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Understanding Performance Measurement from a Social Systems Perspective

by

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To

W.G.M.

Copyright Statement

Signed:

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List of Abbreviations

BRIC	Brazil, Russia, India and China
BSC	Balanced Scorecard
CP	Current Position
CPM	Contemporary Performance Measurement
EI	Emotional Intelligence
HC	Human Capital
HPO	High Performance Organisation
HRD	Human Resource Development
HRM	Human Resource Management
IP	Intellectual Property
KPI	Key Performance Indicator
MBV	Market Based View
OE	Organisational Effectiveness
OP	Organisational Performance
PBV	Practice Based View
PM	Performance Measurement
PMM	Performance Measurement and Management
RACI	Responsible, Accountable, Consulted, and Informed
RBV	Resource Based View
S&OP	Sales and Operations Planning
SBU	Strategic Business Unit
SC	Social Capital
SME	Small and Medium-sized Enterprise
SS	Social Systems
SSL	Social Systems Lens

TMS Transactive Memory System

TMSA Transformational Model of Social Action

WGLL What Good Looks Like

Abstract

Performance measurement (PM) systems fail to predict organisational outcomes reliably because organisations face futures so inherently unknowable that it is impossible to comprehend the full range of potential outcomes open to them. Organisations are complex, adaptive, social systems whose distinctive activity is decision-making. They are heterogeneous entities whose capabilities, behaviours, and circumstances are unique, emerging from their histories and previous decisions. Organisational reality is a social construct delivered through practice. This thesis investigates whether considering PM from a social systems perspective improves PM's effectiveness.

The argument made is organisations connect through social systems and operate through practice with people, processes, and their interactions fundamental to how they perform. A middle-range management theory is presented aimed at making organisations the best they can be with the resources available to them and in the economic circumstances they find themselves. It does this by understanding and reconfiguring the organisation's social system using a structured approach to optimise business processes and performance measures based on a combination of emergent behaviour and practice. Given the reality of radical uncertainty the focus is not on predicting outcomes but on uncovering the explanatory mechanisms behind events caused by specific managed improvement interventions. Understanding the behaviour of dynamically interacting components is done using realist evaluation based on social interactions, emergent powers and social intervention mechanisms. This approach changed behaviours and performance outcomes in case study organisations. The use of an 'inside-out' social systems perspective, coupled to critical realism with its focus on explanation, enabled the causal relationships of importance to be identified and the performance 'black box' to be opened up. This research contributes to closing the PMM theory-practice gap by proposing the performance focus needs to be on the social system rather than the measures, that is, on the 'means' rather than the 'ends'. It also offers a competing theoretical framework to organisational control theory for PMM, one grounded in social systems and practice theory. The social systems perspective is not considered specific to PM and potentially can be applied to all other business processes.

1. Introduction

1.1. Social Systems and Performance Measurement

My experience of working in the Private, Public and Not-For-Profit sectors has shown me how similar organisations are despite their different purposes. On a number of occasions when starting a new job I can remember being told earnestly by my new manager: "You will find we do things differently here." After getting to know the organisation and the people I realised repeatedly that the similarities vastly outweighed the differences. Irrespective of whether the organisation was manufacturing pharmaceuticals or delivering health or social care or managing City finances they faced similar problems; the most challenging of which involves people, processes and interactions.

Longer-term success relies on the ability of organisations to get things done and things get done by mobilising the whole workforce to achieve a common aim. Organisations need leaders who can interact effectively at all levels, establish direction, align people, encourage collaboration and build skilled and motivated teams. The power of the organisation resides in how well it can operate as a coherent entity. None of this is new and literature including Handy (1989), Drucker (1999), Mintzberg (2007) and Armstrong (2011) support this.

During my career I have worked in a diverse range of fields including Human Resources, Legal, Learning & Development and Continuous Improvement, within the pharmaceutical and chemical industries, primary healthcare, local government and not-for-profit organisations. As I observed how people behaved in these environments I could see that some were more proficient at working with people and others more proficient at working with processes. However, it was when I moved to a role in continuous improvement that I became much more aware of the importance of the interactions between people and processes across all functions and how much this could influence progress and impact outcomes. Much of my work involved supporting and coaching individuals leading projects and project teams. In some cases the process methodology was followed to the letter but the project team was unsuccessful due to poor communication with stakeholders or a lack of understanding of the impact of changes in working practices. In other cases projects took too long or didn't address the real problem due to lack of attention to the process but had partial success due to good interactions between people. These observations began to crystallise my thinking on what makes the difference between an outstanding success and a partial one. To be successful organisations need capable people and robust processes (where capable here means proficient, experienced people who can work effectively in teams, and processes refer to business processes as defined by, for example, Davenport (1993)). My experience would suggest that capable people working collaboratively can often make poor processes work to some extent, although not optimally; however, excellent processes will not work effectively if the collaborative element is missing. It is the blend of people, processes and how they interact that makes the difference (Espejo, 2003; Spitzer, 2007).

Organisations have been characterised in many ways. For example, they have been described as distributed knowledge systems (Tsoukas, 1996), interpretation systems (Daft and Weick, 1984), communities-of-communities (Brown and Duguid, 1991) and social systems (Luhmann, 1995). According to Tsoukas (1996) a social system is an inquiring system capable of producing knowledge about itself and its environment; however, this knowledge is dispersed amongst those comprising the social system. Tsoukas adds "at any point in time, what is going on in a social system is not only not fixed but is inherently indeterminate."

More recently organisations have become increasingly referred to as complex social systems (Anderson, 1999; Frank and Fahrbach, 1999; Cilliers, 2001; Holling, 2001; Styhre, 2002; Mitleton-Kelly, 2003; Espejo; 2003; Miller and Tsang, 2010; Byrne, 2013). Mitleton-Kelly (2003; 2011) indicated these adaptive systems comprise social, cultural, political, physical, technical, economic and other dimensions which interact and influence each other leading to complex behaviour, adding little theoretical work has been done to develop a framework to explain this behaviour. Mitleton-Kelly (2003) went on to suggest that such a theory could provide new ways of thinking about organisations and facilitate new patterns of relationships and ways-of-working to create organisational forms more capable of being sustainable in dynamic environments. According to Introna (2003) "social systems are *socially constructed and historically emerging* phenomena." Their historical nature provides stability and continuity for their behaviour and also allows social phenomena such as values, beliefs and collaborative practices to evolve as by-products of social interaction, being emergent properties of the social system (Cilliers, 2002). These by-products are often not perceived by the social system itself. Social systems are also reflexive, observing themselves and their surroundings. Introna (2003) stated complex social systems are "historically situated, recursively emerging realities — i.e. they are continually reconstituting themselves as part of their ongoing 'operation'." Introna also proposed the concept of social complexity theory which, as the name suggests, is a combination of social theory and complexity theory, and appropriates understanding from both. The inclusion of complexity theory offers new ways to understand social systems and inform meaningful organisational intervention. Miller and Tsang (2010) and Byrne and Uprichard (2012) extended this by outlining how the synthesis of complexity theory and critical realism enables the exploration and understanding of complex and contingent causality in relation to complex social systems.

People are the source of the complexity in organisations through their behaviours, interactions and decision-making. My contention is the nature of the complex social system operating in an organisation is fundamental to how effectively that organisation performs. The social system is the context for virtually everything that happens in the organisation. It has a history which shapes the organisation's present and future and is the bedrock for social and technical interventions with the outcomes of both relying on the effectiveness of the social system in operation at the time of the intervention. An important aspect of a social system is that it needs to be characterised in terms of its space of interaction which extends beyond physical space (Mingers, 2011a). Get the social system right and the whole can be much greater than the sum of the parts.

The difference between a social system and a social structure needs clarifying at this point. There is no agreed definition of a social system or a social structure (Elder-Vass, 2007a; Mingers, 2011b). In this thesis a social system comprises individuals who can interact with each other in collective mode and operate with a common purpose. The social system emerges from people's recursive interactions, not from the individuals themselves and will exist for as long as these interactions continue (Luhmann, 1995; Espejo, 2003). From a 'systems thinking' perspective social systems are entities composed of parts, in this case people. Entities such as organisations are an obvious form of social collective. As such social systems are purposeful collectives that display emergent properties or causal powers unique to the way their parts relate to each other (Elder-Vass, 2007a). They are interactive and open systems not well suited to experiment (Mingers, 2006). From a 'systems thinking' perspective Loosemore and Cheung (2015) describe "organisations as a series of interrelated subsystems of people, processes and technologies that cooperate towards the achievement of a common goal." Social systems are complex arrangements of social interactions based on shared goals, norms and values and can refer to an organisation or a function within an organisation or a sub-set of a function i.e. they can be nested (Byrne and Uprichard, 2012). These beliefs, norms and values are constituted in practice (Introna, 2003). Social systems can range from being a desirable, organised, aligned and focused collective to a dysfunctional group of employees, and everything in between (Espejo, 2003). Desirable social systems have a holistic ability for learning and change; that is of producing desirable functional capability, whereas dysfunctional systems typically have a poor capacity for this (Espejo, 2003). People in healthy operating social systems are able to use their collective knowledge and experience to alter the future state of that system to better accommodate changing internal or external requirements (Holling, 2001; Banathy, 2013). Social systems can act to reduce complexity and ambiguity (Argyris, 1996). They have structure, but it is a structure of events rather than parts, a structure therefore inseparable from the functioning of the system.

While recognising that social structures can refer to the way organisations are set up as ordered, stable arrangements of interdependent and interrelated relationships which includes the status and role of each individual within the organisation, and specific, culturally defined norms prescribing rules for accepted behaviour (Parsons, 1961), this thesis utilises an alternative description and considers social structures to refer to entities with causal powers as described in critical realism (Mingers, 2006; Elder-Vass, 2007a). According to Mingers (2011a) social structures 1) can't be observed directly and exist only virtually as a set of practices or roles which empower social activity, 2) rely on the knowledge and understanding of social actors who must be aware they are doing a specific activity and how to do it and 3) are transient, informal in nature, and localised in space and time. Social structures are about patterns of human relations and reflect forms of interaction and configurations of individuals (Porpora, 2013). Here structure is decoupled from functional roles in organisations and centres on shifting patterns of interactions and communications between individuals; connections which can be continuously broken off and remade and which do not necessarily reflect the actual organisational structure (Martin and Lee, 2015). They also have emergent behaviours and properties not possessed by their component parts (Gorski, 2013).

Contextual approaches to organisational change are not new and have been described by Pettigrew (1987) and Child and Smith (1987) among others. In their particular cases major transformations within different large organisations were conceptualised in terms of linkages between the content of the change and its context and process. There are broad similarities between the approach discussed in this thesis and the contextual analysis described by Pettigrew (1987) (see Chapter 5). In practice context is a general concept which, for example, Easton (2010) termed "relevant circumstances" and Welch et al. (2011) defined as "the surroundings associated with phenomena which help to illuminate that phenomena [*sic*]." In this thesis the broader industry and market context influences an organisation's external environment and sets the backdrop for how that organisation responds to competitive pressures, disruptive technologies, legislative changes, etc. (Bititci et al., 2012). The responses organisations make are usually, but not exclusively, focused on what they can control, that is their internal environment, where interventions of some sort are undertaken (Frank and Fahrbach, 1999).

The complex behaviour of social systems can be counterintuitive (Forrester, 1971). For example, the outcome of an intervention may bear no resemblance to what was expected. Forrester suggested there are a number of fundamental reasons why the behaviour of social systems is misinterpreted. For example, social systems tend to direct people to areas where interventions fail. Based on their experience of simple systems people are inclined to seek a cause close to the symptoms of a particular event. The social system frequently displays a plausible cause; however, it is likely this is a coincident occurrence which, like the symptoms of the particular event itself, is being produced by the feedback-loop dynamics of a larger system. Sterman (2000) concurred with this noting through a lack of analysis "our attention is drawn to the symptoms of difficulty rather than the underlying causes", resulting in the potential for superficial solutions. According to Forrester social systems have a small number of sensitive influence points through which the system's behaviour can be changed. These points are usually not in the locations where people expect and the orderly processes at work in human judgment and intuition often lead them to make incorrect decisions when faced with complex and highly interacting systems. Another characteristic of social systems is there are often conflicts between the short and long-term consequences of an intervention. An intervention producing an improvement in the short-term may result in exactly the reverse effect over the medium to long-term (Sterman, 2001). By definition a short-term outcome is more immediately visible and therefore more compelling. As Forrester commented "Until we come to a much better understanding of social systems, we should expect that attempts to develop corrective programs will continue to disappoint us." Pawson et al. (2004) captured this as "a critical feature of interventions is that as they are delivered, they are embedded in social systems. It is through the workings of entire systems of social relationships that any changes in behaviours, events and social conditions are effected." Pawson et al. noted context is critical in interventions and proposed "reviewing research evidence on complex social interventions, which provides an explanatory analysis of how and why they work (or don't work) in particular contexts or settings." Sterman (2001) added interventions in complex dynamic systems require a transdisciplinary approach. Because we are concerned with the behaviour of complex social systems "system dynamics draws on cognitive and social

psychology, organization theory, economics, and other social sciences." Bearing all of this in mind this research attempts to determine whether taking a holistic social systems approach to Performance Measurement (PM) can improve the effectiveness of interventions made.

In this thesis the context of importance is considered to be the social system operating in the organisation at the point the intervention is made i.e. the local environment the organisation has a degree of control over rather that the global one reflecting the external environment. The organisation's social system is what Blom and Moren (2010) termed the 'intervention context', the conditioning local circumstances. Because people are sensitive to context as a result of their ability to interpret situations rather than just be shaped by them social systems always have a level of flux associated with them; the challenge here is to proactively steer the social system to make the organisation the best it can be (i.e. maximise OE) using the resources at its disposal and in the economic circumstances it finds itself at that time.

Most organisations, again almost irrespective of their purpose, use some form of PM process to encourage the 'right behaviours' from employees and the 'right outcome' for the organisation. Of course, organisations don't deliver the 'right outcome', people do; therefore the 'right behaviours' lie at the heart of organisational performance (OP) (Bourne, 2008; Nudurupati et al., 2011; Franco-Santos et al., 2012; Bourne et al., 2013; Melnyk et al., 2014; Sparrow and Cooper, 2014; Smith and Bititci, 2017). What makes PM relevant is "its capacity to instigate informed action – to provide the opportunity for people to engage in the right behaviors at the right time" (Spitzer, 2007). Bourne et al. (2013) observed that people and culture are significant factors in utilising PM successfully and that PM activities are interwoven into an organisation's processes, consistent with the proposal in this thesis that it is people, processes and their interactions that make the difference. Outcomes are often rather narrowly defined, typically limited to financial measures such as earnings or share price, or financially related metrics such as efficiency or unit cost. This ignores the non-financial elements of outcomes associated with people and the operating social systems within which they work. Measures here are more difficult to define because the phenomena involved are meaningful and meanings can't be adequately measured and compared, only understood and described (Mingers, 2006). However, studies across both the public and private sectors to understand, for example, how employee engagement can influence competitiveness and performance have been undertaken and the findings from such work have begun to influence thinking in these sectors (MacLeod and Brady, 2008; MacLeod and Clarke, 2009). There is some evidence of this beginning to be considered in PM (Bourne et al., 2013; Cheche, 2015; Smith and Bititci, 2017). PM is about perception, understanding and insight (Spitzer, 2007).

PM systems often reflect a combination of the core values and strategic direction of the organisation at the operational level (Richard et al., 2009). With pressure to deliver shareholder value the effectiveness of PM and Performance Measurement and Management (PMM) systems is under constant scrutiny especially in the private sector but increasingly in the public sector (for shareholder read taxpayer). However, there is a lack of consistency in the definitions used in practice and in the literature (Franco-Santos et al., 2007), a lack of a disciplined approach to research (Bourne et al., 2005; Neely, 2005), and

ample evidence to demonstrate there are not simple, transferable prescriptions between PM and PMM systems and overall OP (Pavlov and Bourne, 2011; Franco-Santos et al., 2012; Choong, 2013, 2014), a major contributor to which being the mechanisms causing variation in overall OP are unstable (March and Sutton, 1997; Van Aken, 2004).

Having said this, OP is used as the primary dependent variable by most business leaders and researchers interested in assessing and comparing organisations (Hesketh and Fleetwood, 2006). Despite reviews of the literature demonstrating the definition of OP is neither clear nor consistent (March and Sutton, 1997; Lebas and Euske, 2004; Richard et al., 2009, Miller et al., 2013), organisational strategy and accounting researchers use it to gauge overall firm performance; operations, Human Resource Management (HRM) and marketing professionals and researchers use it as the route to improve performance, each applying their own appropriate performance measures reflecting their particular discipline (Guerard et al., 2013; Singh et al., 2016). OP is defined in many different ways, is a multi-dimensional construct (Kaplan and Norton, 1992; Combs et al., 2005; Richard et al., 2009; Singh et al., 2016), organisational measures are many and varied and their link to financial performance inconsistent (Kirby, 2005). Richard et al., (2009) indicated "researchers still pay little theoretical attention to, or methodological rigor about, the choice, construction and use of the plethora of performance measures available to them." Partly this relates to the organisation-specific nature of the stakeholder approach so comparative measurement is difficult; partly it is associated with what organisations can measure readily and partly it is a reflection of the desire to have some form of ruler with which to compare things (Bourne, 2008; Bourne et al., 2013). As an example of the last of these, in response to pressure from government to see evidence-based, 'value-for-money' outcomes from social policy expenditure in what are clearly complex social systems, decision-making is undertaken using evidence lacking in methodological foundation (Callaghan, 2008). Lebas and Euske (2004) described performance as a 'suitcase word' in which "everyone places the concepts that suit them, letting the context take care of the definition."

However OP is gauged it is influenced by management practices such as communicating plans, goals and priorities and having a clear and responsive PMM framework for delivery but it is also impacted by complex internal and external dynamics which organisations can't predict or affect much; for example: technology advancement, not-in-kind competition, mergers and acquisitions and the complex people ramifications associated with changes such as these (Child and Smith, 1987; Paauwe, 2009, Franco-Santos et al., 2012). According to Singh et al. (2016) roughly 40% of the variation in profit differentials reported is as a result of OP being influenced by internal and external variables over which the organisation has little or no control; an observation frequently not taken into consideration by researchers. Substantial improvements in OP can only be accomplished by considering the whole organisation as a complex system (Coens and Jenkins, 2002). A systems theory view of OP sees organisations, strategic groups and the industries they operate within as interdependent parts of a much larger complex system that collectively influences the performance of any individual organisation (Short et al., 2007). The majority of organisations invest in equipment, people, and learning and development to be able to compete. Typically businesses are aligned with specific markets, product families, intellectual property (IP) portfolios etc. Interestingly businesses, which at some point were

identified in the literature as masters of performance, tend to have their years in the sun and often fail to transition to become highly successful organisations when the circumstances change (Kim and Mauborgne, 2005), suggesting there is more to building successful organisations than simply identifying, transferring and developing bundles of routine practices (March and Sutton, 1997). While financial performance is reasonably well defined the contributors to it are as much out-with the control of an organisation as they are within its control. PM is largely associated with what organisations can measure or believe they understand and can control. At best these measures are partial representations of the reality organisations face (Lebas and Euske, 2004; Bourne et al., 2014).

Organisational effectiveness (OE) is another measure commonly referred to within management research literature. Like OP it too has a multitude of definitions (Cameron, 1986; Ferris et al., 1998; Matthews, 2011; Sparrow and Cooper, 2014). Typically it is considered as a more general construct than OP as described by Richard et al., (2009):

- Organizational performance encompasses three specific areas of firm outcomes: (a) financial performance (profits, return on assets, return on investment, etc.); (b) product market performance (sales, market share, etc.); and (c) shareholder return (total shareholder return, economic value added, etc.).

- Organizational effectiveness is broader and captures organizational performance plus the plethora of internal performance outcomes normally associated with more efficient or effective operations and other external measures that relate to considerations that are broader than those simply associated with economic valuation (either by shareholders, managers, or customers), such as corporate social responsibility.

In this thesis:

- OP is defined as the combined outcome of the external and internal environments on an organisation's selected key indicators such as earnings, efficiency or unit cost (de Waal, 2003). The external environment comprises elements which are not part of the organisation, where a change in an element can produce a change in the organisation's performance. The internal environment comprises elements which are part of the organisation, where again a change can produce a change in the organisation's performance.

- OE is defined as how effective an organisation is at optimising its internal business processes to respond to any external or internal opportunity or threat capable of affecting its performance (Katz and Kahn, 1978).

- PM provides key surrogate information to indicate how effective the organisation's response has been (Moullin, 2007; Frankel, 2008).

This definition of OE shares the broader context as outlined by Richard et al. but the more contained scope as captured by Moullin and Frankel. While the link between PM and OE is widely acknowledged an explanation for this relationship is limited by the absence of a clear theoretical foundation (Rangone, 1997; Matthews, 2011).

The history of PM research and practice has followed changing business priorities and philosophies. Modern PM has grown from its roots in book keeping and accounting through the use of frameworks such as the Balanced Scorecard (BSC) in its various forms (Kaplan and Norton, 1992, 1993, 1996, 2000, 2001, 2004, 2008) and others (see examples in Neely et al., 2000; Watts and McNair-Connolly, 2012) to the recognition that quality and customers need to be considered (Kim and Mauborgne, 2005). Despite the difficulties in measuring and managing OP many organisations take the view that you can only manage what you measure (Womack 2003). However, it is increasingly understood that which is measured may not only reflect more the method of observation but also may not be a true reflection of the phenomenon being investigated (for example, Heisenberg, 1963) and may mean different things to different people (Lebas and Euske, 2004) saying more about the observer than the observed (Espejo, 2003). Measurement lies in the eyes of the beholder. According to Lebas and Euske (2004) performance and PM are relative concepts used in decision-making processes; they are complex in nature and are influenced by human interpretation. Performance has a different meaning depending on whether it is viewed from inside or outside the organisation (Lebas and Euske, 2004; Barney and Mackey, 2005; Spitzer, 2007; Garbuio et al, 2011; Feldman and Orlikwoski, 2011) and performance measures are time- and causality-based indicators that only partially describe reality. The processes of generating performance and PM are dynamic social constructs and complex when set against the changing environment and uncertainty of modern business (Hudson et al., 2001; Neely, 2005; Spitzer, 2007; Melnyk et al., 2014).

Albert Einstein's quote that "not everything that counts can be counted and not everything that can be counted counts" is an important reminder for any organisation that the challenge in developing an effective PM system is anything but straightforward.

Literature in the field of PM has developed and matured to some extent in line with the changing nature of organisations. However, while it describes particular elements of PM it fails to address the more multi-dimensional and fluid approach required by organisations today (Hudson et al., 2001; Melnyk et al., 2014; King, 2016) and suggests that, in response to changing organisational climates, there is a need to take a more holistic systems-based approach (Bititci et al., 2012; Loosemore and Cheung, 2015). Bititci et al. (2012) called for a reassessment of how PM is researched; recognising the challenges faced by practitioners and suggested future research should adopt a more interpretive epistemology. Commenting on general systems theory sixty years ago Boulding (1956) proposed a systematic hierarchy of increasing complexity comprising nine levels and commented one use of this hierarchy is to remind researchers that they ought not to accept a level of theoretical analysis below the level of the empirical world being investigated. Boulding noted social organisations and social systems are complex and inhabit level (viii) of (ix) whereas most of the theoretical schemes in the social sciences are at level (ii) or (iii). Of Management Science Boulding indicated "that in dealing with human personalities and organizations we are dealing with systems in the empirical world far beyond our ability to formulate" suggesting a systems-based approach needs to be entered into with care. Boulding also noted that the increasing focus on functional specialism had resulted in "the spread of specialist deafness" between disciplines with the result that the growth of

knowledge is being slowed down by the loss of relevant communications. This position has not changed markedly in the intervening sixty years (Sparrow and Cooper, 2014).

Tregaskis et al., (2013) suggested the limitation of much of the research into PM is that it does not take account of the complex nature of organisations and the difficulty in controlling variables such as relationships and changes in leadership. Richard et al., (2009) explained that many researchers fail to take account of the multi-dimensionality of performance and don't understand how the specific performance measures used are influenced by the complex combination of context and actions over time. They stated "As it is unlikely that objective measures alone will capture this we require research on those combinations of subjective and objective measures that best capture performance, over what time period fluctuations in performance appear, and most importantly a broader exploration of the paths that link heterogeneous environments, and firm characteristics, practices and strategies to overall organizational performance." Singh et al. (2016) acknowledged there can be a number of problems encountered using objective measures and claimed a subjective PM approach can be considered a reliable alternative to assess OP. My experience in public and private sector organisations reinforces both these contentions.

In practice when leadership or management teams are asked about how their organisations are performing or not performing they frequently compare progress to existing plans or targets. Where there is a difference they typically comment about unforeseen changes in markets and/or competitors (if appropriate), or on the timing of the introduction of a new product or service to meet a perceived need and how these have influenced performance (March and Sutton, 1997). Rarely do they start by reviewing how well their organisation has performed as a team, where changes in working practices or business processes made a significant difference or how the leadership, middle or first-level management teams have led and managed the organisation. People are rarely referred to albeit they are the primary determiners of performance. Equally when continuous improvement processes such as Six Sigma are introduced into organisations to improve performance the initial focus is invariably on the statistics. The engineers, scientists and operations teams are energised by new tools to use. More often than not, the transactional groups such as HR, Planning and Purchasing believe it's less relevant for them. The social systems elements of performance are usually not recognised for the fundamental contribution they make. Six Sigma is primarily a people process, supported by some relatively simple statistics. Organisational improvement, whichever lens it is viewed through, revolves around maximising and leveraging the contribution of people through developing collective capabilities and skillsets, combined with a willingness to improve through applying the knowledge and know-how (tacit and explicit) that exists within the operating social system and being prepared to see and do things differently. Organisational creativity is a benefit that comes from proactively treating organisations as social systems (Woodman et al., 1993; Andriopoulos, 2001). Woodman et al. made the link between complex social systems and organisational creativity, organisational change and, ultimately, OE.

The World Bank defined social capital as "the norms and social relations embedded in social structures that enable people to coordinate action to achieve desired goals" (Cohen and

Prusak, 2001). Social capital makes an organisation more than a collection of individuals each engaged in their isolated part of an overall plan. Social capital can be seen as the collective element that comes from a shared understanding of what needs to be done, the interactions which support collaboration, mutual sharing of tacit knowledge, commitment to improvement and teamwork. Organisations which invest in communications, allow people time to develop connections and build trust across their operating social systems encourage collaborative participation rather than just physical presence. This thesis argues the social system is the primary mechanism for developing and growing social capital. Increasing social capital within an organisation is one measure of a successful social system; social capital is the 'what' and the social system is the 'how'.

For the outcome of PM to be successful my observations imply not only must organisations have consistency of outlook and standards when managing activities across different populations but they also need to be aware of the impact of people interactions and different ways of working within these populations when it comes to shaping implementation if they are to be the best they can be in the circumstances they find themselves. The importance of these characteristics is not always recognised but is essential to understand to maximise and leverage employee contribution. While we might expect to see a variation in approach between countries and regions the 'rules of the game' can also vary between teams based in the same location, indeed within the same building (Liao et al., 2009).

It is interesting to note that de Waal and Kourtit (2013) claimed 70% of large US and European organisations operate PMM systems while Neely and Bourne (2000) and de Waal and Counet (2009) stated greater than 50% of implementations fail and cited lack of commitment within the broader organisation as the primary reason for this. Espejo (2003) suggested the 'problem of implementation' is frequently simply a failure to account for an organisation's operational complexity. de Waal and Counet's starting point was "The need for efficient and effective performance management systems (PMS) has increased over the last decade. This is because it has been shown that the use of PMS improves the performance and overall quality of an organization." Given the conclusions of March and Sutton (1997), Lebas and Euske (2004), Richard et al. (2009), Bourne et al. (2013), Miller et al. (2013) and Melnyk et al. (2014) among others, that the link to performance isn't sufficiently clear it is possible that a number of management teams have reached the same conclusion and see PMM systems as inadequate and of only limited importance (Hudson et al., 2001; Melnyk et al., 2014). The practitioners involved in the de Waal and Counet study had a different perspective to the academics on the main reason for failure, focusing on the human element as the problem associated with implementation, mirroring observations already in the literature (Holloway et al., 1995; Simons et al., 2000, Pidun and Felden, 2013). de Waal and Counet commented "The fact that the academics rate these behavioural problems to be relatively less important than the practitioners serves once again as a wake-up call for researchers to go more deeply into these problems, to come up with solutions how practitioners can deal with them." My contention is the social system is the context of importance for virtually everything that happens in an organisation.

As a practitioner in Six Sigma and continuous improvement I am in no doubt that capable measurement systems and well understood metrics are fundamental to improving processes (Antony, 2004; Schroeder et al., 2008). As an HR professional I know that most of what is achieved in OP is governed by people and relationships (Nahapiet and Ghoshal, 1998; Collins and Smith, 2006; Boxall, 2013). In my role as a corporate continuous improvement leader it is clear to me that for success these elements must be brought together purposefully (Jorgensen et al., 2007). Building on the findings of Hudson et al. (2001), Lebas and Euske (2004), Bititci et al. (2012), Melnyk et al. (2014) and Micheli and Mari (2014) my interest is to explore whether there is an opportunity to define a more all-encompassing approach to characterise PM that will add to the learning and understanding of the subject for both researchers and practitioners and help bridge the current gap that exists between PMM theory and practice. (Hudson et al., 2001; Melnynk et al., 2014).

The bases for effective managerial theory and practice are the same (Argyris, 1996). One of the main purposes of schools of management is to undertake research that contributes knowledge to a scientific discipline and to apply this knowledge to the practice of management (Simon, 1967). According to Van de Ven (1989) to do this well management research needs to be designed to provide an understanding of the practical problems facing the profession, and theory development skills enhanced so that the research conducted delivers knowledge which will be relevant to both academe and business. “Good theory is practical precisely because it advances knowledge in a scientific discipline, guides research toward crucial questions, and enlightens the profession of management” (Van de Ven, 1989).

A gap between theory and practice in applied social science has been recognised for many years (for example: Glaser and Strauss, 1967; Argyris and Schon, 1974; Gibbons et al., 1994; Ghoshal, 2005; Gorski, 2013). There is increasing evidence that the outcome from management research is not aligned with what is observed in practice (Daft and Lewin, 1990; Starkey and Madan, 2001; MacLean et al., 2002; Van Aken, 2005; Bourne, 2008; Syed et al., 2010; Sandberg and Tsoukas, 2011) with calls being made for management researchers to spend more time building new, relevant theories from empirical data (Eisenhardt, 1989). Arguments continue on whether the theory-practice gap is narrowing or widening (e.g. Kieser and Leiner, 2009, 2011; Hodgkinson and Rousseau, 2009). Syed et al. (2010) suggested a lack of bridging mechanisms exist to span research and practice and pointed to the potential of interdisciplinary research (Danermark, 2002) and joint practitioner-academic collaboration (Weick, 2001; Bourne, 2008) to do this. One of my interests is to establish whether my research can provide such a bridging mechanism.

On a daily basis, organisations, particularly large private firms, provide those working in them with a wide variety of complex problems to solve. The social systems that comprise organisations, usually problem-solve by taking a transdisciplinary approach where people with a broad range of skills and disciplines come together to leverage their knowledge and experience for the duration of a particular problem or project. The teams involved can include specialists from the company, academe and occasionally government agencies. For example, chemical, electrical and mechanical engineers, information systems engineers, statisticians, chemists and operations personnel may all contribute to improving the

performance of a particular chemical process, often generating new, and sometimes patentable, knowledge that any one discipline on its own would not have developed. This type of knowledge has been termed Mode 2 knowledge (Gibbons et al., 1994). A transdisciplinary style of working is normal within large private organisations yet its influence in terms of PM is so far limited. As noted by Holloway (2009) "The case for research programmes and projects that are practice-relevant, systemic, transdisciplinary and contingent is difficult to refute. To fill the gaps identified we need very good access to organisations and the micro-worlds of managers." I argue that if management researchers wish to influence organisations and produce new, relevant theories from empirical data they must do so from inside the organisation and in ways which align with the actual ways-of-working of the organisation (Tsang, 1997). An 'inside-out' approach is defined in this thesis as research undertaken in longitudinal mode to investigate PM and OE (or OP) using communities-of-practice to audit the local social system and select the most appropriate distinction to apply based on knowledge of the working practices of the organisation. In contrast, an 'outside-in' approach undertakes research, typically in cross-sectional mode, with the researcher observing the organisation's working practices independently from outside, adopting a PM perspective and selecting the distinction of interest based on a narrow specialist view.

According to Partington (2000) the combination of the interest in theory building using empirical data and the shift towards cognitive perspectives in the behavioural sciences where the mediating role of managers becomes important, coupled to the characteristics of Mode 2 knowledge and a simplified version of grounded theory within a critical realism frame-of-reference, offers a route to grounded theories of management action which can close the theory-practice gap. Partington proposed management researchers who analyse stories of past events from retrospective interview data adopt this approach to produce practically derived causal theories of management action. Van Aken (2005) also described a theory building approach using a field-tested and grounded technological rule as a product of Mode 2 knowledge again within a critical realism frame-of-reference as a way to bridge the theory-practice gap. This approach focuses on the development of design knowledge, which occupies the middle ground between descriptive theory and actual application. Both of these management research approaches rely on Mode 2 knowledge, cognitive processes and critical realism.

Gibbons et al. (1994), Partington, (2000), Pettigrew, (2001), MacLean and MacIntosh, (2003) and Van Aken (2004, 2005) described Mode 2 knowledge as transdisciplinary, operating within the context of application; in contrast to traditional, mono-disciplinary, theoretical knowledge which they refer to as Mode 1. Mode 2 knowledge is usually created in a non-hierarchical and transient manner, employs tacit knowledge and is particularly appropriate where the context is complex. It is also better suited to problem-solving than Mode 1 (Huff and Huff, 2001; MacLean et al., 2002). Looked at differently, when attempting to understand the cause of improvements in organisations, Mode 1 research typically focuses on interventions from a mono-discipline perspective, usually treating the improvement as a complicated problem with a known outcome (a determinate prediction). Mode 2 research, however, treats the improvement as a complex problem and looks to develop the knowledge and understanding to solve it (Huff and Huff, 2001; Van Aken,

2005). According to Gibbons et al. (1994) “Mode 2 is more socially accountable and reflexive. It includes a wider, more temporary and heterogeneous set of practitioners, collaborating on a problem in a specific and localised context.” Van Aken (2005) proposed organisations have a hybrid character comprising frameworks reflecting the ‘conscious designs of their founders’, and ‘natural systems’ which develop through social interactions and learning processes. When an ‘outside-in’ perspective is taken research tends to focus on the more tangible conscious designs; however, when an ‘inside-out’ perspective is taken then both the conscious designs and the natural social systems are recognised to be the integrated whole they are. Van Aken suggested the nature of problems in organisation and management are typically “solved by intervening in a natural system, after which the processes of this natural system have to realize the desired improvement.” Taking an ‘inside-out’ social systems perspective is critical to identifying, delivering and sustaining any interventions (Pawson et al., 2004).

Mode 1 knowledge may be viewed as underpinning organisation theory whereas Mode 2 knowledge can be seen as forming the basis of management theory (Partington, 2000; MacLean and MacIntosh, 2003; Van Aken, 2005). Indeed Tranfield and Starkey (1998) saw Mode 2 knowledge reflecting the ontological status of management research more so than Mode 1 does. Van Aken combined Mode 2 knowledge and the action oriented research approach described by Bunge (1967) to develop the concept of a field-tested and grounded heuristic technological rule as a product of management research to address the theory-practice gap. Such a rule represents a middle-range theory of practice (van Aken, 2004) and can be considered as a design proposition connecting an intervention, or series of interventions, to a specific outcome. Field-testing is done through the use of case study research and grounding through the concept of generative mechanisms (Archer, 1995; Pawson and Tilley, 1997) where a generative mechanism provides a rationale for why an intervention produces the outcome it does. According to Van Aken (2005) organisation theory research supports management theory research “by providing profound understanding of organizational phenomena that can be used to formulate tentative technological rules and to establish the generative mechanisms that produce their outcomes.” Van Aken added “technological rules and solution concepts are general statements based on observable patterns of behaviour, that [*sic*] can be transferred and made contextual through the process of redesign from the general to the specific.” The relevance for this thesis is that theories describing social systems and practice may provide the understanding behind the creation of a middle-range explanatory process theory linking PM and social systems to help bridge the PMM theory-practice gap. Theory here refers to an explanatory, conceptual framework that aids the understanding of the behaviour of a complex social system (Mitleton-Kelly, 2003). Subsequent theory testing can be undertaken by determining and assessing for the presence and effects of causal mechanisms (Miller and Tsang, 2010; Smith, 2010). Working from a critical realist frame-of-reference Miller and Tsang highlighted the nature of the social phenomena management research investigates, the imprecision of management theories, inadequate research designs, and unavoidable assumptions as practical and philosophical obstacles to address if management theories are to be tested in a rigorous way. Smith (2010) demonstrated how contextualised hypothesis generation and hypothesis testing and refinement are possible using critical realism’s

proposition of contingent causality. According to Smith this can be used to develop testable middle-range theory appropriate for small-N studies. This thesis takes an 'inside-out' perspective, adopts Mode 2 research through a communities-of-practice approach and explains how taking a social systems perspective can improve the effectiveness of PM and potentially reduce the PMM theory-practice gap.

Alternatively it has been said that "a theory is primarily a form of *insight*, i.e. a way of looking at the world, and not a form of *knowledge* of how the world is" (Bohm, 1980). Insights are neither true nor false but rather are comprehensible in certain conditions and not in others. My intention is to provide a new insight into how organisations perform, a way of looking at them through a 'social systems lens' with the aim of making them the best they can be in the circumstances they find themselves. I will start from a PM perspective but in the spirit of Boulding (1956), Bohm (1980), Gibbons et al. (1994), Van Aken, (2005) and Syed et al. (2010), who have all commented on the need for more transdisciplinary activity, will look to support my argument that considering PM from a holistic, social system perspective improves the effectiveness of PM by including other concepts taken from the theories of social systems, complexity and practice. Continuing professional development and learning have always been important to me. The focus of my career and my studies has centred on people and organisations. When undertaking previous academic work my motivation has been to combine practitioner thinking and experience with research findings and published data. I have found this an interesting and powerful combination which gives credibility and rigour to proposed outcomes whilst recognising the importance of the practical perspective of people experiencing real organisational life (Van Aken, 2005). This is an important consideration for PM as it is an activity which is as much about practice as theory, a fact sometimes overlooked (Bourne, 2008). Organisational problems rarely have only one solution. Similarly, there is no unique set of all encompassing management instructions which, if followed, will guarantee success. The capability to solve diverse problems comes from experience, the ability to make translational links and being open to learn from others with different perspectives. The integration of research thinking and practical knowledge is a powerful conduit for the evolution of ideas and avenues of study. I have been part of several valuable exchanges between academia and business. However, my view is that both organisational practice and research would benefit from working collaboratively to foster a more interdependent relationship centred on developing mutually beneficial goals (Weick, 2001).

To illustrate practice matters, surveys from a number of countries and across a range of industries have shown that significant improvement in measures such as profitability and sales revenue and growth correlate with best practice adoption (Jarzabkowski et al., 2016). Some practitioners feel that research, or the language of research, is not accessible to them. Others say that they are too busy getting on with important work and do not have time for theories (see Hudson et al., 2001). Sometimes approval for data collection and its use may have to be authorised at a high level in the organisation. Senior leaders may be unwilling both to disclose sensitive or unfavourable information and to relinquish control over it (Holloway, 2009). In addition, knowing what should be done doesn't always translate easily into being able to do it effectively. This uncertainty can lead to lack of

motivation for making a change based on research; particularly one which may not fit with current customs and practices. For researchers wishing to work with organisations it can be difficult to build a relationship of trust over a short period. The initial gaining of access to appropriate organisations and people can be difficult without pre-existing contacts or networks. The researcher is a guest and, to be accepted, must demonstrate suitable authority, experience, skill and an ability to make a contribution (Van Aken, 2004). Changing priorities and personnel must be respected and can result in more time being needed to complete work.

It is important for me to consider how to apply my strengths, extensive work experience and professional and organisational networks when approaching my research in order to make a contribution to knowledge and to use this to promote greater understanding of effective PM implementation in organisations. How people see and use PM in organisations will be a key element of my research. I plan to undertake story collection and utilise focus groups and case studies which will all employ my existing skills of interviewing, coaching, facilitation and working with groups. Easterby-Smith et al. (2008) suggested that researchers make use of their own experience but also cautioned against being overly influenced with the filters and assumptions that can come with this. The factual knowledge we obtain will be influenced by the theoretical insights we apply. I need to take account of this in my research work. Along with many others Easterby-Smith et al. described the balance of 'the insider/outsider perspective' where those experiencing a situation will see it differently from those observing it. I plan to utilise this dual perspective by considering PM both from the view point of a researcher looking into organisations and that of individuals and groups working in those organisations. Indeed, management research from inside organisations, applying a Mode 2 approach, has been stated as "the only consistent way of looking at change" (MacLean et al., 2002). PM in organisations can be an emotive topic so it is important for me to show a high standard of ethical behaviour and deal honestly with people who give me their time to recount their personal experiences. My research will also give me opportunity to examine how I approach my own work in organisations and how to further develop my skills and knowledge. The challenge of reflective practice and the integration of theory and practice are described extensively in the literature by, for example, Schon (1984) and Bradbury et al. (2012).

PM commands considerable interest across academic disciplines and organisational functions. Researchers seek to contribute to the development of PM theory. Organisations are searching for more appropriate ways to measure what they do. Whilst this high level of attention has resulted in an abundance of materials on the topic it also makes it difficult to see patterns and common threads. As a researcher I found it difficult, in spite of a myriad of diverse and informative academic papers and books, to glean a clear and unambiguous understanding of PM. Among others Neely et al. (2002), Holloway (2009) and Micheli and Manzoni (2010) explained that one challenge for researchers in pulling existing PM resources together is that much of it exists in functional silos which makes it difficult to build on previous work. This mirrors the comments made by Gibbons et al. (1994) regarding Mode 1 research and Boulding (1956) on specialist deafness.

Guerard et al. (2013) raised the question of considering performance as an input and an outcome in a dynamic process involving feedback loops. They noted "This perspective suggests a need for longitudinal studies on how performance as input and performance as output relate to each other over time" and commented that "some of the most interesting studies in this vein are process-based qualitative analyses that track in depth the evolution of organizations over time, showing how their behaviour shifts in reaction to perceived performance outcomes and how that behaviour may go on to generate unexpected consequences that in turn input into future actions." This resonates with my research intentions and interests.

Given the complex nature of both social systems and PM I decided to limit my enquiries to the area I am most interested in and where my skills will complement my research work: people in organisations. I will focus on exploring the extent to which taking a holistic, social systems approach to PM from inside the organisation influences PM's effectiveness. Therefore, my initial research question is:

- How does looking from a holistic, social systems perspective enhance our understanding of performance measurement and organisational effectiveness from a wider organisational viewpoint?

The departure points for this research are:

- *Organisations are complex social systems populated by unpredictable human beings whose everyday actions are influenced by context, history and their accessible and accessed knowledge (Simon, 1979; Introna, 2003; Miller and Tsang, 2010; Smith and Bititci, 2017).*
- *Studying the behaviour of complex social systems provides a means to explain and understand the nature of organisations (MacLean et al., 2002; Mitleton-Kelly, 2003; 2011).*
- *There is awareness of a link between organisational behaviour and PM, and possibly OP (Spitzer, 2007; de Waal and Counet, 2009; Nudurupati et al., 2011; Franco-Santos et al., 2012; Bititci et al., 2012; Melnyk et al., 2014; Smith and Bititci, 2017).*
- *The inability of PM to reflect the uncertainties organisations face is the primary contributor to the PMM theory-practice gap (Hudson et al., 2001; Lebas and Euske, 2004; Bourne, 2008; Melnyk et al., 2014; Micheli and Mari, 2014).*
- *There is concern about the robustness of the theoretical foundation of PMM (Richard et al., 2009; Franco-Santos et al., 2012; Micheli and Mari, 2014; Bititci et al., 2018; Beer and Micheli, 2018) and a call for competing theoretical frameworks that enable better integration of new and existing knowledge (Bititci et al., 2018).*
- *The presence of a theory-practice gap in the social sciences in general is recognised (Argyris and Schon, 1974; Gibbons et al., 1994; Van Aken, 2005; Syed et al., 2010; Sandberg and Tsoukas, 2011) together with a lack of bridging mechanisms (Syed et al., 2010).*
- *Middle-range management theory developed from Mode 2 research can reduce the theory-practice gap (Partington, 2000; MacLean et al., 2002; Van Aken, 2005).*
- *The potential for the theory of practice to link various theoretical approaches and use their strengths under a joint conceptual frame can guide research (Chudzikowski and Mayrhofer, 2011; Feldman and Orlikowski, 2011).*
- *Theoretical ideas taken from complexity theory, social systems theory and critical realism can contribute to mechanistic explanation (Archer, 1995; Elder-Vass, 2007b; Mingers, 2011a).*

The departure points 1) direct the initial literature review at exploring the extent to which evidence exists for social systems influencing the application of PM; 2) highlight the presence of a PMM theory-practice gap, a paucity of bridging mechanisms and a lack of robustness in the theoretical foundations of PMM, and 3) suggest the lines of enquiry should explore the behaviour of social systems in organisations from the broader perspective of social systems theory, complexity theory and the theory of practice, and whether taking a mechanistic explanation approach provides the foundations for developing a middle-range theory capable of reducing the theory-practice gap. Based on the research question and the nine departure points outlined above five underlying assumptions have emerged which inform this thesis and investigate the argument that social systems have an important role to play in PM and OE in general. These are:

1. The nature of the social system operating in an organisation plays a fundamental role in defining how that organisation performs.

2. An organisation's complex behaviour and latent capability influences the development, implementation and outcome of interventions aimed at improving PM and OE.

3. By taking an 'inside-out', social systems approach to organisational practice, social systems initiated interventions can improve OE, with PM providing a directional indicator of the impact.

4. By combining organisational theories centred on social systems and practice, explanations of how social systems initiated interventions change the behaviour of organisations and influence performance can be described.

5. An approach grounded in social systems and practice theory provides an alternative framework to organisational control theory as a theoretical foundation for PMM, explaining various phenomena associated with PMM and reducing the PMM theory-practice gap.

These underlying assumptions are expanded on further in Chapter 3 and tested against the case study findings in Chapter 6 with Chapter 7 summarising the outcomes of this research by answering the research question and commenting on each of the assumptions.

1.2. Thesis Structure

This thesis comprises seven chapters:-

Chapter 1 (Introduction) explains my interest in the topic and summarises the departure points, the underlying assumptions and the approach taken. This thesis examines whether considering PM from a holistic social systems perspective can enhance our understanding of PM and OE. My argument is the social system operating in the organisation is fundamental to how effectively that organisation performs. The blend of people, processes and how they interact makes the difference. Central to this is that social systems, OP and PM are social constructs and ongoing productions that emerge through people's recurrent actions. Practice generates organisational reality therefore studying the behaviour of

complex social systems not only provides a means to explain and understand the nature of organisations but also a way to close the PMM theory-practice gap.

Chapter 2 (Performance Measurement and Social Systems: A Literature Review). This review discusses approaches to PM and where these are considered to be failing. While it is acknowledged organisations are complex social systems research on how social systems might influence PM is virtually non-existent in the literature. It is increasingly accepted that PM theory inadequately reflects the dynamic environments organisations operate in, leading to a PMM theory-practice gap. The utility of PMM in such environments is questioned. The chapter describes why it is necessary to take an 'inside-out' approach to exploring performance and PM. However, it leaves unanswered how the behaviour of complex social systems might influence PM and performance. Finally the concept of using social controls to explain organisational behaviour and performance outcomes is challenged for not taking holistic causality fully into account.

Chapter 3 (An Investigation towards a Framework Based on Social Systems and Practice Theory) explores the behaviour of complex social systems from a range of theoretical perspectives. The chapter reviews a range of concepts contributing to social systems and practice theory with the aim of demonstrating how they overlap and complement one another in order to establish whether this can support the development of a new middle-range management theory linking social systems, PM and OE. This work suggests that by adopting a combined Mode 1 and Mode 2 knowledge approach and applying critical realism as the research philosophy a fuller explanation can be presented of how the behaviour of complex adaptive social systems can influence performance. This chapter identifies emergence, knowledge and know-how, sense-making and decision-making as contributors to any middle-range theory linking social systems, PM and OE generated from this research.

Chapter 4 (Research Philosophy and Design) provides the rationale and background to the research philosophy of critical realism and outlines the research methodology and structure including the design chosen to investigate the subject of this thesis. Critical realism is recognised as offering a way to redress the theory-practice gap in management research through its multimethod and multilevel approaches to causal analysis. This chapter lays out the ontological assumptions and the methodological principles of critical realism before outlining the research strategies adopted and the data collection and analytical approaches taken and concludes by explaining why it is the most appropriate choice of research philosophy for this work. Realist evaluation is used in Chapter 6 to explain the observations from the case study research.

Chapter 5 (Semi-structured Interviews, Focus Groups and the Development of the Organisational Effectiveness Framework) describes how behavioural characteristics, identified as important to PM, were generated from semi-structured interviews and distilled down to ten interdependent social systems factors. These factors are also considered critical to success across the normal range of business processes leading to improved OE. A further literature review is undertaken to establish whether there is evidence for the presence of these factors, either singly or in combination, within research linking PM, HRM, social capital etc. to OE or OP which would support a more holistic

approach. This chapter focuses on the development of an OE framework or middle-range theory that conceptualises a link between PM and OE based on the interrelationships between the factors and looks to bridge the PMM theory-practice gap. It is based on an Action Research strategy. Key to this is the engagement of communities-of-practice.

Chapter 6 (Case Studies: Action Research, Interventions and Realist Evaluation) describes the application of the middle-range theory to three organisations to explore whether it provides a more relevant approach to better reflect business need in practice, thereby narrowing the theory-practice gap. Case study research is well aligned with critical realist analysis when the requirement is to develop causal explanations in complex systems. Describing how the OE framework operates is a key component of this Chapter as is use of the concept of realist evaluation to explain the outcomes of the interventions initiated by application of the framework. This involves use of retroduction to identify candidate mechanisms and judgemental rationality to select the most likely explanation of reality. The case studies were selected to build the theory, test elements of it and demonstrate its generalisability.

Chapter 7 (Discussion, Conclusion, Limitations and Broader Applicability) provides answers to the research question posed in Chapter 1, reviews the underlying assumptions developed in Chapter 3 from a broader PM perspective and discusses the findings of this research. As a conclusion it presents a new middle-range theory which has been field-tested and grounded and is focused on making the organisation the best it can be using the resources at its disposal and in the economic circumstances it finds itself at that time. This approach also provides an alternative theoretical framework to organisational control theory for PMM, one grounded in social systems and practice theory, and supported by realist evaluation theory. It also suggests the model may have wider applicability across other business processes.

Table 1.1 provides a guide to how the contribution to knowledge, summarised in Section 7.3, is developed and built up through the thesis. This will help the reader locate the various interconnected strands of theory and practice that combine to produce the four separate contributions numbered 1 to 4 in Section 7.3. The table highlights key aspects advanced in the various chapters (identified by the appropriate section number) and where these are combined and developed in the body of the thesis to construct the four contributions to knowledge.

Note: the definitions of performance measure, performance measurement and performance management used in this thesis are taken from the Procurement Executives' Association (1999) and reproduced in Appendix 1.1

Chapter	Key Topics	Key Contributing Elements in Chapter	Link to Development of Contribution to Knowledge	Developed in Section	Contribution to Knowledge
1	Complex social systems	Organisations are complex social systems whose distinctive activity is decision-making in uncertain and dynamic environments. Social systems emerge from the interactions of people. They are purposeful collectives that display emergent properties unique to the way their parts relate to each other.	Organisations are heterogeneous entities whose capabilities, behaviour and circumstances are unique, emerging from their histories and previous decisions. They are non-linear systems generating unpredictable long-term outcomes where connecting cause to effect is difficult. Studying the behaviour of social systems provides a way to understand how organisations work in practice that supports decision-making. Organisational decision-makers demonstrate behavioural plasticity when faced with making decisions.	1.1, 3.4	1
1	Human behaviour	Human behaviour has significant implications for OP. There is awareness of a link between organisational behaviour and PM, and possibly OP. PM system design and implementation doesn't take human behaviour sufficiently into account.	People are the source of the complexity in organisations through their behaviours, interactions and decision-making. Little work has been done to develop a framework to explain complex behaviour arising from interactions and interrelationships within a complex social systems Such an understanding could provide new ways of thinking about organisations and facilitate different ways-of-working to create organisational forms more capable of being sustainiable in dynamic environments.	1.1, 2.1, 3.4, 5.1	1,2
2	PMM theory-practice gap	The inability of PM to reflect the uncertainties organisations face in the dynamic environment they operate in is the primary contributor to the PMM theory-practice gap. People's decisions and actions are the source of the uncertainty.	The relationship between PM and OP is inconclusive and more complex than originally thought. The fundamental mechanisms and processes explaining how PM works are not understood. PM has evolved to include a behavioural contribution but this is not at the depth required to explain how PM works. A deeper understanding of relevant people contributions to business processes and PM is required to identify, implement and sustain interventions made to improve performance.	2.1, 5.1, 5.2, 5.4	2
2	PMM theoretical foundation	There is concern about the robustness of the theoretical foundation of PMM. Functional specialism has hampered theory-building. Organisational control theory has been proposed as the most appropriate framework for PMM.	The fundamental mechanisms and processes that explain how PM works are not understood. PMM systems are not well-suited to the dynamic environment organisations face. There are aspects of organisational reality that call into question whether Organisational Control Theory should be the predominant theoretical framework for PMM. Adopting a social systems perspective better supports decision-making in the equivocal situations organisations face.	1.1, 2.1, 2.2, 5.1, 5.4, 7.1	4
3	Overlap between social systems & practice	Organisations connect through social systems and operate through practice. Any theory proposing to explain and influence performance needs to accommodate the effects of social systems and practice and incorporate the idiosyncrasies that come from human behaviour.	Two strands of research are required to progress a social systems approach. The first is to identify the common theoretical ground between social systems and practice to provide the architecture for 'what' a social systems perspective needs to address. The second is to develop 'how' a social systems perspective can be created and evaluated reproducibly and 'why' it offers a relevant alternative foundation for PMM.	3.4, 3.5, 3.6, 5.1, 5.2, 5.4	3
3	Intervention basis for social systems perspective	The common theoretical ground between social systems and practice provides the intervention basis for the social systems perspective.	A framework to explain and influence OP needs to build on the common ground linking social systems and practice. The outcome of this research identifies knowledge/know-how, emergence/complexity, sense-making/decision-making as the common theoretical ground, underpinned by critical realism/realist evaluation. The PM literature	3.4, 3.5, 3.6	3
4	Contextualised explanation	Critical realism makes an important contribution to the development of the alternative theoretical framework for PMM. The philosophical foundation for contextualised explanation lies in critcal realism.	Critical realism's overlap with complexity theory, its approach to causality, agency, explanation and knowledge and, in particular, its usefulness in evaluating management theory makes it appropriate for case study research and subsequent theory building and testing in complex social systems to help bridge the PMM theory-practice gap. Critical realism's focus on explanation based on the concept of generative mechanisms enables the performance 'black box' to be opened up to provide the organisation with knowledge of the causal relationships it needs.	1.1, 3.2, 3.3, 3.4, 3.5, 3.6, 4.2, 4.3, 4.4, 4.5, 4.6, 5.4, 6.2, 7.1	4
5	Social systems basis for social systems perspective	An analysis of the behavioural characteristics associated with applying PM systems describe the social systems basis for the social systems approach.	The relationship between PM and OE is mediated by the organisation's operating social system. A method of applying a reproducible social systems perspective to PM using ten interdependent social systems factors is based on leveraging the knowledge and know-how of communities-of-practice to create and execute social systems-initiated interventions targeted at making the organisation's business processes and measures more effective.	4.6, 5.1, 5.2, 5.3, 5.4	2
5	Addressing the primary gaps in the PM literature	The development of the Organisational Effectiveness (OE) framework uses the common theoretical ground between social systems and practice, and the representation of a holistic social system provided by the ten interdependent factors as the intervention basis and social systems basis respectively.	Addresses the primary gaps identified from the PM literature, i.e. 1) reduces the PMM theory-practice gap by recognising the focus needs to be on the social system not on the performance measures. PM plays a supporting role, signalling directionally whether the short-term outcome of social systems initiated interventions has been beneficial or not, and 2) provides an alternative theoretical foundation for PMM based on social systems and practice theory underpinned by realist evaluation theory.	5.4, 6.1, 6.2, 6.3, 7.1	3
6	Testing the approach using longitudinal research	Case study research identified a social intervention mechanism as key to the intervention process to modify business processes and measures. Understanding the behaviour of dynamically interacting components is done using realist evaluation based on social interactions, emergent powers and the social intervention mechanism.	An alternative theoretical foundation for PMM which incorporates theoretical concepts from social systems and practice theory to form a social systems driven approach which enhances understanding of PM and OE. This 'inside-out' social systems approach changed behaviours and performance outcomes in case study organisations reducing the PMM theory-practice gap. Social interaction can be both a part of a social intervention mechanism and a mediating condition where the mechanism is sometimes activated by interventions and sometimes activates interventions.	2.2, 6.1, 6.2, 6.3, 7.1	3,4
7	Competing theoretical framework	The operating social system can be proactively reconfigured into one with greater functional capacity to ceate purposeful and targeted interventions which deiver more effective OE outcomes. This forms the social systems and practice basis of a competing theoretical framework for PMM.	Proactive reconfiguring of the social system replaces performance management as the way to engage with the complexity of the organisation and influence its performance. The theoretical framework explains how organisations can use the latent powers of social systems to investigate and optimise the interactions between the social system and the organisation's processes and measures and then apply a structured approach to leverage organisational learning and make change happen through emergent behaviour and practice.	6.2, 7.1	4

Table 1.1: Development of Contribution to Knowledge

2. Performance Measurement and Social Systems: A Literature Review

2.1. Performance Measurement in Organisations

There is an awareness of a link between organisational behaviour and PM, and possibly OP.

This Chapter discusses approaches to PM and where these are considered to be failing. While it is acknowledged organisations are complex social systems research into how the behaviour of holistic social systems might influence PM is virtually non-existent. It is recognised that PM processes inadequately reflect the dynamic situations organisations face leading to a PMM theory-practice gap. This chapter describes why it is necessary to take an 'inside-out' and holistic social systems perspective to exploring performance and PM.

Corporate success has traditionally been measured by the creation of wealth for shareholders (Clarkson, 1995; Jensen, 2001; 2002). Decisions were made on the basis of shareholder profit with the claims of other stakeholders largely ignored. Managers were encouraged to pursue shareholder value by more or less any legitimate means possible. As an alternative to shareholder theory, stakeholder theory identifies stakeholder groups (shareholders, customers, communities, suppliers and employees) and looks to reflect their needs in a more balanced way using a variety of measures. Contemporary Performance Measurement (CPM), of which the BSC is the most popular (Hudson et al., 2001; Murby and Gould, 2005; Elzinga et al., 2009; Franco-Santos et al., 2012; de Waal and Kourtit, 2013; Upadhaya et al., 2014; Hoque, 2014), comprises financial and non-financial measures which are typically aligned and tuned to the organisation's core values and strategy (for example, Ahn, 2005). According to Murby and Gould (2005) the BSC has been successful because it helps ensure consistency and alignment between financial and non-financial measures, and aids identification and measurement of the value drivers linked to performance.

Jensen (2001) criticised the stakeholder theory and the BSC approach of Kaplan and Norton (1992) for introducing management confusion, inefficiency and lack of focus when trade-offs between measures are sought. Jensen saw the BSC as a simple dashboard. His critique of it is captured by "the Balanced Scorecard does not provide a scorecard in the traditional sense of the word [….] Very simply, a scorecard yields a score, not multiple measures of different dimensions [….]." Instead Jensen advocated use of a single-valued objective function, stressing the clarity value maximisation brings to managers by encouraging them to understand how their performance measures link to an overriding principal single-valued criterion. Jensen's value maximisation puts traditional PM in a supporting but subordinate role. However, Jensen also commented that an organisation can't maximise its total market value if it disregards the interests of its stakeholders completely and so introduced enlightened value maximisation and enlightened stakeholder theory as a means of bringing the approaches together with maximisation of the long-term value of the organisation as the decision-making criterion. Clarkson (1995) suggested pursuit of a single

measure of shareholder wealth is self-defeating and supported the balanced stakeholder approach believing conflicts concerned with the distribution of wealth between primary stakeholders needed to be resolved fairly if an organisation is to survive over the long-term. Holloway (2009) noted prioritising the interests of stakeholders from a performance perspective will inevitably be subjective. Fairness also becomes subjective.

Both approaches have been followed by scholars in the field of PM. Despite Jensen's criticism of the BSC Kaplan and Norton's (1992) bias is for a shareholder approach. The BSC uses financial metrics as the primary drivers for long-term shareholder value but includes stakeholder perspectives. The BSC is measures-oriented, with a deliberate focus on the 'ends' rather than the 'means'. According to Kaplan (2009) shareholder theory confuses 'means' and 'ends' and is poorer for it. Kaplan added that while the BSC started out as a PM system, over time it has developed into "a management tool for describing, communicating and implementing strategy." It also attempts to integrate measures of intangible assets into management systems acknowledging the value of these are indirect and context specific. Other scholars support the stakeholder approach and have designed PM systems which reflect this (for example: Atkinson et al., 1997; Neely et al., 2002; Watts and McNair-Connolly, 2012).

According to Ackoff (1971) an organisation can be defined as "a purposeful system that contains at least two purposeful elements which have a common purpose [….] It is the relationship between what the purposeful elements do and the pursuit of their common purpose that gives unity and identity to their organisations [….] An organisation consists of elements that have and can exercise their own wills." Organisations are recognised as complex social systems. Social systems are therefore purposeful systems consisting of elements that have and can exercise their own wills and, according to Espejo (2003), "an implication of this purposeful nature of social systems is the emergence of performance as a significant construct for them." March and Sutton (1997) challenged the idea that unitary purpose is clear, or that multiple purposes are consistent, or that a workforce has a single interpretation of purpose or even that purpose always precedes activity. Despite this lack of clarity they noted researchers routinely evaluate and compare OP against assumed common purposes applying simple models to complex situations.

Typically PM is taught within business schools as part of management and business studies. Business studies' teaching, in line with the other social sciences, gravitates towards positivism as its philosophy of choice for reasons outlined in Chapter 3. PM has a key role in providing the evidence to demonstrate the success or otherwise of this approach.

The PM literature is shaped largely by looking at organisations from the outside and from a PM perspective (an 'outside-in' approach). Perhaps because of an expectation to apply PM to measure performance in organisations (given the name performance measurement), perhaps because of a history emanating from a financial and accounting background, perhaps because the prevailing methodology taught in business schools is positivism and the majority of the researchers in the field are economists, engineers or scientists, the general approach adopted when searching for links between PM and OP (or OE) is to apply the methodology of the natural sciences, commonly referred to as the 'scientific method'.

The meta-theory adopted is positivism, the ontology is empirical realism. Here applying the 'scientific method' means OP (or OE) is quantified using various measures which act as proxies for performance (or effectiveness). Often statistical tools and techniques are applied to the proxy data to explore whether law-like generalisations can be identified and specific hypotheses supported. Causal explanations and predictions are expected as outcomes from this approach (Saunders et al., 2016).

Over the last forty years PM systems have transitioned from simple processes focused primarily on accounting measures and aimed at improving financial performance to much more sophisticated PM frameworks which attempt to better reflect and inform business processes and organisational strategy (for example, Kueng, 2000; Franco-Santos et al., 2012; Choong, 2014; Pavlov et al., 2017, Bititci et al., 2018). The growth of PM has been significant, the breadth of applications substantial, yet the results remain inconclusive (Miller et al., 2013; Bourne et al., 2013; Choong, 2013; Melnyk et al., 2014; Micheli and Mari, 2014; Bourne et al., 2014; de Waal and van der Heijden, 2015). Bourne et al. (2013) stated "this is because we do not understand the fundamental mechanisms and processes that explain how PM works." An increasingly accepted view is that an organisation's internal and external environments play a significant role in defining the effectiveness of PM systems (Franco-Santos et al., 2012). However, on a number of occasions the question has been posed as to whether any link exists between PM and OP (termed PM-OP link; for example, March and Sutton, 1997; Bourne et al., 2013; Guerard et al., 2013), just as of the link between Human Resource Management (HRM) and OP (termed HRM-P link; Paauwe and Boselie, 2005; Hesketh and Fleetwood, 2006; Guest, 2011; Singh et al., 2012). The answer to this question is anything but clear yet the PM-OP (and HRM-P) merry-go-round continues to turn. Bohm (2006) used the concept of a carousel in the study of organisations stating "the merry-go-round: one sits on a toy horse (exchanging views with fellow riders) that speeds around its own axis. The movement of this carousel is one that 'eternally returns' to itself; it announces change with every second, but it just returns to us the ever-same." This mental picture captures the current position of PM where most PM researchers typically take an 'outside-in' approach, remain committed to positivism with its reliance on empirical techniques and continue to report inconclusive outcomes. They consider performance measures as technical controls supporting observable and measurable facts and look for resultant causal outcomes to be identified and predictions on phenomena to be made. The drawback is there is insufficient allowance given for the adaptability and flexibility characteristics of social systems and the unpredictable behaviour of people. In an analysis of seventeen definitions of business PM systems taken from the literature (Franco-Santos et al., 2007) there is no mention made of social systems although it is proposed one role PM systems have is to influence behaviour. From a social systems perspective any influence is accommodated via contributions through the organisation's intangible resources (Kaplan and Norton, 2004; Barney, 1991, 2001a, 2001b; Barney et al., 2011; Kaplan, 2009) or through the concept of social controls (Pavlov and Bourne, 2011; Bititci et al., 2012; Melnyk et al., 2014; Smith and Bititci, 2017, Bititci et al., 2018).

Choong (2013) states the majority of publications contained in the literature don't deliver the measurement requirements to support business processes effectively. A business process is defined as a "structured, measured set of activities designed to produce a

specified output for a particular customer or market. It implies a strong emphasis on *how* work is done within an organization, in contrast to a product focus's emphasis on *what.* A process is thus a specific ordering of work activities across time and place, with a beginning, an end, and clearly identified inputs and outputs: a structure for action" (Davenport, 1993). The significance of *how* work is done relates to people, processes and their interaction. According to Yen (2009) there is no single business process measurement approach that reflects all stakeholders' interests. Glykas (2010) adds most of the PM systems used are "inadequate to measure performance holistically and integrate, organizational, human resource management, process management and workflow management concepts."

Specific mention of social systems influencing PM outcomes is limited in the literature (e.g. Spitzer, 2007; Bititci et al., 2012; Bourne et al., 2013; Sparrow and Cooper, 2014; Tandardini and Kroll, 2015; Smith and Bititci, 2017; Bititci et al., 2018). Spitzer (2007) commented "one of the major reasons why performance measurement is seldom able to deliver on its positive potential is because it is almost never properly "socialized," that is, built *in a positive way* into the social fabric of the organization." Spitzer added the context of the measurement is more important than the measurement itself and believes creating a positive social and organisational environment (or context) for PM is key for its effective use, noting few organisations do this. Within conference proceedings Bititci et al. (2010) called for more systematic, qualitative studies to explore the social forces that shape the way PM systems operate in organisations after using a small number of PM stories to develop an initial framework and direction to help researchers understand PM from a social systems perspective. Mackenzie (2013) expanded on this by collecting further PM stories to investigate the behavioural characteristics influencing PM and proposed that a holistic social system approach was needed to address the challenge of how to understand PM in changing times. Mackenzie suggested that by re-thinking PM from an integrated social systems perspective and by taking an 'inside-out' approach and focusing on business processes, PM can become a vehicle for delivering OE rather than a separate process or function. Mackenzie proposed that by managing a series of interdependent social systems factors the measures would take care of themselves. Based on case study research Mackenzie (2017) proposed the link between PM and OE is mediated by the nature of the social system operating in the organisation. Communities-of-practice can be used to better understand the complexity of the social system and performance measures in operation at the time, and develop iterative social intervention plans aimed at optimising these. The introduction of a social systems approach to PM can bring focus to OE and increase the potential for an organisation to be the best it can be in the circumstances it finds itself. Other literature exceptions include Bititci et al. (2012) who noted "that future research needs to adopt a more interpretive approach towards understanding performance measurement as an integrated social system, holistically, within the ever emerging context", Bourne et al. (2013) who proposed organisational social climate impacts OP most with PM setting the direction, and Brewer and Selden (2000) and Lebas and Euske (2004) who viewed performance as a complex and dynamic social construct, influenced by different measures and interpretations within organisations. These measures and interpretations "provide the basis for an understanding of the complexity and management of performance in the organisation" (Lebas and Euske, 2004).

This is not to say that the importance of social systems on OP is not acknowledged to some extent in the literature (Bowen and Ostroff, 2004; Nahapiet and Ghoshal, 1998; Takeuchi et al., 2009) but any association with PM is distant. Bowen and Ostroff, for example, proposed the strength of the HRM system as the linking mechanism responsible for "shared, collective perceptions, attitudes and behaviors among employees." This is based on social influence and social cognition theories with sense-making playing a role. Ferris et al. (1998) discussed the social context theory of the HRM-OE link which centres on organisational culture and values. Paauwe and Boselie (2005) recommended approaching HRM from a holistic perspective incorporating organisational climate and culture and aligning individual, corporate and societal values to understand the HRM-P link. Bititci et al. (2004) and Bititci et al. (2006) investigated the link between organisational culture, management style and PM and found it to be interdependent. The Resource-Based View (RBV) recognises a contribution from complex, difficult to reproduce processes and people-related skillsets that offer competitive advantage through what it calls intangible assets but has yet to focus on the social systems aspects in detail (Barney, 1991, 2001a; Barney et al., 2011; Hitt et al., 2016a). A Practice-Based View (PBV) has been put forward as an alternative to the RBV for operations management. The PBV differs from the RBV in the definition of the dependent variable and isolating variables (Bromiley and Rau, 2016). However, the holistic nature of social systems means it is inappropriate to isolate a characteristic and concentrate on it to the exclusion of other elements which contribute to the social system through their interrelationship and interdependence (Mitleton-Kelly, 2003; 2011).

In a review of the PM literature Franco-Santos et al. (2012) grouped the consequences of CPM systems into three categories i.e. behaviour, organisational capabilities and performance. The first two categories reflect people, processes and their interactions which relate to the social system as outlined in this thesis, and the third category is outcome. In terms of the consequences for the behaviour of people after the introduction of CPM systems they noted the propensity for issues of subjectivity, trust, bias and conflict. In terms of the consequences for performance they highlighted it is how CPM systems are conceived and evolve but primarily how they are used that determines success or not. Franco-Santos et al. reviewed a number of theories which attempt to explain the mechanisms believed to affect behaviour, organisational capabilities and OP but did not consider social systems theory *per se* although cognitive and informational processing theories were included. They concluded "the effectiveness of CPM systems is moderated by internal contingencies such as the employees' experience or the organization's strategic orientation, structure, information systems, culture, and management style, along with external contingencies such as competition or the degree of environmental uncertainty in which the organization operates." They recognised CPM systems are complex by their very nature and the significant impact of context which remained under-researched. Cheche (2015) recommended research is undertaken to determine the moderating role of organisational culture on the PM-OP link. According to Clarkson and Nicolopoulou (2003) organisational culture can't be subject to statistical rationality and is "in a different realm of questioning and knowing."

The link between measurement and behaviour and motivation is discussed by Robson (2004) who noted improved performance is not a natural outcome of introducing PM

systems. Robson emphasised the need for performance measures to be aligned with organisational objectives and warned about the potential downsides of simply measuring what can be measured rather than what ought to be measured. Robson recognised the influence of complex systems and emergent behaviour and the suggestion made that organisations are more effective at dealing with uncertainty and unforeseen events when those involved directly in a process are monitoring a small number of measures critical to the success of that process. Holloway (2009) reminded researchers not to expect direct relationships between cause and effect in complex organisational settings. Cheng and Coyte (2014) suggested the design of PM systems can shape behaviours, such as knowledge sharing and discretionary activity, depending on the type of reward scheme in operation. However, in a complex system an intervention on its own is rarely the cause of an outcome, rather it is how the intervention interacts with the other components in the system that is important (Byrne, 2013). Cheng and Coyte's analysis represents an oversimplification which is not uncommon in the literature when a single discipline rather than a holistic organisational perspective is taken (Bourne, 2008; Holloway, 2009; Sparrow and Cooper, 2015).

Based on a study of Performance Management Analysis dimensions and High Performance Organisation (HPO) factors de Waal and van der Heijden (2015) identified certain behavioural aspects of people in organisations linked to a performance management structure which correlates with high performance. According to de Waal and van der Heijden if organisations pay attention to their performance management systems this will encourage the appropriate performance-driven behaviours necessary to improve overall financial and non-financial performance (see also de Waal and Counet, 2009; de Waal, 2010). However, the approach taken is more 'ends' than 'means' oriented and while de Waal and van der Heijden reported a correlation they were unable to provide the causal explanation for their observations. In an earlier study de Waal (2013) suggested applying certain management practices within the HPO Framework impacts OP with the direction of causality being from management practice to OP. According to de Waal (2011) "the HPO framework stipulates "what" is important to become and stay successful but is does not indicate "how" organisations can achieve success." Elzinga et al. (2009) repeated de Waal's study (2002, 2003) on behavioural factors using four different case study organisations and found the results of their own study, those of de Waal and also those of Franco-Santos and Bourne (2005) to be inconsistent. They challenged the methodology used by de Waal.

Cilliers et al. (2013) recognised PM is useful in understanding patterns of relationships in complex systems providing valuable guidance for management action. These authors stated "Despite its necessity, measurement is not sufficient in and of itself." They added that adopting a positivist approach constrains the view of the system the researcher obtains to a set of measurable indicators only and proposed that, in addition to 'traditional' quantitative and/or qualitative measurement, processes of scanning and sensing should be undertaken. Scanning and sensing offers information about the relationships and interactions between measures and, in a social systems setting, provides an insight into behaviours and a reflection of the operating context. Hudson et al. (2001) reviewed the appropriateness of ten PM systems for Small and Medium-sized Enterprises (SMEs) and identified further evidence for the theory-practice gap in PM. While the need for

organisations to align their PM systems with their strategic goals is well documented in the literature (Hudson et al., 2001, Melnyk et al., 2014), practitioners in SMEs were choosing not to update their PM systems. Hudson et al. commented that PM systems need to be dynamic and flexible to match the emergent nature of strategy and emphasised the requirement for the process to be iterative to maintain the relevance of performance measures.

In a similar vein, Melnyk et al. (2014) have argued that the "role and position of PMM in the literature is incorrect" as a result of increasing levels of business uncertainty linked to dynamic environments. In line with Hudson et al., (2001) Melnyk et al. commented that, in practice, while businesses revise strategies they don't revise their PMM systems. This is not that surprising since businesses want to be able to refer to historical trends, particularly financial ones, and altering PM systems would prevent this. Moreover, businesses don't give as much importance *per se* to PM as PM specialists do. Using a Delphi study involving practitioners Melnyk et al. demonstrated it is increasingly difficult to adequately define performance measures and targets in rapidly changing business environments. PM is unable to keep up with the rapid rate of change organisations now face (Holloway, 2009). The views of Hudson et al. and Melnyk et al. are in broad agreement with Lebas and Euske's (2004) observation that performance measures are instantaneous and invariably wrong when set against a dynamically changing performance. PM is context sensitive and can be counter-productive and misleading in dynamic environments (Neely, 2005; Spitzer, 2007; Franco-Santos et al., 2012; Melnyk et al., 2014; Micheli and Mari, 2014, Bititci et al., 2018). Melnyk et al., along with Spitzer (2007), Franco-Santos et al. (2012), Bourne et al. (2014) and Micheli and Mari (2014), also noted PM/PMM has a greater role to play in informing decision-making rather than as an accurate representation of performance.

In contrast to traditional PMM systems Melnyk et al. proposed a modified PMM process which they considered better able to flex to reflect today's more dynamic business environments; a less focused but more resilient PMM approach which they termed the Performance Alignment Matrix. However, this again delivers an 'outside-in' perspective; that is from PMM to the organisation (or social system). The argument made in this thesis is that it is necessary to take an 'inside-out' perspective (Lebas and Euske, 2004; Barney and Mackey, 2005; Olsen, 2007; Feldman and Orlikowski, 2011; Garbuio et al., 2011; Byrne, 2013; Micheli and Mari, 2014) and look at PM from inside the social system (or organisation) because understanding what is to be distinguished is paramount if the measures selected are not to 'blind' the observer from all other possibilities of observation (Seidl and Becker, 2006).

Concern has been expressed about the lack of robustness of PMM's theoretical foundations (Richard et al., 2009; Franco-Santos et al., 2012; Micheli and Mari, 2014; Bititci et al., 2018). Prompted by this Smith and Bititci (2017) proposed a theoretical framework based on organisational control theory where technical and social controls are considered as "separate but interrelated and complementary concepts" aligned with performance measurement and management respectively. Social controls relate to "the emergent cultural and behavioural characteristics of the organization" and technical controls to "the rational, planned, bureaucratic and structural elements of the organization." Social controls

are “conceptualised as the cultural and behavioural routines that define how we use the performance measurement system to manage the performance of the organisation.” Beer and Micheli (2018) extended the social control concept by proposing people be included in the theory and practice of PMM through the perspective of social value measurement, calling for research into how the technical and social elements of PMM interact and how people’s interpretations and experiences of PMM influence their actions. They concluded that the experiences and perspectives of those involved in PM should be included in the design and implementation of the PMM process in what they termed “human-centred measurement practices”.

The introduction of social controls moves PMM research in the direction of the social systems perspective proposed in this thesis; however, it continues to look at performance from a PM perspective, trying to accommodate the broader impact of the social system through these social controls. The approach also treats PMM as a closed system believing it is possible to isolate PM interventions and accompanying social interventions to explain organisational behaviour and performance outcomes. By applying the social control approach outlined above contained research settings are created with conditions unable to surface all of the critical interactions with and interferences from the rest of the social system meaning any resulting causal explanations are incomplete (Argyris, 1996). This thesis considers organisations as complex social systems, where it is not possible to hold some sub-systems constant to study others, and causality as holistic. Accounting for the complexity of the system is a recursive process which requires performance assessments of all its sub-systems (Espejo, 2003). The characteristics and behaviour of the system depend on the relationships between components rather than the properties of the components themselves (Mingers, 2011). It is how an intervention interacts with the other components in the system taking context into account that is important in terms of explaining the observed outcome (Pawson, 2004; Byrne, 2013). This is why a holistic, social systems perspective should be taken in organisations. From a social systems perspective PMM is a sub-system and separating performance measurement and management an artificial construct. While acknowledging a unifying theory for PMM has failed to materialise Bititci et al. (2018) concluded “it is clear the foundations of PMM lie in organizational control theories”, although they recognised PMM sits at the interface of a number of functional disciplines and some researchers in other disciplines have used different management theories to explain PMM outcomes. With this in mind Bititci et al. (2018) called for “the development of a number of competing theoretical frameworks that enable better integration of existing and new knowledge in the field.” Alternative frameworks will inevitably be based on different theories or combinations of theories to explain PMM-related circumstances. This thesis explores whether an alternative theoretical framework to organisational control theory grounded in social systems and practice theory can be supported.

2.2. Taking an 'Inside-Out' Approach to Performance Measurement

In an attempt to step off the merry-go-round of inconclusive outcomes this research takes a different approach. It considers PM from inside organisations and from a complex social systems perspective, and proposes developing causal explanations based on realist evaluation (Pawson and Tilley, 1997). As an emergent system the social system needs to be considered as a totality (Byrne, 2013). The direction of travel is the reverse of traditional PM studies with changes made to PM (or HRM or any other business process) from the perspective of the social system in operation at the time i.e. the social system is prime and PM (or any other business process) is subordinate (cf. Bourne et al., 2013).

A causal model to define performance can be developed from outside or inside the organisation (Lebas and Euske, 2004). According to Lebas and Euske "performance does not have the same meaning if the evaluator is inside or outside the organization. The operations of the organization remain a black box for the outsider while the insider operationalizes performance in cooperation with other internal actors." The model of causality generated from inside the organisation is more likely to concentrate on the results of interventions carried out by people in the organisation absorbing the ways-of-working, background, and relevant history. In contrast, the model from outside is more likely to centre on an interpretation of the signals observed by researchers removed from the ways-of-working, background and relevant history. According to Lebas and Euske "While it is normal to have a diversity of views about performance as seen from the outside, the concept of performance as defined from the inside of the organization is more likely to have a unique, although many-faceted, definition, shared by all actors involved in its creation. If the members of an organization do not share the same view of performance, actions cannot be coordinated and resources may be wasted." The approach taken in this thesis concentrates on understanding and explaining the means to achieve improved results as opposed to simply focusing on the end results. In support of this it acknowledges the strong overlap between social systems and practice both in terms of theory and observation. It proposes people are the complex, unpredictable entity in the system and focuses on them rather than developing ever more complicated PM frameworks to address unpredictable OP outcomes. Building on the perspective of Lebas and Euske (2004) performance is a complex concept, a dynamic social construct both in terms of the results and the processes generating the results which come from the identification and sharing of a causal model. The process of generating performance is complex and set against a changing and uncertain environment.

Lebas and Euske used the analogy of a performance tree as shown in Figure 2.1. This helps visualise performance as no more than a snapshot in time, an outcome being influenced by a myriad of interrelating characteristics, some of which are difficult to grasp as contributing unless the observer is directly involved, some of which run on different time constants to the frequency artificially imposed by the measures. Performance measures or indicators need to be selected carefully and preferably be leading rather than lagging. It is likely that within the basket of measures recorded some will be contradictory if only because their time constants aren't compatible. Divergent information can be managed and understood

provided there is a good understanding of the processes involved in generating the information. The model an organisation has for performance and PM is unique to it, reflecting the contingent nature of the circumstances it operates within (Holloway, 2009). Performance and PM have no value unless they result in action of some sort and decisions taken (Lebas and Euske, 2004; Spitzer, 2007). Decisions immediately introduce the potential for different interpretations and further complexity as different objectives and time horizons influence them. Each decision absorbs the uncertainty of previous decisions (Luhmann, 1995). Clarity of common purpose becomes important. PM and the actions ensuing from it require an understanding of the workings of the organisation; therefore, those involved directly in the activities are best placed to shape the measurement and the actions. OP (or OE) is the outcome of contributions from many functions and areas. As such there will be many different descriptors of performance, ways to measure them and uses for the information. Performance does not have a unique operational definition and the measures need to be appropriately integrated to set and agree actions.

Figure 2.1: The Performance Tree (Lebas and Euske, 2004)

Performance measures are no more than indicators, a reflection of the means of measurement and the interpretation of those making them (Easton, 2010; Dubnick and Frederickson, 2011). According to Lebas and Euske (2004) the complexity of measures is increased by recognising there are "two types of signals; those which assume the model is still valid (efficiency and effectiveness, for example) and those allowing a verification of the continued relevance of the model." If we equate performance as the potential for value creation then comparison becomes important and introduces timeframes and context, and interpretation and judgement. Guerard et al. (2013), mirroring Feldman's and Orlikowski's (2011) quote on strategy, concluded that "If practices are understood to be the primary

building blocks of social reality, not only strategy but also performance should be seen as something people do, rather than something that organizations have."

Lebas and Euske (2004) presented nine propositions on which they believe performance can be defined, identified, measured and managed. In summary, performance and PM are relative concepts used in decision-making processes, they are complex in nature, respond to human interpretation and require judgement and interpretation. Performance is dynamic and focused on generating future results, it has a different meaning depending on whether it is viewed from inside or outside the organisation. Performance measures can be complementary and contradictory, are time- and causality-based indicators that only partially describe reality, and leading indicators of performance "only if the organisation has acquired the knowledge and mastery of its causal relationships and can reproduce this outcome or result in the future."

The use of an 'inside-out' approach coupled to critical realism with its focus on inferred explanation through the concept of generative mechanisms enables the performance 'black box' to be opened up from a social systems perspective to provide the organisation with the knowledge and mastery of the causal relationships it needs (Elster, 1983; Lebas and Euske, 2004; Blom and Moren, 2010). From a practice perspective, taking an 'inside-out' approach means focusing on the indicators that those who comprise the local social system in the organisation understand and can influence (Luhmann, 1995; Lebas and Euske, 2004; Barney and Mackey, 2005; Feldman and Orlikowski, 2011; Garbuio et al., 2011; Micheli and Mari, 2014). For the social system to be able to do this then the indicators will be relevant local operational measures rather than any overarching organisational outcomes whose relationship to PM is already viewed as tenuous (March and Sutton, 1997, van Aken, 2004). Guerard et al. (2013) identified these measures as proximal indicators in their work on rethinking the concept of performance (see Table 2.1). Paauwe and Boselie (2005) made the same point in relation to the HRM-P link. Guerard et al. suggested that "performance plays a more powerful and tighter role as an independent variable in explaining behavior than as a dependent variable in describing that behavior's consequences." Guerard et al. also outlined the concept of performativity where performance is considered as an activity rather than a variable (see Table 2.1). They noted that an emphasis on performance can result in an organisational or social system focus on what can be measured rather than whether the measurement is relevant. According to Guerard et al. performativity can be characterised by two different views, one of which refers to the predominance of the performance criterion (Lyotardian view, in Table 2.1) and the other which involves the repetitive enactment of discourse (the enactment views). Guerard et al. saw performativity as providing a practice-based perspective on the link between strategy and performance. They suggested by considering performance as an activity rather than as a variable, a richer understanding of how strategy is produced and performed in various contexts can be developed thereby providing information on the 'means' rather than the 'ends'.

Approaches	Description	Suggested Research Agenda and Research Questions
Proximal performance	Outcome at the group or individual level.	Identification of suitable indicators for the success/failure of activities and practices on the micro- or meso-level. Investigating the chain of consequences leading from individual and collective strategic actions to outcomes at a lower level of analysis.
Performance as both input and output	Feedback loops between past and future outcomes of strategic actions.	Tracking the evolution of organizations over time via a process-based qualitative analysis by examining performance as both input and output. Understanding how organizational behavior shifts in response to performance outcomes and how that behavior in turn generates (unexpected) consequences. Understanding how and with what consequences the nature and meaning of performance is negotiated among different stakeholders.
Performance as performativity		
1. Lyotardian perspective	The predominance of performance criterion in the practice of strategy.	Investigating how the obsession with performance and performance measurement shape strategic practices and orient organizational activities. Examining how performance controls and incentives co-evolve with strategies over time. Tracking the interpenetration and interaction between strategic initiatives and between multiple sources of performance measurement and assessment.
2. Austinian perspective	Strategy discourse enacting what it refers to.	Examining how, why and to what degree what is said and claimed about strategy and what is accomplished in daily activity mutually constitute one another over time.
3. Callonian perspective	Enactment of theoretical models of strategy producing corresponding strategies.	Investigating the role of material tools, conventions and actor-networks in making strategy. Tracking how different strategy tools embed references to different objects, subjects and activities, each channeling or orienting behaviors in different ways.
4. Butlerian perspective	Strategy as repetitive enactment of strategic discourse.	Examining how through repetitive enactment strategy discourse creates subject positions, strategic practices and strategic objects.

Table 2.1: Approaches to Rethinking Performance in Strategy Research
(adapted from Guerard et al., 2013)

2.3. Summary

The literature review undertaken in this chapter leaves largely unanswered how the behaviour of complex social systems might influence PM, PMM or performance. In addition, observations from the literature indicate that a company's financial performance is prone to too many unpredictable and uncontrollable external and internal events to expect PMM systems to deliver 'guaranteed' improvements in financial performance (Barney 1991; Kirby, 2005; Bourne et al., 2005, Franco-Santos et al., 2012, Melnyk et al., 2014; King 2016). Therefore it is proposed the goal for any PM approach is to maximise OE using the resources the organisation has at its disposal and in the economic circumstances it finds itself. The absence of a unifying theory for PMM is an important observation. Functional specialism has hampered theory-building (Bititci et al., 2018) by failing to observe the holistic, underlying drivers of PMM. For a robust explanation it is necessary to

look deeper than the functional perspectives applied by individual disciplines to ideentify the mechanism or mechanisms responsible for their respective observations. The common, underlying feature present in all functional views is the social system in operation at the time. This literature review reveals that while there is some evidence of researchers acknowledging the presence of a social systems element to PM and PMM, in general, the literature doesn't adequately take into account the profound impact social systems have on how organisations operate. Organisations are complex social systems whose interactions and performances are linked to the complex behaviour of the people that comprise them. Social phenomena such as values, traditions and collaborative practices in organisations evolve as implicit by-products of social interaction (Introna, 2003). These by-products are often not directly perceived by the social system itself but strongly influence organisational behaviour. It is acknowledged performance measures are merely indicators of performance and don't fully reflect reality; therefore, it is proposed any attempt to explain OP (or OE) is better served by viewing OP (or OE) through a holistic, social systems lens from inside the organisation rather than by adopting an external, partial PMM approach. The concept of using social controls to explain organisational behaviour and performance outcomes doesn't take holistic causality sufficiently into account or the fact that social interventions work through interactions with other components and are themselves complex systems operating inside a larger complex system namely the social system (Pawson et al, 2005; Mingers, 2011; Byrne, 2013). The next Chapter explores whether social systems and practice theories can provide the basis for a new middle-range process theory linking PM and OE and offer a competing framework to organisational control theory that can explain existing and new knowledge in PMM and reduce the PMM theory-practice gap.

3. An Investigation towards a Framework Based on Social Systems and Practice Theories

3.1. Introduction to Social Systems and Practice

Studying the behaviour of complex social systems provides a means to explain and understand the nature of organisations.

Organisations are complex social systems whose performances are linked to the complex behaviour of the people that comprise them. Chapter 2 demonstrated that while there is some evidence of researchers acknowledging the presence of a social systems element to PM and PMM, in general, the PM literature doesn't adequately take into account the effect social systems have on how organisations operate. To address this gap this chapter explores the behaviour of complex social systems from a range of theoretical perspectives. It considers how concepts contributing to social systems and practice theory overlap and complement one another to establish whether this can support the synthesis of a new middle-range management theory explaining how taking a social systems perspective to PM can improve its effectiveness and potentially reduce the PMM theory-practice gap by understanding how the behaviour of complex, adaptive social systems influences OE. Five underlying assumptions are developed to investigate the contention that social systems have an important role to play in PM and OE in general. The synthesis of social systems and practice is enabled by adopting a critical realist frame-of-reference.

The absence of a unifying theoretical framework for PMM prompted Bititci et al. (2018) to propose that organisational control theory may provide such a framework but also call for the development of competing frameworks capable of explaining existing and new knowledge in PMM. The development of a middle-range management theory grounded in social systems and practice theory, as outlined above, may offer such a competing framework.

3.2. Philosophies used in Management Research

Middle-range theory can be used to guide empirical inquiry into social systems (Merton, 1949). According to Merton, middle-range theory can be defined as "intermediate to general theories of social systems which are too remote from particular classes of social behavior, organization, and change to account for what is observed and to those detailed orderly descriptions of particulars that are not generalized at all. Middle-range theory involves abstractions, of course, but they are close enough to observed data to be incorporated in propositions that permit empirical testing." The potential to build middle-range management theory that integrates theory and practice, and can be tested empirically has been described in the literature (Tranfield and Starkey, 1998; Partington, 2000; Pettigrew, 2001; MacLean and MacIntosh, 2003; Van Aken, 2005; Smith, 2010).

Social science is a branch of science that deals with the study of human society and societal relationships. It comprises a range of subjects, each one viewed as a social science in its own right. Management research sits under the social science umbrella. Over many years business and management scholars have contested whether multiple research philosophies are helpful or not. There are two schools of thought: the unificationists, who believe management research should be under one research philosophy, paradigm and methodology, and the pluralists, who welcome a diversity of approaches. According to Maxwell (2004) the unification approach fails to provide an explanatory tool for the social sciences. Within the pluralist school of thought there are a number of philosophies used. The five most frequently adopted are summarised in Table 3.1 along with descriptions of their ontology, epistemology, axiology and typical methods (Saunders et al., 2016).

Ontology	Epistemology	Axiology	Typical Methods
Positivism			
Real, external, independent One true reality (universalism) Granular (things) Ordered	Scientific method Observable and measurable facts Law-like generalisations Numbers Causal explanations and prediction as contribution	Value-free research Researcher is detached, neutral and independent of what is researched Researcher maintains objective stance	Typically deductive, highly structured, large samples, measurement, typically quantitative methods of analysis, but a range of data can be analysed
Critical Realism			
Stratified/layered (the empirical, the actual and the real) External, independent, intransient Objective structures Causal mechanisms	Epistemological relativism Knowledge historically situated and transient Facts and social constructions Historical causal explanation as contribution	Value-laden research Researcher acknowledges bias by world views, cultural experience and upbringing Researcher tries to minimise bias and errors Researcher is as objective as possible	Retroductive, in-depth historically situated analysis of pre-existing structures and emerging agency. Range of methods and data types to fit subject matter
Interpretivism			
Complex, rich Socially constructed through culture and language Multiple meanings, interpretations, realities Flux or processes, experiences, practices	Theories and concepts too simplistic Focus on narratives, stories, perceptions and interpretations New understandings and worldviews as contribution	Value-bound research Researchers as part of what is researched, subjective Researchers interpretations key to contribution Researcher reflexive	Typically inductive Small samples, in-depth investigations, qualitative methods of analysis, but a range of data can be interpreted
Postmodernism			
Nominal Complex, rich Socially constructed through power relations Some meanings, interpretations, realities are dominated and silenced by others Flux of processes, experiences, practices	What counts as 'truth' as 'knowledge' is decided by dominant ideologies Focus on absences, silences and oppressed/repressed meanings, interpretations and voices Exposure of power relations and challenge of dominant views as contribution	Value-constituted research Researcher and research embedded in power relations Some research narratives are repressed and silenced at the expense of others Researcher radically reflexive	Typically deconstructive – reading texts and realities against themselves In-depth investigations of anomalies, silences and absences Range of data types, typically qualitative methods of analysis
Pragmatism			
Complex, rich, eternal 'Reality' is the practical consequences of ideas Flux of processes, experiences, practices	Practical meaning of knowledge in specific contexts 'True' theories and knowledge are those that enable successful action Focus on problems, practices and relevance Problem solving and informed future practice as contribution	Value-driven research Research initiated and sustained by researcher's doubts and beliefs Researcher reflexive	Following research problem and research question Range of methods: mixed, multiple, qualitative, quantitative action research Emphasis on practical solutions and outcomes

Table 3.1: Comparison of five research philosophies in business and management research (Saunders et al., 2016)

The predominant philosophy adopted by social scientists is positivism despite persistent claims over many years that other philosophies have as much, if not more, to offer (Burrell and Morgan, 1982; Ghoshal, 2005; Sandberg and Tsoukas, 2011; Gorski, 2013). Burrell and Morgan commented the dominance of positivism is such that researchers take it to be the correct and self-evident philosophy to use, with the result that alternative perspectives based on different assumptions are rarely considered. Over the last fifty years scholars from a number of disciplines have challenged the appropriateness of applying positivism to complex social systems where human intentionality makes a significant contribution. Ghoshal (2005) stated "But the trouble with the social sciences is that the logic of falsification, which is so essential for the epistemology of positivism, is very hard to apply with any degree of rigour and ruthlessness in the domain of social theories." Gorski (2013) added "At present, there is a yawning gap between the philosophy of social science and the practice of social science. The ghost of logical positivism still haunts contemporary discussions of methodology."

There is increasing evidence that the outcome from management research based on positivism is not aligned with what is observed through management practice (for example: Van Aken, 2005; Syed et al., 2010; Sandberg and Tsoukas, 2011). Repeated calls have been made to close this gap (for example: March and Sutton, 1997; Sandberg and Tsoukas, 2011; Miller et al., 2013). March and Sutton (1997) raised concerns about management researchers' use of overly simple assumptions and theories noting "Most studies of organizational performance are incapable of identifying the true causal relations among performance variables and other variables correlated with them through the data and methods they normally use." Miller et al. (2013) state "performance continues to be a difficult concept to apply in a scientifically rigorous way" and comment "The forces prompting a focus on general performance in theory building are complex and powerful, making change a difficult proposition. Despite the difficulty of systemic change the current practices must be stopped. As the field of management evolves and the knowledge and understanding of practicing managers increases, we run the risk of being exposed as frauds having the trappings of scientists but functioning more as witch doctors." Within established positivist philosophy, explanations to account for the gap typically centre on knowledge transfer or knowledge production problems (Sandberg and Tsoukas, 2011). However, Sandberg and Tsoukas suggested the root cause of the shortcomings relates to the fundamental ontological and epistemological assumptions of positivism. Hodgkinson and Rousseau (2009) agreed noting that "For many scholars the rigour-relevance gap has arisen as a function of the predominance of positivistic epistemologies." They advocated the adoption of critical realism. It is noteworthy that Syed et al. (2010) believe, because of its ontological position, critical realism can "contribute to an improved understanding of tensions between research and practice", bridging the gap between 'rigour and relevance'. However, Kieser and Leiner (2011) stated critical realism is of marginal importance commenting "critical realism is one of those epistemologies that are announced as possessing gap-bridging potential but still have to live up to these expectations" adding "And it is questionable whether recommendations not derived from positivistic research will be accepted by practitioners."

According to Tranfield and Starkey (1998) management research operates to no single ontological or epistemological paradigm, using knowledge and research methods from other social science disciplines. It can be considered as a soft, applied, divergent and heterogeneous field of study which includes social and behavioural aspects. Tranfield and Starkey, along with the British Academy of Management, proposed management research is about building a body of knowledge concerned with understanding and improving the practice of management, knowing 'how' as well as 'what'. They added the output of management research "needs to be framed, produced and disseminated within a context of application"; an important distinguishing feature being it should address the question of "what are the implications for management?" The approach should be theory-sensitive and practice-led. This provides management research with a clear purpose and directs it towards use of a transdisciplinary approach based on Mode 2 knowledge. Transdisciplinary research brings together relevant interdisciplinary activities to build a coherent whole from which new, less traditional understanding can emerge (Sparrow and Cooper, 2015). In comparison to 'traditional' Mode 1 knowledge, Mode 2 knowledge is socially distributed and created in broader transdisciplinary social and economic contexts (Gibbons et al., 1994). A Mode 2 approach to knowledge production is considered as contributing to closing the theory-practice gap (Tranfield and Starkey, 1998; Partington, 2000; Starkey and Madan, 2001; Van Aken, 2005).

Performance is a social construct which only has meaning within a decision-making context (Lebas and Euske, 2004, Franco-Santos et al., 2012, Melnyk et al., 2014). Despite widespread use in virtually all fields of management a clear definition of performance is rarely presented. Lebas and Euske interpreted performance as simultaneously referring to "the action, the result of the action and to the success of the result compared to some benchmark" and defined it as "doing today what will lead to *measured* value outcome tomorrow." By considering performance as a comparative judgement further complexity is introduced. Lebas and Euske noted "Performance is the sum of all processes that will lead managers to taking appropriate actions in the present that will create a performing organization in the future." Performance, including PM, is a complex concept dependent on people's choices, understandings and interpretations in the present, taking the current operating contexts both internally and externally into account, with the aim of undertaking actions to change how an organisation will perform in the future.

Organisations are described in a number of ways: for example, complex social systems (Mitleton-Kelly, 2011), distributed knowledge systems (Tsoukas, 1996), interpretation systems (Daft and Weick, 1984) and decision systems (Luhmann, 1995, McCarthy and Gillies, 2003). In the spirit of 'theory-sensitive and practice-led', this chapter explores how existing organisational and social theory might inform the development of a new middle-range management theory centred on how social systems can improve the effectiveness of PM. The background to this approach comes from:

- The recognition that organisations are complex social systems with the power to generate and sustain decision-making and sense-making, and 'artificial' forms of behaviour for extended periods (Mingers, 2003, 2011b; Espejo, 2003; Maitlis, 2005; Elder-Vass, 2007; Mitleton-Kelly, 2011; Ahrne et al., 2016).

- Performance is a social construct based on comparison and only meaningful within a decision-making context (Lebas and Euske, 2004; Spitzer, 2007).
- The objective of interventions is to change the state of a system; to modify its trajectory through time so that in the future it is different from what it is now (Byrne, 2013).
- The gap between theory and practice across the social sciences, including PM, is a result of the application of positivism (for example: Hodgkinson and Rousseau, 2009; Syed et al., 2010; Sandberg and Tsoukas, 2011; Gorski, 2013)
- Management research should take a dual approach to knowledge production with practice leading theory (Boyer, 1990; Sandberg and Tsoukas, 2011; Corley and Gioia, 2011) and a pragmatic, realist approach to organisational science to uncover the causal mechanisms in operation within organisations.

This chapter outlines how the concepts of organisational analysis, complexity theory, social systems theory, intentional explanation, rational decision-making, bounded rationality, resource configurations and dynamic capabilities, resource-based and practice-based views of organisations, the logic-of-practice based on practical rationality, and the theory of practice can contribute to building an integrated picture of the social system operating in organisations from a theory-sensitive and practice-led perspective. The research question to be addressed in this thesis may benefit from understanding taken from a variety of perspectives. The transdisciplinary character of the research comes from the transdisciplinary nature of the theories of management, complexity, practice and social systems and from the research methodology adopted. It delivers a transdisciplinary outcome from interdisciplinary processes (MacLean et al., 2002). The relevance to this thesis is that these organisation theories may provide support for the development of a middle-range process theory linking PM and the social system operating in an organisation which helps bridge the PMM theory-practice gap (Hudson et al., 2001). The approach also points towards use of critical realism as the research philosophy. Critical realism sits at the interface between the social and natural sciences and provides a route to close the gap between science and the observable world by presenting a practical alternative to the limitations of positivism and idealism (Syed et al., 2010; Martin et al., 2014) and an explanation for how interventions can influence social systems operating in organisations (Pawson et al., 2004).

To close this section it is interesting to observe leading economists have again began to acknowledge we live in a complex world where radical uncertainty means that “when businesses invest, they are not rolling dice with known and finite outcomes on the faces; rather they face a future in which the possibilities are limitless and impossible to imagine” (King, 2016).

3.3. Influence of Positivism on Business School Teaching

Focus on Positivism within the Social Sciences

The formation of the conceptual and methodological approaches to the natural sciences that we identify as modern science today originates from the scientific revolution of the

16th century. The view that knowledge could be obtained from observation and experimentation and was empirical rather than metaphysical led to the philosophies of empiricism and positivism. For empiricists knowledge must be observable, for positivists the observations need to be quantifiable mathematically.

Modern philosophy can be said to have started in the early 20th Century with a move away from the idealism that had dominated the 19th Century. The Vienna Circle of the 1920s is credited with influencing the development of a new philosophy, termed logical positivism. Logical positivists weren't able to countenance a world that went beyond science and common sense and believed that any statement that wasn't either a formal statement, such as a statement of logic or mathematics, or one that wasn't empirically verifiable inductively was nonsensical. "The authority of science thus rests on the authority of the senses" (Cruickshank, 2011). Logical positivists considered it was the task of science to find out about the world and explain it and not the task of philosophy. Logical positivism existed to refine the methods of science, clarify its concepts and methods of argument and differentiate between legitimate and illegitimate methods of argument available to science with logic being the tool of philosophical analysis. As stated by Ayer (1978) logical positivists believed science described the world as it was and saw a future where "philosophy is going to be the handmaiden of science."

In the areas of mainstream finance, economics and social science the predominant approach was to copy the methods of the natural scientists, in some cases literally. In finance, for example, models such as the Black-Scholes pricing formula were developed based on equations taken from theoretical physics (Haldane, 2016). However, there was a powerful body of thought within academe, albeit not the dominant one, which believed that economics and the other social sciences were sufficiently different from the natural sciences to warrant different methods of investigation and philosophy (Merton, 1949; Glaser and Strauss, 1967; Simon, 1979; Campbell, 1984; Hayek, 1989; Popper, 1992).

For example, Campbell (1984) asked "Can we be scientific in applied social science?" Campbell noted that in the 1960s positivism had a dominant influence over the philosophy of science, including applied social science where goal statement and achievements were defined in terms of quantitative measures, commenting "positivism failed to recognize that even at its best, experimental research is equivocal and ambiguous in relation both to the real physical processes involved and to scientific theory." Maxwell (2004) considered Campbell's approach to be grounded in a realist epistemology. Hayek (1989) noted "the failure of economists to guide policy more successfully is closely connected with their propensity to imitate as closely as possible the procedures of the brilliantly successful physical sciences – an attempt which in our field may lead to outright error", adding "unlike the position that exists in the physical sciences, in economics and other disciplines that deal with essentially complex phenomena, the aspects of the events to be accounted for which we can get quantitative data are necessarily limited and may not include the important ones. While in the physical sciences it is generally assumed, probably with good reason, that any important factor which determines the observed events will itself be directly observable and measurable, in the study of such complex phenomena as the market, which depends on many individuals, all the circumstances which will determine the outcome of a

process, for reasons I shall explain later, will hardly ever be fully known or measurable." Runde (2001) and Fleetwood (2013) concluded Hayek's philosophy of social structure was broadly consistent with critical realism.

However, Friedman (1977) re-enforced the predominant positivist view by stating the similarities between the natural and social sciences were such that it was wholly appropriate to treat them in the same manner noting "In both social and natural sciences, the body of positive knowledge grows by the failure of a tentative hypothesis to predict phenomena the hypothesis professes to explain; by the patching up of that hypothesis until someone suggests a new hypothesis that more elegantly or simply embodies the troublesome phenomena, and so on ad infinitum. In both, experiment is sometimes possible, sometimes not (witness meteorology). In both, no experiment is ever completely controlled, and experience often offers evidence that is the equivalent of controlled experiment. In both, there is no way to have a self-contained closed system or to avoid interaction between the observer and the observed. The Gödel theorem in mathematics, the Heisenberg uncertainty principle in physics, the self-fulfilling or self-defeating prophecy in the social sciences all exemplify these limitations." Interestingly Heisenberg (1963) commented "Natural science does not simply describe and explain nature; […] it describes nature as exposed to our method of questioning." In other words the observer is part of the system and how the observation is made is critical to the measurement, context counts. Cartwright (1999) concurred that the similarity between the natural and social sciences is clear but preferred to adopt critical realism in her analysis of it rather than positivism. While positivists see social science primarily about observing behavioural regularities and producing law-like generalisations which look to predict outcomes under certain conditions, critical realists see social science as about objects, entities and structures that exist and give rise to observed events.

Despite challenges from eminent scholars such as Campbell, Hayek, Simon and others management science has been explained and taught in the majority of business schools based on a positivist model. Typically the approach centres on large samples, quantitative methods of analysis involving statistical techniques, the search for event regularities, their description in terms of a mathematical model and the prediction of an outcome based on the model. However, in light of the inability to predict the financial crisis of 2008/9 the views of leading economists have begun to swing away from those of Friedman and back towards those of Campbell and Hayek. As Greenspan stated in 2008 during his Congressional testimony he was "shocked" that markets did not work as anticipated. "I made a mistake in presuming that the self-interests of organizations, specifically banks and others, were such as that they were best capable of protecting their own shareholders and their equity in the firms" (Brooks, 2008). To help shed light on this Brooks identified four steps in decision-making "First, you perceive a situation. Then you think of possible courses of action. Then you calculate which course is in your best interest. Then you take the action" and suggested that the long held assumption that people and organisations are mostly engaged in step-three (i.e. rationally calculating and optimising their self-interest) whilst correct contains a hidden flaw. While economic models and social science disciplines are built around step-three, the real complexity is in step-one "looking at and perceiving the world is an active process of meaning-making that shapes and biases the rest of the

decision-making chain." Brooks added "My sense is that this financial crisis is going to amount to a coming-out party for behavioral economists and others who are bringing sophisticated psychology to the realm of public policy. At least these folks have plausible explanations for why so many people could have been so gigantically wrong about the risks they were taking." Haldane (2016) commented "it would probably not be an exaggeration to say the economic and financial crisis has spawned a crisis in the economics and finance profession – and not for the first time." Haldane makes the case that the properties of economic and financial systems are little different from social systems with strong evidence of complex system dynamics adding they are frequently in disequilibrium, are best examined using a multi-disciplinary approach and are inherently unpredictable in their behaviour. He noted "A world of radical uncertainty, the like of which arises in a complex system, changes that perspective fundamentally. Uncertainty means it may sometimes be impossible to compute future outcomes." Radical uncertainty is described by King (2016) as uncertainty so complex that it is impossible to portray the future in terms of knowable outcomes we can attribute probabilities to. King suggests "the failure to incorporate radical uncertainty into economic theories was one of the factors responsible for the misjudgements that led to the [banking] crisis." None of this is new (Simon 1979).

From the perspective of this thesis there is a body of research in economics and social science that recognises traditional models based on positivism are unable to accommodate the uncertainty associated with complex systems. From a Mode 2 management research perspective the recent acknowledgement by leading economists of the impact of radical uncertainty fits with the theories of complexity and social systems.

Alternative Meta-Theory Choices to Positivism

The meta-theory selected most often for research into organisations is positivism (Glaser and Strauss, 1967; Burrell and Morgan, 1982; Gorski, 2013). Alternative meta-theories that have been adopted include interpretivism, social constructionism and critical realism. These approaches have very different social ontologies. A comparison of positivism, idealism and critical realism is shown in Table 3.2 (Fleetwood, 2013).

Positivism's oldest challenger is interpretivism which gained support as an alternative philosophy in the social sciences during the second half of the 20th Century. Interpretivism is based on the philosophy of idealism and comprises a number of approaches including social constructionism, phenomenology and hermeneutics. Interpretivism takes the opposite view to positivism, dismissing the idea that social science should embrace the 'scientific approach' and rejecting the objectivism of positivism for a subjectivist perspective, believing reality is socially constructed and given meaning to by people and not by external factors. Rather than gathering facts and seeking regularities interpretivists look to make sense of the world and explain behaviour by determining what people, individually and collectively, are thinking and feeling through sharing experiences. The assumption is the actions of people are related to the sense they make of situations and not as a direct response to external stimuli. Interpretivists assume that access to reality is only through social constructions such as discourse, language and shared meanings. Critical realists also consider reality to be a social construct (Sayer, 1992; Easton, 2010) but while

they acknowledge interpretative understanding makes an important contribution to social science they believe there is still room for causal explanation.

	Empirical realist ontology	Idealist ontology	Critical realist ontology
Associated meta-theory	Positivism	Interpretivism, social constructionism etc.	Critical realism
Ontology	Atomistic, observable events No recognition of social construction No agency-structure approach, only rational agents as individuals	Entities cannot exist independently of their identification because all entities are constructed from discourse Reality is entirely socially constructed Reality is problematized, doubted and sometimes denied Reality is multiple Reality is becoming & processual Agents: decentralised subjects constructed via discourse No agency-structure approach	Some entities exist independently of their identification because not all are constructed from discourse – i.e. extra-discursive Single reality but multiple interpretations Four modes of reality: materially, artefactually, ideally & socially Reality is stratified, emergent, transformational, systemically open becoming processual and often relational Agents and structures: distinct but related: TMSA M-M
Scope of philosophy of science & meta-theory	Avoids virtually all discussion of meta-theory. Gets on with applying its method and doing O&M science	Replaces philosophy of science with socio-politics of science Offers a socio-political critique of meta-theory As yet little engagement with critical realism	Explicitly reflects upon meta-theory Engages with other ontologies Accepts socio-political critique of meta-theory Retains both philosophy of science & socio-politics of science
Epistemology	Knowledge derives from a) observing, b) event regularities Truth established via testing hypotheses Not relativist at all	Primacy of epistemology over ontology Fudges or denies ontology-epistemology divide Recognises the fragility of knowledge – for ontological reasons Truth (with capita "T") is impossible for ontological reasons: it is socially constructed Pragmatic notion of truth Epistemically and judgementally relativist	Subordination of epistemology to ontology Recognises the fragility of knowledge – for epistemological reasons Knowledge derives from uncovering causal mechanisms Truth (not with "T") is difficult but not impossible Epistemically but not judgementally relativist
Aetiology	Humean: causality as event regularity Laws, law-like relations & functional relations	Reduces causality to Humean causality, rejects the latter, thereby rejecting the notion of causality	Separates Humean causality from causality as powers and tendencies Powers and tendencies replace laws, law-like & functional relations
Methodology	Covering law method Explanation = prediction Laws or event regularities = closed systems	Mainly deconstruction, genealogy, but other methods used	Causal-explanatory Explanation via uncovering & understanding causal mechanisms Deconstruction in genealogy accepted
Research technique	Maths, stats & quantitative data Regression, analysis ov variance, correlation, structural equation modelling, factor analysis	Permissive Avoids quantitative analysis	Permissive Critical discourse analysis, action research, archaeology Mainly uses qualitative techniques: role of (some) quantitative techniques is debated
Objective	Prediction To construct & test predictions and hypotheses to establish whether claims are true or false	Socio-political not meta-theoretical Attempts to uncover power-knowledge & socio-political agendas and lend voice to relatively powerless	Explanation Accepts attempts to uncover power-knowledge & socio-political agendas & lend voice to relatively powerless
Explanation	Explanation is thin Explanation = prediction	What is to be explained shifts from entity to its social construction To explain is to provide a socio-political account of how reality is socially constructed	Explanation is thick – operation of causal mechanisms Not confused with prediction Accepts a role for socio-political account
Prediction	Prediction confused with application Explanation based on inductive generalisations Spurious precision	Rejected as a naïve idea sought by positivists who accept the modernist idea that we can predict and control reality	Tendential prediction based on knowledge of causal mechanism Tendential prediction is not precise, but not spurious either
Theory	Vehicle for delivering predictions	Unclear Sceptical of the very idea of theory	Vehicle for delivering causal-explanatory accounts
Mode of inference	Deduction & induction	Unclear	Retroduction

Table 3.2: Paradigms: based on ontology (Fleetwood, 2013)

Social constructionism sits within the interpretivism family of approaches. According to Cruickshank (2011) positivism, social constructionism and critical realism are all concerned with the source of knowledge; however, this source is interpreted differently by each theory. For positivists and critical realists the aim is to justify knowledge claims whereas for social constructionists it is to invalidate knowledge claims. The concept of knowledge being developed and applied is rejected by social constructionists who believe knowledge is a manifestation of underlying power relations that exist. The aim of the interpretivist researcher is to anticipate how context and culture will influence the social realities individuals experience and, as such, it is inappropriate to apply the reductionist approach of positivism. Instead interpretivists look to capture the complexity of the workplace through developing a richer understanding of the social system in operation by reflecting what is meaningful to employees.

Whereas interpretivism dismisses the belief that knowledge can be developed and applied, critical realism looks to apply the positive development and application of scientific knowledge through a realist view of science (Cruickshank, 2011). While critical realism rejects the law-like approaches of positivism it shares a common desire to develop knowledge. In summary, while positivists make successive observations and deem the difference to be variation this is unsatisfactory according to Gorski (2013) because "it focuses on the empirical level, it obscures structural change and emergence at the level of the real, and conflates causality with generality." Gorski added "by emphasizing the operation of "abstraction", it fails to specify its own context, namely of a particular system with internal relations and spatio-temporal boundaries." Gorski considered interpretivists to be in no better a position in that they reduce social structure to individual interactions and structural change to cultural change and only account for change in terms of intentionality. Based on its approach to causality, agency, explanation, knowledge and values Gorski recommended critical realism as the research philosophy of choice for social science.

Different Kinds of Scholarship – Enlarging the Perspective

Boyer (1990) makes the case that in the past teaching, service and research were considered as equals in the academic world; however, academe has taken a more restrictive view of scholarship with basic research increasingly considered first among equals with concomitant downsides. Boyer commented that knowledge is not necessarily developed in a linear fashion and causality can, and often does, point in both directions. He added "Theory surely leads to practice. But practice also leads to theory." Boyer looked to build bridges between theory and practice and proposed four complementary and overlapping types of scholarship: discovery (research), integration (multi-disciplinary/ synthesis), application (practice) and teaching (pedagogy).

The scholarship of discovery contributes to the stock of knowledge. The scholarship of integration involves undertaking research at boundaries where academic fields interact, interpreting the work of overlapping [academic] neighbourhoods into a bigger picture. Boyer commented that the distinction between discovery and integration can be captured by the former being involved in 'what is to be known, what is yet to be found?' whereas the

latter is involved in 'what do the findings mean?' Boyer presented a move towards interdisciplinary, interpretive and integrative studies as evidence of a philosophical realignment in response "to pressing human problems. As the boundaries of human knowledge are being reshaped, the academy surely must give increased attention to the *scholarship of integration*." The scholarships of discovery and integration of knowledge are characteristics of traditional academe. The scholarship of application asks how this knowledge can be applied, in particular in social environments. Boyer viewed the scholarship of application as a dynamic process where new understanding can come from the activity of application. Theory and practice interact to produce new insights and contribute to human knowledge. The scholarship of teaching is seen as the passing on of understanding; something he considered to have become undervalued. Boyer proposed that knowledge is obtained when the combination of the four types of scholarship interact dynamically to form an interdependent whole. Reflecting on Boyer's analysis Ghoshal (2005) noted "Historically, business schools have celebrated and accommodated as equals the practitioners of all four kinds of scholarship. Over the last 30 years, we have lost this taste for pluralism" and posed the question "what if we included them again in the mainstream, as equal members – judging them not on their scientific credentials but on their practical knowledge?" (see MacLean and MacIntosh, 2003).

From the perspective of this thesis Boyer and Ghoshal re-enforce the importance of the scholarship of application, particularly in the social sciences, as part of an interdependent and interdisciplinary whole and propose that theory and practice are equals in what they can offer academic research. From a Mode 2 management research perspective Boyer's scholarship view aligns with the theory of practice and the management practice of knowledge integration.

3.4. Social Systems – Relevant Background

Sociological Paradigms and Organisational Analysis

Through their work on social paradigms and organisational analysis Burrell and Morgan (1982) are credited (Syed et al., 2010) with highlighting approaches to study organisations which adopt perspectives other than positivism. Their premise is that "all theories of organisation are based upon a philosophy of science and a theory of society" and these define two dimensions of analysis. The first dimension deals with social philosophy which the authors refer to as the 'subjective-objective' dimension. This subjectivist-objectivist dimension is captured pictorially in Figure 3.1.

Burrell and Morgan conceptualised social science in terms of assumptions relating to ontology, epistemology, human nature and methodology. Their method was to take these four standpoints and define the extremes cases, recognising that approaches used by researchers would fall somewhere in the continuum between the extremes. The ontological assumptions concentrated on whether the social world was realist (real structure) or nominalist (no real structure), the epistemological assumptions on whether knowledge was positivist (verificationist/falsificationist) or anti-positivist (relativistic), the

human nature assumptions on whether people responded to their environment in a deterministic (mechanistic) manner or had autonomy (free-will) and the methodological assumptions on whether the approach taken was nomothetic (based on scientific rigour) or idiographic (based on explanation/context).

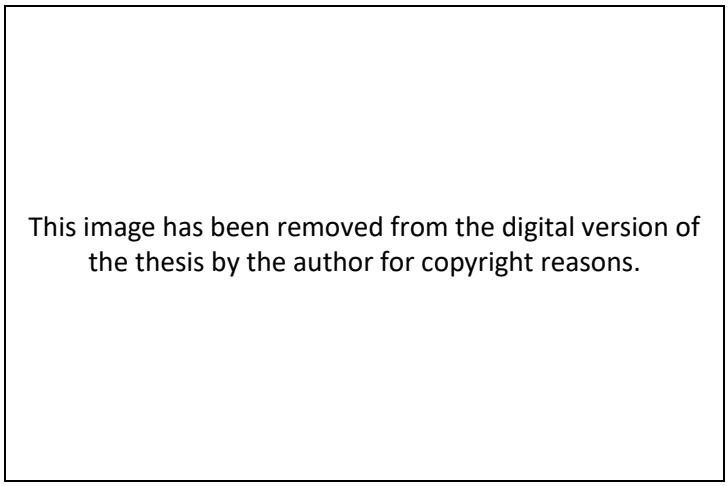


Figure 3.1: Scheme for Analysing Assumptions about the Nature of Social Science (Burrell and Morgan, 1982)

Burrell and Morgan's assumptions about the nature of social science are recorded in Table 3.3 and taken from Goles and Hirschheim (2000).

	Subjective	Objective
Ontological assumptions	Reality is interpreted by the individual. It is socially constructed (nominalism).	Reality is external to the individual. It is a "given" (realism).
Epistemological assumptions	Knowledge is relative. Researchers should focus on meaning and examine the totality of a situation (anti-positivism).	Researchers should focus on empirical evidence and hypothesis testing, looking for fundamental laws and causal relationships (positivism).
Assumptions about human nature	Humans possess free will and have autonomy (voluntarism).	Humans are products of their environments (determinism).
Methodological assumptions	Understanding the world is best done by analyzing subjective accounts of a situation or phenomena (ideographic).	Operationalizing and measuring constructs, along with quantitative analysis techniques and hypothesis testing, will uncover universal laws that explain and govern reality (nomothetic).

Table 3.3: Assumptions about the Nature of Social Science (Goles and Hirschheim, 2000)

The second dimension deals with social processes. Burrell and Morgan proposed a continuum between what they term the sociology of regulation and the sociology of radical change. The former concerns the requirement for order in organisations and human behaviour; it supposes social systems require a degree of unity and cohesiveness. The latter approaches research in organisations more from replacing the status-quo through significant change to the way structures operate. The assumptions about the nature of society are recorded in Table 3.4, also taken from Goles and Hirschheim (2000).

Regulation	Radical change
Society tends towards unity and cohesion.	Society contains deep-seated structural conflict.
Society forces uphold the status quo.	Society tends to oppress and constrain its members.

Table 3.4: Assumptions about the Nature of Society (Goles and Hirschheim, 2000)

These two dimensions, the subjectivist-objectivist continuum and the regulation-radical change continuum, can be viewed as a 2x2 matrix producing four distinct paradigms representing four separate views of social reality as shown in Figure 3.2.

Burrell and Morgan proposed that "social theory can usually be conceived in terms of four key paradigms based on different sets of meta-theoretical assumptions about the nature of social science and the nature of society." From an organisational analysis perspective the four quadrants are distinct and mutually exclusive with each paradigm offering a different perspective to the others based on diametrically opposed assumptions about the nature of how the social world operates. With regard to the study of organisations the vast majority of theory and research resides in the functionalist quadrant. Burrell and Morgan commented this has resulted in a very dominant orthodoxy to the extent that its proponents take it to be self-evident.

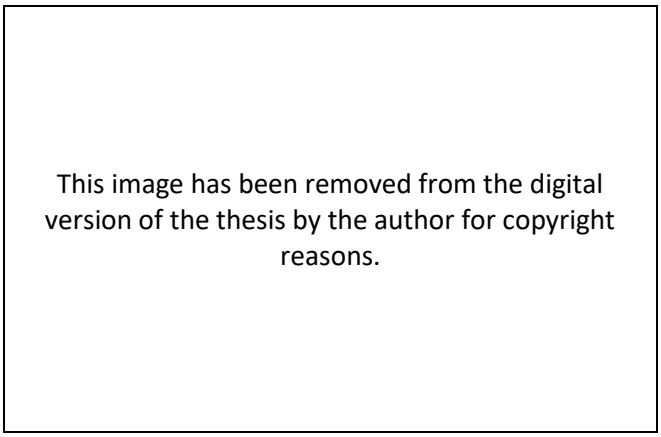


Figure 3.2: Four Paradigms for Organisational Analysis (adapted from Burrell and Morgan, 1982)

The functionalist paradigm looks at the world in terms of the subjective-objective continuum from the objectivist end. It is underpinned by realism, positivism, determinism and a nomothetic approach and firmly rooted in regulation. Research in this quadrant is typically formed on the basis of positivist philosophy consistent with the scientific method.

The interpretive paradigm looks at the world as it is and from a subjective standpoint. It sees the social world as an emergent process created by individuals. It is idealist and questions whether organisations exist in anything other than a conceptual sense. It is underpinned by nominalism, anti-positivism, voluntarism and an idiographic approach. Research in this quadrant is typically formed on the basis of interpretivist philosophy.

The radical humanist paradigm is characterised by its concern to develop radical change from a subjectivist perspective. Like the interpretive paradigm it is underpinned by nominalism, anti-positivism, voluntarism and an idiographic approach but seeks to challenge existing structures. Research in this quadrant is typically formed on the basis of social constructionist philosophy.

The radical structuralist paradigm focuses on structural relationships within a realist social world. In Burrell and Morgan's model it is underpinned by realism, positivism, determinism and a nomothetic approach although for critical realists social science is neither nomothetic nor idiographic (Tsoukas, 1989; Sayer, 2000). Radical structuralists look to provide explanations of interrelationships within the context of the complete operating social system. Research in this quadrant is often formed on the basis of critical realist philosophy (Saunders et al., 2016). Burrell and Morgan (1982) noted "This paradigm, located as it is within a realist view of the social world, has many significant implications for the study of organisations, but they have only been developed in the barest forms."

As organisational research developed within business schools it was positioned alongside finance, accounting and business management, all steeped in a tradition of positivism. Goles and Hirschheim (2000) noted "The net effect of the business school milieu was to nudge organizational studies towards the southeast corner of the Burrell and Morgan framework – the functionalist paradigm." The critical realist approach applied in this thesis lies close to the centre of the 2x2 matrix, as shown by the black X in Figure 3.2 i.e. the southwest corner of the radical structuralist paradigm. It is based on realist ontology but is epistemically relativist, it relies on a degree of autonomy being exercised within a level of management order and makes use of both qualitative and quantitative techniques. The research adopts an objective perspective with objective entities. It looks for consensus, social integration and cohesion but also is prepared to question the ways things are done in the organisation and make some significant changes to current structures and ways-of-working.

From the perspective of this thesis the research undertaken is considered to sit inside the radical structuralist paradigm where use of critical realism is viewed appropriate. From a Mode 2 management research perspective Burrell and Morgan's organisational view fits within social systems theory.

Organisations as Complex Social Systems

The performance of an organisation is the result of a complex interplay between its external and internal environments. "Managers are not confronted with problems that are independent of each other, but with dynamic situations that consist of complex systems of changing problems that interact with each other" (Rosenhead and Mingers, 2001). Organisations have been viewed as open systems since the 1960s. More recently, it has become accepted they are complex social systems (Daft and Weick, 1984; Anderson, 1999; Frank and Fahrbach, 1999; Cillers, 2001; Styhre, 2002; Mitleton-Kelly, 2003, 2011; MacLean and MacIntosh, 2003; Espejo, 2003; Byrne, 2013) and viewed by some as the most complex of systems (Boulding, 1956; Daft and Lengel, 1987). The need to understand and include

human behaviour in these systems has been expressed by MacLean and MacIntosh (2003) "Only when we explicitly factor in human phenomena such as reflexivity, intentionality, emotion and intuition, will we move towards an understanding of what is actually meant by management in complex adaptive social systems." An organisation displays complex collective behaviours and has the decision-making capacity to consciously alter its configuration to influence its current and future state (McCarthy and Gillies, 2003). In organisations, agents, such as operators, managers, control systems etc., are the decision-making entities. Mitleton-Kelly (2003, 2011) indicated these complex social systems comprise social, cultural, political, physical, technical, economic and other dimensions which interact and influence each other leading to complex behaviour, adding relatively little work has been done to develop a framework to explain the complex behaviour that arises from the interrelationships, interactions and inter-connectivity of elements within complex social systems and between the system and its environment. Mitleton-Kelly (2011) suggested that such a theory could provide new ways of thinking about organisations and facilitate different patterns of relationships and ways-of-working to create organisational forms potentially more capable of being sustainable in dynamic environments (see Melnyk et al., 2014). According to Mitleton-Kelly complex social systems display "characteristics which include self-organization, emergence, coevolution, exploration of the space of possibilities, and many others. Not only can complex systems *adapt* to, and *coevolve* with changing conditions; they are also able to *create new order*." While Mitleton-Kelly made comparisons with natural complex systems she recognised social systems comprise people who have the cognitive faculties to make choices, change their minds and act irrationally which makes the behaviour of complex social systems virtually impossible to predict (see also Elster (1983) in Section 3.5 - Human Intentionality and the Philosophy of Scientific Explanation). In a similar vein Gorski (2013) noted the "high degree of behavioural plasticity is a distinguishing characteristic of the human species." The strong overlap between complexity theory and critical realism has been acknowledged by a number of scholars; for example, Pawson et al. (2005), Callaghan (2008) who stated complexity theory has its foundations in critical realism, Miller and Tsang (2010), Byrne and Uprichard (2012) who noted the synthesis of critical realism and complexity theory, termed complex realism, offered a route for exploring causality in complex systems, and Mingers (2011b) who stated 'systems thinking/complexity theory' and the philosophy of critical realism share many fundamental principles. This can be extended by connecting the concepts of complex realism (Byrne and Uprichard, 2012) and social complexity theory (Introna, 2003) where critical realism, complexity theory and social theory can be brought together to produce a 'complex realist social theory' which may well support the exploration and understanding of complex and contingent causality in complex social systems, potentially leading to more effective ways to intervene in organisational development [cf. emergentist Realist Social Theory of Archer, 1995].

Complex systems exhibit non-linear behaviour (Anderson, 1999; Anderson et al., 1999; Cilliers, 2001; Styhre, 2002; Mitleton-Kelly, 2003; Byrne, 2013). They can be sensitive to small differences in initial conditions such that two entities with similar initial states can follow very different paths over time. Interventions to make small changes to one or two parameters can cause emergent behaviour within the whole system sometimes with

unintended consequences. Organisations can benefit from the latent emergent behaviour they have at their disposal if that behaviour is exercised. Social systems are the structures which actualise this potential. Pawson et al. (2004) captured this as "…a critical feature of interventions is that as they are delivered, they are embedded in social systems. It is through the workings of entire systems of social relationships that any changes in behaviours, events and social conditions are effected." In complex systems the presence of emergence means it can be difficult to interpret what is happening in terms of the system's components. The existence of interconnections and feedback loops means it is not possible to hold certain subsystems constant in order to study others, the basis of reductionist analysis. In a similar vein to Pawson et al. (2004), Byrne (2013) evaluated complex social interventions in a complex and emergent social world from a critical realist perspective and recognised emergence requires things to be viewed as a totality, noting causality doesn't only run in one direction (cf. Boyer) and applying the scientific approach is inappropriate. Byrne advocated research which is case based and aligned with the complexity frame-of-reference. "It *(the complexity frame-of-reference)* can accommodate history and agency and that is just what is needed for the development of transferable knowledge from social interventions in a complex social world" (Byrne, 2013). Byrne commented that incomplete probabilistic causal explanations should be taken as indicative of emergence.

Organisational change increases the degree of complexity for organisations. According to Espejo (2003) "an *organisation* is defined as a closed network of people in interaction *creating, regulating and implementing* its social meanings", adding the challenge is in establishing effective organisations comprising desirable social systems. Espejo noted that desirable social systems have a holistic capacity for learning and change; that is of producing desirable functional capacity, they are self-constructed, their meanings are created by themselves and they are purposeful activities. An implication of the purposeful nature of social systems is the emergence of performance as a significant construct for them (Espejo, 2003). Change programmes typically introduce major social interventions to organisations. The outcome of a significant change programme is context-dependent and unlikely to be experienced as a linear series of sequential activities but more often as a series of as non-linear, disruptive, unpredictable events (Balogun and Johnson, 2005) with a multiplicity of interconnected causes and effects (see section entitled Episodic and Continuous Change in Organisations). According to Styhre (2002) "social systems are always fluid, fluxing, disruptive systems that undergo periods of increased variety and heterogeneity as well as periods of homogenization and standardization. No matter what events and activities appear within a social system, the flow of information and energy that characterises the continuous movement of social systems is always multi-directional and overdetermined in terms of being caused by a multiplicity of sources." Organisational change invariably represents a period of increased heterogeneity for the social system operating within the organisation.

Models are unable to deal with the complexity of the real world and, at best, can only partly reflect it. According to Box and Draper (1987) "Essentially, all models are wrong, but some are useful." Cilliers (2001) commented it is not that there is no value in developing models; it's just that the major limitations of any model must be understood and acknowledged. PM frequently applies simple models (Bititci et al., 2000) to reflect complex

social constructs, in many cases involving complex behaviour, without acknowledging this only partly reflects the real world (Lebas and Euske, 2004). Cilliers (2001) stated no matter which way a model is constructed it will be flawed as a result of the non-linear nature of interactions in complex systems and the unpredictability of the importance of components which means identifying causal relationships is difficult. Local causality is not a given.

While complexity theory enhances the understanding of organisations it struggles to predict or control their behaviour because this is condition, context and time-dependent (Cilliers, 2001). Moreover, organisational boundaries are undefined (Frank and Fahrbach, 1999) and while organisational structure and hierarchies exist they interpenetrate each other. In open systems relationships between components are typically more important than the components themselves. From the perspective of critical realism because the boundaries of an operating social system are undefined and permeable there is no guarantee that the powers that were exercised in a given structure, at a given time and in a specific context will deliver the same outcome at any time in the future (Mingers, 2011b, Wynn and Williams, 2012). Systems are usually viewed as something contiguous in space; however, social systems are capable of operating in different spatial locations concurrently suggesting that social systems can be part of many different systems simultaneously and that these systems interpenetrate (Mitleton-Kelly, 2003). Cilliers (2001) stated "if the components of the system are richly interconnected, there will always be a short route from any component to the "outside" of the system. There is no safe "inside" of the system, the boundary is folded in, or perhaps, the system consists of boundaries only. Everything is always interacting and interfacing with others and with the environment; the notions of "inside" and "outside" are never simple or uncontested." The greater the interdependence the greater the impact an intervention can have i.e. an improvement in one entity may result in a deterioration in other entities within the same system or related systems. Interconnectivity and interdependence are characteristics contributing to how complex behaviour emerges (Mitleton-Kelly, 2003).

As soon as we accept we are dealing with an emergent, complex social system any attempt to apply a positivist philosophy to what is happening is inappropriate (Byrne, 2013). According to Hesketh and Fleetwood (2006) "it simply does not reach far enough inside organizations to explain what is going on therein." Yet many scholars continue to undertake research to measure the effect of manipulating one variable over another in what is clearly a complex social system. Callaghan (2008) made the argument that much of what is done relies on methods without methodological foundation. In a similar vein, Sayer (2000) outlined research concerned with explaining differences in performance between firms in the same industry within and between regions and confirmed that attempts to interpret these differences using extensive research and treating firms as members of a taxonomic group in the hope of finding regularities in behaviour failed because what was being addressed was an open complex system. Only when a switch was made to intensive research were explanations found.

Application of the scientific approach can't establish causality with any certainty in complex and emergent systems such as organisations. Every intervention should be considered as a case. According to Byrne (2013) attributing causality to an intervention and developing a

level of generalisable knowledge is possible using critical realism. Byrne noted "Whilst we can never establish universal/nomothetic accounts of causality, we can, through careful comparison and exploration of complex contingent causation, begin to get a handle on what works *where (in what context), when (in what temporal context)* and *in what order*." Critical realism is increasingly finding application in investigating and understanding complex social systems (Pawson et al., (2005); Easton, (2010); Wynn and Williams, (2012); Mingers et al., (2013); Byrne (2013)).

From the perspective of this thesis organisations are considered complex social systems. The nature of the complex social system operating in an organisation plays a fundamental role in defining how that organisation performs. The overlap between complexity theory and critical realism, termed complex realism by some, has resulted in the increasing use of critical realism as the research philosophy for complex social systems. Connecting complex realism and social complexity theory may potentially offer a route to more effective organisational interventions. Indeed for the purposes of this thesis an organisation's complex behaviour and latent capability is considered to influence the development, implementation and outcome of interventions aimed at improving PM and OE. From a Mode 2 management research perspective, organisations, as complex social systems, fit with both social systems theory and complexity theory and the management practices of decision-making and knowledge integration.

Unpredictable People, Social Systems and the Resource-Based View

Competitive advantage can be defined as a condition or circumstance that puts a company in a favourable or superior business position. Understanding the sources of competitive advantage continues to be a major area of management research. The framework used over the last forty years to investigate competitive advantage is shown in Figure 3.3.

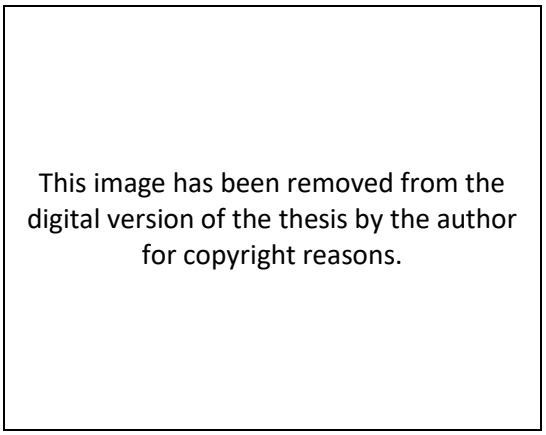


Figure 3.3: Relationship between the traditional "strengths-weaknesses-opportunities-threats" analysis, the resource-based model and models of industry attractiveness (Barney, 1991)

Early strategic research on competitive advantage focused primarily on opportunities and threats in an organisation's external environment (e.g. Porter, 1985), i.e. a Market-Based

View (MBV) and not on the organisation's internal resources (Jarzabkowski et al., 2007). Scholars who focused on the environmental models saw organisations acquiring and adapting resources to fit their strategic plans. They assumed resources were tradeable and there was no inherent benefit from intangible collective knowledge or capability built-up over time i.e. trade secrets would not remain secret. The more recent concept of a value chain would look to accommodate these types of resources by considering them as support activities which underpin the primary activities in the chain. Instead the MBV made the case that external market and industry macro-level factors were the major influencers of OP and long-term profitability. Competitive advantage came from how a business executed particular activities; its performance being determined mainly by the competitive dynamics and industry structure within which it operated. Typically organisations would assess where they stood against a view of their external environment using, for example, Porter's five forces model (Porter, 1985; 2008) and, by understanding how they compared to their competitors, what the bargaining powers of their suppliers and customers were and what the threat of potential new entrants and substitute products looked like, they believed they would be able to create a picture of what was likely to influence profitability in their industry and put in place appropriate interventions to protect and enhance their positions.

As an alternative to the MBV the Resource-Based View (RBV) considers competitive advantage can also come from an organisation's internal resources (Barney, 1991, 2001a, 2001b; Barney et al., 2011). Based on the observation that resources are distributed differently across competing organisations reflecting their different histories, and that these differences remain reasonably constant over time and are not as readily tradeable as the proponents of the environmental model implicitly assume, Barney proposed certain internal resources had the potential to deliver competitive advantage. Resources are defined as "all assets, capabilities, organisational processes, firm attributes, information, knowledge etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness." These resources were classified into three categories: 1) physical capital resources, such as plant and equipment, location and accessibility, 2) human capital resources, such as training, people's individual and collective experience, judgement, intelligence, relationships and insight and 3) organisational capital, such as reporting structures, formal and informal planning and controls systems, informal relationships among and between groups and with the external environment. In terms of a social systems perspective the resources in categories 2) and 3) overlap with people, processes and how they interact. Barney defined competitive advantage as a value creating strategy organisations implement that isn't being implemented by a current or potential competitor, and sustained competitive advantage as competitive advantage that continues to exist after attempts by competitors to replicate it have been found to fail. For resources to deliver sustained competitive advantage they need to be of value, rare amongst competitors and unable to be readily replicated or substituted. Sources of sustained competitive advantage can be acquired or accumulated (Maritan and Peteraf, 2011) but can also be lost as a result of regulatory or technological change for example.

Barney suggested one way to make it difficult for competitors to replicate a competitive advantage is if the resource generating the advantage is socially complex. This may be

through multiple, multi-level interpersonal relationships within the workforce, or the culture and traditions within teams, or through external relationships with suppliers and customers, or information processing systems embedded in socially complex management decision-making processes. Social complexity within an organisation linked to its particular history is difficult to replicate and provides a path to potential sustained competitive advantage. Barney recognises all organisations are socially complex but hasn't explored whether social systems can be manipulated proactively to further increase social complexity. For example, RBV proponents haven't contemplated whether social complexity or social networks within organisations provide an opportunity for PM to contribute to competitive advantage through, for example, creative leveraging of tacit knowledge (Glykas, 2010).

Kogut and Zander (1992) proposed the sharing and transfer of knowledge between individuals and groups within an organisation was crucial to success. Knowledge is embedded in the ways people co-operate within organisations. Kogut and Zander (1993) suggested organisations compete on the basis of information and know-how, and an ability to develop new knowledge by experiential learning, building on social relationships. According to Kogut and Zander organisations specialise in the transfer of tacit knowledge which is virtually impossible to codify. In Barney's terminology these resources rely on social complexity and represent a potential source of sustained competitive advantage. Kogut and Zander (1996) suggested organisations can be viewed as social communities specialising in the efficient creation and transfer of knowledge, and proposed they evolve through knowledge, partly by logic and partly by opportunity and the influence of the external environment. Moreover, people are limited by what they know and value, and are sensitive to the norms of what is considered appropriate behaviour. Kogut and Zander state "It is not transaction costs, but the social knowledge embedded in the competence of individuals and the organising principles of work that explains what firms are on the basis of what they know how to do." Kogut and Zander appreciated the importance of combining social systems, knowledge and practice as a contributor to competitive advantage.

Over the last twenty-five years the RBV has gained increasing acceptance in academic literature (Barney et al., 2011). The origins of RBV go back to Penrose (1959) who believed the resources possessed and used effectively by an organisation were more important than industry structure (Child and Smith, 1987). It is now accepted that resources have the potential to create economic value but this is only realised when the organisations use these resources to create and implement strategies (Barney and Mackey, 2005). The ability of management teams to recognise, interpret and implement the change needed in their products, processes and behaviours to meet the emergent requirements of the sector they operate in is seen to be crucial to their organisation's survival under competitive conditions (Child and Smith, 1987). Short et al. (2007) see these organisations differentiating themselves at the strategic group level. To retain any competitive advantage organisations need to be able to respond flexibly to changes in the competitive landscape (Sirmon et al., 2011). Whereas organisations frequently find themselves having to deal with unexpected interventions from the external environment (for example: exchange rate changes, not-in-kind entrants, new legislation etc.), in principle, they have more control over their internal environment. Garbuio et al. (2011) proposed the RBV to be "an efficiency-oriented,

resource-focused analytical tool for discerning firm performance differences" based on looking inside organisations and challenging commonly held behavioural assumptions. Interest in understanding how and what to control in the internal environment has been responsible for the plethora of academic publications on the RBV.

Of course, the reality is OP is a combination of both the external and internal environments, a blend of headwinds and tailwinds from the external world, mitigated or enhanced respectively by relevant actions taken by business leaders, and activities in the internal world to help deliver competitive advantage. Over the last twenty-five years the external environment most organisations operate in has become both increasingly complex and more dynamic (Sirmon et al., 2011; Sparrow and Cooper, 2014; Melnyk et al., 2014). In many industries organisations follow similar strategies (for example, under increasing pressure from low cost economies many western organisations who find it difficult to compete on cost have gravitated to niche areas to survive); therefore interest in new ideas which support competitive advantage is high.

The RBV is acknowledged as an influential theory for describing, explaining and predicting organisational relationships (Barney et al., 2011). An organisation's resource portfolio comprises tangible and intangible assets with the latter capable of delivering competitive advantage. The recognition that intangible assets develop within organisations through complex social and organisational processes (Barney and Zajac, 1994; Winter 2003), need to be managed strategically (Gove et al., 2003), reflect socially complex resources and dynamic capabilities and have the potential to create economic value (Barney and Mackey, 2005), that the RBV is a theory of interactions and not main effects (Molloy et al., 2011), that scholars need to undertake resource-based empirical work from inside organisations (Barney and Mackey, 2005) all point to the RBV's elements of importance relying on the presence of complex social relationships within organisations.

From early on the RBV has recognised the importance of heterogeneous human capital as a contributor to sustained competitive advantage. However, it is unclear what human and/or social capital is required in a socially complex reality. Interest has grown in understanding the microfoundations of strategic capabilities (Barney et al., 2011; Coff and Kryscynski, 2011; Barney and Felin, 2013). Microfoundations refer to attempts to understand macro-economic phenomena in terms of the micro-economic analysis of the behaviour of individual economic entities and their market and non-market interactions (Janssen, 2008). Molloy et al. (2011) noted theoretical links can be made between the properties of intangible resources and the outcome they are expected to influence and that these links lead to microfoundations theory. Barney and Felin (2013) outlined how complex, non-linear and emergent social aggregation is core to the microfoundations of competitive advantage and that microfoundations are "a pragmatic observation that explanation is often best accomplished by looking at the origins and evolution of collective givens as a function of lower level factors and social interaction [….] individuals and their interactions are central for understanding organisations and social systems." However, Barney and Felin noted "there is little consensus on what microfoundations are and what they are not" and called for new research in multi-level human capital and behaviour theory at the micro-level, stating that "organizational scholars need to engage in the hard work of specifying unique

theories of aggregation that appropriately represent the social interactional and contextual factors that shape behavior and performance in organizations." This thesis proposes social systems underpin organisations, their management processes and delivery of any strategy.

Barney and Felin (2013) also noted human capital scholars have argued that human capital is a complex, multi-level concept comprising not only individual level factors, such as knowledge, skills and abilities, but also a host of social factors such as social capital and organisational culture. Ployhart et al. (2014) concurred, believing human capital resource combinations are complex and tend to be organisation specific. Barney and Felin stated more work needs to be done to understand how capabilities are built, the role of specific actors in building capability, as well as the architectures of human and social interaction that are central for determining the aggregate outcomes and collective capabilities observed, given these architectures can facilitate or restrict collective action. Sirmon et al. (2011) emphasised the important role managers have in structuring, bundling and leveraging an organisation's resources and term this resource orchestration. As such managers have a vital role in initiating resource-related processes or actions. Garbuio et al. (2011) recognised the potential for psychological influences to impact decision-making and structuring of resources in organisations, invoking behavioural decision theory to explain the potential for bias by decision-makers. Their proposal is based on the key psychological contexts of decisions recognised by behavioural decision theory and strategic decision-making literature and centred on perceptions of an organisation's resources, the competence of the decision-makers and how the options are presented to decision-makers. Their proposal also distinguished between single choices made in isolation and simultaneous choices. According to Garbuio et al. research into causal ambiguity (Powell et al., 2006) has advanced an appreciation of how bias amongst the decision-makers in organisations complicates the understanding of the causal relationships between resources and OP. Each decision absorbs the uncertainty of previous decisions (Luhmann, 1995).

What has become clear over the last twenty-five years is that the RBV approach has reached the conclusion that gaining a better understanding of the complexity of the social systems operating inside organisations is critical to controlling how competitive advantage can be influenced from the internal environment. However, just as the external environment is challenging to predict, the social element of the internal environment is as difficult to comprehend and predict, if not more so, because it comprises many unpredictable actors interacting in a multitude of different and changing ways. RBV scholars have partially recognised the influence social systems can have on competitive advantage and performance but not yet explored this in detail (Evans and Davis, 2005).

From the perspective of this thesis it is clear the RBV links much of its competitive advantage to non-linear social interaction which involves social complexity, knowledge sharing, collective action and decision-making. The call for "theories of aggregation that appropriately represent the social interactional and contextual factors that shape behavior and performance in organizations" (Barney and Felin, 2013) resonates with this research. From a Mode 2 management research perspective the RBV fits with social systems theory and management practices of decision-making and knowledge integration.

Social Capital and Social Systems

Organisations invest in physical, human and social capital to build competitive capability (Coleman, 1990; Barney, 1991; Tsai and Ghoshal, 1998). Physical capital is created by making changes to materials to form something of value, human capital by making changes to an individual's skills to help them act differently and social capital by making changes to the relationships between people in a way that facilitates effective action. Physical capital, by its presence, is tangible; human capital, less so being an attribute of the individual; and social capital even less so, being expressed by the interactions between people. Social capital can be considered to be what makes an organisation more than simply a collection of individuals engaged in a common purpose (Coleman, 1988, 1990). Coleman argued the power of social capital comes from networks of relations that generate individual and collective action. Like physical and human capital, social capital depreciates over time if not refreshed (Coleman, 1990). In broad terms social capital reflects the social interactions, trusting relationships and value systems that underpin action.

According to Coleman (1990) the value of social capital "lies primarily in its usefulness for qualitative analyses of social systems and for those quantitative analyses that employ qualitative indicators." Put another way, a social system is the primary means of developing and generating social capital within the organisation. An increase in social capital is one outcome of a 'healthy' operating social system. Social capital is an indicator of a successful social system, it is the 'ends' and the social system is the 'means'. However, measuring social capital is not straightforward (Paldam, 2000).

Building on a review of the social capital literature Nahapiet and Ghoshal (1998) considered social capital to comprise three aspects of social context which they called the structural, relational and cognitive dimensions. The structural dimension revolves around social interactions, the relational dimension around trust and trustworthiness built on these interactions and the cognitive dimension around the shared goals and values of operating in a social system. Tsai and Ghoshal (1998) explored the relationship between business units of a large organisation and how Nahapiet and Ghoshal's three dimensions of social capital influence social exchange and product innovation. Social interaction and trust were observed to correlate with resource exchange between business units which in turn supported innovation. Informal inter-unit networks facilitated by growing trust enabled resource exchange. Inkpen and Tsang (2005) demonstrated that social capital facilitates the transfer of knowledge within networks; however, the conditions for this are network and circumstance specific. Perry-Smith and Shalley (2003) and Evans and Davis (2005) outlined the benefits of social networks for stimulating creativity within organisations where weak ties are viewed more likely to connect people with diverse perspectives. These observations are relevant for Case Study 2 described in Chapter 6.

Cohen and Prusak (2001) defined social capital as "the stock of active connections among people: the trust, mutual understanding, and shared values and behaviors that bind the members of human networks and communities and make cooperative action possible." Cohen and Prusak suggested social capital is present in every organisation; indeed they believe without it organisations can't function properly. They referred to an organisation as

“a social organism of people willingly engaged in joint enterprise” and described the characteristics of social capital as trust, a shared understanding of aims and beliefs and collective participation, seeing organisations are living and breathing social entities rather than disembodied assemblages of processes. Cohen and Prusak acknowledged while social capital supports organisational success, organisations can succeed or fail for many different reasons, often outside their control and frequently nothing to do with social capital.

Leana and Van Buren (1999) described how organisational social capital is realised through collective goal orientation, shared trust and the leveraging of information. Social capital delivers value by facilitating collective action and reflects the character of social relations within the organisation. The social system is at the heart of organisational social capital. According to Leana and Van Buren the primary components of organisational social capital are associability and trust with employment practices a means of managing organisational social capital to maximise its benefit. Organisations with strong and stable internal relationships tend to display positive organisational social capital. HR practices, such as investment in learning and development, open collaborative team-working, policies on pay and reward, promotion from within, profit sharing, job security etc., build organisational social capital (Leana and Van Buren, 1999). Nandhakumar (1999) considered trust from the perspective of virtual teams that may be geographically and/or temporally separated, such as regional support teams. Nandhakumar concluded that personalised trust relationships are necessary for continuous virtual teamworking and typically these are best established through face-to-face interactions and socialisation.

Leana and Van Buren described some of the benefits of organisational social capital as individual commitment to the common good, greater flexibility around working practices, orchestrated collective action and the development of intellectual capital in the organisation via knowledge sharing. Social capital plays an important role in an organisation’s capacity to absorb or transfer knowledge. In addition, instances of conflict are reduced with greater likelihood of amicable resolution of differences of opinion. Fehr and Gelfand (2012) discussed conflict and a multi-level model of workplace forgiveness with links to social capital and trust and where employee responses to interpersonal conflict involve a prosocial sense-making process which may emerge gradually from the social context and an organisation’s core values. Leana and Van Buren (1999) defined organisational social capital as “a resource reflecting the character of social relations within the organisation, realised through members’ levels of collective goal orientation and shared trust.” Social capital underpins collaboration between employees, removing functional and hierarchical barriers in organisations and is a pre-requisite for the effective operation of communities-of-practice.

Watson and Papamarcos (2002) reviewed the impact organisational social capital can have on organisational commitment. Their study shows that trust, communication and shared values influence organisational commitment. The authors defined organisational commitment as an employee’s involvement in and identification with the organisation.

The contribution of human capital and social capital as potential sources of sustainable competitive advantage to support OP has been discussed by Hitt et al. (2001) and Ireland et

al. (2003). Human capital has been defined by Dess and Lumpkin (2001) as ”individual capabilities, knowledge, skills and experience of the company’s employees and managers, as they are relevant to the task at hand, as well as the capacity to add to this reservoir of knowledge, skills and experience through individual learning.” Most of the skills and knowledge of an organisation reside within its workforce, its human capital. Specifically tacit know-how, typically gained through practice, is increasingly viewed as a potential source of competitive advantage and therefore a possible determinant of OP. Human capital is considered to be enhanced by the organisation’s social capital.

Luthans, Luthans and Luthans (2004) described positive psychological capital as an extension of human and social capital and a means to understand OP. Linking intangible assets such as human and social capital to increases in market-to-book values of companies these authors suggested that psychological capital, notably confidence, hope, optimism and resilience, can be managed for more effective work performance.

Cameron et al. (2004) explored the idea that OP might be related to the virtuousness in organisations or virtuousness enabled by organisations. These authors commented that the concept of virtuousness is associated with organisations, communities and cultures and noted that it is the basis for societies and economies to flourish. It operates in a self-reinforcing manner. The concept; however, has received little attention in the scientific literature and most organisations would not associate it with economic performance. Virtuousness in organisations refers to the behaviour of the workforce; virtuousness enabled by organisations refers to elements of the organisation that encourage virtuousness by the workforce. Cameron et al. defined organisational virtuousness as “individual’s actions, collective activities, cultural attributes, or processes that enable dissemination and perpetuation of virtuousness in an organisation” and stated it has an amplifying or self-reinforcing effect on positive emotions, social capital and prosocial behaviour. Cameron et al. commented that “high levels of social capital reduce transaction costs, facilitate communication and cooperation, enhance employee commitments, foster individual learning, strengthen relationships and involvement and ultimately enhance OP.” Virtuousness has a buffering effect on organisations when they are faced with traumatic outcomes; for example, downsizing. In the absence of virtuousness OP can deteriorate due to low morale, loss of trust, teamwork and information sharing etc. In the absence of a management team that understands this, social capital, knowledge and know-how can be lost causing irreparable damage over the long-term as involvement and contributions reduce over the short to medium-term.

In a comment about the future of PM research Neely (2005) noted “for many firms ever-increasing proportions of their assets are intangible, grounded in human and social capital, but how these assets should be accounted for remains an open question.” An early reference to social capital in the PM literature albeit Neely said no more than this. A correlation between social capital and OP has been described by Smerek and Denison (2007). By using four measures of organisational culture to represent social capital they observed that adaptability and involvement contribute most towards long-term financial performance and predict that social and cultural resources developed in one period can have a significant impact on an organisation’s performance in subsequent periods.

Rasmussen and Edwards (2014) stated social capital is essential to generate performance improvement and is believed to increase productivity through knowledge sharing, ongoing support, feedback and mutual encouragement. Tantardini and Kroll (2015) looked at the role of organisational social capital in the application of performance information in the public sector. They proposed that social interaction, trust and common values foster the collection and sharing of performance data. Organisational social capital takes time to build and needs to be developed and managed carefully. With trust as a core component of social capital there is the potential for organisations to damage social capital through actions the collective considers inappropriate.

Jiang and Carroll (2009) outlined two logical grounds for social capital, the first based on the individual connections described in social networks and the second based on social systems which earth to norms, trust, reciprocity etc. These two approaches have different starting points and foci. In the social systems approach two characteristics of social capital, namely the structural properties that social systems have and their role in catalysing actions, are emphasised. The structural properties of social systems, their origins and consequential social behaviours mean that people making up the social system are prepared to relinquish their right to control their actions to satisfy the interdependent interests of the group i.e. allegiance to the collective is greater than individual interests.

Brooks and Muyia Nafukho (2006) described an integrated model attempting to illustrate the relationships between human resource development (HRD), emotional intelligence (EI), social capital (SC) and organisational productivity as shown in Figure 3.4.

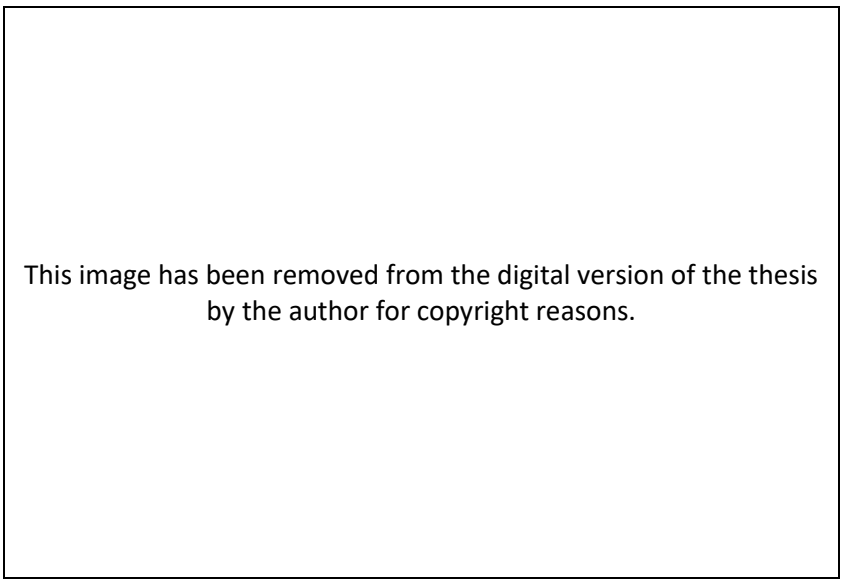


Figure 3.4: Integrating Human Resource Development, Emotional Intelligence, Social Capital and Organisational Productivity (Brooks and Muyia Nafukho, 2006)

Brooks and Muyia Nafukho noted “Systems theory supports the need to view organizations from a holistic perspective and to acknowledge the interconnectedness of organizational

performance, economic gain, social networks and social needs of people within organizations" and propose that having a clear "understanding of employees' emotional intelligence should help create an organizational environment that has a propensity to develop and sustain social capital." Brooks and Muyia Nafukho conceptualised SC as an intangible asset whose outcome is organisational productivity and competitive advantage, with HRD and EI operating as facilitating internal variables. In addition to the internal environment they recognised the external environment can affect organisational productivity but acknowledge "While there appears to be a clear relationship among HRD, social capital, emotional intelligence, and organizational productivity, it is difficult to create measurement instruments that can show the contributions of each to organizational productivity." The authors challenged scholars and practitioners to develop measures of the link between HRD, EI and SC, and its impact on OP. This thesis presents a different integrated model based on the social system operating in the organisation and, alongside this, a method to measure its impact on OP.

From the perspective of this thesis social capital, as with other capitals, needs a process to generate it. The social system does this. Increasing social capital is taken as the positive outcome of a 'healthy' operating social system. The extent to which an organisation can develop and leverage the value of social capital may be its most enduring form of competitive advantage (Moran, 2005). The common threads are social interactions, networks, collaboration, collective action, shared knowledge and trust. From a Mode 2 management research perspective social capital fits with social systems theory and the management practice of knowledge integration.

Human Resource Management, Social Systems and Organisational Performance

Despite extensive investigations over the last twenty years into the relationship between HRM practices and OP the link is anything but clear (Wall and Wood, 2005; Paauwe and Boselie, 2005; Hesketh and Fleetwood, 2006; Fleetwood and Hesketh, 2006; Guest, 2011; Singh et al., 2012). However, the HRM literature does identify various people-related characteristics, such as discretionary effort, knowledge exchange, trust, social networks, organisational social climate and organisational citizenship behaviour, which it considers to be catalysed by HRM practices and may well contribute to performance positively (MacDuffie, 1995; Collins and Clark, 2003; Evans and Davis, 2005; Collins and Smith, 2006; Messersmith et al., 2011; de Waal, 2013; Tregaskis et al., 2013; Bourne et al., 2013).

MacDuffie (1995) indicated that despite claims of various HRM practices impacting OP favourably few studies demonstrated this. MacDuffie suggested HRM practices can motivate employees and impact performance if they are applied as a selected 'bundle' which together underpin business strategy. MacDuffie recognised the knowledge a workforce has about products, processes and customers is embedded in routines and social interactions and produces organisational capabilities that Barney would consider intangible assets. MacDuffie stated "innovative human resource practices are likely to contribute to improved economic performance only when three conditions are met: when employees possess knowledge and skills that managers lack; when employees are motivated to apply this skill and knowledge through discretionary effort; and when the firm's business strategy

can only be achieved when employees contribute such discretionary effort." Crucially, in his study, MacDuffie deliberately deselected contextualised information by excluding practices associated with any particular company. In short, MacDuffie ignored the operational context but recognised leveraging tacit knowledge is important.

Studies by Boselie et al. (2005), Paauwe and Boselie, (2005), Nishii et al. (2008) and Guest and Conway (2011) all indicated that HR practices tend to impact measures such as employee attitudes and behaviour more so than OP, largely because any impact HR practices make are usually too far removed in time from OP for any direct link to be determined. Collins and Smith (2006) concluded that HRM practices don't impact OP directly but influence social climates to facilitate knowledge development and exchange. Their work showed a relationship between commitment-based HRM practices and the organisational climates of trust, co-operation and shared codes and language which in turn were related to OP via knowledge exchange. Collins and Smith stated trusting relationships are essential to increase interaction and encourage exchange of information to support innovation. Nahapiet and Ghoshal (1998) also supported the contention that co-operation between employees underpins a social climate that facilitates knowledge exchange. According to Amabile et al. (1996) creativity is increased when a workforce collaborates. Trusting relationships and active involvement, facilitated by consistent processes, lead to open communications through which teams can innovate. Collins and Smith (2006) postulated that the social conditions encouraging a workforce to collaborate and share information may have a greater effect on performance than the accumulation of individual human capital across the workforce. In short, the emergent output from the operating social system may be more important than the sum of the individual parts.

Collins and Clark (2003) reported how social networks of senior managers influenced OP. Social networks were defined as the relationships senior managers had with the workforce inside their organisation and others outside the organisation. Collins and Clark contended that senior managers' external networks were potential sources of new information and their internal networks provided routes to advantageously exploit this information – they acted as conduits for information. These networks supported trust and could be encouraged by network-building HRM practices. The authors also recognised there were many different groups of employees inside an organisation capable of creating competitive advantage. Purcell and Kinnie (2007) suggested that employee attitudes and behaviour are central to understanding any HR causal chain; however, little attention has been paid to employee-related variables. Paauwe and Boselie (2005) emphasised the potential for reverse causality.

Takeuchi et al. (2009) demonstrated linkages between commitment-based HRM practices, an organisation's social system, and employee job satisfaction and commitment. Takeuchi et al. argued that the processes and interrelationships through which commitment-based HRM influence outcomes for individuals are complex. Messersmith et al. (2011) proposed that a link between commitment-based HRM and performance operates through a mechanism connecting employee attitudes to discretionary behaviour. According to Messersmith et al. organisational citizenship behaviour (OCB) can be associated with positive outcomes at the individual level and postulated it may also operate in an aggregate

form as an important pathway to favourable organisational outcomes. They speculated that greater commitment from the organisation might be reciprocated by a greater likelihood of prosocial behaviour from employees which could benefit the organisation and may become the cultural norm, although they questioned whether discretionary behaviour is sustainable. Messersmith et al. commented "that the contributions of employees to organizational performance metrics are likely to be at least partially dependent on the extent to which employees display discretionary behaviors that lead to organizational effectiveness." This is aligned with the research contained in this thesis.

Building on the work of Collins and Smith (2006), Bourne et al. (2013) and Pavlov et al. (2017) followed a case-study strategy and used semi-structured interviews to explore how HRM and PM practices combine to generate OP. They proposed that OP is catalysed by employee engagement with PM providing directional guidance. The HRM practices are seen as stimulating a positive organisational social climate leading to greater engagement, with PM practices taking the subordinate but important role of aligning activities with the strategic objectives of the organisation. The interaction between HRM and PM is complex and consistent with the theme of people, processes and their interaction explored in this thesis. Bourne et al. called for further empirical studies to "understand how the practices, mechanisms, processes and routines in an organisation deliver performance." This thesis looks to bridge the theory-practice gap by doing exactly this and, as alluded to by Bourne et al. (2013), chooses to be theory-sensitive and practice-led.

In many organisations commitment-based HRM focuses on the individual through processes such as selection and recruitment, learning and development, individual performance management etc., and on the organisation through application of HR practices to all employees, driven by a corporate desire to encourage team-work (Liao et al., 2009; Buller and McEvoy, 2012). The former concentrates on developing human capital, the latter on 'organisational motivation' but through applying HRM practices across the workforce uniformly (for example: profit-sharing, share schemes etc.) rather than on specific team-related processes which encourage the development of social systems and networks. These latter activities are seen as management responsibilities; however, many managers don't recognise, or prioritise, or want to deal with the social systems elements of delivering improved performance and so these important organisational processes are frequently poorly executed. As Heinrich von Pierer, the former CEO of Seimens AG, stated "having a global workforce of well-trained, highly skilled people obviously isn't enough; the workforce must be efficiently networked and leveraged to maximize benefits across the company" (Buller and McEvoy, 2012).

Evans and Davis (2005) proposed a theoretical framework which describes how an organisation's internal social structure mediates the relationship between high-performance work systems and OP. High-performance work systems and commitment-based HRM practices are broadly equivalent. Evans and Davis conceptualised their high-performance work system as an integrated group of specific HR practices aligned with the organisation's strategy and the internal social structure by patterns of employee relationships conducive to OP and the behaviours associated with the formation of those relationships. This interpretation of an internal social structure is different to the one used

in this thesis which refers to critical realism and is defined in Chapter 1. Evans and Davis proposed that their series of HR practices fundamentally changed the social relationships and behaviours within the organisation ultimately leading to improved OP.

The implementation of commitment-based HRM practices is not a differentiator in terms of delivering OP. HRM falls into the category of necessary but not sufficient (Collins & Smith, 2006), an enabling device (Paauwe and Boselie, 2005), an essential support activity (Porter, 1985) or a facilitating variable (Brooks and Muyia Nafukho, 2006; Paauwe, 2009). It is recognised that the psychological contract between employees and employers is changing. Where the change is such that it interferes with organisational trust employee commitment can be damaged. Typically HRM systems have struggled to keep up with the changing values of people and organisations. Lins et al. (2015) studied how trust already developed between an organisation and its stakeholders impacted OP during the 2008 financial crisis, providing evidence to support the contention that organisation-specific social capital can be considered an insurance policy for difficult times. However, over the last decade many organisations have looked to reduce their people-related costs by diluting their commitment-based HRM offerings (for example, closure of defined benefit pension schemes). According to the norms of reciprocity such a change in how organisations manage their HRM practices should result in a shift in how employees view employers (MacDuffie, 1995; Evans and Davis, 2005; Lepak & Shaw, 2008, Conway et al., 2011). The case study organisations described in Chapter 6 all have relatively advantageous HRM practices and operate close to single status (Liao et al., 2009); yet, their individual circumstances of facing increasing competition and/or restructuring caused a loss in trust demonstrating, while hard to build up, trust can be lost easily (Boxall, 2013) with the potential to adversely impact employee engagement and commitment (Conway et al., 2011).

Overall, the observations that specific 'bundles' of HRM practices appear to contribute to performance (MacDuffie, 1995; Huselid, 1995); may impact employee attitudes and behaviours (Boselie et al., 2005; Paauwe and Boselie, 2005; Nishii et al., 2008; Guest and Conway, 2011) and might affect employee groups differently and potentially counter-productively (Liao et al., 2009); that commitment-based HRM practices don't impact performance directly but may do so through their effect on organisational social climate and knowledge exchange (Bowen and Ostroff, 2004; Collins and Smith, 2006) or internal social structure (Evans and Davis, 2005) or may link to employee commitment and behaviour through the organisation's social system (Takeuchi et al., 2009); that HRM research is flawed and it's unclear how much it contributes to performance (Guest, 1997; Paauwe and Boselie, 2005; Wall and Wood, 2005; Paauwe, 2009; de Waal and van der Heijden, 2015) and while HRM results are mixed, where they have worked it has involved human and social capital (Evans and Davis, 2005; Kochan et al., 2013); and it is the interaction of HRM and PM that positively impacts performance (Bourne et al., 2013) all suggest that while HRM practices seem to contribute to OP somehow it remains unclear by what mechanism. No-one yet has pulled the various strands together to shine a light on how all of this might be integrated and work. The mechanisms by which HRM affects OP are not understood and over-simplified (Paauwe and Boselie, 2005; Fleetwood and

Hesketh, 2008; Buller and McEvoy, 2012). This may be because different disciplines tend not to collaborate (Marr and Schiuma, 2003; Neely, 2005).

From the perspective of this thesis there is a body of HRM literature describing characteristics such as social capital, social networks, trust, organisational social climate and knowledge exchange, internal social structure and prosocial behaviour that relate to social systems and are considered to contribute positively to performance. I concur with Bourne et al.'s (2013) view that PM systems play a directional role, helping align activities but propose the social system operating in the organisation provides the primary contextual factor to deliver the required enabling mechanisms and social processes that make the difference rather than HRM practices. From a Mode 2 management research perspective HRM fits with social systems theory and the management practice of knowledge integration.

The Social Processes of Organisational Sense-making

"Organizations are in the business of making sense. If they attend to anything with consistency and regularity, it is to their sense-making activities" (Weick, 1979). According to Weick (1995) "People make sense of things by seeing a world on which they have already imposed what they believe." Weick sees sense-making as reality, a process with a strong reflexive quality, something people engage in retrospectively and something to be understood literally. Organisational sense-making is a social process where people interpret their environment through interactions with those around them and by creating explanations that allow them to comprehend collectively what is going on (Gonzalez-Padron et al., 2010). Sense-making activities are important in times of significant change (see section entitled Episodic and Continuous Change in Organisations in Chapter 3 and Chapter 7) when there may be a need to construct a coherent collective understanding that sustains relationships and allows collective action to be taken (Balogun and Johnson, 2004, 2005; Maitlis, 2005); it allows people to deal with uncertainty and ambiguity. As Weick states "The basic idea of sense-making is that reality is an ongoing accomplishment that emerges from efforts to create order and make retrospective sense of what occurs."

Maitlis (2005) suggests there are four distinct forms of organisational sense-making: guided, fragmented, restricted and minimal and two key dimensions that describe the social processes: control and animation. Figure 3.5 captures the four models in terms of levels of leader and stakeholder sense-giving. The four forms reflect the degree to which leaders and stakeholders are involved in sense-giving, defined as the process of attempting to influence the sense-making and meaning construction of others toward a preferred re-definition of organisational reality. In guided sense-making processes are co-ordinated, controlled and animated, and deliver rich coherent accounts providing a common basis for action. In fragmented sense-making processes are animated but not controlled, and as such do not produce coherent accounts but rather multiple individualistic accounts leading to inconsistent actions which resemble what Weick (1993) describes as the collapse of sense-making. In restricted sense-making processes are controlled but not animated and result in narrow accounts, often only incorporating the leaders' perspectives. In minimal sense-

making processes are neither controlled nor animated leading to superficial accounts and minimal action.

As Maitlis indicates guided organisational sense-making, where leaders encourage and integrate stakeholder accounts, are more likely to generate innovative proposals than the restricted form of sense-making. Use of communities-of-practice (Wenger 2010) fits Maitlis' guided sense-making model well. Restricted sense-making may be appropriate when an issue is best addressed by a single, decisive management action, for example area evacuation in an emergency.

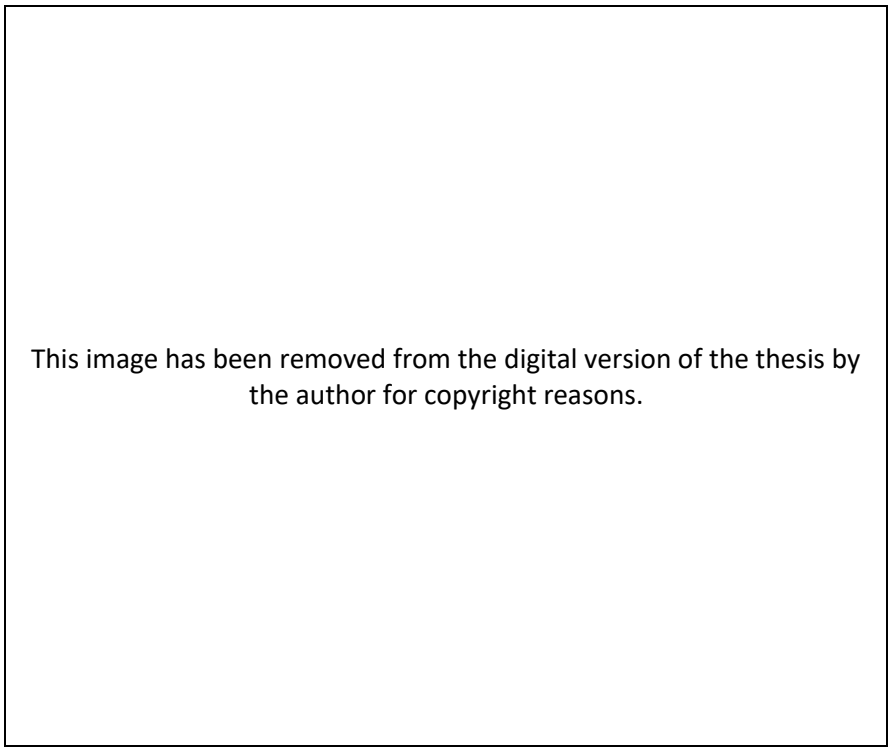


Figure 3.5: Four Forms of Sense-making (Maitlis, 2005)

Weick (1993) discusses the collapse of sense-making in organisations. Collapse of sense-making means that within the organisation the sense of what is occurring and the means to rebuild that sense collapse at the same time. Weick comments that although most organisational analysis revolves around decision-making the processes behind decision-making are not clear. He adds "decision making preferences are often inconsistent, unstable, and externally driven; the linkages between decisions and actions are loosely-coupled and interactive rather than linear; the past is notoriously unreliable as a guide to the present or the future; [….]." Weick believes decision-making relies on strategic rationality, built around clear questions and answers. Sense-making, on the other hand, is about contextual rationality and built around vague questions, unclear answers and negotiated agreements that try to minimise confusion (Weick, 1993). He adds that, in a fluid world, organisations need curiosity, openness and complex sensing.

Weick and Roberts (1993) describe the concept of the collective mind and how it can explain OP in conditions which rely on continuous operational reliability. According to Weick and Roberts "Collective mind is conceptualized as a pattern of heedful interrelations of actions in a social system." In such a system people undertake actions understanding that the system comprises connected actions involving them and others, effectively operating as communities-of-practice. The collective mind is an emergent phenomenon and a distributed system (Tsoukas, 1996).

From the perspective of this thesis sense-making is core to the social systems approach. It plays a central role in understanding and reconfiguring the operating social system to proactively make the changes required to enhance OE and make PM more relevant. Sense-making involves communities-of-practice, emergence, context, interpretation and decision-making; it is a key social process for the organisation. The overlap with social systems and performance is evident. From a PM perspective the concept of interpreting how to measure, what the measurement means and how that outcome is "exposed to our method of questioning" (Heisenberg, 1963) is highly relevant. From a Mode 2 management research perspective organisational sense-making aligns with social systems theory.

Social Systems Theory – Overview

Parsons' (1951) work entitled *The Social System* attempted to capture the essence of a conceptual scheme for the analysis of the structure and processes of social systems. Because of its elementary treatment of various processes Parsons proposed it should be regarded as a statement of general sociological theory. Parsons viewed social systems as open systems and emphasised the mapping between structure and normative culture. Structure related to an organised set of social roles which were defined by specific norms that prescribed rules for behaviour.

Merton (1949) took a more pragmatic approach believing sociological theory was not ready for a unified theory. In his opinion the field hadn't done enough preparatory work on which to base a general theory describing social behaviour, social organisation and social change. Instead Merton suggested sociology should advance in smaller steps by developing theories applicable to limited conceptual ranges which he termed middle-range. Merton saw these theories lying between an all-encompassing general theory and the many hypotheses supporting day-to-day research that are not generalizable. His rationale was that sociological theory should proceed "by developing special theories from which to derive hypotheses that can be empirically investigated and by evolving, not suddenly revealing, a progressively more general conceptual scheme that is adequate to consolidate groups of special theories." Middle-range theories are close enough to what is observed to guide and enable empirical enquiry. Merton identified social mechanisms as the building blocks of middle-range theory defining them as "social processes having designated consequences for designated parts of the social structure." Identifying these social mechanisms and understanding how they come into being, why they fail to operate effectively or not at all in some social systems is central to Merton's approach. Social mechanisms explain observed associations between events; they represent the 'how'. All meaningful explanations explain the particular by the general and, as such, there are fundamental

mechanisms that apply across a wide range of social situations based on common principles. Hedstrom and Swedberg (1996) defined a social mechanism as "a plausible hypothesis, or set of plausible hypotheses, that could be the explanation of some social phenomena, the explanation being in terms of interactions between individuals, or individuals and some social aggregate" and noted that with the demise of the Columbia School the interest in mechanism-based theorising in sociology waned although a broader concept is described in the work of Elster (1983). Elster took the position that "the basic building block in the social sciences, the elementary unit of explanation, is the individual action guided by some intention" and that the actual mechanism needs to be specified for each particular case, "To explain is to provide a mechanism, to open up the black box and show the nuts and bolts, the cogs and wheels of the internal machinery." (see Section 3.5, Human Intentionality and the Philosophy of Scientific Explanation).

The next two sections describe different social systems theory approaches that relate to organisations and mechanisms in particular, and support the social systems perspective developed in this thesis.

Social Systems Theory – Functionalist/Autopoietic

Social systems theory has been heavily influenced in recent years by the work of Luhmann (1995). Luhmann is rare amongst sociologists because his social systems theory has particular significance for organisation studies. Building on the functionalism of Parsons (1961) the substance of Luhmann's theory relies on autopoiesis (Luhmann, 2005). An alternative to Luhmann's theory is Archer's realist social theory (1995) which focuses on the importance of the interactions between structure and agency. Archer (1995) argues the relationship between the individual and society is the primary sociological issue and states "understanding the linkage between 'structure and agency' will always retain this centrality because it derives from what society intrinsically is." Given the range of different views it is perhaps no surprise that the nature of social systems and social structure is anything but settled (Mingers, 2002).

This section gives an overview of Luhmann's functionalist version of social systems theory given its alignment to organisations. The next section provides an overview of Archer's emergentist version and compares and contrasts it with Luhmann's theory and other approaches.

Seidl and Becker (2006) summarised Luhmann's interpretation of organisations as follows:

1. The epistemological aspect: organizations are processes that come into being by permanently constructing and reconstructing themselves by means of using distinctions, which mark what is part of their realm and what not. In brief: organizations are 'autopoietic' systems.
2. The social-theoretical aspect: the organization belongs to a social sphere sui generis possessing its own logic, which cannot be traced back to human 'actors' or 'subjects'. In brief: organizations are social systems.
3. The genuinely organizational aspect: organizations are a specific kind of social process characterised by a specific kind of distinction: decision, which makes up what is specifically

> organizational about organizations as social phenomena. In brief: organizations are decision systems.

Distinctions here refer to what distinguishes the object of research from its environment. When a researcher has a particular object to investigate the distinction (or measure) the researcher selects is an arbitrary choice and reflects the manner the researcher chooses to observe the object. For example, in the case of an organisation, the researcher could select the distinction on the basis of hierarchy or formal or informal organisation or supply chain or market or project affiliation etc. Seidl and Becker (2006) noted that "the distinction chosen for ones' observation usually blinds all other possibilities of observation." They commented researchers tend to assign all observations made on the object of interest to the object itself rather than considering it may be linked to their view of the object. Seidl and Becker highlighted a basic assumption in Luhmann's theory is "it is the choice of the distinction rather than what is being distinguished that produces the observation." In other words selection of a different distinction is likely to produce a different observation. They added "It thus does not see what it excludes and does not see that there are other, equally valid distinctions that could have been chosen." There are implications here for the measures selected by any researcher whose interest is in investigating PM systems operating within a complex social system such as an organisation. However, this is not unique to social science. For example, Heisenberg (1963) made the following comment on the act of observation "Natural science does not simply describe and explain nature … it describes nature as exposed to our method of questioning." Luhmann suggested that the distinction selected by a researcher should reflect the one the object of interest uses itself. For an organisation or group of interest then the researcher should select the distinction the group itself uses to distinguish themselves from the rest of the world and not one from outside. This is equivalent to taking an 'inside-out' rather than an 'outside-in' approach.

Luhmann's theory of social systems is built around the concept of autopoeisis, namely that social system reproduce their own elements on the basis of their own elements. Bhaskar in his descriptions of critical realism also considers social systems as autopoietic (Mingers, 2011b). Luhmann (1995) conceptualised elements as momentary events that immediately pass away. Because the elements of a social system have no duration the social system needs to continuously produce new elements otherwise the system disappears. Elements are also defined through their integration into a system by their relationship to other elements; they have no status as elements outside the system. They are part of the social system as a whole. Reproduction in autopoeisis refers to the use of an element in a network of other elements, where an element is produced as a result of being used. Seidl and Becker (2006) explained this by comparing it to words in a text: "only through the relation of the words to other words in the text – that is, the context – are (the meanings of) the words defined." The broader social system is the context.

According to Luhmann (1995) the fundamental building block of all social systems are networks of communication (rather than people or social practices); that is social systems use communicative events as their particular method of autopoeitic reproduction. Luhmann stated "Their elements are communications which are recursively produced and reproduced by a network of communications and which cannot exist outside of such a

network." In Luhmann's theory communication is understood as an emergent phenomenon (Seidl and Becker, 2005) arising from interaction between at least two people and comprises three components: utterance, information and understanding. Understanding is the most important of these components as it dictates the outcome of the communications. It is conceptualised as the distinction: for a communication to be understood the information has to be distinguished from the utterance. Luhmann interprets communication as the understood meaning not the intended meaning.

Luhmann distinguished three types of social system that reproduce their system/ environment distinction on the basis of communication. These are societies, organisations and face-to-face interaction as shown in Figure 3.6.

Figure 3.6: Types of Autopoeitic Systems (Seidl and Becker, 2006)

'Society' is conceived as a single system that consists of all communications that are produced as part of world society. Society also comprises the other two types of social system, namely interaction and organisation. These are also communication systems; however, unlike society they reproduce themselves on the basis of a specific type of communication. 'Face-to-face interaction' distinguishes itself on communication based on participants' mutual perception of their physical presence. 'Organisation' distinguishes itself on the basis of decision communications. Consider communications here as the transfer of knowledge or information. The system/environment distinction is that between a system of decisions and all other communications. Organisations are decision processing systems with the decision as the element of the organisation. Decision communications are not produced by human beings but by the social system, the organisation. Daft and Weick (1984) presented a model of organisations as interpretation systems where organisations are open social systems in the business of processing information to reduce the uncertainty of decision-making (Daft and Weick, 1984; Daft and Lengel, 1986). While Luhmann considered organisations as decision processing systems Daft and Weick saw them as scanning, interpreting and learning systems which then cause people to act, delivering a similar outcome. Daft and Weick stated "To survive, organizations must have mechanisms to interpret ambiguous events and to provide meaning and direction for participants." They believed interpretation is one of the most important functions organisations undertake with scanning and sense-making core to this (Cilliers, 2013). They added that all models

have weaknesses and the weakness in their model related to Thorngate's (1976) postulate of commensurate complexity which states that a theory of social behaviour can't be simultaneously general, accurate and simple – only two of the three characteristics are possible. Daft and Weick saw their model as general and simple, the trade-off being the model is not very accurate given any interpretation of a complex social system is not amenable to precise measurement.

Within organisations decision communications sit within a process of connecting decisions, that is, every decision is the product of an earlier decision and will give rise to a future decision. Luhmann termed this the concept of uncertainty absorption, taken from March and Simon (1958). For a decision to be made information is required before a choice between alternatives can be taken. However, all decisions are made on incomplete information because the future is uncertain. From a knowledge perspective Tsoukas (1996) noted that organisations "are faced with radical uncertainty; they do not, they cannot, know what they need to know." In Luhmann's model this uncertainty is 'absorbed' by the decision. Future decisions are then unaware of the uncertainty 'absorbed' when previous decisions were made. A decision is virtual until subsequent decisions based on it have occurred (cf. the real, actual and empirical domains used in critical realism; see Chapter 4). Luhmann also incorporated the concept of decision premises. This relates to the structural preconditions that define a decision situation. In short every decision is a decision premise for a later decision. Decision premises limit the decision situation and therefore constrain the outcome. Uncertainty absorption then occurs when a decision is used by subsequent decisions as a decision premise.

In Luhmann's model social systems are not systems of action but self-reproducing decision systems. Change comes through an evolutionary model in which the communication system produces various transformations and then selects changes from these. According to Hendry and Seidl (2003) while Luhmann's model is applied to incremental first-order and second-order change it is the latter in which the social system provides the organisation the possibility to challenge its own structures. Luhmann's social systems theory includes the concept of 'episodes' as a way to introduce change. Episodes are sequences of communicative or decision events with clear beginnings and ends. During episodes normal communicative practice is restricted or suspended without disrupting completely normal practices and routines, thereby providing an opportunity for reflective discussions within the social system on alternatives (cf. temporary breakdowns in the section entitled Logic of Practice through Practical Rationality). Episodes are termed either 'goal-oriented' or 'time-limited'. 'Goal-oriented' episodes feature communications which are focused on delivering a specific goal. The goal is used as the selection criteria for communications. 'Time-limited' episodes are exactly as they sound, that is there is a time limit to the episode. In practice episodes may be a combination of both with communicative events focused on delivery of a specific goal in a specific time.

Episodes can occur spontaneously or as part of a regular process. If an episode is self-organising, that is free to select its own communication structures, it can provide the starting point for emergent strategic discussion. Strategic episodes, such as meetings, workshops etc., can happen at all levels in the organisation and take a wide range of forms.

During such episodes communication and organisational structures may be changed for the duration of the episode with, for example, hierarchical norms removed or established rules of behaviour suspended. Episodes are situation specific in terms of who is present, what information is accessible, which issues are to be discussed etc., with the initial context often set by the wider system, for example, the social system in operation at the time. As Hendry and Seidl noted "episodic processes can sometimes have a very strong influence on processes going on outside. The participants of the episode may be given powers to implement the 'results' of the episode after it has finished, or the results of the strategic discourses may be documented and the relevant outcome acted on by others." Typically, taking forward the results of an episode or series of episodes goes through a review process involving senior management potentially leading to decisions to revise operating structures, this being facilitated by the communicative links between the processes of the episode and the existing operating social system. There is an alignment with how communities-of-practice operate (Wenger, 2010).

Hendry and Seidl (2003) suggested Luhmann's social systems theory enhances understanding of how episodes can assist organisations with strategic practice and provide a framework for the systematic analysis of strategic episodes. With reference to the former they proposed Luhmann's theory provides four insights on the nature of strategic episodes:

1. Episodes are a necessary and routine part of organizational life – from a social systems perspective the routine suspension of normal operating structures is essential to the long-term survival of an organization.
2. Episodes are important not just for changing strategies but also for confirming and reinforcing them – realigning the organization, where appropriate, with the existing strategy.
3. Episodes are the routine focus of strategic practice – they facilitate engaging in strategic practice.
4. Episodes are the means to communicate the thoughts of strategists to managers – the context in which the exchange takes place and the types of communication that context makes possible.

With reference to providing a framework they believed Luhmann's social systems theory of communications provides a sociologically robust approach to deal with many of the problems relating to the change process by paying particular attention to the way episodes are initiated, conducted and terminated. From the perspective of this thesis the social systems theory adopted will be addressed at the end of the next section. However, common threads to be noted are communications, choice of distinction (or measure), meaning, history, uncertainty, decision-making and change.

Social Systems Theory – Emergentist/Morphogenetic

The alternative social systems theory considered in this thesis is the emergentist Realist Social Theory of Archer (1995, 2003). Traditionally sociologists followed one of two incommensurable forms of social explanation, namely individualism and structuralism (or collectivism). Individualists explain society as an aggregate effect of individual actions; structuralists conceive individual actions as consequences of social structures. A third

approach, structurationism, sees structure and agency as being mutually constitutive of each other. Giddens' Structuration Theory (1991) has gained favour as has Luhmann's social systems theory (outlined above).

In considering the traditional theories Archer argued that individualism doesn't deal properly with the relationships between people and society. She believes individualism largely ignores the social and cultural (structural) factors of interactions and provides agency with inappropriate powers which ultimately leads to the unwarranted prominence of individual understanding in explanations. Archer criticised structuralism for not properly advancing causation and emergence; however, recognised that, at the time, the 'framework of empiricism' with its criteria for existence was not conducive towards unobservable entities. Archer noted that by applying the 'accepted rules' of the time structuralists undermined the progress that might have been made. Archer (1995) commented the conflict between these traditional approaches was largely disregarded by researchers, "[…] at one extreme interpretive sociologists undertook small-scale interactional studies and simply put a big, etc. after them, implying that the compilation of enough sensitive ethnographies would generate an understanding of society by aggregation. At the other, large scale multivariate analysis pressed on towards some predictive goal without reference to the interactional processes generating such variables."

Archer suggested that the increase in support for Giddens' Structuration Theory has come about because it circumvents the limitations associated with individualism and structuralism by merging structure and agency. Archer is clear that structure and agency must be kept separate, is in no doubt that by not doing so investigation of their interaction will be compromised, and maintains Giddens' Structuration Theory is based on the incorrect assumption that language can be considered an adequate representation for society.

Archer (1995) presented a morphogenetic theory of the emergence, reproduction and transformation of cultural systems and social structures as an alternative to these approaches. Archer's principles for social analysis revolve around internal consistency between social ontology, explanatory methodology and practical social theorising. The social ontology she adopted had implications for the explanatory methodology she recommended, and this methodology has implications for the guidelines she offered for practical social theorising. Social realism and the principle of emergence were her ontological points of departure.

Archer termed her methodological approach analytical dualism which underlined the requirement to study the interactions between structure (and culture) and agency without conflating them. Here structure refers to social relations; culture to what is produced collectively and agency to what individuals do with it. The principles of emergence and analytical dualism led Archer to develop the morphogenetic approach to study structure and culture. Archer's Realist Social Theory draws on critical realism to give ontological depth to the morphogenetic approach. It has causal reasoning at its core by combining the concept of analytical dualism with critical realism to produce a description of structure and agency, termed the morphogenetic/morphostatic model. The concepts of morphostasis

and morphogenesis were introduced to social systems theory by Buckley (1967) and refer to processes which maintain and change a system's given form, structure or state respectively. According to Archer morphogenetic theory is "the practical methodological embodiment of the realist social ontology."

Analytical dualism states that cultural and social structures are separate from each other and distinct from agency. Archer used analytical dualism to make the case that sociological explanation comes from separating 'people and parts'. This allows the interaction of emergent (structure or agency) entities, more accurately reflecting reality in her view. Archer suggested, while analytical dualism is a guiding principle, researchers require practical guidance as well as good principles. She considered the morphogenetic framework provided a practical complement to critical realism by providing a robust method of analysing the interaction between structure and agency over time and space and captured this in two propositions:

1. That structure necessarily pre-dates the action(s) leading to its reproduction or transformation;
2. That structural elaboration necessarily post-dates the action sequences which gave rise to it.

Archer emphasised what is important to understand are the "conditional and generative mechanisms operating *between* structure and agency. This would be a logical impossibility were the two to be conflated (in any manner or direction)." By combining structure and agency the Structuration Theory inhibits investigation of any effects of one on the other or on their impact on the system at any given time. Archer outlined her morphogenetic cycle as comprising three phases:

- (t_1) structural conditioning → (t_2) social interaction → (t_3) structural elaboration (and their analogues for culture and agency).

This repeating cycle sees the particular configuration at time t_1 condition the practices of the system at time t_2 which aim to reproduce or transform the system to a new elaboration at time t_3, all of which will be modified in the next cycle of an iterative process. Archer viewed this approach as offering a practical methodological representation of realist ontology and a better alternative to individualism, structuralism and Giddens' Structuration Theory.

Emergentist theory is fundamental to Archer's form of causal reasoning. According to Elder-Vass (2007b) emergentism is more integrated with complexity thinking, ontologically more robust and more aligned with developments in systems thinking than Luhmann's functionalist approach. In comparing the approaches Elder-Vass (2007b) identified the core problems associated with emergentism as accounting for causality while countering reductionism and explanatory dualism. For emergentists, systems comprise entities which have emergent properties or causal powers (see section entitled Structures, Powers, Mechanisms, Events and Experiences in Chapter 4) and can be either non-physical or physical things. Social systems are entities which don't have a physical form and are an example of the former; human beings are an example of the latter. Emergent properties

are properties of wholes that are not possessed by their parts (see section entitled The Importance of Emergence in Chapter 4). Elder-Vass regarded the association with the whole to address the problem of reductionism. In critical realism emergent properties are explained by causal mechanisms which are processes that depend on interactions. The critical realist version of emergentism accepts that the causation of actual events comes from interactions between the causal powers of entities where effects require an understanding of the relationship of a system to its environment (see Chapter 4).

Autopoiesis is at the core of Luhmann's social systems theory. The concept that social systems can be autopoietic has been challenged by a number of scholars (for example, Mingers, 2002; Elder-Vass, 2007b). Elder-Vass (2007b) identified the core problems associated with Luhmann's theory as the role of meaning and self-reference in social systems. In Luhmann's social systems theory social systems are networks of communications (rather than networks of people or social practices). According to Luhmann the elements of a social system need to continuously produce new elements otherwise the system disappears. Social systems elements are communications that are recursively produced. From the point of view of causal analysis Elder-Vass suggested autopoiesis is flawed as an ontological approach. His analysis suggested Luhmann's theory isn't able to provide a response to causality and reductionism and only accommodates meaning and self-reference by ignoring the influence of causality on communications which Elder-Vass believes is untenable.

Mingers (2002) took issue with Luhmann's focus on communicative events not involving people within social interaction and also with Luhmann's approach to boundaries. Mingers considered Luhmann's theory as an abstract and reductive view of the social world and reflected "[…] the rich processes of social interaction between real people, become marginalised in favour of almost disembodied communicative mechanisms." Mingers' view of Luhmann's social systems theory as applied to organisations is that it offers a coherent approach which is abstract enough to be applied to most areas of the social world. However, in the context of organisations he considered Luhmann's approach leads to a reductive analysis being based on networks of communicative decisions. Nevertheless, Mingers (2003) concluded it could offer interesting insights when combined with other theories which is the position taken in this work.

From the perspective of this thesis the social systems theory adopted primarily follows the emergentist realist social theory of Archer (1995). It is selected because it provides a more logical and consistent explanatory vision of social reality based on critical realism. It is aligned with complexity theory and offers a direction for social systems theory that is ontologically stronger and more compatible with systems thinking (Elder-Vass, 2007b). However, Luhmann's concept of a social system in an organisation involving communicative decisions and 'episodes' as a means of change is a useful way to guide research into strategic practice (Lipscomb, 2006). Henry and Seidl (2003) provided a helpful framework for the systematic analysis of episodes in qualitative research. This thesis builds elements of both Archer's and Luhmann's social systems theories into its thinking albeit they can be considered as competing paradigms at the ontological level (Elder-Vass, 2007b). The common threads include social complexity and interaction, shared knowledge, collective

action, uncertainty, sense-making, decision-making, emergence, explanation and critical realism. From a Mode 2 management research perspective social systems theory is a core contributor and by taking an 'inside-out', social systems approach to organisational practice, social systems initiated episodes or interventions based on social mechanisms can improve OE, with PM providing a directional indicator of the impact.

3.5. Practice – Relevant Background

Human Intentionality and the Philosophy of Scientific Explanation

Ghoshal (2005) stated that for the last fifty years business management schools have reinforced the dominance of positivism, adding "we have adopted the 'scientific' approach of trying to discover patterns and laws, and have replaced all notions of human intentionality with a firm belief in causal determinism for explaining all aspects of corporate performance." Building on the arguments of Hayek (1989) and others, Ghoshal noted "it is an error to pretend that the methods of the physical sciences can be indiscriminately applied to business studies because such a pretension ignores some fundamental differences that exist between the different academic disciplines." He added "Combined with the pretense of knowledge, this ideology has led management research increasingly in the direction of making excessive truth claims based on partial analysis and unrealistic and biased assumptions." A similar sentiment is expressed by Miller et al. (2013).

Referring to the work of Elster (1983) Ghoshal expanded on these differences by focusing on the philosophy of scientific explanation. Elster's primary interest was in explaining technical change. According to Elster technical change "offers a challenge to analysis in that it is fundamentally unpredictable." With organisations in mind Elster approached technical change from two perspectives. The first considered rational-actor theory, where individuals are assumed to always make prudent and logical decisions based on a combination of self-interest and greatest benefit or satisfaction with a focus on goals to be achieved. The second perspective used evolutionary theory, where history, rather than future goals, is used to explain why organisations employ the techniques they do based on a process of trial and error linked to the accumulation of small, random changes. Both emergence and creativity are seen as important contributors to this approach.

According to Elster the philosophy of science can be separated into the humanities and the natural sciences (see Figure 3.7). Within the humanities a further level of differentiation can be made between the social sciences and the arts. Within the natural sciences it is possible to differentiate between the physical and the biological sciences. It is generally accepted that as a group the sciences can be characterised by their methods of investigation with the natural sciences, arts and social sciences applying the hypothetico-deductive, hermeneutic and dialectical methods respectively. Elster commented "the hypothetico-deductive method is *the* method for verification in all empirical sciences" whereas "the hermeneutic method is seen as a method for theory formation, it coincides with the notion of intentional explanation" while "the dialectical method as a procedure for

verification invokes some kind of appeal to praxis." Elster added "the dialectical method as a tool for theory formation can also be understood in several ways, the most interesting of which involves the notion of psychological and social *contradictions*. These; however, can be made intelligible in the standard causal-cum-intentional language of the social sciences."

Elster contended there are no real grounds for differentiating between the sciences using methods of verification as the problems of verification are largely the same in all disciplines; however, the difference in their subject matters require different approaches of explanation. By classifying the modes of explanation as causal, functional and intentional Elster aligned causal explanations with the physical sciences; functional explanations with the biological sciences and intentional explanations with the social sciences. Elster proposed "the basic building block in the social sciences is individual action guided by intention." Figure 3.7 captured Elster's view of how the sciences differ in terms of their modes of scientific explanation and how these are linked to theory formation.

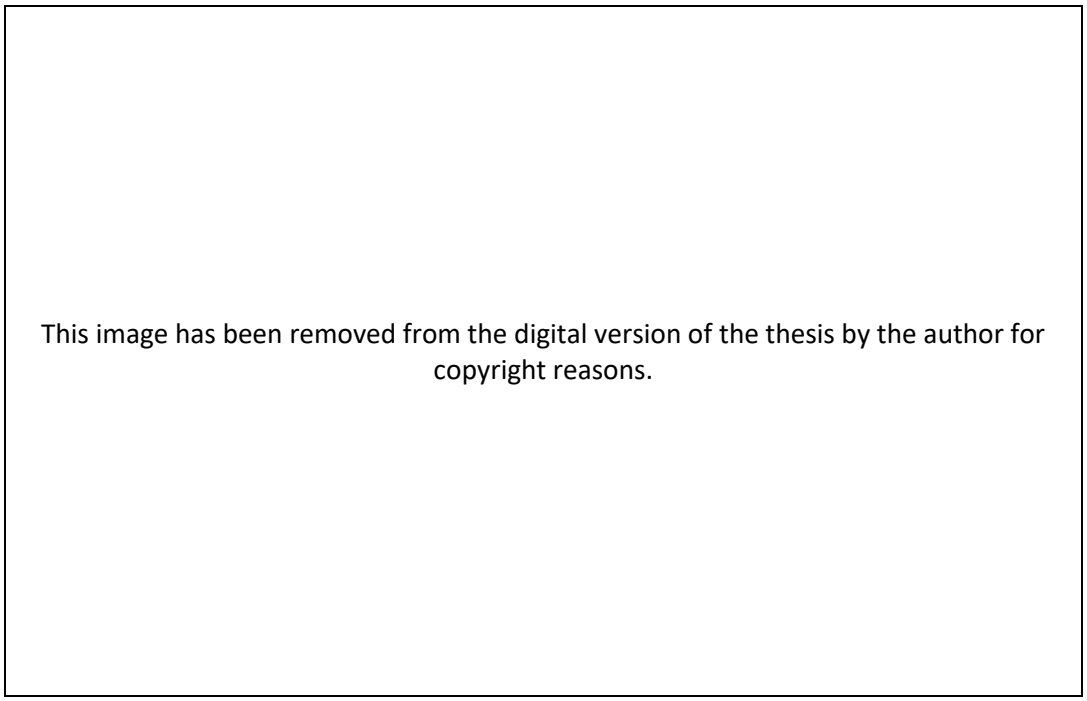


Figure 3.7: The Different Modes of Explanation for the Different Sciences (Ghoshal, 2005)

Elster offered some broad comments on causation and causal explanation. He adopted a Humean view of causation i.e. the causal relation holds as a consequence of a regular conjunction between events. Causal relations are generally considered to follow the principles of determinism, local causality and temporal asymmetry. Determinism assumes every event has a determinate set of causal antecedents, sufficient and necessary for its occurrence. Local causality means that a cause acts on what it is close to in terms of space and time. Temporal asymmetry means the cause needs to precede its effect. Mechanisms in scientific explanation are linked to the principle of local causality. The principle of temporal assymetry applies to all modes of explanation. However, for intentional

explanation intentional behaviour is not explained by the results that follow from it but by the intended outcome whether or not it is actualised (cf. Luhmann). Causal explanation in the social sciences is complex. As Elster commented in the overwhelming majority of social science cases "we are unable to predict macro-variables using only macro-variables, this does not mean that the society in question does not behave deterministically, only that it lacks a certain kind of stability." Elster captured this as "the paradox of turning creativity into a dependent variable."

Elster expressed a level of concern about the use of statistical techniques as ways of providing partial understanding of a phenomenon of interest when dealing with the social sciences. He warned about confusing correlation with causation, suggesting correlation should be considered no more than an indicator of there being something worthy of futher investigation. Put the other way around correlation analysis can be helpful when it supports the rejection of a causal hypothesis when the correlation is low.

Elster highlighted the primary difference between functional and intentional explanation as linked to "the changes being far from totally random, but to some extent directed; they are also screened by a mechanism in which human intentionality plays a crucial role." Intentional adaptation differs from functional adaptation in that the former can relate to the distant future whereas the latter is usually short-term and opportunistic.

Intentional explanation is what distinguishes the social sciences from the natural sciences. However, this does not mean that causal explanation at the individual and collective level isn't important. Intentionality is a behaviour undertaken deliberately for some goal or belief; intentional agents carry out actions as a means to their goal. By definition intentional behaviour is focused on the future with actions steered by the desired goal. As Elster commented "the conceptual network that underlies the analysis of intentionality is fairly complex." (cf. Holling, 2001). Intentional explanation revolves around a three-way relationship between action, desire and belief. It involves demonstrating that what was done was done for a reason. The future-focused element of intentional behaviour focused on goal delivery includes the capacity to choose to follow strategies for longer-term gain at the expense of short-term favourable outcomes or indeed accepting short-term pain. This behaviour reflects conscious decision-making. Operationally, consciousness involves an ability to consider and employ indirect strategies where judgement about what might or might not happen is vital. Elster stated "Consciousness may be defined as a medium of representation, an inner screen on which the physically absent can have a presence and make a difference for action in the present." There is no regularity to this. The overlap with Lebas and Euske's (2004) interpretation of performance as future-oriented and centred on decision-making is clear as is the expanded consciousness available from an operating social system.

Elster questioned whether there can be intentionality without rationality. He believed rationality "should be reserved for the cases in which it has explanatory power." Rational behaviour is usually linked to optimisation, where the rational agent makes a choice to act which not only is a means to his ends but also is the best of the means available (see 'What Good Looks Like' in Chapters 5 and 6). Intentionality can't always be considered rational

because there may be instances where latent expectations are not rationally formed due to complex interactions, or uncertainty about the future, or both. As Elster stated either of these sources of lack of knowledge independently can cause problems; however, when they operate together the outcome may be close to chaotic. Under these circumstances evolutionary theory is more likely to explain the observed outcomes.

Elster recommended a model appropriate for many cases of analysis in the social sciences, one based on intentional explanation of individual actions coupled with causal explanation of the interactions between individuals, and believed "we must 'understand' why – i.e. for the sake of the goal – the actors behave as they do; and then we must 'explain' why, behaving as they do, they bring about what they do." He suggested that postulating causal relationships between macro-variables is not sufficient and stated "we have explained nothing until we can show (i) how the macrostates at time t influence the behaviour of individuals motivated by certain goals, and (ii) how these individual actions add up to new macrostates at time t+1."

According to Blom and Moren (2010) human intentionality can be considered the driving force behind motives, considerations and choices and can be influenced by previous circumstances and previous choices. At the individual level motives, considerations and choices work by means of micro-social interactions (for example: oral, written language, gestures, symbols etc.) and by social and material structures (for example: role expectations and communications technology). At the organisational level collective actions work by means of meso-social interactions (interactions within and between groups) and also by social and material structures (for example: routines, regulations, documents etc.). Blom and Moren consider social mechanisms to comprise causes, motives, considerations and choices and social interaction. Human intentions are accommodated by means of social interaction. The mechanisms involved are a combination of these social interactions and the contextual conditions.

Ghoshal (2005) explained that for the majority of issues relevant to management research human intentions are key. However, management theories are in the main causal in their mode of explanation. The lack of getting to grips with social phenomena as phenomena of organised complexity has contributed to what Ghoshal sees as 'bad management theory destroying good management practice'.

From the perspective of this thesis the model of intentional explanation leading to conscious decision-making, intentionality as a behaviour undertaken deliberately and the work of Blom and Moren (2010, 2011) on micro and meso social mechanisms overlaps with the philosophy of critical realism and offers additional insights at the individual and group level in terms of motives, considerations and choices driven by social interactions and the contextual conditions. From a Mode 2 management research perspective human intentionality fits with the management practice of decision-making and social systems.

Rational Decision-Making in Organisations and Bounded Rationality

Psychological evidence demonstrates people don't employ rational processes when faced with complex choices (Garbuio et al., 2011) but tend to show a level of bias based on a

variety of cognitive influences. On a daily basis human beings make many decisions within and on behalf of organisations based on incomplete information. This happens partly because their knowledge is incomplete and time constraints cap gathering more, partly because people are unable to use all the information available to them while managing multiple problems concurrently, and partly because the environment is ever-changing as a result of the multitude of different internal and external interactions underway at any time and is, therefore, highly uncertain (Simon, 2000; Gigerenzer, 2001; Brooks, 2008; Garbuio et al., 2011). In short, organisations continually make decisions about known and unknown states under the constraints of limited time, knowledge and problem solving capability.

Simon (1979), within his Nobel Memorial Lecture (December 1978), reviewed decision-making in organisations. He registered that "Underpinning the corpus of policy-oriented normative economics, there is, of course, an impressive body of descriptive or "positive" theory which rivals in its mathematical beauty and elegance some of the finest theories in the physical sciences." However, he noted that the relevance of some of this work to the real world has been questioned and specifically its application to organisations is highly suspect. While acknowledging that in empirical science the commitment is to successive approximations, for well established theories the tendency is to accommodate deficiencies by iterative revisions rather than by challenging fundamental assumptions. With reference to the assumptions underpinning the dominant theory of economic sciences applied by Friedman (see Section entitled Focus on Positivism within the Social Sciences) and others, Simon (1979) commented "There can no longer be any doubt that the microassumptions of the theory – the assumptions of perfect rationality – are contrary to fact. It is not a question of approximation: they do not even remotely describe the processes that human beings use for making decisions in complex situations." Interestingly, Greenspan, Haldane and King, all leading economists, have reached the same conclusions again after the 2008 recession. Simon (1979) added that there are alternative theories that describe how human decision-making takes place which deliver much closer approximations to what actually happens. Most involve some version of bounded rationality, summarized by Simon (1979) as "the need to search for decision alternatives, the replacement of optimization by targets and satisficing goals, and mechanisms of learning and adaption."

Bounded rationality refers to the idea that the decisions organisations make are determined not only by the desire to meet overarching goals but also by the limited knowledge of the decision-makers themselves (Simon, 1972). According to Simon (2000) rational behaviour in the real world is as much controlled by what is in the decision maker's mind (inner environment) as by the world in which they act (outer environment), for example, DeTienne et al. (2008). Moreover, the theory of bounded rationality is "as much concerned with procedural rationality, the quality of the processes of decision, as with substantive rationality, the quality of the outcome. To understand the former, one must have a theory of the psychology of the decision-maker, to understand the latter, one needs have only a theory of the goal (the utility function) and the external environment."

Simon (1979) indicated that many investigations have been undertaken into decision-making in organisations but they are not readily summarisable. Most have taken the form of case studies linked to specific decisions an organisation made. No systematic methods

have been used to investigate the content of the case studies to establish whether any general theory of decision-making in organisations might be extracted. However, Simon noted "the case studies of organisational decision-making, therefore, represent the natural history stage of scientific enquiry."

Simon (1979) outlined some examples of attempts to build theories of the 'business firm' which included behavioural assumptions. He noted, in general, these theories departed from the classical approach in not employing the assumption of perfect rationality, in replacing the assumption of profit maximisation by one of goals defined in terms of targets where 'organizational slack' is introduced and dependent on motivational and environmental variables, and in the inclusion of organisational learning. The theories also assumed that the environmental disturbances which occur would be of such a scale as to "prevent the classical solution from being an adequate approximation to the actual behavior." The inclusion of 'organizational slack', or excess capacity, to the model introduces complexity into the organisation's behaviour. Since in practice the organisation may be far from any optimum position the 'slack' acts as a buffer between the environment and organisation's decisions thereby accommodating a level of unpredictability or uncertainty; for example, aim-off in Sales and Operations Planning (S&OP). According to Simon (2000) dealing with uncertainty, and in particular, with the uncertainty of how others react to actions remains a challenge and an ongoing subject for research (see Luhmann's social systems theory). Clearly different decisions can result in different behaviours and outcomes. The sensitivity of outcomes to the decision mechanisms isn't reflected in the classical theories and as such predictions from them must be treated with caution. As Simon (2000) commented the decision-making processes for generating alternatives for choice will be an important direction for research.

According to Simon (1979) "Human behavior, even rational human behavior, is not to be accounted for by a handful of invariants. It is certainly not to be accounted for by assuming perfect adaptation to the environment. Its basic mechanisms may be relatively simple […] but that simplicity operates in interaction with extremely complex boundary conditions imposed by the environment and by the very facts of human long-term memory and of the capacity of human beings, individually and collectively, to learn." In a paper focused on bounded rationality in social science Simon (2000) commented "The social sciences require theories built around realistic models of human actors; that capture that realism only approximately, but avoid over-simplification where it makes a consequential difference." According to Simon this requires "formal methods for building theories, and empirical methods for testing them, and – perhaps most important – empirical methods for discovering the important phenomena of thinking and decision making." Again the overlap with Lebas and Euske's (2004) model of performance being essentially a decision-making process and some of the thinking in Luhmann's social systems theory (1995) is evident.

Foss (2003) concluded that as a result of a lack of definition and a lack of clarity on how bounded rationality might be modelled, but primarily because of its lack of alignment with mainstream economics, bounded rationality has not been absorbed into organisation theory. It has been used to support and explain other concepts and insights, particularly in the areas of dynamic capabilities, competence-based and resource-based (RBV) approaches

and the evolutionary theory of for-profit organisations. As noted by Foss these approaches all have common characteristics “notably an emphasis on experiential, localized, and socially held knowledge and learning processes as a key aspect of the firm.” Based on better developed concepualisations and greater clarity on how it could be applied Foss argued for greater use of bounded rationality in organisation science.

From the perspective of this thesis the concept of bounded rationality recognises the reality of decision-making in organisations and the uncertainty absorbed in all decisions taken due to limited and incomplete information in what is an evolving and adaptive complex system. It provides further understanding of why theory struggles to cope with the complexity of practice, reinforcing Boulding’s (1956) comment “on our ability to formulate.” From a Mode 2 management research perspective bounded rationality fits with the management practices of knowledge integration and decision-making.

Practice-Based Views of Strategy Based on Bounded Rationality

According to Bromiley and Rau (2014) operations management research generally focuses on the application of common practices aimed at helping organisations make specific decisions to improve operational and/or business performance whereas strategic management research operates more at a macro-level. Bromiley and Rau perceived an opportunity was being missed to improve OP and proposed, what they termed, a Practice-Based View (PBV) of strategy scholarship to bridge this gap.

Bromiley and Rau contended that applying the Resource-Based View (RBV), as described by Barney (1991, 2001a, 2001b), Barney et al. (2011) and others, to the field of operations management is of limited value because it focuses on competitive advantage which exists at the overall business rather than operations level. They added, defining and measuring competitive advantage is difficult and, in practice, rarely done in the RBV literature with some accessible measure of performance typically used as a proxy for sustained competitive advantage. Bromiley and Rau believed the PBV addresses issues that the RBV has with its choice of dependent variable, namely sustainable competive advantage, and the explanatory variables that describe sustainable competitive advantage. According to Bromiley and Rau the main difference between the RBV and the PBV is that the former relies on unique, differentiating activities that support sustained competitive advantage whereas the latter concentrates on common activities that represent the routine practices undertaken by most organisations and which can have a major impact on performance. They argued the valuable, rare, inimitable and non-substitutable resources singled out by the RBV are not the only reason for variations in OP; the generic practices comprising the PBV have as big an effect. They also challenged the RBV assumption of economic rationality i.e. that organisations will, in time, apply all practices open to them in the public domain. The RBV assumption is this leads to firm homogeneity and equal profitability, and firm heterogeneity based on valuable, rare, inimitable and non-substitutable practices is required to provide a route to competitive sustainable advantage.

In the PBV, practice is defined as an activity or set of activities readily available to most, if not all, organisations. Examples of such management and operational practices include having clear organisational goals, introducing commitement-based HRM practices,

operating formal PMM processes, running S&OP processes, undertaking predictive maintenance, employing stage-gate product innovation processes and 'benchmarkable' industry-standard quality and safety practices. The PBV looks to investigate how these imitable and readily transferable practices influence performance against the backdrop that most organisations operate and compete using these common practices with different levels of competence and different emphasis.

Bromiley and Rau believe the PBV is capable of delivering greater understanding of the determinants of performance and a route to deriving tacit knowledge from routines, using this to introduce new and improved practices through developing and adapting organisational capabilities (Zollo and Winter, 2002). In one sense the PBV is concerned with making the organisation 'the best it can be' within the position it occupies. Bromiley and Rau's approach rejected economic rationality and incorporated the principles of bounded rationality (Simon, 1979, 2000). In short organisations don't know of and/or don't apply all of the commonly available management practices open to them. Bromiley and Rau proposed that the PBV "allows for variation in adoption of beneficial practices, and for ties between such adoption and firm performance" and that organisational or industry performance demonstrate a continuum of performance from outstanding to poor irrespective of the performance measures considered – PM acts simply as an directional indicator of performance (Bourne et al., 2013). This overview reflects practical reality in the organisations I have experience of.

Bromiley and Rau (2014) indicated that PBV researchers should target organisational or business unit performance as the dependent variable. Figure 3.8 describes the PBV model of strategy research. The notation applied is that normally used in path analysis i.e. rectangular boxes represent observed variables, ellipses represent unobserved variables and straight arrows signify that the variable at the base of the arrow causes the variable at the head of the arrow. In Figure 3.8 the practices are important entities in their own right, with the explanatory variables influencing use of the practices.

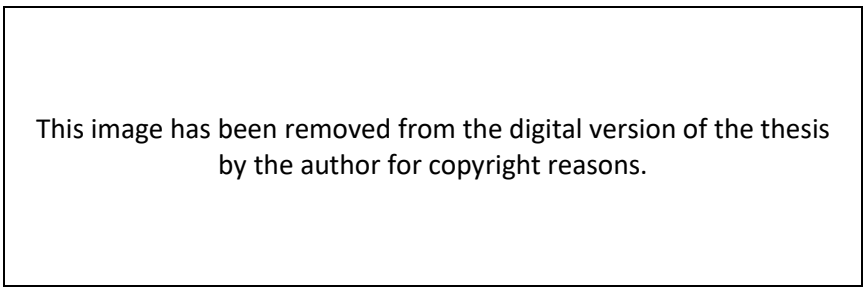


Figure 3.8: PBV Model of Strategy Research (Bromiley and Rau, 2014)

The PBV is based on the scientific approach but recognises a level of complexity from management judgements and decisions, the potential for complex interactions between practices and the contextual influence (cf. Lebas and Euske's (2004) description of

performance). Understanding practice needs qualitative as well as quantitative analysis; however, Bromiley and Rau noted "qualitative research has a limited ability to identify effective processes rigorously." According to Bromiley and Rau in addition to producing information of value and relevance to practitioners the PBV offers the potential to explain performance variations and the potential for prescription. Bromiley and Rau suggested that explaining performance using the PBV model will depend on:

1. The use of specific practices
2. The details of how those practices are used
3. The interaction of those practices with other practices in the firm
4. The behaviour of competitors

More recently with reference to the adoption and utilisation of specific practices Bromiley and Rau (2016) stated the PBV assumes organisations will not apply every beneficial practice and acknowledged the choice of what is used depends on "social desirability and legitimacy, firm networks, and the behavioral theory of the firm to suggest a variety of factors that will influence adoption beyond actual benefits of the practice." They comment social factors will affect the search for and adoption of new practices, as will managers' biases, opinions, pressures, constraints etc. With reference to the performance outcomes of specific practices they see organisational history and context playing a critical role. How much a practice benefits an organisation will depend on other practices operating and practices can affect performance directly and indirectly. The level of uncertainty Bromiley and Rau describe is high but reflects reality and makes prediction inappropriate.

Directionally, successful application of the PBV moves an organisation towards the RBV. The two views reflect different positions in the spectrum having the same fundamental building blocks. Indeed, the difference is artificial when viewed from a practitioner's perspective. In response to Bromiley and Rau's critique of the RBV, Hitt et al. (2016b), proposed the views are complementary. Hitt et al. noted competitive advantage is a moving target which once gained can be lost. One way to delay this is if the practice competitors are attempting to match is socially complex and relies on, for example, a series of capabilities undertaken in a particular manner by communities-of-practice.

Whilst supporting a practice-based approach Jarzabkowski et al. (2016) saw Bromiley and Rau's (2016) work as overly narrow, focusing primarily on the 'what'. They preferred to apply the three key elements of practice theory (see section entitled Theory of Practice, Strategy-as-Practice and Change), namely the 'what', 'who' and 'how' of practice (Feldman and Orlikowski, 2011) and suggested that by omitting 'who' is engaged in the practices and 'how' the practices are carried out Bromiley and Rau risk mis-attributing performance differentials. Jarzabkowski et al. emphasised the interactive relationship between practice and practitioners (cf. entwinement strategy described by Sandberg and Tsoukas, 2011) and the influence the 'who' has on the impact of practice as well as the importance of understanding 'how' practice is done and the impact context has. They highlighted that there is frequently a gap between stated and actual practice.

Jarzabkowski et al. (2016) considered Bromiley and Rau (2016) as optimistic in attempting to statistically relate practices to performance because "the chain of causality is too long

and dependent and independent “variables” are not entirely separable.” The perspective offered by Jarzabkowski et al. emphasised entanglement and the interdependence of practices rather than variable-based reasoning and is aligned with a number of authors who believe the level of uncertainty is such that predicting OP with confidence is impossible (March and Sutton, 1997; Lebas and Euske, 2004; Fleetwood and Hesketh, 2008; Mitleton-Kelly, 2003, 2011; Miller et al., 2013).

Jarzabkowski et al. recommended a more integrated perspective that produces “more precise and contextually sensitive theories about the enactment and impact of practices as well as about critical factors shaping differences in practice outcomes.” This led them to propose a model of strategy practice based on the key elements of the theory of practice as shown in Figure 3.9. The model is not dissimilar to Bromiley and Rau’s with practices of central importance to performance. However, unlike the Bromiley and Rau’s proposal these practices can display multiple interdependencies of effects between practices (practice 1 to practice ‘n’). In addition, interactions may be complex and emergent in nature, leading to the creation of new strategy practices, often through observation of practice adaptation. Figure 3.9 highlights that practices are influenced strongly by the practitioners who develop and champion them.

Figure 3.9: A Schematic Model of Strategy Practice (Jarzabkowski et al., 2016)

In Figure 3.9 Jarzabkowski et al. proposed that how practices are carried out mediates between practices and outcomes and not taking this into account may lead to mis-attribution. In contrast to Bromiley and Rau, Jarzabkowski et al. noted that “If we move beyond views of practices largely transferred intact between contexts and actors, to understanding *how* those practices are enacted locally in practice, often in ways that make them barely recognizable to their originators, we may develop theories about the critical role of practice adaptation or even practice transformation in generating performance outcomes.” Jarzabkowski et al. commented that their model “would inform a wider approach to practice outcomes that would allow researchers to consider not just firm performance but also impacts on the practices themselves. That is, the enactment of practices feeds back on those practices”, an iterative process.

Jarzabkowski et al. illustrated how an 'integrated practice perspective' provides different insights and new information for strategic management. For example, the RBV assumes that the combination of starting conditions and path dependence can generate capabilities within organisations that can lead to competitive advantage. By taking a practice-based perspective and paying "attention to the temporal practices of strategy making" the traditional view of path dependence as largely pre-determined, can be seen rather as one where the actual practice of strategy makers is heavily influenced by the organisation's history. Interpretations of the past, present and future form the context for constructing new paths – emergence in operation comprising uncertainty absorption. These new paths may result in practices no longer considered valuable from the RBV sense of valuable, rare, inimitable and non-substitutable becoming valuable again through re-interpretation and re-work of existing practice to fit the current context and support future strategy. Jarzabkowski et al. see this as the 'how' of practice enactment transforming the 'what' of the original practices.

According to Jarzabkowski et al. "how practices are enacted mediates between practices and outcomes" and is consistent with how the social system operating in the organisation is proposed to mediate between PM practice and OE. The danger of a superficial understanding of how a social system operates could be one of mis-attributing performance differentials: for example, selected HRM bundles are held up as practices to adopt when it is '*how'* the social system implements them that makes the difference. Jarzabkowski et al. suggested that their "integrative practice model will therefore aid scholars in generating more accurate and contextually sensitive theories about the enactment and impact of practices and the critical factors shaping variation in both processes and outcomes."

From the perspective of this thesis the practice-based view is a pragmatic approach based on what the actors involved in decision-making think and know and also on the context in existance at the time (Garbuio et al., 2011). While Bromiley and Rau (2016) made no direct mention of any influence from the social system in operation in the organisation other than the impact of managers' biases, opinions etc., Jarzabkowski et al. highlighted a direct link through entanglement and interdependence of practices and interactions which are complex and emergent. Indeed practice adaptation and practice transformation are seen as critical to the generation of performance outcomes. From a Mode 2 management research perspective the PBV fits with complexity theory and the management practice of decision-making.

Both the PBV and the RBV make use of dynamic capabilites. According to Zollo and Winter (2002) a dynamic capability can be defined "as a learned and stable pattern of collective activity through which the organization systematically generates and modifies its operating routines in pursuit of improved effectiveness." Dynamic capabilities rely on cross-functional teams bringing a blend of skills representing relevant disciplines and functions, taken from the social system in place. The input from such teams are context and people specific and, therefore, are imperfectly imitable and broadly aligned with the unique historical conditions and social complexity criteria outlined by Barney (1991) and the reconceptionalisation of dynamic capabilities proposed by Eisenhardt and Martin (2000).

Dynamic Capabilities and Resource Configurations

The RBV looks at how competitive advantage is established and sustained in an organisation (Barney, 1991). Organisations are conceptualised as bundles of resources. These resources are heterogeneously spread across organisations. If these resources can be considered valuable, rare, inimitable and non-substitutable the organisation has the potential to achieve sustainable resource-based competitive advantage. This makes the assumption the organisation has discretion over how it uses its resources, in particular, its human resources and the knowledge they have or could generate.

The concept of dynamic capabilities was developed twenty years ago. Research into the topic aims to explain how organisations can manage change to sustain their competitive advantage. Initially two complementary approaches were employed. Teece (2007) adopted a rational view where the organisation as a whole can be considered as a rational actor aiming to deliver maximum competitive advantage. Eisenhardt and Martin (2000) adopted a normative view where action is considered as an outcome of historically shaped norms and routines undertaken by organisational groups or sub-groups. Subsequently developments based on behaviourism and bounded rationality produced hybrid views. In response to criticism regarding inconsistencies and a lack of theoretical foundation researchers explored dynamic managerial capability (Helfat and Martin, 2015). This approach looked at the capacity of managers to effect strategic change and concluded managers with greater dynamic managerial capability are able to adapt and change more readily than those with less capability with subsequent ramifications for competitive advantage. Barney and Felin (2013) commented that more work needs to be done on understanding how capabilities are built, in particular, the role of specific actors and how the architecture of human and social interaction determines the aggregate outcomes and collective capabilities observed.

Argote and Ren (2012) proposed a transactive memory system (TMS) can be considered as a microfoundation of an organisation's dynamic capability. The TMS construct focuses on integrating and using distributed expertise; it is a shared system that people in groups develop to leverage their collective knowledge, know-how and skills. TMS provides individuals and teams with access to more knowledge than any one person possesses (Wegner, 1987; Lewis, 2003; Lewis and Herndon, 2011). Organisational TMSs are complex, developed by social interaction and provide a collective approach to problem solving: a community-of-practice. TMSs are a source of emergent collective knowledge and contribute to complex activities where processes and the knowledge and skill demands change throughout the life-time of the task (Lewis and Herndon (2011); see section 5.4 entitled Development of the Organisational Effectiveness Framework in Chapter 5). Their social complexity makes this an intangible asset.

Research into dynamics capabilities tries to explain how organisations change to maintain competitive advantage. MacLean et al. (2015) argued that innovation is essential for change and contend this is inadequately captured in any of the rational, normative or hybrid views of dynamic capabilities. MacLean et al. stated these concepts relate to different levels of analysis with rational action aligned to the level of the organisation and

normative action to the level of a group or collective whereas the concept of creative action which they propose operates at the level of the individual actor. They argued input at all three levels is required to understand dynamic capabilities fully. Moreover, they suggested that the concept of creative action comprises the three components show in Figure 3.10. The first component is emerging intention. MacLean et al. took a different stance to intentionality than Elster (1983) suggesting intentions don't precede action but emerge during the action itself as the action attempts to overcome the immediate barriers presented. According to MacLean et al. the individual "does not act *on* a given situation as if from the outside but from *within* the situation in a way that is 'the very essence of creativity'" or, in short, as the action unfolds the individual's initial interpretation of the situation may change which might result in a revision of the outcome. They considered intention as the result of "interactions between the situation and the multiplicity of individual motivations help explain how new courses of action emerge" and saw this as crucial to explaining sources of innovation in dynamic capability research. The second component is embodied expression. This relates to the behaviours of those involved. MacLean et al. commented on "the multiplicity of motivations that the individual brings to the situation is the result of his or her earlier biography." They suggested that among other things dynamic capability research needs to investigate the impact of leadership, experience, relationships, personality etc. The third component is interactive identity formation. This relates to the formation of identity through interaction with others. MacLean et al. noted that "human beings are embedded in a network of social relations within which their identity as individuals is formed." Identity is moulded and remoulded through interactions and, by default, is context specific.

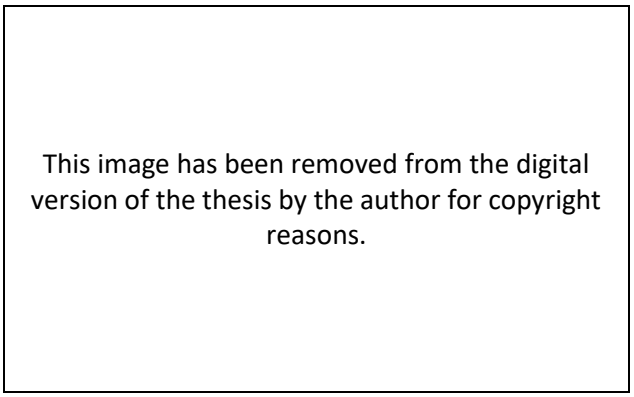


Figure 3.10: Components of creative action (MacLean et al., 2015)

MacLean et al. contend emerging intention, embodied expression and interactive identity formation have been ignored in dynamic capabilities theorising and that understanding the components of creative action "might therefore benefit from increased cross-fertilization with research in adjacent domains – such as complexity theory (particularly as regards social systems), entrepreneurship (with a focus on strategists and leadership traits) and theories of learning and identity formation in organization theory (such as those concerned with communities of practice)." As will be discussed the emergent, creative elements

emanating from communities-of-practice make an important contribution to the social systems theory advocated in this thesis.

Brown and Duguid (1991) explored organisational learning and conclude significant learning and innovation is generated through informal communities-of-practice. They contended understanding practice is central to performance, actual practices determine the success or failure of organisations and separating learning from working is ill-founded, arguing the "concept of 'learning-in-working' best represents the fluid evolution of learning through practice." As Bohm (1980) noted experience and knowledge are inseparable aspects of one process, knowledge is not some separate experience. In general organisations are too willing to assume complex tasks can be translated successfully into a set of simple steps that can be followed without need of understanding or insight and forget learning is a social construct best undertaken in the context in which it has meaning, where knowledge can't be isolated from practice.

Cook and Brown (1999) redefined the traditional understanding of organisational knowledge by expanding the traditional view of knowledge and also introducing the concept of knowing linked to practice to provide a different perspective on what people know and how they know. According to Cook and Brown knowledge and knowing complement one another. They proposed explicit, tacit, individual and group knowledge exist as four separate, equal and mutually supporting forms of knowledge (which they refer to as the *epistemology of possession*) but maintained that not all of what is known is captured by these forms of knowledge. They suggested that in addition, knowing that is part of action (which they refer to as the *epistemology of practice*) exists. In short, they believe knowing how to do things takes more than knowledge alone. They see knowledge as abstract and static whereas knowing is dynamic, concrete and relational; it relates to the interaction between the knower and the environment. A pluralistic epistemology based on knowledge held by individuals and collectives that organisations make use of has also been referred to by Tsoukas (1996). Tsoukas described organisations as entities in constant flux where knowledge exists as a distributed knowledge system, is emergent and continually reconfiguring. Tsoukas added the key to achieving coordinated action is to appreciate organisations are discursive practices, communities. Cook and Brown (1999) commented "we must see knowledge as a tool at the service of knowing not as something, once possessed, is all that is needed to enable action or practice." They believed by bridging the epistemologies of possession and practice organisations can leverage knowledge and knowing. The interplay between knowledge and knowing plays a key role in how knowledge is generated, transferred and applied in organisations. Harnessing this requires organisational structures that support this interplay. In the OE Framework described in Chapter 5 communities-of-practice are structures which do this by applying a similar approach to the concept of productive enquiry described by Cook and Brown. Knowledge represents the 'what' and some of the 'why', knowing represents the 'how' and some of the 'why' and tends to be the source of new understanding with that source generally coming from people interactions.

According to Eisenhardt and Martin (2000) dynamic capabilities have equifinality, homogeneity and substitutability across organisations, contrary to the characteristics of

RBV resources. Dynamic capabilities then are not a source of competitive advantage by themselves; rather any advantage comes from the resource configurations generated. Different market dynamics are reflected in different types of dynamic capabilities. Typically dynamic capabilities comprise particular strategic and organisational processes such as new product development or strategic decision-making that can generate value by directing resources into new configurations. They can be combinations of a number of simpler capabilities. For moderately dynamic markets dynamic capabilities rely on existing knowledge and fairly predictable processes whereas for 'high-velocity' markets they are simple, experiential, unpredictable processes that depend on new knowledge and iterative implementation to produce unpredictable results. If dynamic capabilities and organisational knowledge and knowing are considered from an organisational change and social systems perspective this locates them closer to the high-velocity case described above. New, context-specific knowledge and knowing is required based on experiential input, rapid assessment and learning via an iterative process. In high-velocity markets the duration of any competitive advantage is unforeseeable, time is important and the dynamic capabilities themselves are unpredictable.

From the perspective of this thesis the recognition that understanding practice is central to performance, the complementary nature of knowing and knowledge, the roles of social systems, social networks, complexity theory and communities-of-practice in leveraging distributed knowledge from within the organisation to increase organisational learning all support how the theory-practice gap can be reduced. Eisenhardt and Martin's (2000) and MacLean et al.'s (2015) interpretations of dynamic capabilities and Cook and Brown's (1999) 'generative dance' between knowledge and knowing have strong social systems and emergence elements to them and similarities to the logic of practice described by Sandberg and Tsoukas (2011). From a Mode 2 management research perspective dynamic capabilities fits with social systems theory and the management practice of knowledge integration.

Logic of Practice through Practical Rationality

Sandberg and Tsoukas (2011) attempted to address the gap between theory and practice in applied social science by proposing practical rationality as a more relevant management research philosophy than scientific rationality (positivism) for developing theories to represent the 'logic of practice'.

Practical rationality theories investigate what comprises organisational practices and how they are implemented. It takes a more people-oriented and holistic stance than the PBV (Bromiley and Rau, 2014, 2016). According to Sandberg and Tsoukas as a method for theorising practice scientific rationality suffers from three major flaws. First, it fails to recognise the extent to which people are involved in organisational practice, how practitioners are engaged in the entirety of what is going on, how rapidly people, things and circumstances change and how actions can't be reduced to a set of contingently linked variables. As Sandberg and Tsoukas stated "when investigating an organizational practice, a researcher does not explore stand-alone entities but, rather, meaningful relational totalities – namely, interrelated humans and objects that show up in terms of familiar

practices for dealing with them." Second, it fails to recognise the context in which practitioners operate. In a need to simplify it looks to "construct homogeneity in heterogeneous phenomena", the outcome of which is often an aggregate view which has lost it contextual relevance. Third, it fails to recognise the temporal flow of practice. It ignores the changing priorities, uncertainties and urgencies experienced in organisations thereby failing to consider the level of complexity which influences the timing of actions and judgements needed.

Sandberg and Tsoukas (2011) proposed practical rationality can reduce the theory-practice gap within management and organisational science. Essential to gap closure are the different ontological and epistemological assumptions between the two frameworks which mean practical rationality makes theory a derivative of practice rather than practice a derivative of theory. Practical rationality looks to reflect the holistic approach, heterogeneity and context, and the temporal flow of practice that Sandberg and Tsoukas considered absent from scientific rationality. The framework of practical rationality is based on the existential ontology of Heidegger (1996) and Schatzki (2005). Heidegger's view of being-in-the-world assumes the most basic form of being is entwinement i.e. we are always entwined with others and things in specific non-contingent sociomaterial practices. According to Sandberg and Tsoukas the concept of entwinement constitutes the logic of practice. For something to be it must exist as "part of a meaningful relational totality with other beings." Furthermore, since sociomaterial practice can exist across time and space, the logic of entwinement looks to focus on 'means' rather than 'ends' because 'ends' can change. Much of this is aligned with the approach taken in this thesis.

The logic of practice relies on the concept of absorbed coping as the principal method of engaging with the world, where those involved in practice are immersed in their activities without being aware of their involvement. Only when an interruption happens does the practitioner focus on the sociomaterial practice. Heidegger proposed two forms of interruption, temporary breakdowns and complete breakdowns (cf. Luhmann's episodes). When faced with a temporary breakdown practitioners switch from absorbed coping mode to involved thematic deliberation mode. The practitioner remains involved in a practical activity but is paying deliberate attention to managing the interruption before reverting to the absorbed coping mode once it is dealt with. According to Heidegger (1996) it is through temporary breakdowns that the relational whole of the sociomaterial practice become visible. If the breakdown is not readily recoverable the practitioner's absorbed coping is interrupted permanently. The practitioner then becomes disconnected from absorbed coping and moves from involved thematic deliberation to theoretical detachment. At this point the relational whole the practitioner was pre-occupied with disappears, leaving just the discrete entities that make up the sociomaterial practice. Put another way these refer to: first, a minor distraction which does not disturb the overall flow of the activity and second, a major distraction which destroys the flow of the activity. Sandberg and Tsoukas described the "changeover in our modes of engagement – from absorbed coping to involved thematic deliberation and to theoretical detachment – demonstrates how the epistemological subject-object relation is a derivative mode of being-in-the-world." Practitioners are initially absorbed in practice until an interruption then they think about the practice i.e. the existential ontology of being-in-the-world comes before the subject-

object separation. Sandberg and Tsoukas summarised this as “what constitutes the logic of practice is not the epistemological subject-object relation but the entwinement of ourselves, others, and things in a relational whole in the sense that we are always already engaged in specific sociomaterial practices.” Only when practitioners are diverted from their absorbed coping mode to involved thematic deliberation does the logic of practice become apparent fleetingly. If the diversion is more significant i.e. theoretical detachment, then the logic of practice is masked and practice presents itself as a series of discrete entities that make up sociomaterial practice.

Sandberg and Tsoukas (2011) outlined strategies for theorising using practical rationality. Their framework consists of two major departures from scientific rationality. These are 1) entwinement (or focusing on the relational whole of specific sociomaterial practices) replaces entities as the departure point and 2) involved thematic deliberation (linked to minor interruptions) replaces the scholastic attitude of theoretical detachment. Accommodating these departures characterises the strategy for defining the logic of practice.

Acquiring information on entwinement entails researchers understanding how practitioners are normally concerned with the relational whole which comprises their tasks. Sandberg and Tsoukas demonstrated the application of the entwinement strategy through a corporate law case study. They claimed that the existential ontological perspective facilitated a better appreciation of what constituted competence in work performance. The results suggested that professional competence was not defined by knowledge, skills and attributes or bundles of HRM practices alone but was the entwinement of people, their skills, tools, resources, prestigious office building, ways of practicing law etc. i.e. the totality of the package and the overall internal and external context which mattered. This is also consistent with the observation that the same policies and procedures and knowledge, skills and attributes can result in different outcomes because not all that matters can be measured and outcomes are context specific.

The strategy of searching for temporary breakdowns to reveal the relational whole of the sociomaterial practice looks for first-order breakdowns, linked to organisation practices themselves or second-order breakdowns which are deliberately created by the researcher. The strategy for searching for first-order temporary breakdowns comprises investigating practitioners’ responses to 1) foiled expectations, 2) the emergence of deviations and boundary crossings and 3) the awareness of differences. Foiled expectations occur when a practice is interrupted as a result of the emergence of unintended consequences. Deviations and boundary crossings emerge as a result of unexpected outcomes. This allows researchers to observe how practitioners respond to these breakdowns which helps identify what is important to the logic of the sociomaterial practice. Awareness of differences relates to observing how practitioners respond to becoming aware of practices from history, practices present in other organisations or new practices proposed from change activities and whether this uncovers anything of significance in relation to their own practices. Another strategy for searching for breakdowns is for the researcher to create them deliberately. These are what Sandberg and Tsoukas termed second-order temporary breakdowns. There are several ways this can be achieved; for example, scenario planning,

counterfactual thinking, instructive language and thought experiments, all of which encourage practitioners to consider possibilities and potentialities outside what they do normally. Sandberg and Tsoukas reviewed an example from work by Argyris where, through high-involvement research designs, practitioners were invited to describe an organisational problem, then helped to question their assumptions and reflect on them critically at which point practice then becomes reflexive. These interventions introduced deliberate temporary breakdowns; practitioners were invited to step back from their absorbed coping mode and enter into involved thematic deliberation, allowing them to consider how they practice and reflect on the relational whole. This effective audit of current practice provides a route to improving practice.

Sandberg and Tsoukas (2011) outlined how to develop theory through the strategy of entwinement and the strategy of temporary breakdowns. In the case of the former (entwinement) this involves:

1. Taking sociomaterial practice as the departure point. This identifies the constituent entwined entities comprising the sociomaterial practice i.e. what practitioners routinely do and for what purpose.
2. Looking for how practitioners competently perform and with what outcome. The focus is not simply on people but on the activities they are involved in to achieve a particular purpose. This identifies patterns of sociality, use of tools and empowerment.
3. Searching for the distinct ways activities are performed. This identifies the sense in which the practice is enacted.
4. Exploring what matters to practitioners by understanding how accountability is realised. Understanding what constitutes success and failure

Research methods such as interviews, shadowing, detailed descriptions of practice etc. look to collate a view of the logic of practice which people routinely undertake in absorbed coping mode. There are parallels with the emergent activities undertaken by the communities-of-practice in this thesis as outlined in the OE Framework described in Chapter 5.

In the case of the latter (temporary breakdowns) this involves:

1. Investigating instances where expectations are thwarted, boundaries are crossed and/or differences in awareness are noted as the departure point.
2. Placing the temporary breakdowns under investigation within the broader socio-material practice in which they occur.
3. Identifying the significance of the way in which practitioners are absorbed in their practical activities.

Research methods such as second-order temporary breakdown initiation, critical incident analysis, failure mode effects analysis (FMEA) etc. look to collate the thought processes, frames-of-reference and feelings about interruptions.

According to Sandberg and Tsoukas the strategy for searching for temporary breakdowns can uncover “the significance of the taken-for-granted distinctions practitioners cannot articulate while absorbed in practice (e.g. assumptions about role structure effectiveness).”

Equally, searching for entwinement can uncover “the scope of the sociomaterial whole that shapes human action, which practitioners are unaware of while immersed in action.”

Together these inputs help construct the research that aims to theorise the logic of practice. Practical rationality theories are recognised as emergent, context-specific, complex with multiple temporalities and connections among events across time. They should be considered as indicators to help direct the search for greater understanding. This does not mean practical rationality theories are less precise than scientific rationality theories; rather while the former are imprecise by definition (cf. Thorngate, 1976), the latter are not relevant to practice because they fail to reflect it.

Sandberg and Tsoukas indicated theories about routines-in-action, technology-in-practice, strategy-as-practice with their respective emergent elements, emphasised the common approach through which various subject matters are enacted and encouraged the search for “the situational specificity through which processes of enactment take place in particular contexts.” They described why practical rationality is their preferred method of uncovering important aspects of the logic of practice and indicated the framework of scientific rationality is not relevant to practice but can provide simplified views which may be helpful. They noted “Weber perhaps best captured what scientific rationality theories can offer by referring to ideal types as serving ‘as a harbour until one has learned to navigate safely in the vast sea of empirical facts’” suggesting scientific rationality theories, in general, help by pointing the way to important characteristics for practitioners to investigate further. Sandberg and Tsoukas put this contribution into perspective stating “insofar as practice retains a certain plasticity stemming from the fuzziness, irregularity, and even incoherencies of its dispositional principles a style of theorizing different from that provided by scientific rationality is required for grasping its logic and, thus, for bridging the management theory-practice gap. Practical rationality and the associated strategies of the theory development suggested here provide the appropriate resources for such theorizing.” (cf. Mode 2 knowledge approach).

From the perspective of this thesis practical rationality represents an example of attempting to close the theory-practice gap in applied social science. Practical rationality is emergent, context-specific and complex. It focuses on people and processes, the context and the complexity of decision-making. According to Sandberg and Tsoukas practical rationality provides a method of revealing the logic of practice which was previously unclear. By doing so they believe they offer practitioners tools to better understand and improve practice. In particular, the input from second-order temporary breakdowns potentially makes visible emergent information on what is going on in practice within organisations. This general approach will be used by communities-of-practice to help close the theory-practice gap as described in Chapter 5 (see steps 2 and 3 of the OE Framework). Much of what Sandberg and Tsoukas described is consistent with complexity theory, episodes (cf. Henry and Seidl, 2003) and critical realism. From a Mode 2 management research perspective the logic of practice through practical rationality fits with practice theory, complexity theory and the management practice of decision-making.

Theory of Practice, Strategy-as-Practice and Change

A number of calls have been made for organisational strategy research to be formulated taking the social theories of practice based on the works of Giddens (1976, 1991), Bourdieu (1977) and Schatzki (2005) into account.

According to Hendry and Seidl (2003) "strategies serve to structure, organize and give meaning to complex operations of business organisations." Strategies provide organisations with direction, are future-focused and recursively reproduced by the practices they produce and are the primary instruments of change within organisations. Feldman and Orlikowski (2011) suggested strategy "is understood as something people do as opposed to something that organizations have. This is an understanding of "strategy in the making" – as a dynamic accomplishment rather than a static outcome."

As Hendry and Seidl stated "Strategy, for practitioners as well as academics, is explicitly concerned with the future, and with how this might differ from the present: with what 'should be' rather than what is" (cf. performance as described by Lebas and Euske, 2004). This association with change, sometimes radical change, links back to Burrell and Morgan's four paradigms for organisational analysis and, in particular, their second dimension which covers the theory of society (reflected by a continuum between regulation and radical change). Strategy is a social practice. Hendry and Seidl (2003) noted that in adopting a theory of practice the only way organisations can change is through "incremental adaptation to external pressures or incremental changes" which occurs through recursive reproduction systems.

There is no definition of practice theory that has gained broad acceptance (Feldman and Orlikowski, 2011). Feldman and Orlikowski described practice theory as it relates to organisations. Key to practice theory in their interpretation is the concept that social systems in organisations deliver a series of organised events that emerge through people's recurrent actions. Feldman and Orlikowski stated that "Contemporary organizing is increasingly understood to be complex, dynamic, distributed, mobile, transient, and unprecedented, and as such, we need approaches that will help us theorize these kinds of novel, indeterminant, and emergent phenomena." They considered practice theory's "focus on dynamics, relations, and enactment" to be well suited to this. Feldman and Orlikowski looked at practice theory from three perspectives: the empirical, the theoretical and the philosophical i.e. the 'what', 'how' and 'why' of practice. The empirical approach to practice recognises the contributions people make to organisational outcomes through their actions and indicates practices impact directly how organisations operate. It deals with the 'what'. The theoretical approach to practice attempts to explain the relationship between the actions people take, how these are generated and how they operate across different contexts and over time. It deals with the 'how'. The philosophical approach to practice argues that practices are the building blocks of social reality. It deals with the 'why'. As noted by Feldman and Orlikowski for Schatzki "the social is a field of embodied, materially interwoven practices centrally organized around shared practical understandings."

Feldman and Orlikowski commented while there are no general principles agreed by scholars by which practice theory is judged some common principles have emerged. These include:

1. The principle of consequentiality – everyday actions are significant in producing the structural features of social life.
2. The principle of the rejection of dualism – scepticism towards the use of antithetical concepts in analysis.
3. The principle of the relationality of mutual constitution – relations of mutual constitution produce the system of which they are part.

These authors believe organisations are complex and ambiguous entities and applying practice theory requires an investment in longitudinal studies and the opportunity to work with practitioners inside organisations. They identify the benefits of practice theory as:

1. It provides the basis for powerful theoretical generalisations
2. It has the capacity to offer important practical implications for practitioners

Feldman and Orlikowski highlighted that the theoretical generalisations based on practice theory are not predictions (in a positivist sense) but should be taken "as principles to explain and guide action." They are historically and contextually grounded and point to particular relationships. In addition, while each context is specific the dynamics and relationships determined and theorised are transferable to other contexts. All of this aligns with the approach taken in this thesis. Feldman and Orlikowski added "practice theory is practical. The findings and insights of practice scholarship can identify organizational levers for enabling change in practices, while supporting and reinforcing those practices that are working" (see section entitled 'Different Kinds of Scholarship – Enlarging the Perspective' and in particular the scholarship of application).

Chudzikowski and Mayrhofer (2011) emphasised the integrative nature of the theory of practice suggesting "the resulting overarching theoretical framework not only strengthens interdisciplinary dialogue, but also constitutes an integrative conceptual umbrella allowing new questions and answers through a systematic integration of theories and methodologies from different disciplinary heritages." The case for theory of practice is captured by Chudzikowski and Mayrhofer's comment "such an approach offers the possibility of linking the various perspectives and using their strengths under a joint conceptual frame. While the strength of the more fine-grained theoretical concepts lies in their in-depth focus on particular elements and their ability to formulate precise and focused hypotheses, the theory of practice can link these concepts and offer a background against which research is conducted. In this way, the theory of practice with its potential for connectivity can not only promote interdisciplinary conversations supporting dialogue across disciplines and different theoretical approaches, but also guide concrete research leading to non-trivial insight."

Strategy-as-practice research has grown rapidly over the last twenty years (Golsorkhi et al., 2015). In the second half of the twentieth-century the MBV (Porter, 1985) set the tone for much of strategy research (see section entitled Unpredictable People, Social Systems and

the Resource-Based View). People played little part in the MBV or in early work linked to frameworks such as the BSC. The RBV redressed the balance somewhat; however, many researchers pointed out there would be merit in refocusing research into the actions and interactions of strategy practitioners (Jarzabkowski et al., 2007). Strategy-as-Practice formed over the turn of the century as a different approach to strategy. It seeks to put a strong human element into management and organisational research by focusing on the micro actions people do which ultimately impact macro strategic outcomes. "Strategy is increasingly seen not as something an organisation *has* but something its members *do"* (Jarzabkowski et al., 2007). Jarzabkowski et al. argued that "strategy-as-practice as a field is characterized less by what theory is adopted than by what problem is explained." The strategy-as-practice approach recognises that micro actions need to be considered in the wider social context where people recognise they need to act within acceptable modes of operation of the social system they belong to (cf. Kogut and Zander, 1996). It underlines the link between the micro and the macro as a social practice (Jarzabkowski, 2004). Jarzabkowski et al. (2007) defined strategic activities as those which have a consequential impact on the strategic outcomes, direction, survival and competitive advantage of an organisation even where these consequences are not part of an articulated strategy. Jarzabkowski et al. defined strategizing as "the 'doing of strategy'; that is, the construction of this flow of activity through the actions and interactions of multiple actors and the practices that they draw upon"; very much a 'means' rather than 'ends' focus where the act improves understanding. Jarzabkowski et al. (2007) operationalised these definitions through a conceptual framework of praxis, practices and practitioners as outlined in Figure 3.11 which shows the concepts are discrete but interconnected.

Figure 3.11: A conceptual framework for analysing strategy-as-practice (Jarzabkowski et al., 2007)

Jarzabkowski et al. defined praxis, practices and practitioners as follows:

1. Praxis describes human action; it comprises the interconnections between the actions of individuals, groups and organisations within which people act and to which they contribute to.
2. Practices are routinized types of behaviour consisting of several interconnected elements such as forms of activities, things and their uses and various types of background knowledge e.g. understanding, know-how etc.
3. Practitioners are the individuals who draw upon practices to act and are interrelated with practices and praxis.

In the strategy-as-practice approach people from multiple levels are key contributors, indeed all employees have important roles to play. Typically strategy-as-practice research looks to elucidate what 'doing' strategy involves and how that 'doing' informs strategy through approaches such as those outlined by Hendry and Seidl (2003). The outcomes are invariably context specific; as such they are unlikely to focus on organisational level outcomes and more likely to be a 'micro-mechanism' which ultimately are consequential at the macro-level (Hedstrom and Swedberg, 1996).

According to Jarzabkowski et al. strategy-as-practice "does not require 'new' theories per se, but to draw upon a range of existing theories to explore the strategy problems defined within our conceptual framework, to develop novel methods and research designs for their study, and to advance explanations of how strategy is accomplished using these different levels and units of analysis." In short, strategy-as-practice draws from a diverse range of existing theoretical principles. For example, studies that aim to understand how strategic change is delivered through the activities of practitioners make use of the organisation theories of sense-making and narrative (Balogun, 2003; Balogun and Johnson, 2004, 2005; Rouleau and Balogun, 2011).

From the perspective of this thesis it is practice that produces organisational reality (Feldman and Orlikowski, 2011); therefore, understanding what influences practice and how is fundamental. The theory of practice underlines the importance of interdisciplinary activities, it provides a basis for theoretical generalisations and recognises and supports practitioners. The strategy-as-practice approach looks to connect people and practice to strategy delivery with strategy reconceptualised as 'doing' at multiple social levels. The theoretical basis of strategy-as-practice research relies on existing organisation and social theory such as the RBV, PBV, dynamic capabilities and sense-making etc. (Jarzabkowski et al., 2007), all of which support the concept of the middle-range theory to be presented in this thesis. From a Mode 2 management research perspective the theory of practice is a core contributor. By combining organisational theories centred on social systems and practice, explanations on how social systems initiated interventions change the behaviour of organisations and influence performance can be described.

Episodic and Continuous Change in Organisations

The concept of organisational change has been referred to many times in this chapter. Organisational change is context dependent, unpredictable and non-linear (Balogun and Johnson, 2005). It exploits the dynamics of self-reinforcement of the organisation's social system and is a collective undertaking which is both cognitive and social. According to

Weick and Quinn (1999) organisational change frequently arises because of an organisation's failure to adapt. This is the position with two of the case study companies investigated in Chapter 6. Organisational change can be large or small but always involves people, processes and how they interact. The outcome of change processes can lead to differences in strategic direction, leadership, organisational structure and level of resourcing, operational methodology, ways-of-working etc. Irrespective of the magnitude of the activity change requires to be managed carefully. Most organisational change focuses on a single entity and emerges as events unfold. From an organisational development perspective change can be defined as "a set of behavioral science-based theories, values, strategies, and techniques aimed at the planned change of the organizational work setting for the purpose of enhancing individual development and improving organizational performance, through the alteration of organizational members' on-the-job behaviors" (Porras and Robertson 1992). Van de Ven and Poole (1995) outlined four simple process models of change characterised by different event sequences and generative mechanisms. The teleological model emphasises the role of leaders, change agents and the construction of change by the organisation's members. It involves a cycle of goal formulation, implementation, evaluation and modification of actions where the sequence emerges through social construction of an envisioned end state. Balogun (2003) emphasised the role of middle managers in facilitating sense-making and translating strategic change into practical reality. This is close to what is described in Chapter 5 and applied in Chapter 6.

Weick and Quinn (1999) characterised organisational change as either episodic, with discontinuous, intermittent and intentional characteristics, or continuous, with ongoing, evolving and largely incremental characteristics. Weick and Quinn argued the difference between episodic and continuous change reflects whether the observer takes a macro or micro view of how events unfold. From a distance an organisation can be seen as relatively unchanging, occasionally interrupted by major change events or episodes. Close-up the same organisation can be seen as undertaking a continuous stream of small, potentially influential changes. Some researchers treat the accumulation of small changes as evidence of organisational change whereas others see this as simply day-to-day incremental change and consider the major events as the contributors to change. The main differences between episodic and continuous change are shown in Table 3.5.

Episodes are described as comprising three key processes:

1. inertia
2. the triggering of change
3. replacement or substitution

Inertia is defined as the inability to change as rapidly as the environment. The triggering of change is considered to come from five sources linked to internal and external changes, namely: the environment, performance, characteristics of senior leaders, structure and strategy. Replacement or substitution is often seen as the vehicle for change. Episodic change is considered to be the result of organisational inertia which eventually triggers a requirement to act through restructuring or downsizing for example, and precipitates an

episode of replacement. Weick and Quinn stated episodes are usually associated with intentional change catalysed when "a change agent deliberately and consciously sets out to establish conditions and circumstances that are different from what they are now and then accomplishes that through some set or series of actions and interventions either singularly or in collaboration with other people." The role of the change agent in episodic change is that of lead actor.

	Episodic Change	Continuous Change
Metaphor of organization	Organizations are inertial and change is infrequent, discontinuous, intentional.	Organizations are emergent and self-organizing, and change is constant, evolving, cumulative.
Analytic Framework	Change is an occasional interruption or divergence from equilibrium. It tends to be dramatic and it is driven externally. It is seen as a failure of the organization to adapt its deep structure to a changing environment. Perspective: macro, distant, global. Emphasis: short-run adaptation. Key concepts: inertia, deep structure of interrelated parts, triggering, replacement and substitution, discontinuity, revolution.	Change is a pattern of endless modifications in work processes and social practice. It is driven by organizational instability and alert reactions to daily contingencies. Numerous small accommodations cumulate and amplify. Perspective: micro, close, local. Emphasis: long-run adaptability. Key concepts: recurrent interactions, shifting task authority, response repertoires, emergent patterns, improvisation, translation, learning.
Ideal Organization	The ideal organization is capable of continuous adaptation.	The ideal organization is capable of continuous adaptation.
Intervention Theory	The necessary change is created by intention. Change is Lewinian: inertial, linear, progressive, goal seeking, motivated by disequilibrium, and requires outside intervention 1. Unfreeze: disconfirmation of expectations, learning anxiety, provision of psychological safety. 2. Transition: cognitive restructuring, semantic redefinition, conceptual enlargement, new standards of judgment. 3. Refreeze: create supportive social norms, make change congruent with personality.	The change is a redirection of what is already underway. Change is Confucian: cyclical, processional, without an end state, equilibrium seeking, eternal. 1. Freeze: make sequences visible and show patterns through maps, schemas and stories 2. Rebalance: reinterpret, relabel, resequence the patterns to reduce blocks. Use logic of attraction. 3. Unfreeze: resume improvisation, translation, and learning in ways that are more mindful.
Role of Change Agent	Role: prime mover who creates change. Process: focuses on inertia and seeks points of central leverage. Changes meaning systems: speaks differently, communicates alternatives schema, reinterprets revolutionary triggers, influences punctuation, builds coordination and commitment.	Role: recognizes, makes salient, and reframes current patterns. Shows how intentional changes can be made at the margins. Alters meaning by new language, enriched dialogue, and new identity. Unblock improvisation, translation and learning.

Table 3.5: Comparison of Episodic and Continuous Change (Weick and Quinn, 1999)

Weick and Quinn commented that practitioners are focused increasingly on large scale interventions, depending more on systems theory than action theory, more on gathering data from the environment than using internally available data, more on real-time analysis

and decision-making rather than on top-down cascades, more on learning about the whole organisation than on the individual unit, more driven by the organisation than by senior managers and more on being participant than consultant-centred – the teleological model (Van de Ven and Poole, 1995). Weick and Quinn (1999) commented that complexity theory may help understanding of episodic interventions where, for example, improved performance may be associated with more autonomous behaviour.

Continuous change is used to describe change that is ongoing, fluid, evolving, and cumulative. It is emergent and described as grounded in updates of work processes and social practices which, over time, can deliver significant organisational change (Brown and Duguid 1991; Tsoukas 1996). The distinctive feature of continuous change is while the magnitude of individual activities is often small they can build on each other non-linearly, leading to significant change. This context assumes tightly coupled interdependencies. Interpretation, improvisation, translation and learning are considered important capabilities and tend to be where middle managers make significant contributions. For example, the development of and changes to skills and knowledge can be viewed as changes to an organisation's ability to respond. This can extend to organisational routines (Feldman and Pentland, 2003), know-how contained in communities-of-practice (Brown and Duguid, 1991), transactive memory (Wegner, 1987), collective mind in organisations (Weick and Roberts, 1993) and sense-making in organisations (Balogun, 2003; Maitlis, 2005). Ford and Ford (1995) indicated "The macrocomplexity of organizations is generated, and changes emerge through the diversity and interconnectedness of many microconversations, each of which follows relatively simple rules." Interventions in continuous change are very different to those in episodic change; the sequence of freeze, rebalance, unfreeze replaces one of unfreeze, transition, refreeze (see Table 3.5).

Social systems play an important role in continuous change acting as the glue for the myriad of small changes that take place. Weick and Quinn (1999) saw culture as a vehicle that embeds the know-how of adaptions into the norms and values of an organisation, quoting Colville et al. (1993) "If we understand culture to be a stock of knowledge that has been codified into a pattern of recipes for handling situations, then very often with time and routine they become tacit and taken for granted and form the schemas which drive action." According to Weick and Quinn culture "serves as a scheme of expression that constrains what people do and a scheme of interpretation that constrains how the doing is evaluated." The role of the change agent in continuous change is more of an orchestrator than lead actor. The role becomes one of managing discussions, recognising emergent changes and reframing them for understanding, making sense of the existing change dynamics, redirecting sensitively and explaining how further intentional changes can be made. As Weick and Quinn commented "interaction focused on thinking processes and how they are performed by past experience, enables groups to create a shared set of meanings and a common thinking process."

Successful organisations tend to display clear managerial responsibilities and have design processes that are both flexible and continuously changing. Typically they involve richly interconnected communication systems. According to Weick and Quinn two features that underpin episodic and continuous change are 1) semi-structures balanced between order

and disorder and 2) intentional links in time between the present and future to reduce discontinuity.

Weick and Quinn referred to Burgelman's (1991) more generic approach for both episodic and continuous-change interventions which shows "how organizations adapt by a mixture of continuous strategic initiatives that are within the scope of the current strategy and additional episodic initiatives that are outside the current strategy." This is consistent with the view that organisations evolve through continuous change punctuated by episodic change led by senior leadership and usually catalysed by external events (Tushman and Romanelli, 1985; Romanelli and Tushman, 1994). According to Weick and Quinn (1999) continuous change doesn't require the major change events identified as key to episodic change. While episodic change is determined by inertia, continuous change is determined by alertness and an inability to remain stable; "the analytic framework for continuous change specifies that contingencies, breakdowns, opportunities, and contexts make a difference."

Pettigrew (1987) challenged the concept that episodes are discrete and "somehow separate from the immediate and more distant antecedents that give those events form, meaning and substance" and commented these views "fail to provide data on mechanisms and processes through which changes are created." Instead Pettigrew proposed a more holistic and dynamic interpretation of organisational change, one based on a contextual approach, "an approach that offers both multilevel, or vertical analysis and processual, or horizontal, analysis." Examples of vertical and horizontal level analyses are "the impact of a changing socioeconomic context on features of intraorganizational context and interest-group behaviour" and "the sequential interconnectedness among phenomena in historical, present and future time" respectively. The contextual approach described by Pettigrew (1987) and Child and Smith (1987) centred on the content, context and process of change and their interactions. In Pettigrew's model content refers to the particular areas of transformation under investigation. Pettigrew's description of context has outer and inner elements to it. The outer context refers to the "social, economic, political, and competitive environment in which the organisation operates" and the inner context to the "structure, corporate culture, and political context within the organisation through which ideas for change have to proceed." Pettigrew's process of change refers to the actions, reactions, and interactions from the various interested parties. In broad terms content captures the 'what', context the 'why' and process the 'how' of change. Franco-Santos and Bourne (2005) applied a contextualist approach to the development and implementation of PM systems and Pettigrew (1987), Child and Smith (1987) and Nudurupati et al. (2011) noted that some social systems can be unreceptive to change, for example those with institutionalised contexts – the inner context counts for more in practice.

Episodes as described within the context of Luhmann's social systems theory by Henry and Seidl (2003), temporary breakdowns as a route to unravelling organisation practices as described by Sandberg and Tsoukas (2011), episodic and continuous change as described by Weick and Quinn (1999) and Burgelman (1991), sense-making as described by Balogun (2003) and Maitlis (2005) and the contextualist approach of Pettigrew (1987) all contribute to understanding the theory behind the practice of introducing change to organisations

through operating social systems. MacBryde et al. (2014) reviewed change in a large organisation and concluded of the critical success factors for transformation only PM proved central in driving change in their particular case study.

In the case studies described in Chapter 6 two organisations underwent significant organisational change. Both organisations adapted by a combination of episodic and continuous strategic initiatives. The work described in this thesis is primarily involved with the latter.

The critical realist perspective to change sees the world as comprising discrete structures, for example, human beings or social networks such as communities-of-practice. Changes in the characteristics or relationships or indeed the emergence of new structures are driven by how the interactions between these structures change on a temporal, spatial and cultural basis as part of the system (Gorski, 2013).

From the perspective of this thesis making change is fundamental to all improvements. According to MacLean et al. (2002) Mode 2 research activity is "the only consistent way of looking at change, i.e. 'from the inside' of a dynamic which can only be accessed through experience." From a Mode 2 management research perspective episodic and continuous change sits with social systems theory and complexity theory.

Management Research as a Design Science

Organisation Theory is a product of Mode 1 research where management researchers use an explanatory science process to produce description-oriented knowledge often with limited interaction with end users (MacLean and MacIntosh, 2003). However, there is increasing evidence that the outcome from management research is not aligned to what is observed in practice. Van Aken (2005) proposed the theory-practice gap may be reduced by using a combination Mode 1 and Mode 2 research. Under specific conditions the research product of Mode 2 knowledge may be considered to be a field-tested and grounded technological rule capable of bridging this gap. In such circumstances Management Theory can be an outcome of Mode 2 research. A technological rule is the research product of design science which provides solution-oriented knowledge. Van Aken used the term 'design science' to emphasise knowledge-for-design of solutions and to separate this from actions undertaken by practitioners. Van Aken looked to complement description-oriented knowledge with solution-oriented knowledge such that Organisation Theory can provide an understanding of events which can be used to produce potential technological rules and establish possible mechanisms that support their outcomes. He proposed a technological rule should be 'field-tested' in its intended context and 'grounded' using the concept of generative mechanisms (Pawson and Tilley, 1997). In such cases a technological rule can provide a general solution concept to design a specific intervention around to produce a desired outcome or performance in a particular context. Van Aken (2005) added "In management, technological rules and solution concepts should be given 'thick descriptions' to aid their understanding and to facilitate their translation from the general to the specific context. These 'thick descriptions' should be based on the field testing and grounding of the rule." Researchers and practitioners can apply these rules to design particular solutions

for specific problems. This requires experience and competence on the part of the researchers and the practitioners and is helped by the collective approach taken by communities-of-practice. Typically heuristic technological rules are established through a case study approach involving collaboration between researchers and practitioners. The researcher is part of what is being observed and not independent.

According to van Aken (2005) in the design sciences, academic research objectives are more pragmatic in nature. Research is aimed at understanding and improving human performance. It is prescription-driven and solution-focused, rather than problem-focused. While the research product from the explanatory sciences is a causal model that from the design sciences is a technological rule (Bunge, 1967). The main differences between description-driven and prescription driven research are captured in Table 3.6. A technological rule can be considered a middle-range theory whose validity is restricted to specific types of application (Van Aken, 2005). It is a design proposition connecting an intervention to an outcome and should be evaluated holistically. The holistic relationship between an intervention and its outcome has been termed design causality (Argyris, 1996).

Characteristic	*Description-driven research programmes*	*Prescription-driven research programmes*
Dominant paradigm	Explanatory sciences	Design sciences
Focus	Problem focused	Solution focused
Perspective	Observer	Player
Logic	Hindsight	Intervention-outcome
Typical research question	Explanation	Alternative solutions for a class of problems
Typical research product	Causal model; quantitative law	Tested and grounded technological rule
Nature of research product	Algorithm	Heuristic
Justification	Proof	Saturated evidence
Type of resulting theory	Organization Theory	Management Theory

Table 3.6: Main Differences between Description-driven and Prescription-Driven Research Programmes (Van Aken, 2004)

Van Aken's approach focuses on the development of design knowledge, which occupies the middle ground between descriptive theory and actual application. It relies on the research products of Mode 2 knowledge production. Mode 2 research usually involves groups and networks (communities-of-practice) who come together on a temporary basis to address problems. While Mode 2 research may be transient and groups short-lived the communication networks formed tend to persist in organisations with the approach adopted by other communities-of-practice to address subsequent issues. There is an overlap with the approach taken by Partington (2000) which is described in Chapter 4. Partington also made use of Mode 2 knowledge, cognitive processes and a critical realist frame-of-reference. The relevance for this thesis is that by combining organisation theories centred on social systems and practice a theoretical foundation for PMM can be developed

to help bridge the PMM theory-practice gap by providing the understanding behind the creation of a middle-range management theory linking PM and social systems.

3.6. The Overlap between Social Systems, Practice and Critical Realism

Organisations connect through social systems and operate through practice. The premise at the start of this work is that considering PM from a holistic, social system perspective can improve the effectiveness of PM because the social system operating in an organisation plays a fundamental role in how well that organisation performs. This chapter explores whether adapting and combining social systems, complexity and practice theories might underpin the development of a new middle-range management theory linking social systems to the effectiveness of PM. In some cases the concepts discussed in this chapter address similar organisational challenges but from different functional perspectives. A number of approaches profess to contribute to reducing the theory-practice gap. One important conclusion from this chapter is organisational reality is a social construct (Sayer, 1992, Easton, 2010) delivered through practice (Feldman and Orlikowski, 2011). This is core to the development of the Organisational Effectiveness framework described in Chapter 5. Performance is also a social construct (Lebas and Euske, 2004; Spitzer, 2007; Guerard et al., 2013) influenced by practice (Bourne, 2008; Richard et al., 2009) as is sense-making (Weick, 1993; Maitlis, 2005). From a management research viewpoint the overlap between the concepts discussed in this chapter and social systems, practice, knowledge and know-how, sense-making, decision-making and change also provides the opportunity to develop a theoretical foundation for PMM grounded in social systems and practice, building in the theory-practice bridging potential. The overlap of the various concepts and their common characteristics is captured in Table 3.7 and shown schematically in Figure 3.12.

Concepts	Knowledge Integration	Emergence	Sense-making	Decision-making	Social System	Change	Practice	OP	PM	Critical realism
Scholarship	X						X			
Social Paradigms and Organisational Analysis		X			X	X				X
Organisations as complex social systems	X	X		X	X	X			X	X
Resource-Based View	X	X		X	X			X		
Social Capital	X		X		X			X	X	
Human Resource Management	X				X	X		X	X	
Sense-making in organisations		X	X	X	X	X		X	X	
Social Systems - autopoietic	X	X	X	X	X	X	X			
Social Systems - morphogenetic	X	X			X	X	X			X
Human intentionality	X	X		X	X	X				X
Rational decision-making/bounded rationality	X			X					X	
Practice-Based View/bounded rationality		X		X	X		X	X		
Dynamic capabilities	X	X		X	X	X	X			
Logic of Practice/practical rationality		X		X		X	X			X
Theory of Practice	X	X	X			X	X			
Organisational change	X	X	X	X	X	X			X	
Managemen Science as a Design Science	X						X			X

Table 3.7: Overlap of Social Systems and Practice

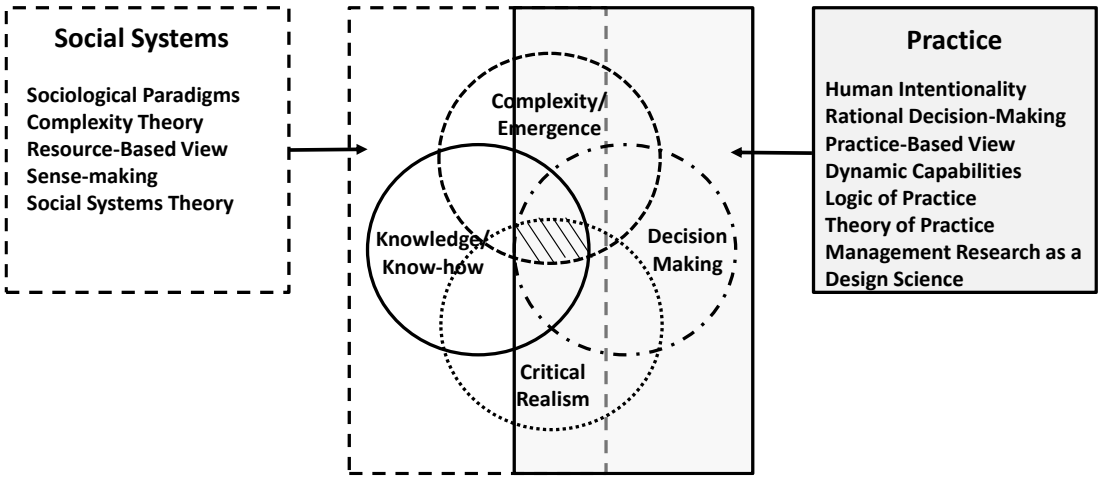


Figure 3.12: Overlap of Social Systems and Practice, and Knowledge/Know-how, Decision-Making, Complexity/Emergence and Critical Realism

In summary the logic behind Figure 3.12 is:

1. Organisations are complex, adaptive social systems.
2. OP is affected by a multitude of internal and external influences and impossible to predict with any certainty; however, people are the primary shapers of OP.
3. Organisational reality is a social construct delivered through practice.
4. PMM isn't fit for purpose due to the turbulent environments organisations face.
5. Practice is the primary building block of social reality; performance, PM and PMM should be seen as something people do, not something organisations have.
6. This research explores how looking at PM from a social systems perspective enhances our understanding of PM and OE; however, the PM literature doesn't adequately reflect the impact social systems have on how organisations operate (Chapter 2).
7. Therefore this research also explores how social systems and practice overlap from a range of theoretical viewpoints and examines whether this can support the proposal that taking a social systems perspective can improve the effectiveness of PM.
8. Knowledge/know-how, emergence, decision-making and critical realism are common overlapping themes present in the social systems and practice literature. The first three provide the theoretical focus for this research. Critical realism is selected as the research philosophy based on its approach to causality, agency, explanation, knowledge and values.

The links between practice theory and social systems theory, the practical slant of Archer's realist social theory, the centrality of complexity theory and emergence to both social systems and practice, and a focus on knowledge and know-how, sense-making and decision-making, represented by the hatched area in Figure 3.12, must be reflected in any middle-range management theory linking social systems to PM generated from this research. From a PM perspective the aspects of complexity/emergence, decision-making, sense-making, and knowledge and know-how generation are acknowledged in the PM literature (Lebas and Euske, 2004; Spitzer, 2007; Nudurupati et al., 2011; Franco-Santos et al., 2012; Cilliers et al., 2013; Bourne et al., 2014; Melnyk et al., 2014; Micheli and Mari,

2014; Beer and Micheli, 2018; Bititci et al., 2018; Pavlov et al., 2018) providing common ground for a link with social systems and practice. The hatched area in Figure 3.12 represents the focal point for investigation in this thesis (see Appendix 3.1) and informs the five underlying assumptions which form the basis of the research. These are:

1. The nature of the social system operating in an organisation plays a fundamental role in defining how that organisation performs (Espejo, 2003; McKelvey, 2003; Spitzer, 2007; Mitleton-Kelly, 2003, 2011).

2. An organisation's complex behaviour and latent capability influences the development, implementation and outcome of interventions aimed at improving PM and OE (MacLean et al., 2002; Spitzer, 2007; Mitleton-Kelly, 2011; Bititci et al., 2012; Cilliers et al., 2013).

3. By taking an 'inside-out', social systems approach to organisational practice, social systems initiated interventions can improve OE, with PM providing a directional indicator of the impact (Pawson and Tilley, 1997; Lebas and Euske, 2004; Garbuio et al., 2011).

4. By combining organisational theories centred on social systems and practice, explanations of how social systems initiated interventions change the behaviour of organisations and influence performance can be described (Feldman and Orlikowski, 2011; Chudzikowski and Mayrhofer, 2011).

5. An approach grounded in social systems and practice theory provides an alternative framework to organisational control theory as a theoretical foundation for PMM, explaining various phenomena associated with PMM and reducing the PMM theory-practice gap (Archer, 1995; Partington, 2000; MacLean et al., 2002; Van Aken, 2005; Elder-Vass, 2007; Mingers, 2011a).

A new management theory based on these assumptions would respond to the challenges of Mitleton-Kelly (2003) to develop frameworks to explain complex behaviour in organisations which could lead to organisational forms more sustainable in dynamic environments; of Jarzabkowski et al. (2007) to develop novel research designs to advance strategy-as-practice; of Barney and Felin (2013) to specify unique theories of aggregation that represent the social interactional and contextual factors which drive behaviour and performance in organisations; of Bourne et al. (2013) to explain how and under what circumstances PM makes a difference and of Bititci et al. (2018) to develop alternative theoretical frameworks for PMM.

Smith (2010) argued that developments in the philosophy of social science have opened up new methodological possibilities including the use of critical realism with its view of contingent causality and explanation that allows for contextualized hypothesis generation, hypothesis testing and refinement, and generalization. Essential to developing testable hypotheses is the generation of tightly linked middle-range and case-specific theories that provide propositions which can be tested and refined. For the reasons outlined throughout this chapter and because it is recognised as having much to offer organisational and management studies, in particular its ontology (Fleetwood, 2004), critical realism is selected as the appropriate research philosophy for this work. Its ontology, epistemology, methodology, research techniques and mode of inference are captured in Table 3.2 and expanded upon in Chapter 4.

4. Research Philosophy and Design

4.1. Introduction to Critical Realism

Theoretical ideas taken from complexity theory, social systems theory and critical realism can contribute to mechanistic explanation.

As described in Chapter 3 critical realism has been selected as the research philosophy to underpin this thesis because of its overlap with complexity theory, its approach to causality, agency, explanation and knowledge, and its increasing application in complex social systems research. Moreover, adopting a critical realist frame-of-reference facilitates the synthesis of social systems and practice and helps provide a more logical and consistent explanatory vision of social reality. This chapter provides the rationale and background to critical realism. It lays out the ontological assumptions and the methodological principles before outlining the research strategies adopted and the data collection and analytical approaches taken. Critical realism is also recognised as providing a way to reduce the theory-practice gap in management research through its multimethod and multilevel approaches to causal analysis.

In today's world there is more data available than ever before. Despite this there are more unexplained results and patterns than before. Although organisations are recognised as unpredictable complex social systems, when it comes to PM research most researchers still apply approaches which consider them as complicated, predictable systems. Combinations of formulae and models coupled with past experience and knowledge are reported with conclusions that purport to predict, with a degree of confidence, how OP is affected by, for example, specific HRM practices (MacDuffie, 1995; Ramsey et al., 2000; Gelade and Ivery, 2003; Guest et al., 2003; Takeuchi et al., 2007). While the conclusions reflect particular sets of data the outcomes will be contextually contingent and the generalisability of their findings suspect because the approach taken was flawed.

Organisations' circumstances are typically unique, many factors impact performance (some completely outside the organisation's control), formulae have limited application and past performance provides no guarantee of future outcomes. To accommodate this reality, researchers must go beyond using readily observable measures to make predictions and adopt a different approach which seeks to understand and influence what is happening within the social system that is the organisation. Critical realism (Bhaskar, 2008, 2009) can help explain what is happening inside social systems by asking questions such as what matters most, how to know what is most important and how best to measure it, how does context influence things, how do the various parts of the organisation interact and how do things change over time.

4.2. Philosophical Paradigms and Ontological Assumptions

Philosophical Middle Ground

Critical realism enables researchers to investigate complex social systems in a holistic way (Mingers, 2004b, 2006, 2011b; Wynn and Williams, 2012). Bhaskar (2009) states that to make sense of what is going on in a social system, the social structures that have produced the phenomena under investigation must be unpicked. Critical realist research looks to provide explanations for observable organisational events by identifying the means through which social structures and contextual conditions interact and influence everyday activities. Bhaskar believes what can't be observed directly may be identified through the practical and theoretical processes of the social system in operation. Critical realist research centres on detailed historical analysis of social systems, how they operate and what they do and achieve over time. Methodological pluralism is used to help coordinate and triangulate information with different tools providing different records of the world (Lebas and Euske, 2004). With a focus on historical analysis critical realists follow a relativist epistemology which recognises knowledge is historical and what occurs are social constructs developed by people, not natural phenomena. Causality can't be reduced to statistical correlations (Byrne and Uprichard, 2012).

Critical realism takes the middle ground between positivism and interpretivism providing an alternative to seeking law-like relationships on the one hand, or multiple meanings and interpretations on the other. It is a meta-theory established in ontology. It takes a realist view of being whilst accepting, epistemologically, the role of relativistic knowledge of social actors. In other words ontologically it looks to establish an independent world of causally active objects and structures (objects are, or are part of structures) which give rise to the events that happen (or don't happen) and, epistemologically, its assumptions revolve around what counts as acceptable truth by identifying their origin and characteristics. Critical realists don't support reductionism, although this positivist concept was described by Ayer as impractical and incorrect. Mingers (2011b) noted "atomic physics itself, the bastion of reductionism, also recognised wholeness at the very fundamental levels of subatomic particles which were not so much discrete particles but webs of interacting forces. As Heisenberg put it: ' ..in modern physics the world is not divided into different groups of objects but rather into different groups of relationships … The world thus appears as a complicated tissue of events, in which connections of different kinds alternate or overlap or combine and thereby determine the texture of the whole'." Critical realism looks for plausible explanations for why things happen by taking the 'texture of the whole' into account to increase the likelihood of providing organisations with the information they need to make better quality decisions. Critical realism acknowledges that observations are liable to error therefore knowledge can't be taken as complete or absolute and is contingent on the prevailing circumstances. In other words social phenomena are essentially meaningful and meaning has to be understood and explained rather than simply measured so inevitably there is always an interpretative element to social science (Sayer 2000). Critical realist research focuses primarily on the nature and capabilities of things rather than just on their measurable properties.

Basic Assumptions of Critical Realism

According to Sayer (1992) the basic assumptions of critical realism can be summarised as:

1. The world exists independently of our knowledge of it.
2. Our knowledge of the world is fallible and theory-laden. Concepts of truth and falsity fail to provide a coherent view of the relationship between knowledge and its object. Nevertheless knowledge is not immune to empirical check and its effectiveness in informing and explaining successful material practice is not mere accident.
3. Knowledge develops neither wholly continuously, as the steady accumulation of facts within a stable conceptual framework, nor discontinuously, through simultaneous and universal changes in concepts.
4. There is necessity in the world; objects—whether natural or social—necessarily have particular powers or ways of acting and particular susceptibilities.
5. The world is differentiated and stratified, consisting not only of events, but objects, including structures, which have powers and liabilities capable of generating events. These structures may be present even where, as in the social world and much of the natural world, they do not generate regular patterns of events.
6. Social phenomena such as actions, texts and institutions are concept dependent. We not only have to explain their production and material effects but to understand, read or interpret what they mean. Although they have to be interpreted by starting from the researcher's own frames of meaning, by and large they exist regardless of researchers' interpretation of them. A qualified version of 1 therefore applies to the social world. In view of 4–6, the methods of social science and natural science have both differences and similarities.
7. Science or the production of any kind of knowledge is a social practice. For better or worse (not just worse) the conditions and social relations of the production of knowledge influence its content. Knowledge is also largely—though not exclusively—linguistic, and the nature of language and the way we communicate are not incidental to what is known and communicated. Awareness of these relationships is vital in evaluating knowledge.
8. Social science must be critical of its object. In order to be able to explain and understand social phenomena we have to evaluate them critically".

Points 1, 4 and 5 capture the main ontological assumptions. The ontology assumes there is a reality "out there" independent of observers. Critical realism assumes reality is neither readily understood nor easily measured; this means observers are only familiar with a portion of it. In contrast, points 2, 3, 6 and 7 accept that reality is socially constructed. Critical realists live with this dichotomy by arguing that the world is largely socially constructed; however, on occasions the real world makes a presence (Easton, 2010). In addition, the importance of communication is noted (Luhmann, 1995).

Critical realism looks to understand human practice by seeking to understand what practice says about the world. It's a pragmatic approach essentially asking what the social system must be like to make sense of the practices in operation and what is observed.

Structures, Powers, Mechanisms, Events and Experiences

Given social systems are complex, open, emergent systems comprising people whose behaviour is anything but pre-determined the likelihood of finding behavioural regularities to describe social systems is remote. This has ramifications for the social construct of PM. Critical realism considers reality as an open system which is beyond our ability to control

directly. Having said this, critical realists accept that the actions of humans have a level of intentionality such that social phenomena may exhibit some stable, long-lasting features. However, clear, robust regularities are rarely found in the social world so critical realism dispenses with the view that social science must focus on discovering regularities and adopts an ontology that differentiates between events and event regularities and the structures, powers and mechanisms that lie behind events.

Critical realism views the social world as comprising objects, entities and structures and exists independent of our knowledge of them. These objects, entities and structures are the source of the events we observe. According to Easton (2010) objects, or more generally entities, are the building blocks of critical realist explanation. Entities can be organisations, people, relationships, attitudes, resources, ideas etc., all of which can influence one another. Entities have sets of causal powers and liabilities (a liability being a susceptibility to actions by other entities) and can combine to produce structures with emergent causal powers that are irreducible to those of their constituent entities. Structures comprise combinations of internally related objects or practices that under specific contextual circumstances create the *real* entities of interest to be investigated. Structures replace variables as the parameters of interest for critical realist research with the focus shifting to the nature and characteristics of things rather than their measurable properties. Structures can be nested within structures. Typically, social structures are not observable but are detectable through their effects on human activities. Organisations comprise clusters of structures which provide them with powers that are dependent on human agency. An organisation relies on many interacting and interdependent structures to run its business processes to deliver an output, be that a manufactured product for sale, courses for students or an income tax demand.

ln this thesis a causal power is defined as the ability of a structure to have a particular causal effect. Powers exists as tendencies in as much as a particular power has a tendency to produce a particular causal effect which may be contingent on the presence of other powers or may be prevented from causing the effect by the presence of counteracting powers. A tendency can be defined as a causal power set in motion or actualised (note: according to Fleetwood (2011) the terms power and tendency can be used interchangeably). Mechanisms are defined as the processes operating between structured entities that give them powers to cause particular events. Mechanisms are the internal processes at the heart of causal explanations. Events are explained by identifying the causal powers that interacted to produce the events and powers are explained by identifying the mechanisms responsible for them.

Experiences or outcomes are what critical realists study in practice. These are the observable outcomes of the behaviours of people, processes or systems that caused the event to happen. Therefore while we can observe some of the complex behaviours of organisations but by no means all of them, understanding how those behaviours came about necessitates identifying the causal powers that interacted to cause particular events and explaining this by identifying the mechanisms behind them. In contrast to positivism and interpretivism critical realism adopts a stratified ontology where it differentiates between three nested domains, the real, the actual and the empirical (see Table 4.1).

	Domain of Real	*Domain of Actual*	*Domain of Empirical*
Mechanisms	√		
Events	√	√	
Experiences	√	√	√

Table 4.1: Stratified Ontology – The Real, the Actual and the Empirical (Bhaskar, 2008)

In broad terms the domain of the empirical consists of what we experience either directly or indirectly, the domain of the actual is where events happen and the domain of the real where the mechanisms responsible for the events are found. The domain of the real consists of all the objects or entities and their structures and powers that exist in the world. Objects or entities, through their structures and causal powers, have the potential to behave in particular ways. The domain of the actual is a subset of the real and includes the events that occur when the causal powers of structures and entities are exercised whether they are observed or not. The third domain, the empirical, is a subset of the actual and consists of the events we are able to observe either by measurement or insight. Events in the domain of the actual that have been exercised because a mechanism has been activated need not necessarily be observed in the domain of the empirical. Similarly, there are mechanisms in the domain of the real which have not been exercised or have been but are counteracted by other mechanisms and therefore don't produce events in the domain of the actual. In short, the observations made in the empirical domain are the result of mechanisms operating in the real domain and events occurring in the actual domain. Causality is found in the domain of the real and as such critical realism directs the focus from experiences which are observable to mechanisms which are not. The real, actual and empirical domains are out-of-phase and the purpose of the critical realist researcher is to bring them in-phase and activate, isolate and observe the causal powers of particular objects or entities (Tsoukas, 1989; Gorski, 2013). (cf. Heidegger (1996) in Chapter 3).

While a particular configuration of components can endow an organisation with powers unique to that particular structure and the contextual circumstances in operation at the time people are invariably the agents who activate causal powers. Hesketh and Fleetwood (2006) refer to the interaction of all the causal components as a generative ensemble and suggest "we can think of the workplace, the shopfloor, the work-system or the team, as a complex web of interlocking generative ensembles, sub-configurations, sub-sub-configurations, and so on." These can combine together to produce what we recognise as business processes. According to Hesketh and Fleetwood some business processes are more obviously sub-configurations than others but rarely do such configurations or sub-configurations lend themselves readily to measurement. This complexity is frequently ignored and proxies for PM introduced which disregard the fundamental causal mechanisms at work in the social processes underpinning business processes. Researchers are attempting to make meaningful measurements of things they don't understand fully.

Social structures have emergent powers that are irreducible to those of its constituent components. These powers exist and continue to exist whether they are exercised or actualised. An actualised power is an exercised power which is unaffected by other exercised powers i.e. it delivers it expected outcome. Sayer (1992) refers to the susceptibility to the action of other entities as a liability. A power, when exercised, may or may not have an observable effect and its outcome is impossible to predict in an open system because of interactions with other exercised powers which may either compound or counteract its effect. In other words the outcome of a particular exercised power is contingent on other powers being exercised at the same time. Alternatively the effect of a particular exercised power may be mitigated by other exercised powers. Powers can be possessed with or without being exercised and may be exercised with or without being actualised. People also possess powers; beliefs, motivations, imagination, ingenuity and creativity. Again these powers may or may not be exercised or actualised (Hesketh and Fleetwood, 2006).

This can be condensed down to three important questions aimed at answering 'what makes something happen':

1. What are the entities or social structures that define the research undertaken?
2. What are their relationships?
3. What are their powers and liabilities?

Necessary and Contingent Relations

There are two types of relationships among entities, termed necessary and contingent relationships (Tsoukas, 1989; Easton, 2010). The relations between entities and the events they cause can be expected to be many and varied. Necessary relations derive from the nature of the entities involved. An organisation has been defined by Ackoff (1971) as "a purposeful system that contains at least two purposeful elements which have a common purpose…..It is the relationship between what the purposeful elements do and the pursuit of their common purpose that gives unity and identity to their organisations…..An organisation consists of elements that have and can exercise their own wills." Organisations involve people operating as a social system for a common purpose. A social system must exist within an organisation; therefore, the social system and the organisation have a necessary relationship and one with many points of interaction. Necessary relations change when there are changes in an entity. For example, if the organisation agrees to make changes in the organisational structure this will change the necessary relationship between these entities.

A contingent relation is a relation where a change may not affect the relationship. Contingent relations differ from necessary relations only in the nature of the relations. While necessary relations will affect the entities concerned, contingent relations only may affect the entities concerned. Both necessary and contingent relations are the result of causal processes and have their own causal powers. Causal explanations need to take into account contingent relations as well as necessary relations. If all relations are contingent the causal explanation is unique and offers nothing towards a generalised view. Critical realism places special importance on the "transformational nature of the social world,

whereby human agents draw upon social structures and, in doing so, reproduce and transform these same structures" (Hesketh and Fleetwood, 2006; also link to Luhmann 1995). According to Sayer (1992) "Structures can therefore be said to be invariant under certain transformations, that is, they can continue to exist while their constituents undergo changes in attributes which are not relevant to their reproduction." Without this invariance theory building would not be possible. Note: social structure here refers to the causal powers of entities not the way organisations are set up.

The Concept of Negotiated Order

Organisations don't make things happen, people do. In this sense, social systems and organisational structure matter. The concept of negotiated order is predicated on systems being structural entities and influenced largely by the organisation at lower levels (Callaghan, 2008). According to Callaghan negotiated order influences how social systems operate in practice. The concept was introduced by Strauss et al. (1963) in response to the clash between Parsons' 'primacy of order' and Dewey's 'primacy of change'. The basis of the argument for negotiated order is that although organisations may have recognised organisational structures the ways-of-working by which they operate reflect existing agreements and discussions between the people involved, with the outcome tending to be history and time-dependent. According to Callaghan the existence of organisational structure is important as it sets the position from where people negotiate from. The order that ensues is described as negotiated because it takes the current context into consideration and reflects the decisions made by those directly involved on a daily basis and is subject to revision should circumstances change. For example, previous agreements and way-of-working negotiated with unions may influence how social systems operate within organisations (Pettigrew, 1987; Child and Smith, 1987); however, the concept is broader than this, influencing the ethos by which the organisation as a whole operates which, in turn, impacts performance, PM and OE among many other things.

The Importance of Emergence

Emergence exists at a systems level, not at an element level. Emergent properties are features of the integrated whole and "appear as macroscopic patterns in collections of elements amongst which non-linear interactions take place" (MacLean and MacIntosh, 2003). This non-linearity arises from the interconnectivity of the system and makes the relationship between cause and effect difficult to define with certainty or predict. Social systems are complex and emergent therefore application of the 'scientific method' can't establish causality because the context associated with an intervention needs to be considered (Sayer, 2000; Byrne, 2013). In social systems this non-linearity extends back and forth between the cognitive and physical domains. Observations in the cognitive domain give rise to interventions in the physical domain which reinforces the observation and so on. Emergent properties are therefore only partly predictable and their expression reflects the interaction between the observer and the observed and the choice of distinction.

Within limits knowledge that is generalizable can be developed provided research approaches are adopted that recognise the contextual nature of causal powers and the role

individuals and groups play in delivering these. Byrne (2013) comments “we can, through careful comparison and exploration of complex contingent causation, begin to get a handle on what works *where (in what context), when (in what temporal context)* and *in what order*”.

The acceptance of the presence of emergence means that selecting components and looking for relationships between component inputs and the whole (e.g. certain performance measures and OE) is misguided. Rather it is necessary to consider all elements, combination of elements as well as the whole and recognise parts can have causal implications for the whole and vice versa. As Byrne (2013) states “causality does not run in any one direction.”

Critical realists assume the world has the distinctive feature of emergence. Emergent properties refer to causal powers possessed by an entity as a whole and not by any of its component parts either individually or in combination. An entity’s causal powers derive not only from those of its components but also reflect synergistic effects. Entities may be analysed at different levels of aggregation. Causal relations between entities at a particular level can generate events as can causal relations between levels where causal powers at one level interact to produce emergent powers at a higher level. It is possible that the mechanisms responsible for the events may be identified as emerging from components at lower levels than the focus of analysis. Emergence in social systems can come about through the interactions between people making up the social system. Indeed social systems are only understood by studying the connections between the individuals and groups making up the system, how they causally intertwine (Archer, 1995) and not through individuals in isolation (Easton, 2010). For the PM-OE link what this means is it is not the presence of PM systems that is most important but understanding through knowledge and practical experience how the PM systems work in the complex environment of a social system. Typically this focuses attention on the layers below the high level measures.

Epistemological Assumptions, Knowledge and Explanation

Epistemology is concerned with assumptions about knowledge, how to understand the world and communicate this to others (Burrell and Morgan, 1982). A positivist epistemology is based on the scientific method, observable and measurable facts, law-like generalisations and causal explanations and predictions. An anti-positivist epistemology can take a number of forms but has the common feature of not accepting law-like generalisations. Anti-positivists see the social world as relativistic, believing it can only be understood from the perspective of those involved in the phenomena being investigated. Anti-positivists don’t accept the positivist requirement for detached external observation and believe it is important to understand the social world from the inside rather than the outside (Burrell and Morgan, 1982).

Access to knowledge in organisations can come from a multitude of sources ranging from numerical data to interpretations, including narratives or stories (Saunders et al., 2016). Typically most data in social science research is historical, taken from reports etc.; however, in this thesis information was available both from direct observation as well as

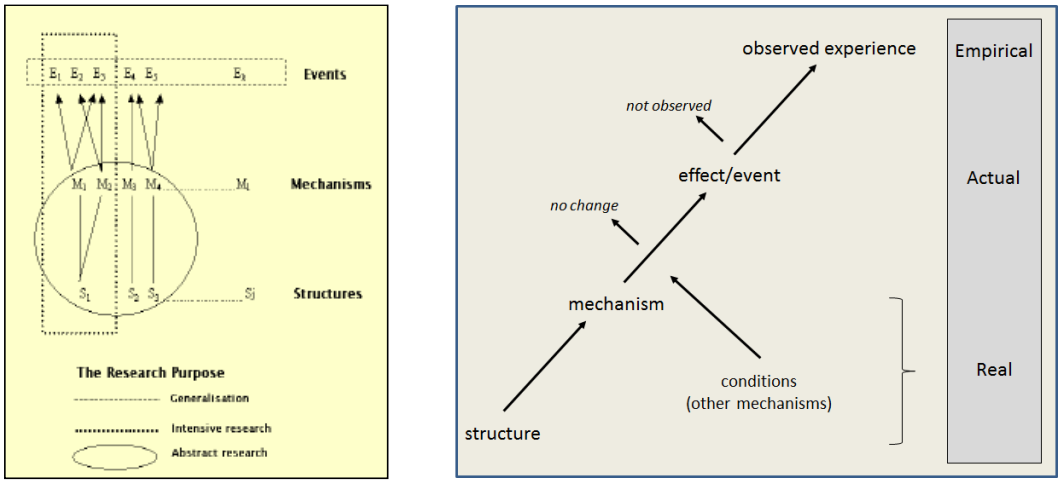
reports, for example, survey information. In line with other anti-positivists, critical realists adopt a relativistic stance, where knowledge is historically situated and transient and the basis for causal explanations. However, unlike other anti-positivist approaches critical realism accepts there is a place and time for numbers, facts and data analysis, and takes a multi-method, multi-level approach (Syed et al., 2010).

Critical realists distinguish between intransitive and transitive knowledge (termed mediated knowledge below). Structures, powers and mechanisms are considered to be intransitive (i.e. they exist and operate independently of our perception of them) and structured (i.e. they are irreducible to events and patterns between events). Our understanding of these structures and beliefs about their causal efficacy is considered transitive (i.e. it has been created by experiment and reason and is subject to revision). The intransitive focuses on the domain of the objects of our knowledge. Our knowledge of intransitive entities is formed in the transitive dimension and mediated by the social structures in operation e.g. groups, co-workers etc. (Wynn and Williams, 2012). The knowledge of these unrevealed structures and mechanisms is constructed jointly alongside other social interactions, and as such knowledge is value-laden.

Causality refers to the relationship between an action and the result it produces, termed cause and effect respectively. Causal explanations of a particular phenomenon generally require the identification of the components and relationships that caused it to happen. Organisations are open complex social systems with a significant number of social structures running concurrently which makes any identification of specific causation difficult. In a complex system the future is not prescribed and a causal power can generate a number of different outcomes depending on whether there are any interactions with other causal powers in operation at the time. Conversely it is possible for different causal powers to produce the same outcome. To complicate matters further since agents (people) respond to memory and other human factors, history and context are important contributors to what is observed. Indeed agents are causal mechanisms in their own right (Syed et al., 2010). As stated by Sayer (2000) “There is more to the world, then, than patterns of events. It has ontological depth: events arise from the workings of mechanisms which derive from the structure of objects, and they take place within geo-historical contexts.”

Critical realists study observed experiences or outcomes with a focus on describing causality by providing information on processes related to the structures, actions and local context through which events are produced (Sayer, 2000). Experiences are the observable outcomes of the behaviour of people (human agents) and social structures. A causal explanation identifies entities and the mechanisms (powers) that connect them and combine to cause an event to occur. Entities or objects are usually structured. A structure refers to a set of internally related objects or practices (Sayer, 1992). For example, an organisation can be considered to consist of other entities such as businesses, sites, functions, people and processes, all of which interact in a multitude of ways. Nested structures are common. From a critical realist’s perspective causation in a social system depends on whether powers are exercised or not and if exercised whether they are actualised or not. If specific causal powers are exercised then the event or outcome can be

affected by interaction with other exercised causal powers. This explains why exercising the same powers at different times, and therefore in different local contexts, can produce different outcomes (Greenhalgh et al., 2015). For critical realists causation relies on explanation (Sayer, 2000). This requires identifying the relevant causal mechanism(s) in operation at the time of interest. Explaining why a causal mechanism exists entails establishing the social structure the causal power depends on and then determining whether the power has been exercised and actualised (see Figure 4.1). The social and cultural contexts of the phenomenon under investigation play a pivotal role in understanding how a causal mechanism works (Maxwell, 2004).



A) The Layered Ontology of Critical Realism
(Taken from Sayer, 1992)

B) Causal mechanisms in Critical Realism

Figure 4.1: The Layered Ontology of Critical Realism

Figure 4.1 A) shows the layered ontology of critical realism taken from Sayer (1992). Figure 4.1 B) shows a simplified causal mechanism diagram. With reference to Figure 4.1 B):

- Structure is defined as a set of internally related objects or practices that constitute the real entities under investigation in a specific contextual situation. They may contain a number of components. Structures possess a range of powers related to the structure itself.
- Mechanism is defined as the process responsible for a causal power.
- Event is defined as a specific happening or action resulting from exercising one or more powers with their associated mechanisms.
- Experience is defined as an event that can be observed or measured. Experiences are a subset of actual events.

According to Sayer (2000) "the same mechanism can produce different outcomes according to context, or more precisely, according to its spatio-temporal relations with other objects, having their own causal powers and liabilities, which may trigger, block or modify its action."

In Figure 4.1 B) other objects with their own causal powers which are capable of interacting with the social structure of interest are captured as conditions (other mechanisms). Causal powers are different from and independent of the pattern of events they cause and, as outlined by Gorski (2013), the critical realist researcher aims to close what would otherwise be an open system by bringing the actual and empirical domains in-phase and activating, isolating and observing the powers of particular objects or entities.

Complex causality refers to the integrated impact of all interacting causal phenomena. Specifically it is their particular configuration in time and space that results in the effect/event observed. Complex causality is associated with what Fleetwood and Hesketh (2008) term robust explanation. Providing an explanation for an outcome can be seen as requiring information about the underlying social structures, mechanisms and the people that activate the specific powers or mechanisms. Identifying the relevant causal mechanism(s) in a complex social system is not straightforward because of the number of interacting social structures – sorting the wheat from the chaff is often a matter of opinion. For complex social systems Hesketh and Fleetwood (2006) propose a robust explanation requires two kinds of information:

1. Information relating to the way relevant stakeholders interpret, understand, make sense of, the workplace and thereby initiate action.
2. Information about a significant (but not infinite) set of interacting and causal phenomena through which agents initiate actions

Information on item 2 could include social, economic and competitive information about the organisation, the composition of various teams, the experience of those comprising the teams, new activities, upgraded skillsets, the relationships between the workforce, the management team and the business strategy, the way the organisation is managed, the nature of synergies etc. created by the interaction of the enabling causal phenomena. Much of the content of items 1 and 2 will be qualitative.

The epistemological assumptions underpinning causal explanations include transitive and intransitive knowledge, explanation by mechanisms, the unobservability of some mechanisms and the presence of multiple mechanisms (Bhaskar, 2008). Within complex social systems the ability to explain why something works and determine causality allows transfer of knowledge to other cases.

To this end Byrne (2013) asks 6 questions:

1. What has worked?
2. How has it worked? – what causal mechanisms have operated?
3. Where has it worked?
4. When has it worked?
5. Can it work elsewhere?
6. Can it work elsewhen?

Question 1 deals with specifying the nature of the intervention, questions 3 and 4 deal with the context and questions 5 and 6 deal with the transferability of the knowledge.

Understanding which causal mechanisms have operated is central to answering these 5 questions.

In a complex system an intervention on its own is rarely the cause of an outcome; what matters is how the intervention interacts with all the other components in the system and other systems. In complex social systems the outcome of any intervention may be generated in a number of ways, it is not unique. In other words there are a number of configurations of components that could deliver the same outcome so any causal mechanisms proposed need to accommodate not only complex causation but also the potential for multiple causation.

Multiple Causal Explanations and Judgemental Rationality

In most situations there will a number of possible combinations of mechanisms which could be responsible for the observed experience under investigation. In open complex social systems it is not possible to observe every aspect of an organisation's actualised events (some are unobservable). The ramifications of unobserved events may be realised in different ways depending on the specific contextual conditions in play at the time. Therefore as various combinations of mechanisms are hypothesised multiple explanations of an event may be possible that are open to multifinality and equifinality. In general it is not possible to remove every possible contributor that might have a causal impact to unequivocally identify the exact cause of an observed experience.

In light of this critical realists have had to establish a way of evaluating the explanatory power of alternative possible causal explanations and have advanced the concept of judgemental rationality. This looks to compare possible explanations in the transitive dimension rather than consider the intransitive dimension where events may be unobservable. According to Archer et al. (2004) "Judgemental rationality means we can publically discuss our claims about reality as we think it is, and marshal better or worse arguments on behalf of those claims. By comparatively evaluating existing arguments, we can arrive at reasoned, though provisional, judgements about what reality is objectively like; about what belongs to that reality and what does not." Such judgements remain subject to further information and/or re-evaluation. The parallels with considering performance as a relative concept containing inevitable contradictions among temporal measures which require comparative judgement is clear (Lebas and Euske, 2004).

Multiple Future States – Path Dependency Linked to History

Complex systems have a time line – history matters. Future decisions include the uncertainty 'absorbed' when previous decisions were made. For a complex system there are a multitude of possible states. According to Byrne (2013) this can be viewed as a "multi-dimensional mathematical space where the number of dimensions is the number of quantitative descriptors of the condition of the system and the location of a given system in that state space is indicated by the values of those descriptors." The objective of decision-making and activating interventions is to change the future state of the system. The set of possible future states is path dependent limited (Byrne, 2013). This path dependency influences how the future will be changed. The social system in operation and how it

develops and changes over time matters to outcomes; it is part of the absorbed uncertainty.

4.3. Methodological Principles of Critical Realism

Methodological Principles

Sayer (2000) states "Compared to positivism and interpretivism, critical realism endorses or is compatible with a relatively wide range of research methods, but it implies that the particular choices should depend on the nature of the object of study and what one wants to learn about it." Sayer outlines two types of research design: extensive and intensive. These research designs have different purposes but can be complementary in some circumstances. Extensive research tends to utilise surveys and questionnaries and typically employs statistical analysis to look for patterns and potential regularities. It has relatively limited explanatory power (Maxwell, 2004). Intensive research looks at individual agents through interviews, culture and other qualitative methods and seeks causal explanations which are context specific and limited to the situation under study. Testing is by corroboration. The focus on an individual perspective is consistent with an inside-out rather than outside-in approach as referred to by Burrell and Morgan (1982) and is what is applied in this thesis.

Whereas extensive research is focused on how phenomena and patterns exist in a population, intensive research is concerned primarily with why things occur in certain cases. Table 4.2 (Sayer, 1992) captures the complementary nature of the two approaches.

	Intensive	**Extensive**
Research question	How does a process work in a particular case or small number of cases? What produces a certain change? What did the agents actually do?	What are the regularities, common patterns, distinguishing features of a population? How widely are certain characteristics or processes distributed or represented?
Relations	Sustantial relations of connections.	Formal relations of similarity.
Type of groups studied	Causal groups.	Taxonomic groups.
Type of account produced	Causal explanations of the production of certain objects or events, though not necessarily representative ones.	Descriptive 'representative' generalisations, lacking in explanatory penetration.
Typical methods	Study of individual agents in their causal contexts, interactive interviews, ethnography, qualitative analysis.	Large-scale survey of population or representative sample, formal questionnaires, standardised interviews. Statistical analysis.
Limitations	Actual concrete patterns and contingent relations are unlikely to be 'representative', 'average' or generalisable. Necessary relations discovered will exist wherever their relata are present, for example, causal powers of objects are generalisable to other contexts as they are necessary features of these objects.	Although representative of a whole population, they are unlikely to be generalisable to other populations at different times and places. Problem of ecological fallacy in making inferences about individuals. Limited explanatory power.
Appropriate tests	Collaboration	Replication

Table 4.2: Intensive and extensive research (Sayer, 1992)

Intensive research has strengths in causal explanation and interpreting meanings in specific contexts but is time-consuming to undertake and tends to limit the number of cases that can be investigated. Despite views to the contrary this does not mean that the validity of any analysis is reduced as single cases can provide equally useful, albeit different, information. Extensive research informs on quantitative dimensions of certain properties and relations but provides little in the way of causal relationships and has limited explanatory capability. As noted by Sayer (2000), "statistical explanations are not explanations in terms of mechanisms at all, merely quantitative descriptions of formal (not substantial) associations." Sayer notes that the methods have flexibility in that extensive methods can be applied to a single case study and intensive methods are not limited to single cases.

As an intensive research method case studies are consistent with a critical realist ontology and recognised as the primary research design for critical realist research (Easton, 2010; Wynn and Williams, 2012). Wynn and Williams state: "For the purpose of studying contemporary social-technical phenomenon to uncover the causal mechanisms and contextual factors that combined to generate them, case study research is well-suited to conduct critical realist research." Critical realist case study research offers researchers new ways to explore complex social structures within organisations in a holistic manner through an iterative research process, the essence of this thesis.

The methodological principles for conducting and evaluating case study research have been summarised by a number of authors (e.g. Easton, 2010; Wynn and Williams, 2012). As commented by Easton the critical realist case study approach is a particularly appropriate research method to explore bounded complex social systems. It looks to establish a causal, transitive explanation of a complex socio-technical phenomenon or outcome thereby providing a more coherent understanding of how organisations work in practice, combining theory and practice. While both Easton (2010) and Wynn and Williams (2012) describe critical realist approaches to case study research the approach adopted in this thesis is that described by Wynn and Williams which is based on the approach described by Sayer (1992, 2000). Wynn and Williams offer five interdependent methodological principles for undertaking case study research. These are captured in Figure 4.2 and Table 4.3 below.

Figure 4.2 outlines the Ontological and Epistemological Assumptions of Critical Realism and the Methodological Principles**.** Table 4.3 lists the five principles, the ontological and epistemological basis and proposed evaluation criteria. The methodological principles are considered to be interdependent and the five-stage process is not intended to be applied in a step-wise manner but can be addressed in any order and iteratively throughout case study research as required. The dynamic character of the interactions between the principles is represented in Figure 4.3 below. This attempts to show the conceptual flow in undertaking critical realist case study research while recognising the interdependencies of the proposed methodological principles (Wynn and Williams, 2012). Retroduction is considered to be at the heart of the critical realism explanatory model as implied in Figure 4.3. Each of the five methodological principles is expanded upon in the sections below and identified by 'Methodological Principle of Critical Realism'.

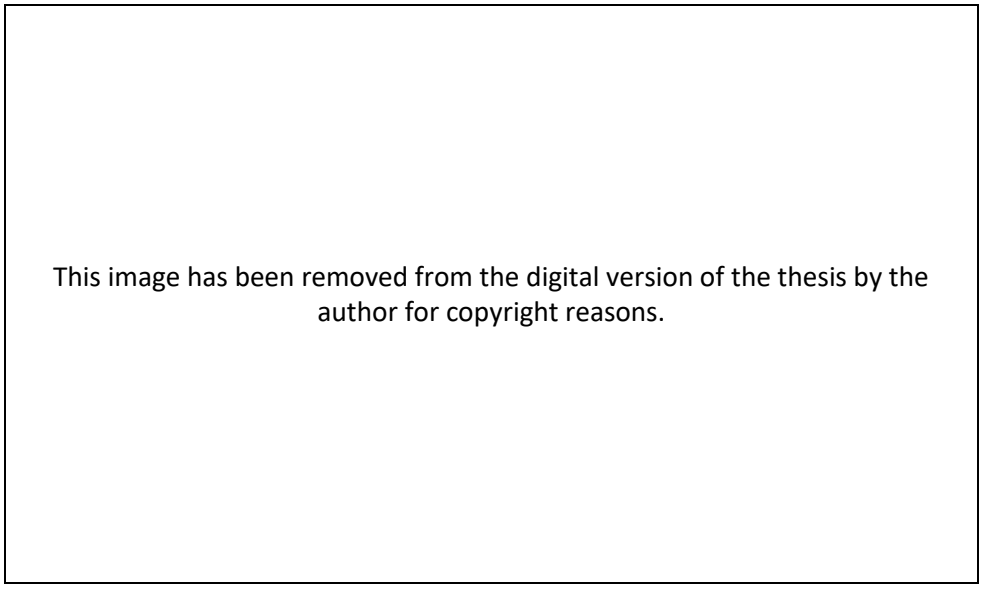


Figure 4.2 Ontological and Epistemological Assumptions of Critical Realism and the Methodological Principles (Wynn and Williams, 2012)

CR Principle	Ontological and Epistemological Basis	Evaluation Criteria	Examples from CR Case Studies in Information Systems
Explication of Events Identify and abstract the events being studied, usually *from experiences*, as a foundation for understanding what really happened in the underlying phenomena.	• Stratified ontology • Mediated knowledge	• Thick description of case "story" including actions and outcomes • An abstracted sequence of events (including the experiences of participants and observers)	• Morton (2006) described a detailed sequence of five composite events associated with the strategic IS planning project. • Volkoff et al. (2007) abstracted core events from empirical observations as changes to structure associated with an IS implementation.
Explication of Structure and Context Identify components of social and physical structure, contextual environment, along with relationships among them. (Critically redescribed from actor's viewpoint into theoretical perspective.)	• Stratified ontology • Open-systems perspective • Mediated knowledge • Unobservability of mechanisms	• Description of the structural entities, constituent parts, and contextual conditions existing in the case • Identification of the relationships among the entities • Explication of changes to the structure • Description of the resulting emergent properties	• Bygstad (2010) identified various elements of the information infrastructure, and the relationships among them. • Morton (2006) identified organization units and actors as primary structural entities, and described three structural relationships with causal implications for observed outcomes. • Volkoff et al. (2007) explored elements of structure, structure changes, and contextual influences by focusing on participant activities, responsibilities, and interactions.
Retroduction Identify and elaborate on powers/tendencies of structure that may have interacted to generate explicated events.	• Emergence • Focus on explanation • Explanation via mechanisms • Multiple explanations • Unobservability of mechanisms	• Identification of a set of plausible candidate causal mechanisms • Logical and analytical support for the existence of proposed mechanisms linking the structure to events	• Bygstad (2010) explained how the emergent higher level structures affect lower level entities and vice versa in identifying the innovation reinforcement and service reinforcement mechanisms.
Empirical Corroboration Ensure that proposed mechanisms have causal power and that they have better explanatory power than alternatives.	• Independent reality • Stratified ontology • Unobservability of mechanisms • Multiple explanations	• Analytical validation of proposed mechanism based on case data • Assessment of explanatory power of each mechanism relative to alternative explanations • Selection of the mechanism(s) that offers the *best* explanation	• Volkoff et al. (2007) and Morton (2006) demonstrated causal efficacy by using the hypothesized mechanisms to explain other events occurring in the cases. • Bygstad (2010) discussed a comparative analysis of candidate mechanisms to determine which offered the strongest explanatory power.
Triangulation & Multimethods Employ multiple approaches to support causal analysis based on a variety of data types and sources, analytical methods, investigators, and theories.	• Independent reality • Mediated knowledge • Unobservability of mechanisms • Multiple explanations	• Multiple theoretical perspectives • Multiple analytical and methodological techniques • Variety of data sources and types • Multiple investigators	• Zachariadis et al. (2010) integrated a series of studies based on interview data, econometric analysis, survey data, and historical analysis. • Volkoff et al. (2007) utilized multiple data sources, data types, and investigators.

Table 4.3: Methodological Principles of Critical Realism (Wynn and Williams, 2012)

Figure 4.3: Relationship among Methodological Principles (Wynn and Williams, 2012)

Methodological Principle of Critical Realism – Explication of Events

The first principle, the Explication of Events, involves identifying the events to be investigated using empirically observed experiences as the starting point. It is based on the ontological assumption of a stratified ontology and the epistemological assumption of mediated knowledge (Wynn and Williams, 2012). Rich descriptions of these experiences are core to being able to construct the complex events occurring in the real domain from experiences observed in the empirical domain. These descriptions include the details of the sequence of actions and outcomes, the particular context and the specific components comprising the social structures.

The research question is relatively straightforward i.e. *what caused the events associated with the observed experiences to occur?* Through the case study approach a causal transitive explanation is sought to explain the observed experiences. The first task is to establish the event or events that make up the observed experiences. This exercise looks to introduce some order to observed experiences to aid the explanation of the events and identification of the components of the social structures that are causally relevant. By identifying and interpreting the events, the basis is formed for establishing the components of the social structure, the context in operation and the mechanisms in play at the time. The relationship between events and observed experiences can be complex and difficult to untangle. Observed experiences can be regarded as a subset of events and the explanation of events may require a level of iteration. For example, initiation of a specific organisational process will activate responses from a number of relevant social structures which exist in the organisation. These responses interact to produce the events enacted in the actual domain and the experiences observed in the empirical domain. Having a rich description and detailed discussion of the actions occurring at each step in the process facilitates a more thorough understanding of how the agents and components of the social structure interacted to produce the eventual observed outcome.

Methodological Principle of Critical Realism – Explication of Structure and Context

The principle of Explication of Structure and Context aims to identify the causally relevant components of the social structure. To do this the components of the structure, the

context at the time and other exercised mechanisms which might interact with the phenomenon of interest all need to be identified. Complex organisational environments introduce many social structures and contextual factors that are capable of influencing the events under investigation. These social structures reside in the real domain and are not observable directly but are knowable as a result of the effects of the investigative procedure in the empirical domain.

In order to identify the causes behind events it is necessary to break down the social structure into its relevant structural components i.e. human agents, groups, relationships, processes, rules etc. and identify the connections and interdependencies between them. This analysis establishes the tendencies of each component to act and how their combined powers produce the emergent properties of the social structure as a whole. Understanding social phenomena requires recording and analysing events that occur as a result of agents acting. Events can be retained as stories or other records. Social structures need to have a degree of longevity. Data on the social structures can be collected in a number of ways but is constrained by context. Data collection methods should reflect what is considered appropriate to provide a plausible causal mechanism as viewed from inside the social system (see section entitled Taking an 'Inside-Out' Approach to Performance Measurement in Chapter 2 and Lebas and Euske, 2004). Qualitative data can be obtained via semi-structured interviews of individuals and focus groups (see below and Chapter 5). Results based on qualitative research are interpretivist by definition with the outcome that the researcher is exposed to the double hermeneutic. Quantitative data can be obtained by questionnaire or large scale survey (see Chapter 6).

4.4. Approach to Theory – Retroduction

Methodological Principle of Critical Realism – Retroduction

Wynn and Williams' third principle is retroduction (sometimes termed abduction). Sayer (1992) proposes retroduction is a "mode of inference in which events are explained by postulating (and identifying) mechanisms which are capable of producing them." This meta process is at the heart of the explanatory model in critical realism, the outcome of which is the identification of causal mechanisms. According to Wynn and Williams retroduction is "derived from the ontological assumption of emergence and the epistemological focus on explanation, the use of causal mechanisms as the basis for this explanation, the potential for multiple potential explanations, and the knowledge that these causal mechanisms may or may not be observable empirically." Retroduction is likely to be an iterative process within and across cases.

Bygstad and Munkvold (2011) indicate that "to be able to work with retroduction we need to abstract the case, exploring different theoretical perspectives and explanations. A case is a *case of something*, which transcends the actual events." The need for theoretical re-description has been outlined by Bhaskar (2008) and Tsoukas (1989). Theoretical re-description is used to identify layers of reality (Tsoukas, 1989). In this process researchers attempt to theoretically conceptualise the organisational phenomenon of interest and

postulate the existence of generative mechanisms that might explain the occurrence of the events under study. Tsoukas comments that “During the process of explanation, the first stage involves (a) resolving the actions themselves into their constitutive components and (b) theoretically redescribing these components so that their inner constitution is revealed.” Bygstad and Munkvold propose theoretical re-description could be based on social theory or more limited middle-range theory. According to Danermark et al. (2002) a researcher should identify relevant theories, comparing and integrating them where possible, so as to increase theoretical sensitivity and understand the events in greater depth.

Retroduction replaces induction and deduction and explanation replaces prediction. A comparison of induction, deduction and retroduction is contained in the Table 4.4 (Saunders et al., 2016). With reference to theory development deductive approaches commence with a theory, usually derived from academic literature, and then aim to design a research methodology to test the theory (a theory to data approach). In contrast an inductive approach starts by collecting data to explore a phenomenon and then constructs a conceptual framework (a data to theory approach).

	Deduction	**Induction**	**Retroduction**
Logic	In a deductive inference, when the premises are true, the conclusion must also be true	In an inductive inference, known premises are used to generate untested conclusions	In a retroductive inference, known premises are used to generate testable conclusions
Generalisability	Generalising from the general to the specific	Generalising from the specific to the general	Generalising from the interactions between the specific and the general
Use of data	Data collection is used to evaluate propositions or hypotheses relating to an existing theory	Data collection is used to explore a phenomenon, identify themes and patterns and create a conceptual framework	Data collection is used to explore a phenomenon, identify themes and patterns, locate these in a conceptual framework and test this through subsequent data collection and so forth
Theory	Theory falsification or verification	Theory generation and building	Theory generation or modification; incorporating existing theory where appropriate, to build new theory or modify existing theory

Table 4.4: Deduction, induction and reduction (Saunders et al., 2016)

Consistent with critical realism a retroductive approach is used in this thesis where data is collected to explore phenomena, identify themes and explain patterns to outline a new theory which is subsequently tested through additional data collection via an iterative process (a combined approach). Critical realist research can use deductive and inductive activities as part of the data collection process. Deduction supports identification of the phenomenon of interest and may suggest the mechanisms underpinning the event. Induction provides event data to be understood and assesses the explanations. It starts with empirical data and analyses this to look for patterns amongst the data. Explanations rely on causal language and the identification of mechanisms applying the data available as evidence. In an open system there is the potential for multiple possible explanations.

Selecting the preferred candidate mechanisms from a range of possible mechanisms relies on determining the most plausible argument. Judgemental rationality is invoked to help with this. By definition critical realists accept explanations are interpretivist in nature.

If existing mechanisms are known they can be examined to determine whether they reflect the particular phenomenon being studied. If there are no existing mechanisms that can explain the observations new mechanisms are proposed to account for what is observed with context having a significant influence. The mechanism identified by retroduction presents a rational explanation of how the experiences observed came about through the emergent properties of the social structure. It aims "to identify the most complete and logically compelling explanation of the observed events given the specific conditions of the contextual environment" (Wynn and Williams, 2012).

There is increasing interest in mechanism-based explanation to support theory building in the social sciences literature (Astbury and Leeuw, 2010). Critical realists apply retroductive reasoning to theory building. Retroduction starts with an observation and then seeks to explain it by finding the simplest and most likely cause for it. Assuming this can be done a theory to explain the observation can be presented with some understanding of how the social system in operation influences the actions of the people involved. Bygstad (2010) outlines comparing candidate mechanisms from case study data as the route to identifying those which "offer the strongest explanatory power." In this thesis the proposition is that the effectiveness of PM is mediated by the nature of the social system operating in the organisation. If the presence of a social system is responsible for this, then through retroduction, critical realist research should be able to explain how this comes about. In effect we are looking to determine whether it is possible to generate an improvement mechanism associated with a modified social system and, if yes, how has this transpired.

Methodological Principle of Critical Realism – Empirical Collaboration

To support and validate the retroduced explanations and the descriptions of the causal mechanisms within the specific contexts of interest the principle of empirical corroboration is applied. Corroboration is required to subject an as-yet unsubstantiated set of retroduced mechanisms to empirical scrutiny. Typically this is done by "using the full spectrum of data describing the social structures, conditions, agency and events" (Wynn and Williams, 2012). This can include testing the perspectives of multiple participants involved in the observed events by interview or survey, multiple case studies etc. to provide additional empirical data. Another means of testing the validity of a proposed mechanism is to determine whether other events that should have happened, related to a focal event, did so. Longitudinal research with its contextual influences can also be a useful way to explore how and why mechanisms cause specific observed events. By providing a range of corroborating evidence confidence is gained that the hypothesised mechanism resembles reality.

4.5. Methodological Choice

Qualitative and Quantitative Research Methods

Experimental methods are the source of much philosophical debate. Many scholars consider organisational and management research designs are better if they comprise qualitative and quantitiative research components. Bisman (2010) presents a qualitative-quantitative continuum (Figure 4.4) capturing some of the methods available and identifies critical realism as "a 'middle-ground' approach in terms of the methodology, the roles of the individual and of context, and the modified objectivist epistemological position." Bisman considers critical realism's use of qualitative and quantitative methodologies provides both context and a means of assessing broader applicability.

Figure 4.4: Characteristics of the Qualitative-Quantitative Research Continuum (Bisman, 2010)

According to Guba and Lincoln (1994) there are four alternative inquiry paradigms for qualitative research: positivism, postpositivism, critical theory and constructivism. Table 4.5 is taken from Guba and Lincoln (1994) and outlines their reponses to the ontological question of "what is the form and nature of reality?", the epistemological question of "what is the nature of the relationship between the knower and what can be known?", and the methodological question of "how can the knower go about finding out what she or he believes?". In Guba and Lincoln's approach the ontology assumed for postpositivism is critical realism (as Bisman). The interest in philosophies other than positivism was stimulated by dissatisfaction with its dominant position. Critiques of quantitative research methods (for example, Guba and Lincoln, 1994) have centred on:

1. the lack of contextual information
2. the lack of insight into human behaviour
3. the lack of local internal views

4. the inapplicability of translating the general to the specific (nomothetic/idiographic disjunction)
5. the lack of discovery dimension in inquiry
6. the interdependency of theories and facts (theory-ladenness of facts)
7. the underdermination of theory (the difficulty of converging on the 'real' truth)
8. the value-ladenness of facts
9. the interactive nature of the researcher and the researched

Points 1 to 5 critique the metaphysical assumptions that define positivist research whereas points 6 to 9 critique other paradigms. Guba and Lincoln's version of critical realism is that of Campbell (1984) whereas Bisman follow Bhaskar's interpretation (2009).

Item	Positivism	Postpositivism	Critical Theory	Constructionism
Ontology	Naïve realism – 'real' reality but apprehendable	Critical realism – 'real' reality but only imperfectly and probabalistically apprehendable	Historical realism – virtual reality shaped by social, political, cultural, economic, ethnic and gender values; crystallised over time	Relativism – local and specific constructed realities
Epistemology	Dualis/objectivist; findings true	Modified dualist/ objectivist; critical tradition/community; findings probably true	Transactional/subjectivist; value-mediated findings	Transactional/subjectivist; created findings
Methodology	Experimental/ manipulative; verification of hypotheses; chiefly quantitative methods	Modified experimental/ manipulative; critical multiplism; falsification of hypotheses; may include qualitative methods	Dialogic/dialectical	Hermeneutical/dielectical

Table 4.5: Basic beliefs (metaphysics) of alternative inquiry paradigms (Guba and Lincoln, 1994)

Mixed Methods Research Design

Since measurement by its very nature is fallible (Hunt, 1994), critical realism highlights the benefits of multiple measures and observations and the need for triangulation (see below) to get a fuller interpretation of what is happening in reality. Moreover, it reflects what happens within organisations in practice. Critical realism typically applies a mixed method research design (Mingers et al., 2013). Mixed methods research can be defined as "the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts, or language into a single study" (Johnson and Onwuegbuzie, 2004). Mixed methods research can be done concurrently or sequentially. The concurrent approach involves the separate use of qualitative and quantitative techniques within a single phase of data collection (simultaneous triangulation). In this case there is limited interaction between the datasets during the data collection process. This offers a richer source of data than the mono method design. The sequential approach comprises at least two phases of data collection (sequential triangulation). In sequential triangulation the results of one method are used to plan for the next.

Perspective (primary source)	*Pragmatism* (Morgan, 2007)	*Transformative-emancipation* (Mertens, 2003)	*Dialectics* (Greene & Hall, 2010)	*Critical realism* (Maxwell & Mittapalli, 2010)
Context	Alternative to renewed interest in metaphysics among qualitative researchers	Response to the need for a framework that embodied researchers' work toward social justice with marginalized groups	Response to the paradigm wars	Response to polarization of positivism and constructivism
Identified as a/an	Approach (Morgan, 2007)	Perspective and/or paradigm (Mertens, 2003); Purpose (Tashakkori & Teddlie, 2003)	Stance (Greene & Hall, 2010)	Stance (Maxwell & Mittapalli, 2010)
Purpose for using	Determine practical solutions and meanings; useful for programmatic or invention-based studies	Address social inequities; useful for enacting positive social and/or individual changes for marginalized groups	Address convergent and divergent ideas; useful for studies with conflicting data sets/theoretical stances	"Facilitate" dialogue and compatibility between quantitative and qualitative approaches; useful for evaluation-based studies
Characterized by	Emphasis on communication; shared meaning making	Working with minority groups or typically excluded groups; attention to power, privilege, and voice	Working across and highlighting differences	Emphasis on context; acceptance of alternative viewpoints
Approach to connecting theory to data	Connect theory before and after data collection (abduction)	Must use a theoretical framework from community's perspective	Emphasize connections and divergence of theory and data/data sets	Recognize the partial and incomplete nature of theory to explain/capture data
Researcher's relationship to the research	Can follow tenets of objectivity and/or subjectivity depending on research/researcher (referred to as intersubjectivity)	Have a strong relation to the community involved; maintain some level of objectivity to address potential bias	Remain reflective throughout inquiry; promote dialogue among theories, data, and results	Emphasize relationships throughout; believe that complete objectivity is not possible
Methods	Emphasizes identifying practical solutions	Involves community in design and implementation	Emphasizes ability to make comparisons across data	Emphasizes perspectives and perspective taking; process-oriented
Inferences from data	Discuss transferability of results by determining level of context-specificity and study's generalizability	Discuss within relevant community sociohistorical contexts and power dynamics	Generate via integrations of diverse viewpoints/data sets, particularly from tensions within data strands and integration results	Can make causal inferences when emphasizing the context
Implications for mixed methods research	Mixes characteristics of quantitative and qualitative approaches; identifies practical solutions	Provides overarching social justice related goals and issues to guide research process	Addresses divergent results directly and emphasizes both convergence and divergence in data	Provides potential for causal inferences, and an approach to establishing context-based validity; emphasizes importance of mental aspects and perception

Table 4.6: Four Perspectives of Mixed Methods Research (Shannon-Baker, 2016)

Shannon-Baker (2016) and Morgan (2007) made the case for paradigmatically grounded mixed methods research and compare suitable paradigmatic approaches. Table 4.6 compares the four perspectives considered by Shannon-Baker (2016). Critical realism is compatible with both qualitative and quantitative research, being applied in evaluation studies in particular. Shannon-Baker commented of the critical realist perspective "Its emphasis on relationships is connected to its ability to infer causal relationships that are both contextually based and generalizable to others." Greenhalgh et al. (2015) noted that "a realist explanation requires a mix of data types, not just qualitative data, to provide explanations and support for the relationships within and between context mechanisms outcome configurations."

Yin (2006) outlined how using mixed methods research within a single case study can augment and substantiate the study. Yin provided advice on how to focus the use of mixed methods to ensure the integrity of a single study rather than inadvertently allowing the study to fragment into two or more parallel studies. This centres on the research questions, units of analysis, samples for study, instrumentation and data collection methods and analytical strategies. The research design used in this thesis applies a mixed methods approach for complementarity, generalisability and triangulation reasons, and for consistency with the choice of critical realism as the research philosophy.

Methodological Principle of Critical Realism – Triangulation

The focus of the research design should be on developing a clearer understanding of the causal factors and relationships (Wynn and Williams, 2012). To support case study research triangulation aims to collect and analyse different but complementary data on the same topic using at least two methods, usually qualitative and quantitative to address the same research question (Morse, 1991).

The epistemology of critical realism encourages multiple data streams to support the generation of causal explanations. The principle of triangulation and multi-methods supports proposed mechanisms by recognising that reality comprises many types of structures with different emergent properties therefore applying different methods of accessing knowledge is appropriate to reduce measurement error and researcher bias (cf. Lebas and Euske, 2004).

The principle of replicability is regarded as an important criterion in scientific research. However, the frequency with which replication is completed in social science is low (Tsang and Kwan, 1999). Tsang and Kwan stated the reason for this ambivalence toward replication in social science is due to scepticism of it being either possible or relevant because of the difficulty in replicating identical conditions. Tsang and Kwan proposed the case can be made for the epistemic significance of replication from the perspective of critical realism. Moreover, they contended taking a critical realist approach can give a role to replication in theory development.

From the types of replication displayed in Table 4.7 theory testing is best done initially by means of exact replication where contingent conditions are closest to those of the original study. Ideally carrying out a generalization and extension study should occur after the theory is well established. The complementarity of quantitative and qualitative research can be seen in relation to replication. With quantitative methods if the outcome of a replication contradicts the original study it can be difficult to determine whether contextual characteristics play a role in this. However, by attempting to comprehend events in context qualitative research can point to specific contingent conditions by which postulated mechanisms operate. According to Tsang and Kwan (1999) the "significance of a replication should be considered within the context of related studies and relevant factors, rather than in isolation."

Types of Replication

	Same Measurement and Analysis	Different Measurement and/or Analysis
Same Data Set	Checking of analysis	Reanalysis of data
Same Population	Exact replication	Conceptual extension
Different Population	Empirical generalization	Generalization and extension

Table 4.7: Types of Replication (Tsang and Kwan, 1999)

Purpose of Research Design

Research can be designed to be exploratory, descriptive, explanatory or evaluative.

1. Exploratory studies include literature searches, interviews of experts and focus groups. They are useful to gain insight into the subject of interest. By definition they rely on the participation of individual and/or groups.
2. Descriptive studies can follow on from exploratory work. They decribe situations as they are; they don't determine cause and effect. Desciptive study methods include observation, case studies and surveys. Description is used widely in management research as a means to an end.
3. Explantory studies seek to identify causal relationships between variables.
4. Evaluative studies typically look to determine the effectivess of a strategy or intervention. They prove particularly useful when they are able to not only expose how effective or otherwise an intervention has been but also why it is so.

In this thesis a combination of exploratory, descriptive, explanatory and evaluative research will be applied to establish whether a new middle-range management theory aimed at reducing the PMM theory-practice gap can be supported.

Choice of Research Strategies

The research strategies adopted in this thesis were:-

- narrative inquiry/in-depth interviews
- case studies
- action research
- surveys

These approaches are aligned with the techniques associated with critical realism shown in Figure 4.4, the characteristics of the Qualitative-Quantitative continuum and are described in more detail in the next section.

4.6. Research Strategies

Narrative Inquiry/In-Depth Interviews

Narrative inquiry is a useful research strategy to gather information on specific topics where the researcher considers the experiences of participants can be best investigated by capturing personal accounts. It looks to generate rich descriptions of people's views and actions and the culture and practice of the environment they work in through detailed interviews, specifically to identify the linkages and relationships involved and the context at the time. Narrative inquiry can be used in a number of different ways, involving small, medium or large groups. Here in-depth interviews were conducted with a number of people from a range of disciplines and organisations to explore their experiences of a specific event with the intent of determining whether any common factors were present.

Abbott and Becker (Maxwell, 2004) call for more systematic use of narrative and process analysis to support causal explanation.

Stories and their telling are a means of reflecting the complex social system within which work takes place. Stories provide valuable insights of the differences between an organisation's stated processes and what happens in practice often through improvisation, offering context and an explanation of why these differences exist. Stories also act as repositories of accumulated wisdom (Brown and Duguid, 1991; Cook and Brown, 1999; Clarkson and Nicolopoulou, 2003).

Storytelling was used in this thesis to explore behavioural characteristics from semi-structured interviews (Chapter 5) and to find better solutions to existing problems with business processes and related PM using communities-of-practice (Chapter 6). When a community-of-practice shares stories their collective experience, memories and insight can lead to emergent thinking and improved solutions which both increases understanding and adds to the community's collective knowledge. This insight is socially constructed and distributed. Brown and Duguid (1991) described this as a 'community of interpretation' stating "for it is through the continual development of these communities that the shared means for interpreting complex activity get formed, transformed, and transmitted."

According to Martin et al. (2014) critical realism furnishes researchers with the means to ask how something might be otherwise. If the use of a community-of-practice approach produces emergent events which would not otherwise have been actualised without this group coming together then this reflects the community-of-practice having different actualised causal powers than the individuals comprising this group have when not operating in this mode. The creativity of a community-of-practice relies on a social structure that enables the collective's creative powers to be actualised. This may be viewed as organising for an alternative future (Martin et al., 2014). Fleetwood and Hesketh (2006a) termed this as engaging in permutations about likely outcomes.

Building Grounded Theories of Management Action

Developed by Glaser and Strauss (1967), grounded theory is a widely used methodology in the social sciences; however, less so in management research (Partington, 2000). According to Glaser and Strauss its focus is the discovery of theory from data systematically obtained from social research. Glaser and Strauss (1967) state their work "is directed towards improving social scientists' capacities for generating theory that will be relevant to their research." and their "principal aim is to stimulate other theorists to codify and publish their own methods for generating theory." Glaser and Strauss's work provided a counterbalancing view to the then dominant position of positivism and was aimed at closing the observed gap between theory and empirical research. Grounded theories are derived from empirical data and well suited to interpreting the processes by which people construct meaning from their day-to-day experiences.

Partington (2000) described a stripped-down version of grounded theory-building appropriate for use in organisations which, when combined with critical realism, supports Mode 2 management researchers analyse retrospective events taken from semi-structured

interviews to build theories of management action. This approach uses a simplified paradigm model (environmental stimulus → cognition → management action), a simplified conditional matrix of four concentric circles (1. external organisation context; 2. internal organisation context; 3. individual and collective management cognition, and 4. action) and critical realism given its ontology supports a level of causal uncertainty. It provides an understanding of the characteristics of an organisation's external and internal context which contribute to the underlying causal mechanisms, how these mechanisms operate and how they may be generalised for use in other contexts. According to Partington (2000) Glaser and Strauss outlined four criteria for a theory to be considered useful which resonate with Mode 2 management research. The criteria are: 1) theories must fit the real world; 2) work across a range of contexts; 3) be relevant to the people concerned; and 4) be readily modifiable. Partington proposed this modified grounded theory approach to Mode 2 management researchers so that they can produce causal theories of management action from retrospective interview data. There is overlap with the field-tested and technological rule approach taken by Van Aken (2005) described in Chapter 3, with both authors making use of Mode 2 knowledge, cognitive processes and a critical realist frame-of-reference.

The cornerstones of grounded theory are the concepts of *theoretical sampling* and *constant comparison.* In grounded theory the researcher collects and analyses information simultaneously, and develops analytical codes to organise the information into categories. *Constant comparison* looks to compare each piece of information with the other data as the researcher goes along. This helps check for similarities, encourages consistency in coding and supports the process of interpretation. According to Saunders et al. (2016), "constant comparison promotes the higher levels of analytical coding [….] because it involves moving between inductive and deductive thinking." It makes use of a retroductive approach.

Given that data is processed and built into the model 'on-the-fly', the interpretation that emerges needs to be examined by collecting additional information. *Theoretical sampling* also needs to be considered. This involves deciding on which data information should be collected next based on the theory that is being constructed. Saunders et al. (2016) capture the essence of grounded theory as:

1. Early commencement of data collection
2. Concurrent collection and analysis of data
3. Developing codes and categories from the data as these are collected and analysed
4. Use of constant comparison and writing of self-memos to develop conceptualisation and build a theory
5. Use of theoretical sampling and theoretical saturation aimed at building theory rather than achieving (population) representativeness
6. Use of an abductive approach that seeks to gain insights to create new conceptual possibilities which are then examined
7. Initial use of literature as a complementary source to the categories and concepts emerging in the data, rather than a source to categorise these data. Later use to review the place of the grounded theory in relation to existing, published theories
8. Development of a theory that is grounded in the data

A version of the simplified grounded theory approach described by Partington (2000) is applied during the development of the social systems factors described in Chapter 5.

Oliver (2011) reiterates how critical realism and grounded theory are "highly compatible, sharing a focus on abduction *(retroduction)* and commitment to fallibilism and the interconnectedness of practice and theory. Attending to evidence and meaning, individual agency and social structure, theory-building and the pursuit of practical emancipatory goals, the resulting approach is ideally suited to social work research." Partington (2000), Oliver (2011) and Volkoff et al. (2007) outline how critical realist grounded theory addresses events and their meaning, is compatible with emergence and generative mechanisms and is aligned with bringing together information gained from different perspectives.

Realist Evaluation

This thesis considers PM from inside organisations, i.e. it takes a complex social systems perspective, and proposes developing causal explanations based on realist evaluation theory (Pawson and Tilley, 1997). As Pawson and Tilley indicate "For realism, it is axiomatic that certain contexts will be supportive to the programme theory and some will not. And this gives realist evaluation the crucial task of sorting the one from the other." According to Pawson and Tilley the description of the processes that explain how an intervention produces a specific outcome is expressed as a middle-range theory. These authors use Merton's (1949) definition of middle-range theory as this thesis does. As discussed in Chapter 3 (Social Systems Theory – Overview) this approach to social systems theory relies on the identification and analysis of social mechanisms to explain observed associations between events. To have explanatory power the mechanisms must have generality. The presence of generative mechanisms facilitates the interpretation of observed experiences and underpins the search for causality in a social system by understanding how the relationships were brought about. According to Bhaskar (2008) mechanism-based explanations generally require a causal agent. In social science the causal agents are usually people. Hedstrom and Swedberg (1996) provide a definition of a social mechanism comprising four explanatory principles:

1. Action
2. Precision
3. Abstraction
4. Reduction

The first principle relates to causal agents being people. A mechanism-based explanation refers to causes and consequences of individual action. Hedstrom and Swedberg invoke Coleman's (1986) macro-micro-macro model where mechanisms happen at the micro-level. The second principle embodies Merton's middle-range approach i.e. explanations should reflect a limited range of phenomena. This doesn't mean that the same explanatory mechanism can't be observed widely across many social systems situations. The third principle reflects the need for focus and for unrelated factors to be discarded quickly to aid constructive theorising. The fourth principle looks to minimise the distance between cause and effect which is at odds with Forrester (1971).

Mechanisms are rarely observable or directly measureable; they comprise powers such as causes, motives, considerations, choices and collective social actions at various levels (Blom and Moren, 2011). These powers are mediated and work through social interaction and social and material structures such as routines and practices etc. The generative mechanisms of a social system are different to those of its component entities. According to Blom and Moren , "Social interaction is at *the same time* both a constitutive part of social intervention mechanisms and a mediating condition. Sometimes these mechanisms are *activated* by interventions, and sometimes the mechanisms *activate* interventions (through the actors)."

The goal of a critical realism-based case study is to explain the mechanisms that generate certain events rather than make predictions about future events. The consequence of the unobservability of mechanisms is that identifying them isn't straightforward and relies on an ability to infer their existence using the observable outcomes they are believed to have caused. Using judgemental rationality the explanation chosen as the most likely cause of an observable outcome is the one considered to produce the most accurate representation of the real world at the time, given the contextual circumstances and our knowledge. In this thesis the six-step framework proposed by Bygstad and Munkvold (2011) which involves establishing the structural components of a mechanism and how they interact to generate an outcome has been used to identify and evaluate the likely mechanism(s) behind the main events. The six steps are:

1. Description of events
2. Identification of key components
3. Theoretical re-description (abduction)
4. Retroduction: Identification of candidate mechanisms
5. Analysis of selected mechanisms and outcomes
6. Validation of explanatory power

Bygstad and Munkvold make use of the realist evaluation approach based on developing a hypothesis about how, and for whom, interventions might work. The implementation of the intervention and its evaluation tests the hypothesis. Gathering information on how the intervention impacts the outcome, how the contextual circumstances affect the outcome and on the specific mechanisms that may be responsible for the change are fundamental to the realist evaluation process. Put simply CONTEXT + MECHANISM = OUTCOME. Realist evaluation also endeavours to explain why interventions sometimes don't deliver the results expected. It considers social systems and structures to be real and that people react in different ways to interventions in different circumstances and at different times. Marchal et al. (2012) and Greenhalgh et al. (2015) demonstrate the increasing use of realist evaluation in health systems research.

Events are specific outcomes arising from the actualisation of one or more mechanisms. Observed experiences are events that can be observed either directly or via measurement. They represent a subset of actual events and more often than not do not adequately capture the totality of the events occurring or the mechanisms generating them. Complex events are less likely to be perceived directly and can often only be identified by their observable experiences (Wynn and Williams, 2012).

This thesis will introduce intervention plans on an iterative basis and evaluate whether or not they have an impact on closing the PMM theory-practice gap. Pavlov and Bourne (2011) recognise "the broad need for a solid organizational foundation for the studies of PM and the explanation of the mechanism through which PM affects organizational performance." Identifying the most likely causal explanation and determining whether it validates the proposition requires a critical realist interpretation of the observed events.

Virtually all organisations operate to high level corporate or business performance plans and associated indicators. Typically these cover key financial and core values metrics. Individual business units, functions or sites invariably have local performance measures which underpin the corporate ones but are pitched at a more relevant and meaningful level for the workforce (see Figure 4.5).

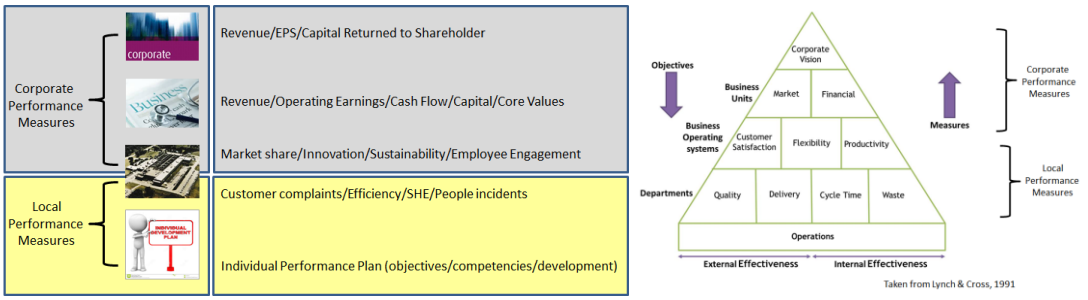


Figure 4.5: Typical Performance Measurement System for a Large Organisation

In their day-to-day operations organisations face many complex challenges. Interventions, put in place to manage these challenges, are themselves usually complex, having many interacting components. What works in one organisation is not guaranteed to work in another or indeed in the same organisation at a different time; in the extreme outcomes can be diametrically opposed. A successful outcome depends on how people react to interventions, on the contextual circumstances operating within organisations at the time and on how success is defined.

Case Study Research

Case study research provides a process for the comprehensive and thorough investigation of specific events of interest within their natural environments, reflecting their temporal and contextual characteristics. It has been proposed as the preferred method for building new operations management theories (Meredith, 1998). According to Meredith the case study approach allows meaningful, relevant theory to be produced from the understanding gained by observing actual practice. Welch et al. (2011) described a method of theorising from case studies which they call contextualised explanation. This is based on the assertion that case study research can generate causal explanations which retain contextual richness. According to Welch et al. critical realism provides the ontological basis for this method "reconciling context and explanation by acknowledging the complexity of the social world,

the bounded scope and contingency of causal relationships, and the simultaneous operation of multiple interaction effects."

Case study research offers the potential to produce insights from intensive (see Table 3.8) and in-depth research, often through a mixed method approach. It can be used for exploratory, descriptive and explanatory purposes (Tsoukas, 1989). The literature provides general advice on when and how to undertake case study research (e.g. Yin, 1994, 2006; George and Bennett, 2005). Further guidance refers to conducting case studies from both a positivist and interpretivist perspective. There is less published from a critical realist perspective; however, an increasing number of authors promote intensive critical realism-based case study research as the preferred approach for investigating complex social systems (Sayer, 2000; Bergene, 2007; Easton, 2010; Wynn and Williams, 2012).

Wynn and Williams' (2012) five interdependent principles coupled with Bygstad and Munkvold's (2011) framework to identify generative mechanisms act as a guide for researchers to conduct critical realist case study research. According to Wynn and Williams three aspects of case study research merit special attention:

1. specifying the research question
2. case selection and
3. generalisability

In line with the epistemological principles of critical realism the research question is straightforward; namely, *what caused the events associated with the observed experiences to occur?* This aims to provide the rationale for the events believed responsible for the empirical observations, taking any relevant contextual circumstances into account. By focusing on specific events and asking how and why questions alignment with the general characteristics of case study research outlined by Yin (1994) is achieved. Causal research questions encourage explanatory research designs to be put in place which make use of data sources with the potential to deliver information on specific causal mechanisms.

Case selection looks to provide events which are typical of what the researcher is seeking to explain (Wynn and Williams, 2012). Usually research is centred on a single structure such as an organisation or a standalone site. Sayer (2000) advanced use of an intensive case study approach and a focus on distinct events with each event examined individually to establish the impact of environment, context and structure (see Table 4.2). Intensive case studies typically produce rich, context specific analyses of complex organisational processes (Wynn and Williams, 2012). In the research reported here case selection was less important as what was being investigated was the social system operating in the organisation and all organisations have this particular attribute.

In critical realism the generalisability of a theory refers to its validity in a setting different to the one where it was tested and confirmed. Generalisability is taken as the potential to use causal explanations from one example as a means of explaining the events of another either being similar or different in a different contextual setting. Lee and Baskerville (2003) discussed a framework to describe four different types of generalisability. They differentiated between empirical and theoretical statements where the former refers to

measurements, observations or descriptions about empirical phenomena, and the latter advances the existence of entities and relationships which are unobservable and can only be theorised. According to Lee and Baskerville "In organizational studies, an example of theoretical statements would be propositions about a particular corporation's culture and social structure, which are not directly observable but whose existence could be theorized from the publicly observable behaviors." Lee and Baskerville also differentiated between what the researcher is generalising from and to, specifically noting Yin (1994) mentioning generalising from a case study's findings to theory. Lee and Baskerville indicated "the notion of the generalizability of empirical descriptions to theory is well developed. Hence, criticisms that case studies and qualitative studies are not generalizable would be incorrectly ruling out the generalizability of empirical descriptions to theory." Eisenhardt (1989) and Dyer and Wilkins (1991) described how to build theories in case study research using a framework for generalising empirical descriptions to theory. Case study research can be used to unravel the factors and relationships contained within organisations (Anderson et al., 2005; Easton, 2010), and is a good basis for theory building (Meredith, 1998; Welch et al., 2011).

Access to Case Study Organisations

The choice of case study organisations is determined by the overall research question, the research design selected and the willingness of the organisation to take part. The organisations have to be prepared to be open to challenge and ready to make changes to their ways-of-working (Van Aken, 2004). The organisations are the source of all primary and secondary information. The subject matter under investigation in this research was sensitive as it focuses on how organisations operate or don't as the case may be.

A multiple case study strategy will be adopted. The research approach will investigate different aspects of the middle-range theory proposed to help demonstrate its generalisability. Finding organisations prepared to apply the middle-range theory relies on identifying organisations with performance issues or challenges where the management team is sufficiently open-minded to consider a different approach. The researcher had previously worked with each of the organisations involved in the case studies described in this thesis therefore a relationship of trust already existed. The case study organisations involved in this work are all large multi-national companies based in Europe. While it might have been interesting to apply the middle-range theory to their global performance measures this is considered neither practical nor desirable. The case studies represent pilot studies where the middle-range theory is applied to local operating social systems which are within the control of the respective leadership teams at the various locations involved. The indicators to determine whether the intervention plans have had an impact on performance will be selected relevant local operational measures rather than particular overarching organisational outcomes whose relationship to PM is typically viewed as tenuous (March and Sutton, 1997; Lebas and Euske, 2004). Guerard et al., (2013) described these local operational measures as proximal indicators in their work on rethinking the concept of performance (see Chapter 2, Table 2.1).

The researcher will explain the proposed process and its potential benefits to the leadership teams and invite the organisations to consider the folllowing points before making a decision:-

1. Would there be business value in undertaking the research?
2. Would sensitive internal information be treated confidentially?
3. Given the topic under consideration would the approach taken be constructive or cause potential internal friction or harm?
4. Do the capabilities and experience of the researcher match the potential activities being considered from an credibility perspective within the organisation?
5. Would the managers and workforce involved in this research have trust in the researcher aims and methods?

There is potential risk associated with making changes to any complex social system – the outcome is unpredictable – however, the organisations' leadership teams remained in control of the process throughout and could bring the study to a stop if there were any internal or external complications of concern.

Originally a fourth case study organisation was targeted to be part of this multiple case study research. The importance of organisation buy-in and trust is re-enforced by the researcher's experience when initiating this fourth case study. The researcher's initial contact with this European telecommunications company was through the HR business consultant. Time was spent with the HR consultant to review the purpose and rationale of the case study and explain the OE framework in detail. The HR consultant could see clearly the potential benefit of applying the framework to the telecoms organisation to address a problem of lack of employee engagement and was the advocate for the case study inside the organisation and with the senior leadership team. During the early stages of the case study it became apparent that the telecoms senior leadership team did not buy into the work and there was insufficient trust between the senior leadership team and the researcher (previously unknown to them) for the researcher to be able to convince them to reconsider their position. This case study did not proceed.

Action Research

The process of Action Research is emergent and iterative and well aligned to a critical realist approach (Fleetwood 2013). The aim of Action Research is to stimulate an iterative 'plan-do-review' process (Deming, 2000) within the organisation. It is intended to help resolve organisational problems or improve outcomes through a participative and collaborative approach and has been used as a means of exploring and understanding the dynamics of social systems in theory-building mode (MacLean and MacIntosh, 2003; Pawson et al., 2004). It looks to change the ways-of-working within the organisation. According to Byrne (2013) it can accommodate history and agency and is well-suited to developing transferable knowledge from complex social interventions. The iterative process is shown in Figure 4.6, and is taken from Saunders et al. (2009).

Action Research starts with a research question and is context specific. At the end of each cycle the question may change or be refined depending on the outcome. The 'plan, do, review' process is participative through a researcher-facilitated 'community-of-practice'

approach where the benefits of taking a collective view to improvements in organisational practice to deliver potentially new solutions are discussed, agreed then implemented and reviewed. An Action Research approach will be taken to collect data to explore the proposition by identifying themes and developing explanations for the patterns observed.

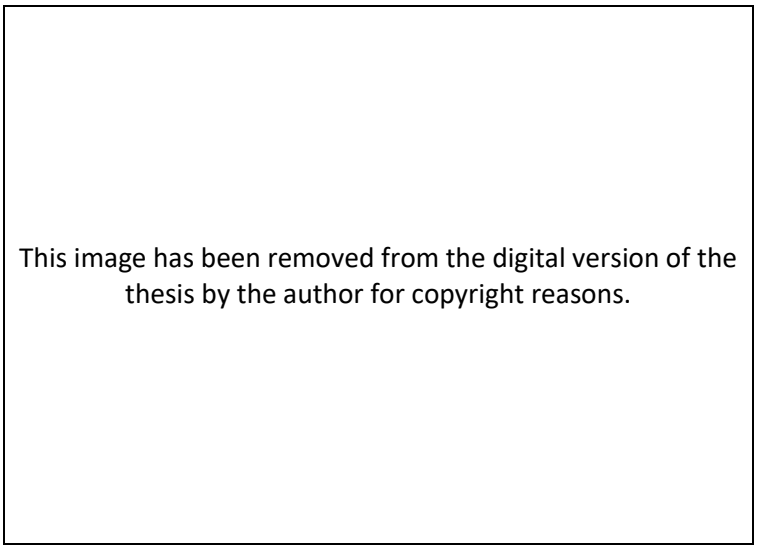


Figure 4.6: The Action Research Spiral (Saunders et al., 2009)

Survey Strategy

Survey strategy is associated with a deductive research approach and is used for exploratory and descriptive research. Typically, survey strategies use questionnaires to collect standardised data from a population or subset thereof. If the latter it's important to confirm the sample is representative. Questionnaires can also be used for descriptive or explanatory research. The data collected is not as rich or detailed as that obtained by other approaches and its value is dependent on the appropriateness and wording of the questions. In this thesis one case study organisation employed an annual employee survey strategy to gather information on engagement and performance (Guest, 1997; Tregaskis et al., 2013) the outcome of which was used to explore the impact of applying a social systems approach.

4.7. Time Horizon

Longitudinal studies were selected for this research because of the need to observe change in the social system operating in an organisation over an extended period. The overall research timeline is shown in Figure 4.7. The case studies lasted between 18 and 30 months.

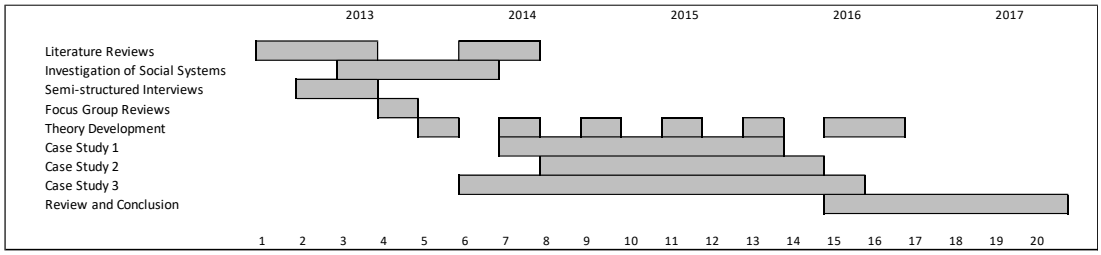


Figure 4.7: Research Timeline

4.8. Data Collection and Analysis

Interviews

Interviews range from being structured and formal to unstructured and informal. Table 4.8 summarises the classification of the purpose of the research and the type of interviews best suited to gathering the information needed to support the selected study approach.

Type	Exploratory	Descriptive	Explanatory	Evaluative
Structured		XX	X	X
Semi-structured	X		XX	XX
Unstructured	XX			X

Table 4.8: Uses of different types of interview for each research purpose (Saunders et al., 2016)

The approach adopted in this thesis uses semi-structured/in-depth interviews in the exploratory study phase to develop a middle-range theory and then surveys and semi-stuctured interviews in descripto-explanatory study phase to establish the causal mechanisms in operation and also to evaluate the effectiveness of modifying the social system and ways-of-working in organisations.

Focus Groups

The use of focus groups in social science research has increased over the last forty years (Finch and Lewis, 2003). It is now an accepted valuable technique. Focus group output is an emergent process. Focus groups can operate as a community-of-practice. The power of focus groups comes from the information originating from the interactions between participants. If managed appropriately the focus group approach delivers a collective and synergistic process, rich in content. It is also helpful if there is a level of trust between the participants to facilitate a more relaxed atmosphere for discussion. In the research described in this thesis the researcher acted as moderator.

Planning for focus group research involves making a number of decisions such as who will take part, how structured the process will be, the level of involvement of the researcher, the size of each group and the number of groups taking part. 'Rules of thumb' and advice on research practice exist to guide researchers (e.g. see Finch and Lewis, 2003); however, in practice the circumstances should dictate what is done (Morgan, 1996a; Morgan 1996b).

Focus groups often comprise participants from a single organisation especially when the research topic requires a level of experience and knowledge. When selecting participants for a focus group the opportunity for bias needs to be considered. The composition of the group should comprise participants both able and prepared to contribute. In the work described later (see Chapter 5) the disparity in the hierarchical levels of the participants was relatively small which helped ensure status did not create issues.

Surveys

Investigating the health of the social system operating in an organisation can be done in a number of ways; for example, structured interviews or employee surveys. For a large organisation, undertaking a survey, often electronically, is a common approach, simply because it is a relatively efficient way to gather data from a large number of people. Surveys tend to be used for exploratory and descriptive research.

When measuring climate and engagement organisations can investigate a number of factors, typically performance enablement factors such as: access to resources, involvement in decision-making, authority needed to do job, how well a work-group works as a team, whether the organisations is making the changes needed to compete etc.; engagement factors such as: how well the organisation values the individual's contribution, pride in the organisation, satisfaction in the company, communications etc., and other dimensions such as collaboration, recognition, growth and development, trust and behaviour change.

Organisations face a choice when measuring organisational climate and employee engagement of either selecting a standard format, which doesn't meet their requirements fully but allows benchmarking with many other organisations who have completed the same survey, or using a customised format that will provide more specific data but won't allow as ready benchmarking with other organisations (Robinson et al., 2007).

Typically questionnaires are used to allow the collection of standardised data from all or a statistically significant sample of a population. The choice and number of questions are important considerations. Information on specific areas of interest can be extracted and quantitative analysis undertaken to reveal trends over time if the survey is repeated. Surveys are often carried out electronically and managed by a professional, external third party for anonymity as well as access to benchmarking that is relevant. In this thesis an organisational climate and employee engagement survey was undertaken for one of the case study organisations by an external professional third party annually over a three-year period. The third party was a commercial organisation comprising organisational psychologists and data analysts. Irrespective of the survey frequency, effective surveys of this type ask questions that lead to specific corrective actions that demonstrate a long-term

commitment to providing a rewarding work experience. Feedback needs to be transparent and demonstrated to be related directly to the input received.

4.9. Conclusion on Methodology

Critical realism is the philosophy of choice for the research contained in this thesis. Critical realism is being adopted increasingly in organisations and social science research (Easton, 2010; Wynn and Williams, 2012, Mingers et al., 2013). Its strength lies in its ability to infer causal explanations for complex phenomena. It is well-suited to case study research and a good basis for theory building (Meredith, 1998; Welch et al., 2011). It bridges the theory-practice gap (Wynn and Williams, 2012) and is well-aligned with complexity theory/systems thinking (Mingers, 2011b). According to Hesketh and Fleetwood (2006) critical realism offers three meta-theoretical insights:

1. It provides an understanding of the limitations of the scientific approach.
2. It provides a causal-explanatory alternative, more aligned with the social systems operating in organisations.
3. It provides the concept of reflexive performance which looks to identify the enabling causal configurations in play through internal conversations

A simplified grounded theory approach is applied in exploratory mode in the initial qualitative investigations into the social systems aspects of PM. This is used subsequently to generate a new middle-range theory based on the data produced from in-depth interviews.

Organisations are open complex social systems and as such critical realism is a well suited research philosophy. Within social systems causality and the underlying mechanisms behind them are also complex by definition. In critical realism the cause of a particular event is considered dependent on all of the contributing causal phenomena, all of which interact. It is the particular configuration of the contributing phenomena along with their emergent powers that generates the specific outcome observed. This means there is the potential for a multitude of different outcomes should there be changes to any of the contributing phenomena. This multiplicity of potential outcomes which comes with complex causality requires detailed explanation which requires disaggregating the contributing causal phenomena into their component parts.

Causality in complex social systems can't be reduced to a series of correlations based on proxy measures but must include information on how people interpret, make decisions and interact in their operating environments and also on the interdependent set of causal phenomena and mechanisms through which any action is initiated and executed. The operating social system in any organisation relies on the trust that develops by collective participation, the presence of shared goals and beliefs and the communications and decision-making processes that define how they operate. Intentions, beliefs and meanings are processes that can't be transformed into 'variables' without misrepresenting the nature of these processes (Maxwell, 2004). As Mingers et al. (2013) comment "The successful occurrence of social activities warrants the existence of causally efficacious although unobservable, social structures."

The main tenets of critical realism are:

1. The existence of an independent reality – things exist separately from our beliefs and accounts of them
2. The presence of a stratified emergent generative ontology – the real, the actual and the empirical
3. The adoption of an explanatory focus – stratification and emergence leads to causal powers
4. The recognition of the importance of structure, agency and culture – the impact of context
5. The recognition of reality as a complex open system – trends are possible
6. The adoption of methodological pluralism – considers different methodologies as tools

Wynn and Williams (2012) identify case study research as a particularly appropriate way to develop causal explanations in complex social and organisational scenarios. Based on the ontological and epistemological assumptions of critical realism Wynn and Williams proposed five integrated methodological principles to guide the conduct and the evaluation of critical realist case study research which have been adopted in this work. Critical realism provides a robust framework for investigating real problems and their underlying causes. Critical realists look to explain what is observed and experienced in terms of the reality that frame events i.e. causal explanations for particular phenomena are inferred by identifying the means by which structural entities and contextual conditions interact to produce a specific set of events. A realist evaluation approach will be adopted through Chapter 6 to explain the observations taken from the case study research.

As noted in Chapter 3 the research undertaken in this thesis is considered to sit within Burrell and Morgan's (1982) radical structuralist paradigm. According to Burrell and Morgan this paradigm is located within a realist view of the world with many significant implications for the study of organisations. Saunders et al. (2016) note that research in the radical structuralist quadrant is often underpinned by a critical realist philosophy. Figure 4.8 maps the research philosophy adopted based on the research onion model presented by Saunders et al. (2016). This approach has been selected because, unlike other representations which often focus on the contrasting extremes of positivism and interpretivism, Saunders et al. introduce critical realism as a philosophy sitting between these extremes. Critical realism as a research philosophy is based on realist ontology but is epistemically relativist. As shown in Figure 4.8 in terms of methodological choice it typically uses a mixed methods research design (Mingers et al., 2013) and strategies from the middle of the qualitative-quantitative continuum such as interviews, case studies and surveys (Bisman, 2010). Narrative inquiry and simplified grounded theory (Partington, 2000) provides the information for the middle-range theory which will be tested using case studies involving action research and surveys (Smith and Bititci, 2017). With a desire to investigate the development and change of the social system the appropriate time horizon requires longitudinal study. This overall approach may provide a competing theoretical framework to organisational control theory for PMM as well as a way to close the PMM theory-practice gap.

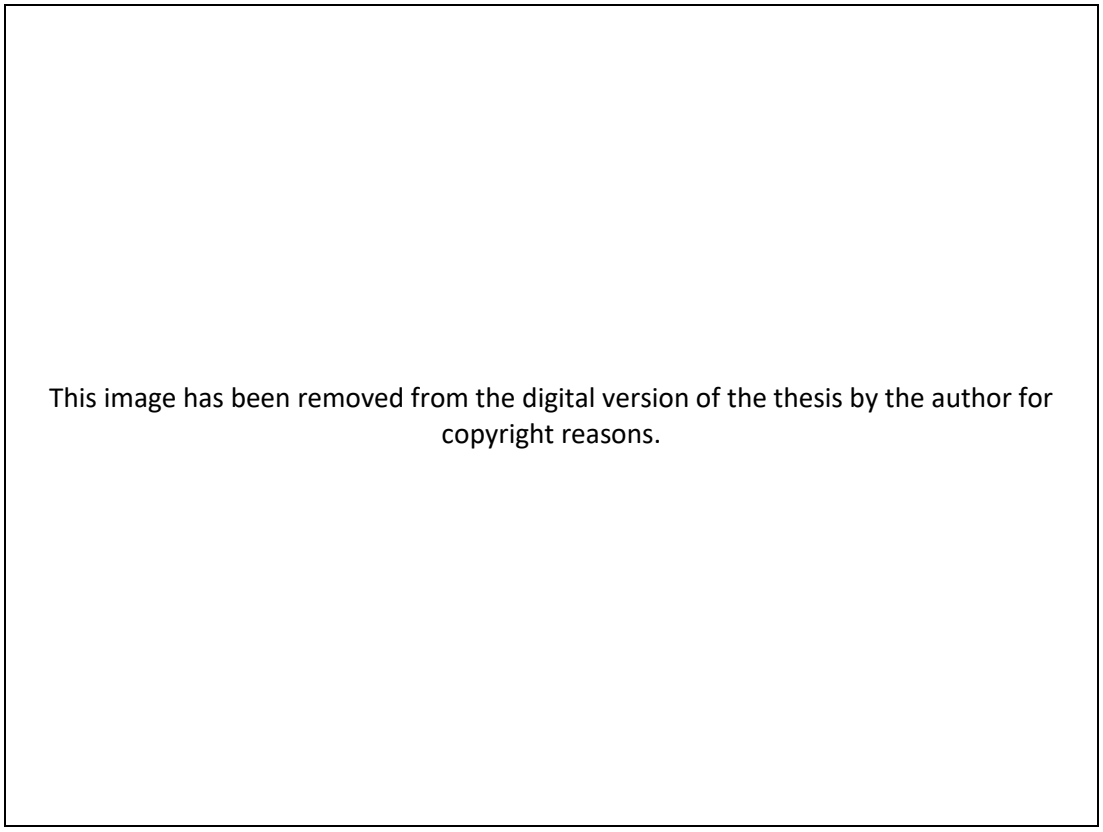


Figure 4.8: The research ‘onion’ (adapted from Saunders et al., 2016)

5. Semi-structured Interviews, Focus Groups and the Development of the Organisational Effectiveness Framework

5.1. Background to Semi-Structured Interviews

Middle-range management theory developed from Mode 2 research can reduce the theory-practice gap.

The chapter starts by describing how behavioural characteristics, identified as important to PM, are generated from semi-structured interviews and distilled down to ten social systems factors. These factors are also considered critical to the success of a broad range of business processes leading to improved OE. Based on the interrelationships between the social systems factors this chapter then focuses on the development of an OE framework that conceptualises a link between PM and OE. The OE framework represents a middle-range process theory which may also provide an alternative theoretical framework to organisational control theory for PMM, one grounded in social systems and practice theory.

Human behaviour within organisations has significant implications for OP (Huselid, 1995; Collins and Smith, 2006; de Waal and van der Heijden, 2015). While PM system design and implementation ought to take the nature of human behaviour into consideration (Holloway et al., 1995; Simons, 2000) there is limited evidence within the literature of it doing so (see Chapter 2). What tends to be presented is how PM systems influence human behaviour (Franco-Santos et al., 2007; Nudurupati et al., 2011; Franco-Santos et al., 2012, Bourne et al., 2013) rather than how organisational behaviour might influence PM. The argument made here is that PM is unlikely to influence human behaviour on its own because behaviour is so deeply ingrained or institutionalised in organisations that change can only be effected through the workings of the entire social system (Pawson et al., 2004). It is much more likely organisational behaviour influences PM and by understanding how this happens PM can be made more effective. According to de Waal (2003) “Performance can be considered an outcome of both organizational and human activities.” de Waal and van der Heijden (2015) have argued that having a performance management system which promotes performance-driven behaviour in organisations will impact OP positively. Their approach incorporates the behavioural aspects of performance management such as accountability, management style, communication etc. (de Waal, 2002, 2003, 2010; de Waal et al., 2004), and performance factors which influence human behaviour and correlate with high OP such as management quality, and openness and action orientation (de Waal, 2011). Robson (2004) and Holloway (2009) indicated the presence of emergent behaviour in organisations means improved performance is not guaranteed when PM is introduced. There is an acknowledgement that the behaviour of complex social systems influences performance, but no clear causal explanation of how (Mitleton-Kelly, 2003, 2011). Cilliers et al. (2013) noted that measurement can be helpful in understanding patterns of relationships in social systems and can provide insight into their complex behaviours. Cilliers et al. advocated extending measurement to include scanning and

sensing to learn more about complex systems by scanning for and being sensitive to the relationships between measures as a source of information on emergent properties reflecting a level of interdependency. There is also evidence that a combination of human behaviour and questioning of the relevance of changing measures may be responsible for traditional PM systems not making the impact hoped for by researchers (Hudson et al., 2001; Bourne, 2008; Melnyk et al., 2014) which emphasises the aspect of use in practice. The approach taken with PM systems is a tangible expression of how well an organisation understands its complex behaviour affects outcomes.

This chapter explores the behavioural characteristics of organisations that influence PM by providing an analysis of PM stories collected from thirty-five people from a range of public and private sector organisations. A semi-structured interview technique was used in exploratory mode (see Chapter 4, Section 4.8, Data Collection and Analysis) to gather relevant behavioural information. These characteristics are important indicators of an organisation's social system (Tsoukas, 1996; Mitleton-Kelly, 2011). Stories have been acknowledged as making an important contribution to social science, organisations and organisational change (Czarniawska, 2004, 2014; Brown et al., 2005; Barker and Gower, 2010; Boje et al., 2016). Gelman and Basboll (2014) described the role stories can play in social science research to illustrate concepts, develop ideas and test hypotheses. To do this stories must be anomalous and immutable i.e. they represent something not explained by existing models and their details should be well established.

Czarniawska (2014) emphasised that organisation researchers don't spend enough time in the organisations they study. According to Czarniawska they "try to map the organizational landscape as well as they can. They draw maps, charts and diagrams, trying to capture structures, networks and hierarchies. In doing so they miss the processes, as organizations are not so much landscapes, as assemblies of organizing processes." Czarniawska added that some key organising processes extend beyond the formal organisation and understanding the 'what' and the 'why' of these processes is possible through narrative knowledge obtained from stories. However, when the researcher "watches the process of organizing, she doesn't *see* the stories." Narrative inquiry is a useful research strategy to gather information on specific topics where the researcher considers the experiences of participants can be best investigated by capturing personal accounts (Partington, 2000). Stories are a means of reflecting the complex social system within which work takes place, providing valuable insights not only on the differences between an organisation's stated processes and what happens in practice, but also offering context and understanding on why these differences came about (Brown and Duguid, 1991; Brown et al., 2009; Cook and Brown, 1999; Sandberg and Tsoukas, 2011). According to Brown et al. (2009) "their *(stories)* key concern is with accounts of sequenced events, with plots that weave together complex occurrences into unified wholes that reveal something of significance." They added storytelling is recognised as a non-linear, distributed activity, frequently associated with sense-making and organisational change and linked to "describing, understanding and explaining complicated processes in which multiple characters, agents, contexts and occurrences overlap and interweave – often in ways which are both uncertain and ambiguous." Storytelling has its critics but it is recognised as providing information not available through other means and is regarded as "a currency (maybe the currency) in

which communities-of-practice trade" in particular when " there is a surfeit of information and a deficit of meaning" (Brown et al., 2009).

Pedersen (2009) introduced the concept of narrative time linking this to organisational change management where stories which relate to the past, present and the future play a part in sense-making for people. Pedersen also noted successful change stories don't translate well to other organisations or organisational levels because time and space (i.e. context) matters. Stories are used as triggers for organisational and social change (Boje et al., 2016). They can be seen as active interventions through attempts to share knowledge and learn from the experiences of other people.

Process for Collecting PM Stories

The research strategy adopted in this work used a qualitative semi-structured interview process to collect PM stories. These stories were obtained from thirty-five people at various levels in organisations from across the public (health/media/government/ education), private (manufacturing/engineering/tourism/retail) and not-for-profit sectors over a 6 months period commencing mid-2012. The organisations involved varied in size (multi-national to small business) and purpose (service to science). The research question asked was *"Please provide a detailed description of your most notable experience of PM at the organisational level from within your organisation".*

The reason for collecting these stories was to understand the behavioural characteristics of organisations that influence PM from the interviewees' perspective. Each story reflects a personal description of an individual's perception of a PM situation; how they saw the event. It is therefore a subjective interpretation based on the individual's experience and knowledge (Clarkson and Nicolopoulou, 2003). The behavioural characteristics identified from the semi-structured interviews are collected in Appendix 5.1. The list of the thirty-five organisational types, their PM system summaries and specific characteristics by organisation are contained in Appendix 5.2.

The process used with each individual was structured and consistent. A short introductory telephone discussion was arranged ahead of the interview to prepare the interviewee for the discussion and generally put them at ease. This involved explaining the background to the research and the content and format of the interview. Based on their personal experience each interviewee was to reflect on a notable PM story from their organisation, one they were prepared to describe in detail. It was explained that the focus of the story should be at the organisational and not the individual level. The subsequent interview facilitated an understanding of the behavioural characteristics in operation within the organisation's PM process from the story teller's perspective. Each respondent was asked to 1) summarise their career histories, 2) describe their notable PM story and 3) explore the foundations on which their assumptions were based (Hesketh and Fleetwood, 2006). The interview process allowed flexibility in the questions asked and an opportunity to explore the details of the story as it unfolded. In some cases this resulted in the interviewee reflecting on what they had said and, having thought about this, coming to a conclusion other than the one they first offered. In other cases, during the interview, the interviewee

requested to tell a different story from the one originally suggested as they considered it more relevant. In addition, the interviewer discarded some stories where the stories lacked sufficient depth or where they became too personal or distressing for the interviewee to continue with. It was important that an atmosphere of trust was developed so that the interviewee felt comfortable about being open and receptive to more in-depth and probing questions when required. This approach allowed the language, format and interaction between the interviewer and interviewee to flex as needed as the interview progressed. It was important the interviewer demonstrated a genuine interest in the respondent and their story.

All interviews were undertaken on a one-to-one basis. Most were face-to-face discussions; however, a few were done by telephone for geographical reasons. Face-to-face interviews are preferred when the purpose is to explore an individual's experience and interpretation of a situation given the richness that comes from observing body language, emotion, expression and subtle changes in response. However, an experienced interviewer can undertake the discussion by telephone or videoconference and achieve good results using active listening and adapting the approach according to the interviewee's responses. It was important to be aware of the sensitive nature of some of the discussions. The researcher was available between the initial contact and the interview to address any additional questions or points of clarification the interviewee had. It was decided not to record the interviews in order to maintain confidentiality. At the end of each interview the researcher summarised the interview notes and, as the main points were restated, checked the respondent concurred with the story as collated and was agreeable with it being included in this research. A general description of the organisation, agreed with the interviewee (e.g. large UK manufacturing company) is given; however, no organisation or individual names are included. Typically the interviews took approximately 1 hour.

Each story included in this research is a personal description of an individual's perception and meaning of a PM situation on the day it was recounted to the researcher. Other observers of the same situation may interpret it differently and the same observer may explain the same event differently on another occasion. This is not an objective view but a valid subjective one based on experience, knowledge and understanding. This understanding may be imperfect but is the interviewee's reality and a truth based on their frame-of-reference (Clarkson and Nicolopoulou, 2003). The idea that 'truth' is not an absolute but is determined by observation and perception is described in 'The Meaning of Truth' by William James where he responded to absolutists, believers in immutable truth and innate or inherited knowledge, by arguing that objective truth exists but it can only be known in terms of experience (James, 1975). From this perspective truth is not waiting to be discovered but derives from the process of enquiring (cf. Heisenberg, 1963).

Given the purpose of the interview was to gather information on organisational behaviours linked to a specific PM situation the approach selected was that of Critical Incident Interviewing, also known as Behavioural Event Interviewing (Brown and Eisenhardt, 1997; McClelland, 1998). In this technique the interviewee is asked to identify and describe specific incidents which they experienced personally. It is an open-ended, retrospective method of questioning with the emphasis on incidents rather than vague opinions. The

technique is used widely within industry, particularly in recruitment, and is one the researcher has considerable experience of. In this research the 'incident' is the PM situation. The interviewer guides the respondent to be specific and redirects if they attempt to reply with generalities. An additional interviewing tool, the Precision Model, was used to move from generalisations such as 'everyone' and 'management' to more specific descriptions. The process is outlined as follows:

- Interviewee outlines PM approach in organisation
- Interviewee describes PM story which had a strong impact on the individual.
- Interviewer makes notes then checks PM story summary with interviewee.
- Interviewer codes the discussion for behavioural characteristics.

For each story the characteristics are documented and each time a new characteristic emerges it is added to the list. The sample size is determined when the saturation point is reached i.e. the incidence of new characteristics dries up. Following this point, additional stories simply reinforce existing characteristics.

Behavioural Characteristics Identified from PM Stories

The semi-structured behavioural event interviews generated rich descriptions of the interviewee's views and actions and the culture and practice of the organisation they worked within, specifically to identify the linkages and relationships involved and the context at the time of their selected story. This study focused on exploring people's experience of a specific social phenomenon, namely the organisation's PM practices and its related behavioural characteristics. Fifty-three characteristics were identified from the thirty-five PM discussions and are shown in Appendix 5.1. In most cases the characteristics described are the words or phrases used by the interviewees. As expected, similar words and phrases were used in the stories by other interviewees to describe common behaviours across organisations. A simplified grounded theory approach (Partington, 2000) was used to identify similarities and code information, with confirmation sought from the interviewees of alignment with the relevant characteristics. After nineteen interviews there were no new characteristics added i.e. reached saturation point. Thereafter the key features identified in the other sixteen interviews could be accommodated by the existing characteristics. The interviewee population for these interviews came from a range of UK, US and European organisations, some of whom are global with a European presence. The list of the thirty-five organisational types, their PM system summaries and characteristics obtained from the semi-structured interviews are contained in Appendix 5.2 as well as three representative examples capturing the interviewee's perception of the PM process in their organisation, their PM story and the characteristics extracted from the discussion. Fifty-three characteristics are too many to use practically as a research tool and were distilled down by a focus group to a more manageable number using the technique of affinity diagramming as described in the next section.

5.2 Focus Groups

Few of the fifty-three behavioural characteristics identified were measurement or process related. Most influenced PM through interactions and behaviours occurring within the social system the individuals worked in. Not surprisingly there was a level of overlap between many of the characteristics; therefore, affinity diagramming was used to group them into a smaller set of common, overarching dimensions (Pyzdek, 2003). Affinity diagramming is used when the number of qualitative inputs is large and complex due to a wide range of different views and opinions as was the case here. It is a means of data reduction by grouping the inputs into meaningful categories through recognising underlying similarity. The concept is that, while there may be many variables, the variables reflect a smaller number of important factors. The affinity diagramming technique is best undertaken by a group of people with appropriate subject knowledge to categorise the inputs. It relies on pattern recognition, group involvement and consensus and, in this case, was facilitated by the researcher. A focus group (Morgan, 1996a; Morgan, 1996b; Finch and Lewis, 2003) comprising fifteen experienced managers, all with PM and management responsibilities, was assembled and asked to apply the affinity diagramming technique to distil the fifty-three characteristics down to a smaller, more manageable number of factors using their collective knowledge and experience. These senior managers came from around the world and worked in a range of Strategic Business Units (SBU) and functions of two multinational organisations that were in the process of merging. They had been brought together for leadership training and the opportunity was taken to develop this PM concept in various “Managing People and Performance” workshops over a 4-day period in Q1 2013 as part of their soft skills development. The managers attending the workshops were not selected or known by the researcher, eliminating selection bias.

The affinity diagramming session commenced by explaining its purpose was to distil the number of behavioural characteristics down from fifty-three to a smaller set of overarching dimensions or factors. Three sub-groups of five managers, selected randomly and working independently, reviewed the fifty-three characteristics, identifying those with similarities and grouping them into common themes. This process was followed until all the characteristics were categorised. Where there was conflict concerning where a specific characteristic best fitted discussion was undertaken until consensus was reached. Each sub-group then reviewed their overall groupings until they were satisfied with the outcome. Each of the three sub-groups proposed what they considered appropriate headings for each overarching dimension.

The three sub-groups came together in a facilitated session. The aim of this session was to generate a single, agreed set of categorised characteristics. There was reasonable alignment between the sub-groups in terms of patterns and categorisation. Where there were differences the collective group discussed these to understand why sub-groups had positioned specific characteristics where they did. This process of active discussion produced a more robust outcome where fifteen experienced managers reached a consensus and created ten overarching dimensions or factors that were enablers for PM and at the same time representative of typical behaviours of the social system that is the organisation. After the groupings were agreed the headings for each dimension were

discussed and a final selection made (Suwignjo et al., 2000). Separate to any link to complex social systems the factors were considered as interdependent by the focus group.

Social Systems Factors, PM and OE

The ten interdependent social systems factors developed as enablers for PM were defined by the focus group by capturing the essence of descriptions contained in the stories that underpinned the categorisation. These definitions would be used later in multiple case study research. The findings from the focus group are captured as summary definitions of the ten interdependent factors in Table 5.1 (fuller description in Appendix 5.3). In line with complexity theory this view of a social system comprises a number of factors characterised by their interdependence and a need to be considered as a collective whole.

No.	Factor	Summary Definition
1	Matches organisational culture & subculture	Shared attitudes, beliefs, customs, written & unwritten rules, collective, sub-cultures match organisation's culture.
2	Conflict resolved constructively	Diverse perspectives valued, respectful, disagreements dealt with quickly, outcomes justified & communicated sensitively.
3	Active involvement of teams & individuals	Aligned individual & collective action, involvement, well-informed, healthy debate, constructive feedback, team first.
4	Consistent flowdown throughout organisation	Clear link to strategy/objectives, line-of-sight top to bottom, common language, consistent methodology across departments
5	Able to respond to external environment	Actions reflect external environment, agile, open to change, customer feedback/competitor intelligence valued & acted on.
6	Consistency with other business processes	Business processes consistent, well understood, clear responsibilities, linked performance measures
7	Organisational values fit with individual values	Values guide conduct, measures fit with norms & values, shared objectives prime.
8	Strong leadership & supportive management	Supportive, facilitates teams & individuals develop, encourages continuous improvement, explains difficult decisions
9	Open clear communications	Honest, two-way, formal and informal, information flow helps decision-making, outcomes shared & understood by all.
10	Trusting relationships	Integrity & consistency, reliability, interdependent, mutual sharing of information

Table 5.1: Summary definitions of social systems factors

Throughout the affinity diagramming session the group of experienced managers repeatedly expressed the view that the 'PM enabling' factors were also common to good leadership and successful business practice, suggesting the factors were not unique to PM. To address these comments a second focus group comprising a different set of fifteen similarly experienced managers reviewed the distilled factors and considered what the high level output would be if these factors were the inputs. These managers were another cohort of senior managers sent by the two merging companies for leadership training. All fifteen managers were Six Sigma trained. In Six Sigma, results are known as 'Ys' and root causes as 'Xs.' The approach taken was to provide this second group of fifteen with the factors as a list of critical 'Xs' and ask them to consider what the 'Y' would be. This focus group was unaware of the PM precursor or the work of the first group and identified the factors as critical 'Xs' for success across the normal range of business activities or processes

(little 'Ys') with OE emerging as the single high level output (big 'Y'). Most business PM systems described in the literature fail to focus on business processes (Choong, 2013; 2014) and don't take a holistic view of them or their drivers (Taticchi et al., 2012). In a study aimed at investigating the role of PM systems in OE within the financial services sector Upadhaya et al. (2014) noted that financial institutions were more successful at improving OE by focusing on non-financial rather than financial measures, the latter being more prone to market effects. Within the non-financial measures, financial institutions using business process oriented measures recorded better OP, consistent with Kaplan and Norton's (2001) deliberations but not Jensen's (2002). The findings from the two focus groups are shown in Figure 5.1.

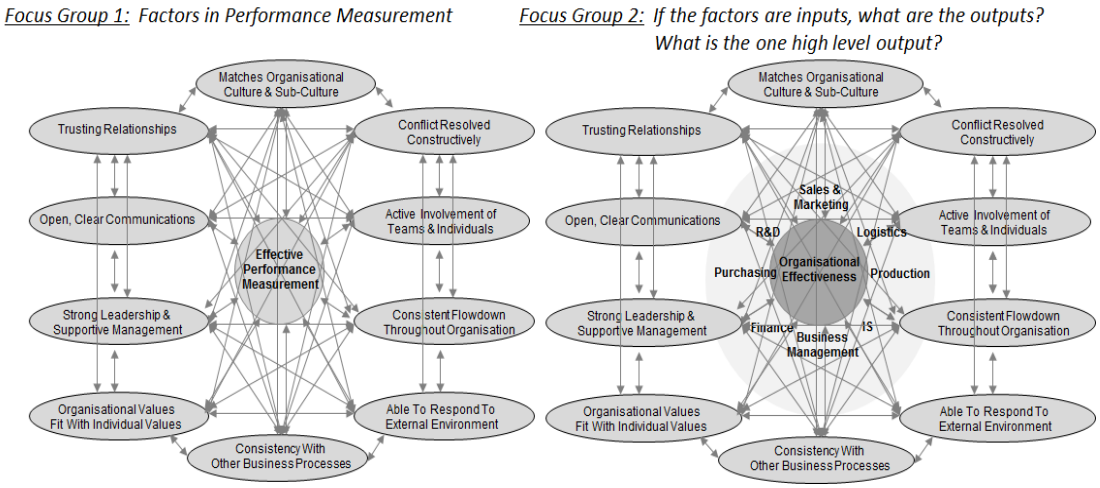


Figure 5.1: Link between the ten social systems factors, effective performance measurement and organisational effectiveness

From a Six Sigma perspective the high level outputs (big 'Ys') are effective PM and OE respectively. These are a function of the critical 'Xs' or root causes which, in this case, are the ten interdependent social systems factors. 'Y' metrics are lagging indicators, the final check at the end of process, the 'ends' (see below). The critical 'Xs' are leading indicators, the 'means' (see below). To improve 'Y' metrics Six Sigma methodology would argue it's necessary to focus on the critical 'Xs'. Intervention plans need to address the critical 'Xs' or root causes, in this case the social systems factors. Simply measuring 'Y' alone will not ensure sustainability over time; it is necessary to continuously evaluate the critical 'Xs' through an iterative process. Gaining buy-in to the process and ownership of the intervention plans are crucial. In the case studies described in Chapter 6 senior leadership and workforce commitment to the interventions plans was essential.

The outcome on the left is from Focus Group 1. This group used affinity diagramming to reduce the fifty-three PM behavioural characteristics to ten social systems factors. The outcome on the right is from Focus Group 2. This group was asked to consider the factors as inputs and determine what the high level output was. The results from the two focus

groups provide a social systems link between PM and OE, termed the PM-OE link; the ten factors being leading indicators for both PM and OE. The focus groups considered application of the SS factors as enabling organisations 'be the best they can be in the circumstances they find themselves'.

The alignment between the factors and OE is supported in Quinn and Rohrbaugh's (1983) spatial model of effectiveness reproduced in Figure 5.2 and also in the approaches to the evaluation of OE reported by Cunningham (1977). Evans and Davis (2005) commented that the aggregate internal social structure was a potential contributor to OE. Quinn and Rohrbaugh (1983) stated to be effective an organisation may need to perform well across all four of their complementary middle-range models (rational goal, internal process, open systems, human relations) of OE. The social systems factors overlap with the means-oriented criteria contained in all four models. The ends-oriented criteria align with an organisation's objectives and OP measures. The social systems factors become the means to deliver the organisation's ends, the critical 'Xs' underpinning the 'Y'.

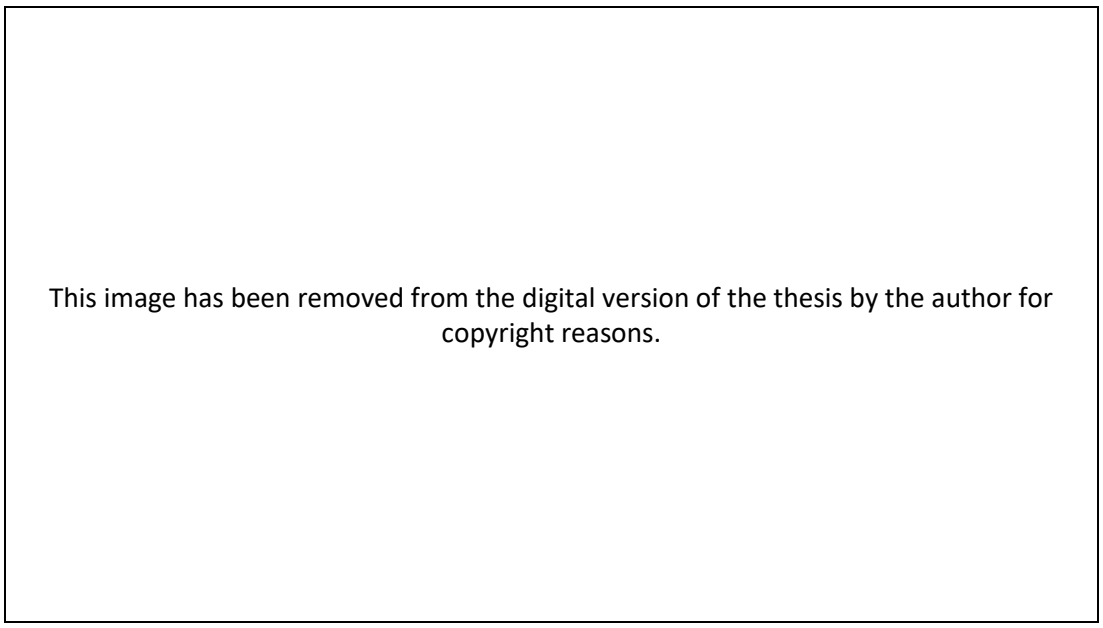


Figure 5.2: Social Systems overlap with OE Models (adapted from Quinn and Rohrbaugh, 1983)

Cunningham (1977) presented seven models for assessing OE in different situations and noted "the literature abounds with criteria ranging from productivity and efficiency considerations to behavioral factors such as morale, organizational flexibility, and job satisfaction." Cunningham banded the seven models into three groups, reflecting the performance of the organisation's structure, the performance of the organisation's human resources and the impact of the organisation's activities, noting that one or more of the banded approaches may be used. The factors overlap with the criteria appropriate to specific applications of evaluation approaches.

Quinn and Cameron (1983) introduced the concept of organisational life cycles and proposed that OE evaluation criteria may be dependent on where an organisation is in its life-cycle. They noted the literature identifies broadly similar life-cycle stages, these being entrepreneurial, collectivity (high cohesion and commitment), formalisation and control, and structure elaboration and adaption. In general the models cover organisational birth to maturity but not decline and death. The case study organisations described in Chapter 6 are all mature organisations and as such Quinn and Cameron would predict the rational goal and internal process model criteria would be the more important criteria for these organisations at their life-cycle stages. According to Cameron (1986) OE is inherently paradoxical. In other words organisations need to be able to manage characteristics that can be contradictory, in some cases mutually exclusive. The OE framework outlined in section 5.4 below accommodates the OE paradox across the four quadrants described by Quinn and Rohrbaugh (see Figure 5.2). Lewis (2000) suggested that "significant advances in management and organization theory will require a way to address paradoxes inherent in human beings and their social organizations." Peters and Waterman (1982) noted "The excellent companies have learned how to manage paradox."

Peters and Waterman described the 7-S model used by McKinsey which concludes that organisational structure alone isn't sufficient to improve OE. The 7-S model comprises what they termed interconnected 'hard' and 'soft' factors. According to Peters and Waterman organisations are more successful when they achieve a balance between the three 'hard' factors of strategy, structure and systems and the four 'soft' factors of skills, staff, style and shared values (see Figure 5.3). Kaplan (2005) observed that the 7-S model and the Balanced Scorecard (BSC) have common characteristics in that they both emphasise the interconnected nature of the seven factors and four BSC perspectives respectively. The interdependent nature of the social system factors described above is broadly similar to the interconnected factors described in the 7-S model.

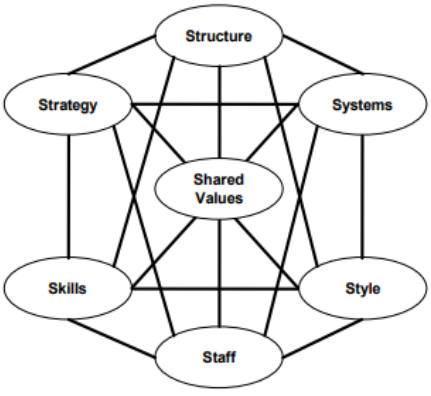


Figure 5.3: The McKinsey 7-S Model

5.3. Targeted Literature Review for Social Systems Factors

This thesis asks the question "*How does looking from a holistic, social systems perspective enhance our understanding of performance measurement and organisational effectiveness from a wider organisational viewpoint?"*

Chapter 2 demonstrated the link between social systems, PM and OP (or OE) is unclear at best. A review of some of the key theories underpinning Social Systems and Practice indicates that together they provide a partial explanation of how social systems might impact OP. Given PM is a complex phenomenon and organisations are complex social systems it is not surprising that a simple causal relationship between PM and OP isn't readily identifiable (Forrester, 1971). Chapter 2 also confirmed that only a handful of publications referred to a link between social systems and PM. However, it has been recognised PM systems ought to take human behaviour more into account than has been done to date (Holloway et al., 1995; Simons, 2000; Nudurupati et al., 2011; Franco-Santos et al., 2012; Bititci et al., 2012; Melnyk et al., 2014; Smith and Bititci, 2017).

In the sections above a holistic social systems view of organisations has been developed which links PM with OE. In Section 5.2 Focus Groups distilled fifty-three behavioural characteristics down to ten interdependent social system factors which mediate the link between PM and OE. It is entirely appropriate to pose the question are these factors simply a creation of the researcher and linked to a desire to establish a social systems connection come what may or do they already manifest themselves elsewhere in the literature either in part or whole? The research question posed here is *"Is there evidence for any of these social systems factors or characteristics elsewhere in the OE or OP literature?"*

This section reviews the OP literature to investigate whether any or all of the ten interdependent social system factors defined in Section 5.2 can be found either individually or in combinations within research linking PM, HRM, social capital etc. to OE or OP. This review is a scoping study based on an ad hoc list of empirical papers to establish the presence or otherwise of an overlap with one or more of the factors proposed in Section 5.2. Appendix 5.4 records the overlap between the literature reviewed here and the ten social system factors (or major elements of them). Strong overlap is expressed as a bold upper case X and weaker overlap as lower case x. In each case the description of the parameter of interest contained in the publication was compared to the definition of the social systems factors given in Appendix 5.1. Where the parameter in question formed a substantive part of the rationale elucidated in the publication and this overlapped with a significant part of the factor as defined in Appendix 5.1 this was recorded as a strong overlap. Where the parameter was mentioned but was neither a main contributor to the rationale nor the overlap with the factor substantial this was recorded as weak. It is recognised this is a subjective analysis.

Findings from the Targeted Literature Review

The link between PM and OP is unclear and fragmented (Guerard et al., 2013; Bourne et al., 2013; Choong, 2013; Micheli and Mari, 2014; Melnyk et al., 2014; de Waal and van der

Heijden, 2015). Eighteen PM papers were reviewed as a representative cross-section of the PM literature (see Appendix 5.4). Included in these publications is a review by Franco-Santos et al. (2012) who developed a framework for understanding the consequences of PM systems in terms of people's behaviour, organisational capabilities and OP. This review summarised a significant cross-section of the literature. Its interrogation enables a judgement to be made on the strength of the overlap of the social system factors across a PM framework based on seventy-six in-depth relevant studies from for-profit organisations. Three of the eighteen papers referred to in Appendix 5.4 (identified with an asterisk) are contained within Franco-Santos et al.'s review. It is interesting to note that the first two categories selected by Franco-Santos et al. reflect people, processes and their interactions, with the third category representing outcome. The blend of people, processes and their interactions underpins the concept of the social system as described in this thesis with the proposition that the social system operating in organisations is the context of importance if OE is to be improved. This is routinely overlooked in the PM literature which normally applies simplistic and overarching performance measures as proxies and disregards the underlying causal mechanisms in operation in the social processes that underpin the core business processes. In their review Franco-Santos et al. inspected a number of theories which might explain the mechanisms believed to affect behaviour, organisational capabilities and performance. However, they did not consider social systems theory among those appraised. As can be seen in Appendix 5.4 all ten social systems factors summarised in Table 5.1 are identified from this analysis of the literature with a strong overlap on five of the ten factors. The other fourteen publications reviewed are consistent with the Franco-Santos et al. (2012) review and each other. From this scoping assessment of the behavioural characteristics contained in the PM literature there is a strong overlap with the *Matches organisational culture and sub-culture, Active involvement of teams & individuals, Consistent flowdown throughout organisation, Strong leadership and supportive management* and *Open communications* factors with the other factors appearing less frequently.

The link between HRM (commitment-based HR practices or strategic human resource management (SHRM)) and OP is also unclear and fragmented (Hesketh and Fleetwood, 2006; Buller and McEvoy, 2012; Zhang and Morris, 2014). Ten HRM papers were reviewed as a representative cross-section of the HRM literature (see Appendix 5.4). Ferris et al. (1998), Collins and Clark (2003) and Bowen and Ostroff (2004) identified organisational culture (climate) and organisational values as contributing to the HRM-P link through combining and exchanging information to produce new knowledge of value. Collins and Smith (2006) reported how HRM practices do not impact OP directly but influence social climates to facilitate knowledge development and exchange. They identify the role of HR practices in the performance of high technology firms in generating trust, cooperation and shared values. Buller and McEvoy (2012) proposed HRM practices are relevant only to the extent they enable the development of organisation-specific human and social capital which represents an important intangible resource if directly connected and aligned to the organisation's strategy by line-of-sight goals. From this scoping assessment of the HRM literature there is strong overlap with the *Matches organisational culture and sub-culture,*

Active involvement of teams and individuals and *Consistent flowdown throughout organisation,* factors with the other factors appearing less frequently.

In a similar vein de Waal (2013) proposed that applying specific management practices, termed the HPO framework, impact organisational performance causally. An HPO is defined as "an organization that achieves financial and non-financial results that are exceedingly better than those of its peer group over a period of five years or more, by focusing in a disciplined way on that what matters most to the organization" (de Waal, 2013). The HPO characteristics referred to by de Waal (2013) reflect an organisation and management practice perspective rather than a social systems perspective; however, a number of the HPO characteristics overlap with the PM characteristics in Appendix 5.1, indeed the elements fit within each of the ten mapped factors. According to de Waal these thirty-five HPO characteristics combine to produce five HPO factors:

1. Continuous improvement
2. Openness and action orientation
3. Management quality
4. Workforce quality
5. Long-term orientation

which also have some overlap with the social systems factors specifically *Leadership and supportive management, Open clear communications* and *Able to respond to external environment*. There is only partial overlap with the ten social systems factors with much of the team and interaction elements missing.

The role of organisational trust in building organisations that function effectively has been discussed by many authors (Argyris, 1964; Handy, 1995; Pfeffer, 1998; Mayer and Davis, 1999; Mayer and Gavin, 2005; Brooks and Muyia Nafukho, 2006; Schoorman et al., 2007). However, although it is recognised as an important concept organisational trust has many diverse and sometimes conflicting definitions (Mayer and Davis, 1999). Trust is considered a property of collectives and applicable to the relations among people (Lewis and Weigert, 1985). These authors added "trust exists in a social system insofar as *the members of that system act according to and are secure in the expected futures constituted by the presence of each other or their symbolic representations"* and noted Luhmann (1979) argued that the function of trust is "the reduction of complexity." Mayer et al. (1995) proposed that trustworthiness is centred on three components, namely ability, benevolence and integrity. Ability refers to skills and competencies that allow an individual or group to have influence, benevolence to the extent to which a trustee is prepared to do good for no guaranteed reward and integrity to a perception that the trustee will adhere to principles the trustor finds acceptable. How these factors combine is unique to the specific situation and context. Mayer and Davis (1999) commented "how a more widespread level of trust among various individuals in a social system can improve the system's ability to function." The suggestion is also made that employee trust in organisations is in decline as organisations disregard perceived obligations. Schoorman et al. (2007) reviewed an integrative model of organisational trust, updating work published in 1995 to include reciprocity, emotion, violation and repair, distrust and context. Given the ever-present existence of conflict within in the workplace Fehr and Gelfand (2012) discussed a multilevel model of

forgiveness with its links to an organisation's core cultural values including trust and social capital through which organisations can encourage employees to respond to conflict prosocially. Brooks and Muyia Nafukho (2006) emphasised the alignment of trust and social capital and the link between trust and productivity "Whether trust is synonymous with social capital or a facilitator of its development remains a subject of ongoing debate among those researching this topic. However, there is significant evidence to support the relationship between trust and productivity" (Brooks and Muyia Nafukho, 2006). Zaheer et al. (1998) explored the impact inter-organisational and interpersonal trust can have on organisational performance and conflict. From this scoping assessment of the organisational trust literature there is strong overlap with the *Matches organisational culture and sub-culture, Conflict resolved constructively* and *Trusting relationships* factors with the other factors appearing less frequently.

Social capital is increasingly considered as a predictor of OP (see Social Capital and Social Systems section of Chapter 3). Ten papers on Social Capital were reviewed as a representative cross-section of the literature (see Appendix 5.4). As mentioned in this thesis it is postulated the operating social system provides the means to develop and grow social capital within the organisation i.e. the social system is the 'means' to the social capital 'ends' and an increase in social capital is an outcome of a 'desirable' operating social system. As outlined in Chapter 1 the blend of people, processes and how they interact makes the difference. The social capital component of a social system is focused more on the people and interaction elements and less on the processes. Given the direct link between social systems and social capital it is anticipated that the social capital literature will demonstrate all ten interdependent social system factors. However, it is also expected that the overlap with the more process related factors may not be as strong as with the people related factors. As can be seen in Table 5.2 all ten social systems factors are in evidence in the literature with the overlap on seven of the factors either strong or medium. The overlap with three factors is considered relatively weak in this scoping assessment. These factors are *Conflict resolved constructively, Consistency with other business processes* and *Strong leadership and supportive management.* The weakest factor is *Consistency with other business processes.*

In today's business environment organisational creativity is important to remain competitive. Woodman et al. (1993) defined organisational creativity as "the creation of a valuable, useful new product, service, idea, procedure or process by individuals working together in a complex social system." Creativity has been linked to OE (Woodman et al, 1993; Andiopoulos, 2001). The overlap with three factors is considered strong these being *Matches organisational culture and sub-culture, Strong leadership and supportive management* and *Open communications.*

According to MacBryde et al. (2014) change management theory has its origins in group dynamics and behavioural psychology. MacBryde et al. examined the academic literature to establish the critical success factors for transformational change. From thirty papers reviewed fourteen critical success factors were identified which overlap with the social systems factors in this work. In particular the overlap with *Active involvement of teams & individuals* and *Strong leadership and supportive management* is considered strong.

Lastly the overlap with OE was considered. As with PMS given the known link between social systems and OE it is anticipated that the OE literature will demonstrate some overlap with all ten interdependent social system factors. The overlap with three factors is considered strong, these being *Consistent flowdown throughout organisation, Able to respond to the external environment* and *Open communications*. The overlap with another three factors was considered weak, these being *Conflict resolved constructively, Organisation values fit with individual values* and *Trusting relationships.*

Conclusion from Targeted Literature Review

This review of a cross-section of the OP literature confirms all ten interdependent social system factors can be identified either individually or as combinations within research linking PM, HRM, social capital etc. to OE or OP. A summary table of the evidence for the presence of the social systems factors or characteristics elsewhere in the OE or OP literature is captured in Table 5.2. This is an integrated summary of Appendix 5.4. Strong overlap is represented by an X, medium overlap with Δ and weak overlap with a □.

Many researchers describe one or more of the factors (or their major characteristics) as contributing to OE or OP either directly or as a 'facilitating variable' within their particular areas of interest. However, the conclusions of studies into PM, HRM, social capital etc. and their link to OP presented in the literature by one author often contradict the outcome observed by another (see examples in Chapters 2 and 3). It is my contention that because these researchers have not recognised the fundamental importance of the social system in operation at the time and the interdependency of the factors, they have not been able to present a complete picture which other scholars are able reproduce because the context (the social system) hasn't been fully taken into consideration.

No.	Social Systems Factor	PMS	HRM	HPO	Org. Trust	Social Capital	Org. Creat	Org. Effect	Change
1	Matches organisational culture & sub-culture	X	X	□	X	X	X	Δ	Δ
2	Conflict resolved constructively	□			X	Δ	Δ	□	
3	Active involvement of teams & individuals	X	X	Δ	Δ	X	Δ	Δ	X
4	Consistent flowdown throughout organisation	X	X	Δ	□	X	□	X	□
5	Able to respond to external environment	Δ	□	Δ		Δ	Δ	X	□
6	Consistency with other business processes	X	□	Δ		□	Δ	Δ	
7	Organisational values fit with individual values	Δ	Δ	□	Δ	X	□	□	Δ
8	Strong leadership & supportive management	X	Δ	Δ	Δ	Δ	X	Δ	X
9	Open clear communication	X	Δ	X	Δ	Δ	X	X	Δ
10	Trusting relationships	□	Δ	□	X	X	□	□	

X = strong overlap, Δ = medium overlap, □ = weak overlap

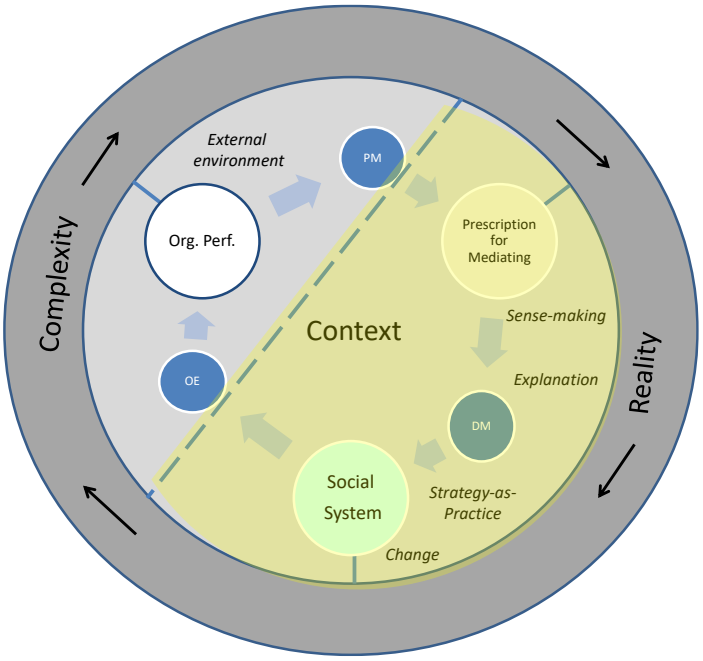
Table 5.2: Presence of Social Systems Factors in the Literature

Holling (2001) considered social systems as complex adaptive systems and outlined an integrative theoretical framework and process, based on empirical reality, for understanding complex systems. According to Espejo (2003) accounting for the complexity of a social system is a recursive process requiring performance assessments of all primary activities. As an emergent system the social system must be considered as a totality; in this thesis this is done by auditing all ten interdependent social system factors. It would be

inappropriate to attempt to understand the influence of a social system in terms of its component factors either individually or as combinations. Therefore, researchers who investigate components of the social system such as trust or leadership or organisational culture and their causal relationship to OE or OP ignore the holistic requirements of considering the totality of the social system and omit some of the context. Byrne (2013) underlines the requirement to think about parts and wholes where parts have causal implications for the whole and other parts, interactions between parts have causal implications for the whole and the whole has causal implications for parts. This perhaps explains why investigations exploring the relationship between a component of the social system and OE or OP can be in conflict i.e. the complex system represented by a particular subset of components doesn't reflect the context in full.

5.4 Development of the Organisational Effectiveness Framework

While a link between PM and OE is acknowledged an explanation for this relationship is limited by the absence of a clear theoretical foundation (Rangone, 1997; Matthews, 2011). This thesis proposes the link between PM and OE is mediated by the nature of the social system operating in the organisation. Figure 5.4 builds on the overlap between social systems and practice described in Chapter 3 and shows pictorially how the social system can be changed to proactively influence the link between PM and OE.



PM: Performance Measurement; OE: Organisational Effectiveness; DM: Decision-Making

Figure 5.4: How Social Systems Mediate Performance

A middle-range theory to mediate the PM-OE link is proposed to comprise reviewing appropriate business processes and performance measures in the context of the social systems operating in the organisation at the time, making sense of and understanding what is happening in practice at the social system level, and proposing and implementing appropriate improvement interventions via various strategy-as-practice and change activities. These activities are set against the complexity of the internal and external global environments but also reflect how these manifest themselves in a local context. This is envisaged as an ongoing iterative process. The elements involved in mediating the PM-OE link are shown to the right of the dotted line (highlighted in yellow) sitting between PM and OE in Figure 5.4. These elements contribute to what is referred to as the OE Framework or Social Systems Lens (SSL), described in more detail below. The model follows the standard stimulus-organism-response mechanism (Partington, 2000; Van Aken, 2005). The condition of the social system operating in the organisation at the time provides a theoretical foundation to explain the link between PM and OE which Rangone (2009) noted as absent.

The process of explaining the OE framework to appropriate local leadership teams and communities-of-practice is termed Prescription for Mediating in Figure 5.4. Communities-of-practice, described by Wenger (2000, 2010) and Cox (2005) among others, are key to the 'inside-out' approach adopted in this thesis. The knowledge, know-how and potential for emergent thinking the community-of-practice offers provides a unique understanding of the condition of the social system in operation along with options for improvement. The community-of-practice then operationalises the agreed improvement interventions (Lebas and Euske, 2004). The OE Framework or Social Systems Lens (SSL) provides a way to translate the organisation's business processes and performance measures into more effective outcomes. It adopts an Action Research strategy and entails the following steps:-

- Step 1: Define the initial OE goal.

  The OE framework is described to the case study organisation's local leadership team. Discussions with them outline how the framework might assist with their performance/ organisational issues by explaining how the process operates, agreeing an initial OE goal, what the unit of analysis is, which parts of the organisation will be involved and what the review process will be.

- Step 2: Undertake the OE audit.

  The initial OE goal is explained to an appropriate community-of-practice (Wenger, 2010) and with this goal in mind, the community-of-practice undertakes an audit of the social system by reviewing how the organisation performs against the ten social systems factors to establish the 'current position' (CP). Business processes, performance measures, organisational routines and interfaces are being examined in these audit discussions. Each factor is discussed in turn using the guidelines developed from the focus groups. Because every organisation is unique the guidelines are interpreted flexibly to suit the specific organisation but focus on business processes and relevant performance measures (Neely et al., 1995; Neely and Bourne, 2000). This information may be collected by degrees (Ulrich and Smallwood, 2004). A 90° assessment would collect data from the leadership team – it is recognised this may contain bias. A 360° assessment would collect data from multiple

groups within the organisation – this provides a more comprehensive view of how social system operates in practice.

- Step 3: Analyse the audit data and identify gaps between the 'current position' (CP) and 'what good looks like' (WGLL)

  Having established the 'current position' (CP) the community-of-practice makes use of their collective knowledge and know-how to consider what the ideal position would look like, termed 'what good looks like' (WGLL). The community-of-practice reviews the CP and WGLL to explore where there are gaps, why these exist and what can be done to close them. They discuss relevant business processes and performance measures and, where necessary, their development-in-use (Neely and Bourne, 2000; Bourne et al., 2000; Kennerley and Neely, 2003). Adopting a sense-making perspective leads to emergent outcomes (Balogun and Johnson, 2005). Trusting relationships and active involvement, facilitated by consistent processes are important if people are to generate and integrate new ideas (Woodman et al., 1993; Amabile, 1998). The two or three factors demonstrating the biggest gap from WGLL are identified. If a priority order of factors to concentrate on does not emerge from the discussions then the community-of-practice will propose their priority factors.

- Step 4: Produce and execute an intervention plan aimed at closing the CP-WGLL gap. Executing the intervention plan is the exercising of powers of a social structure.

  The community-of-practice develop an intervention plan by translating the priority factors from step 3 into a series of practical steps to close the CP-WGLL gap based on their vision of WGLL. As already mentioned the intervention plan is focused on the means, the critical 'Xs'. The outcome from the communities-of-practice is shared with the leadership team to gain their commitment for both the intervention plan and the factors to be addressed. The community-of-practice has the responsibility to execute the plan as agreed with the leadership team (Hendry and Seidl, 2003).

- Step 5: Review the outcome and any relevant external influences, and set new OE goal.

  The outcome of the intervention plan is reviewed with the leadership team to establish whether they believe it has addressed their initial OE goal, reviews whether it has had any impact on the social system and any relevant operational measures, considers whether there are any elements from the external world that need to be accommodated and built into the next iteration of the process.

The OE audit process has similarities with the capabilities audit described by Ulrich and Smallwood (2004) and the entwinement strategy described by Sandberg and Tsoukas (2011). Wenger (2010) considered communities-of-practice and networks as co-existing structures; community highlighting identity, network highlighting connectivity. Wenger stated "Communities-of-practice are networks in the sense that they involve connections among members; but there is also identification with a domain and commitment to a learning partnership, which are not necessarily present in a network." In this thesis communities-of-practice, social capital and social systems are considered to operate at the collective, community level. Social networks need to be considered from the same collective perspective. If social networks are considered only at the individual level they will not capture the emergent group-level processes going on.

The connection topology in networks is usually assumed to be either completely regular or completely random (Watts and Strogatz, 1998). 'Small-world' networks lie between these opposites, having a level of randomness to their connectivity. Although 'small-world' networks have received little attention in the literature they are considered relatively common in the social and natural sciences (Watts, 1999; Borgatti et al., 2009). 'Small-world' connectivity is proposed to be responsible for a range of dynamic consequences. Watts and Strogatz (1998) illustrated this by describing how infectious diseases spread more easily in 'small-world' networks than in regular networks by providing short-cuts to what otherwise might have taken much longer to occur. In 'small-world' networks short-cuts are the routes to non-linear effects. According to Watts and Strogatz (1998) "models of dynamical systems with small-world coupling display enhanced signal-propagation speed, computational power and synchronizability." These are desirable characteristics to progress the OE framework. It is proposed that the communities-of-practice can be considered as 'small-world' networks where the injection of a low level of randomness into the regular structured network that is the organisation has a significant effect on the network's dynamic properties. Communities-of-practice can be considered a rewired version of the regular organisational network to introduce a level of disorder where communication speed, emergent outcomes and parallel processing can happen much more readily than in the normal organisational structure. Those engaged in community-of-practice activity can be considered as participating in a knowledge production process. This thesis advances the use of Mode 2 knowledge production given its ability to reduce the theory-practice gap (Tranfield and Starkey, 1998). Communities-of-practice, networks and transient project teams are a good fit with Mode 2 methodology.

In a similar vein to Ulrich and Smallwood's capabilities audit the OE audit aims to strengthen the social system in operation in the organisation. The OE framework makes use of the community-of-practice's differentiated transactive memory (Wegner 1987) on how business processes, workplace activities, performance measures and the social system operate in the organisation and leverages all of these to define what the community-of-practice believes would be good practice leading to gap closing interventions: for example, changes to ways-of-working of business processes and modifying specific measures to make them more effective. In short, this process not only registers performance measures as measures in thermostat mode but also enables higher-level activities such as testing assumptions and standards inherent within the existing routines (Melnyk et al., 2014). The community-of-practice enables discursive practice and facilitates the integration of distributed knowledge and knowing (Tsoukas, 1996). Business processes focus on how work is done within an organisation, not what is done; they involve specific work activities with clearly defined inputs and outputs (Choong, 2013). The SSL enables a community-of-practice, knowledgeable in the area, to concentrate on key business processes and how work is done and measures made by those involved, with the intention of making these business processes more effective i.e. with the focus on people, processes and how they interact (Kennerley and Neely, 2003). The SSL focuses on actionable knowledge in that it not only describes what is likely to happen under certain conditions but also how to create the conditions and actions (Argyris, 1996). The 'lens' facilitates knowledge, thoughts and ideas to be integrated and shared which generates different outcomes than would have

been achieved in the absence of a collective approach (Weick & Roberts, 1993). The transactive memory system (TMS) is a collective process that leverages the knowledge of the individuals comprising the community-of-practice and the communication processes that occur within the group. The TMS is well suited to complex activities (Lewis and Herndon, 2011) and an intangible property of the community-of-practice; a group information processing system with the potential to generate knowledge and knowing and store these in the group mind (Wegner, 1987). By its very nature the outcome is intangible and inimitable reflecting the collective output of the group (Barney and Felin, 2013).

Communities-of-practice (Weick & Roberts, 1993; Akkerman et al., 2008; Wenger, 2000, 2010) undertake WGLL discussions in goal oriented episodes (Hendry & Seidl, 2003), coupling scanning, interpreting and learning with strategy implementation and change (Daft and Weick, 1984). The organisation, being aware of the overall intention to improve the PM-OE link, is encouraged to use their collective knowledge to define the most appropriate intervention plan to deliver the OE goal. According to Locke and Latham (2006) the group's freedom to control the outcome leads to better results. The objective of the intervention plan is to change the social system such that its future state better supports WGLL. In principle, complex systems have access to multiple future states but path dependency limits which future states are possible. As described in Chapter 3 social systems have a history of decisions. Previous decisions with their absorbed uncertainty have shaped the current social system and will influence what happens in the future. Making new decisions regarding the intervention plan to adopt leads to further absorbed uncertainty. For interventions to have an impact and change behaviour they need to become embedded in the social system. The existing social system, i.e. the intervention context, is key – the same intervention will almost certainly have a different outcome on a different social system. Negotiated order (Callaghan, 2008), associated with communities-of practice here, is central to how the social system changes to deliver WGLL. Evaluating complex social interventions which develop over time, involve groups of people agreeing changes to the social system and the process of evaluation itself, and are intended to deliver change in the social system, is not straightforward.

As discussed in Chapter 4 the practical activities contained in the intervention plan are some of the events which produce observed experiences such as improved operational measures or modified communication and decision-making processes. In the OE framework communities-of-practice are empowered to optimise performance indicators to improve OE and promote the right behaviours over time (Micheli and Manzoni, 2010). This process of using communities-of-practice in this way can be considered a dynamic capability (Zollo and Winter, 2002) making use of TMS. The iterative process that facilitates change in operational measures is broadly similar to the process described by Kennerley and Neely (2003) and shown in Figure 5.5.

Figure 5.5: Process for evolution of PM systems (Kennerley and Neely, 2003)

Pawson et al. (2005) outlined seven defining features of complex social interventions which need to be considered when using the OE framework. These are:

1. Interventions are theories and based on the hypothesis that they will deliver an improved outcome
2. Interventions are active and deliver their effect through the input of people
3. Interventions involve the cumulative success of a series of mechanisms as the intervention unfolds
4. Interventions are non-linear and can go in reverse
5. Interventions are embedded in multiple social systems and vulnerable to context
6. Interventions tend to be replicated in a mutating fashion shaped by refinement, reinvention and adaptation to local circumstances
7. Interventions feed back on themselves

The implementation of the intervention plan and its evaluation in terms of meeting the initial OE goal tests the effectiveness of the OE framework from the organisation's perspective. However, from the research perspective gathering information on how the intervention impacts the outcome, how the contextual circumstances affect the outcome and the specific mechanisms that may be responsible for the observed events are fundamental to the realist evaluation process (Greenhalgh et al., 2017). Realist evaluation also looks to explain why interventions sometimes don't deliver the expected results. Identifying the most likely causal explanation and determining whether it validates the proposition requires a critical realist interpretation of the observed events. Figure 5.6 shows the application of the SSL to PM over two iterations. The descriptive narrative is shown on the right-hand side and the detailed definitions explained in Appendix 5.5.

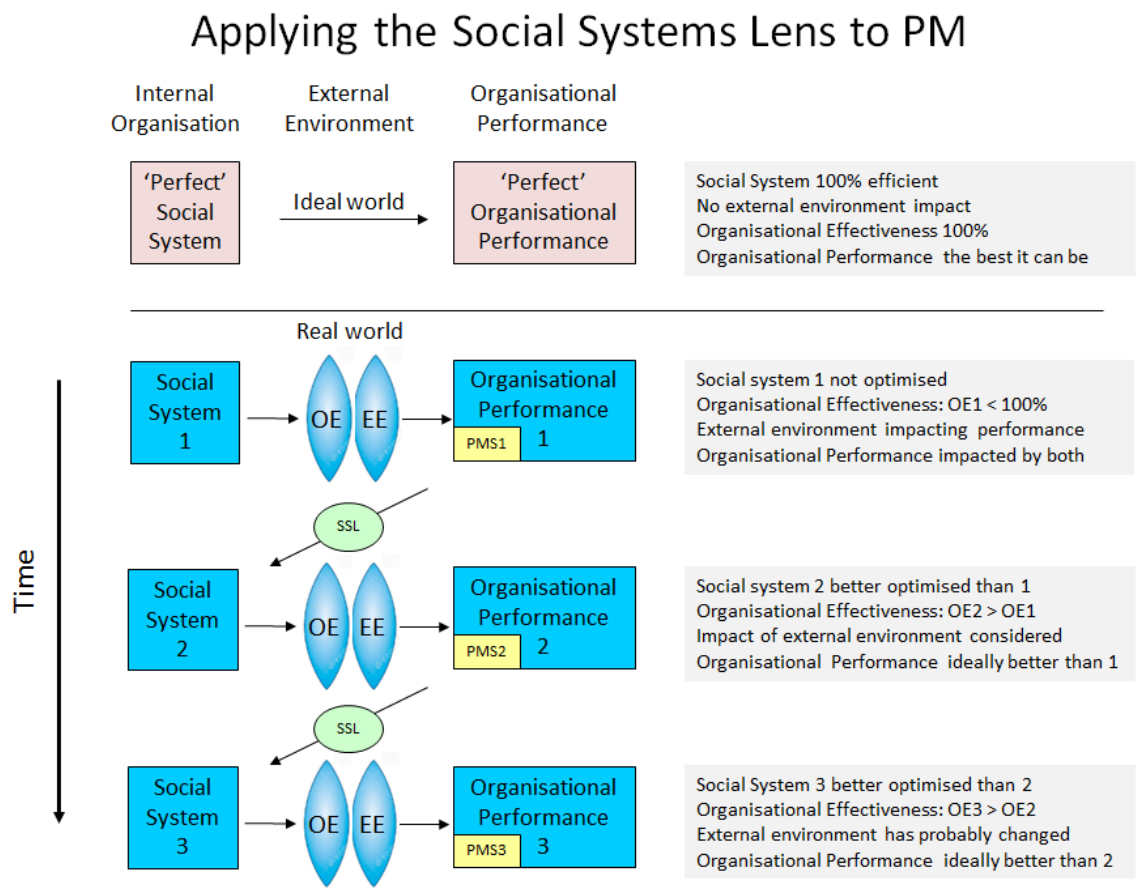


Figure 5.6: Applying the 'Social Systems Lens' to PM

It is interesting to note that Melnyk et al. (2014), through use of a Delphi study, came to the conclusion that the unpredictability of external environments has a consequence for PMM. Melnyk et al.'s approach had three phases: 1) electronic survey, 2) a workshop involving the research team and expert practitioners and 3) framework testing. The conclusions from the study were twofold and broadly similar to those of Hudson et al. (2001). First, while directional outcomes were easily stated developing the appropriate supporting measures was difficult with contributing factors including emerging processes, complex situations and managing opportunities. Melnyk et al. stated "This created challenges, particularly because of the time and number of iterations needed to get the metrics aligned with the new strategy and the confusion caused during the change." In the SSL the focus is on the social system not on the measures. The alignment with the iterative operation of the SSL is clear where the external environment and PM play key roles in terms of optimising the metrics to reflect business requirements. Second, the need for metrics to be dynamic with the potential for sense-making and early decision-making could give organisations a competitive advantage. Melnyk et al. suggested PM needs to become an information and learning tool for the organisation rather than a control mechanism which emphasises the importance of the social system in operation at the time of any intervention. They added from a practice perspective PMM needed to change from an "overly simplistic and highly mechanistic and very prescriptive process" to more a

conditional, contingent approach which recognised that any strategic and PMM response was contextually dependent. Moreover, such a contingent approach was lacking in the PMM literature. The practitioners working with Melnyk et al. are in essence outlining the critical realist approach underpinning the SSL described here and summarised in Chapter 4 as "we can, through careful comparison and exploration of complex contingent causation, begin to get a handle on what works *where (in what context), when (in what temporal context)* and *in what order*" (Byrne, 2013). Melynk et al.'s solution to closing the PMM theory-practice gap is to postulate a new theory which resulted in the Performance Alignment Matrix to explain the relationship between strategy and the PMM system (see Figure 5.7).

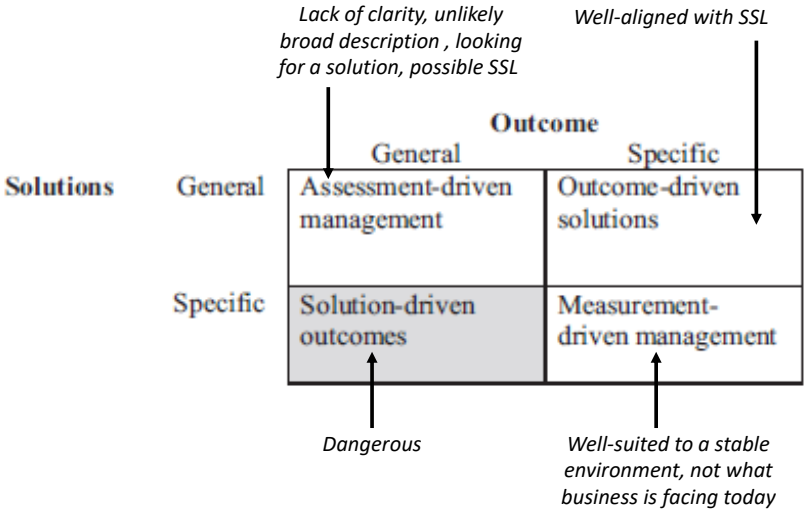


Figure 5.7: Performance Alignment Matrix (adapted from Melnyk et al., 2014)

Melnyk et al.'s four-box model has been annotated to reflect some of the practical flaws associated with it for businesses undergoing 'flux, change and uncertainty'.

1. The Measurement-driven management quadrant is not well aligned with the dynamic environment business are facing today (good for a stable environment) so is not relevant in practice.
2. As Melnyk et al. stated, the Solution-driven outcomes quadrant is dangerous for business because this could drive corporate strategy based on the wrong criteria so is not relevant in practice.
3. The Outcome-driven solutions quadrant has the outcome clearly specified but the solution is only broadly described. The organisation has time to select the best approach and then lock it in. This is aligned with the SSL.
4. The Assessment-driven management quadrant has the outcome broadly described but the organisation doesn't know how to get there and is open to any solution. This moves away from PMM to assessment; however, it is not clear what the organisation does. This might align with the SSL.

The Measurement-driven management and Solution-driven outcomes quadrants are not where businesses want to be and not relevant in practice. The Outcome-driven solutions and the Assessment-driven management quadrants have the outcomes or 'ends' identified and are seeking the 'means' to deliver this. Delivery of the 'means' is well-aligned with application of the SSL, in particular for the Outcome-driven solution, where communities-of-practice target to do exactly this.

An aim of the research contained in this thesis is to describe and explain the emergent behaviour of the SSL through causal powers and mechanisms. According to Gorski (2013), the domains of the real, the actual and the empirical are normally 'out of phase'. The purpose of an experiment, here the case study research, is to bring them 'into phase' such that it is possible to activate, isolate and observe the powers and tendencies of the social system (Chapter 6).

The 'inside-out' approach adopted in this thesis looks at PM from inside organisations and from a holistic social systems perspective. As an emergent system the social system needs to be considered as a totality (Banathy, 2013; Byrne, 2013). In other words it would be inappropriate to attempt to understand its influence in terms of its components either individually or as combinations. The intervention framework uses communities-of-practice to understand the social system operating in the organisation at that specific time. Communities-of-practice represent the "social architecture" considered by Spitzer (2007) as essential for promoting discussion of measurement data and related information to enable appropriate measures be built into the social fabric of the organisation. The practice of multi-level teams discussing and agreeing WGLL and then developing a consensus-based intervention plan built on the ten factors not only galvanises commitment for the plan but also provides the opportunity for the content to reflect collective understanding which exceeds what any individual or small group would generate on their own (Maitlis, 2005; Sandberg and Tsoukas, 2011). Griffin et al. (2007) described how the changing nature of work and organisations are reflected by the increasing interdependency and uncertainty of work systems and outlined how interdependence in a work context defines to what level roles are required to support the broader social system and how uncertainty defines whether roles can be described unambiguously or emerge through adaptive and proactive behaviour. They proposed "context shapes and constrains the behaviors that will be valued in organizations [….]. Uncertainty and interdependence are two pervasive features of context that organizations must manage to be effective." In the research described in this thesis communities-of-practice provide the vehicle to manage these features within a developing social system.

The potential for highly emergent thinking to better understand the processes impacting the measures and also respond to external effects helps refine the intervention plan, and potentially the measures (Kennerley and Neely, 2003), and the likelihood of getting the best outcome (Frank and Fahrbach, 1999). The argument made in this thesis is that the introduction of a SSL to PM brings focus to OE and enables organisations be the best they can be in the circumstances they find themselves (see Figure 5.8).

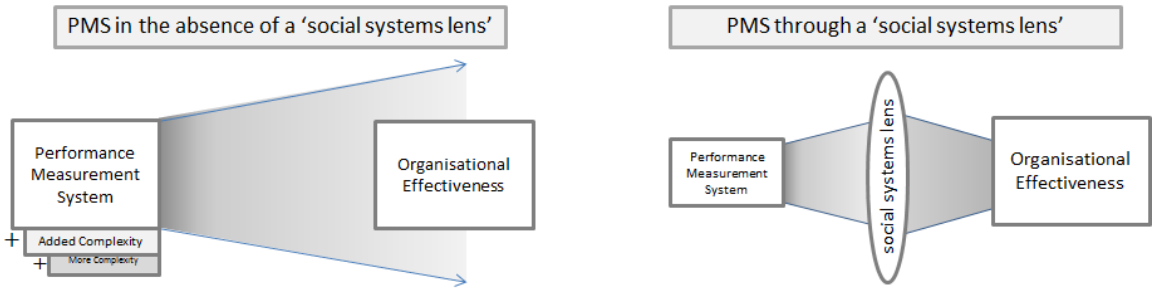


Figure 5.8: Introducing a 'Social System Lens' to PM

This is consistent with the idea that to understand working, learning and innovating in organisations it is necessary to look inside the communities in which the work takes place, inside the operating social system as well as externally. Communities-of-practice provide multiple, multi-level interpersonal relationships, the networks of bridging ties mentioned by Evans and Davis (2005), the social complexity that Barney (1991, 2001a, 2001b) and Barney et al. (2011) refer to as a route to a rich source of sustained competitive advantage. Complex tasks benefit from collaborative understanding (Kogut and Zander, 1992, 1993, 1996). Emergent intervention plans are facilitated by informal communities-of-practice (Brown and Duguid, 1991; Brown et al., 2009; Cook and Brown, 1999; Maitlis, 2005; Akkerman et al., 2008; Sandberg and Tsoukas, 2011). These bottom-up processes of emergence rely on leaders without authority but with influence within their communities (Schneider and Somers, 2006). The communities-of-practice generate a collaborative view of WGLL (cf. Productive Inquiries, Cook and Brown, 1999; or second-order temporary breakdowns, Sandberg and Tsoukas, 2011) and new and improved ways to get to the outcome the organisation desires, given understanding is constructed within and distributed throughout teams and can be viewed as "as a social construction, putting knowledge back into the contexts in which it has meaning" (Brown and Duguid, 1991). They describe a future state in WGLL taking context into account, create alternative ways to get there and select and implement the most promising alternative. Having a consensus on WGLL provides the potential to develop a set of individual, group and macro-level intervention goals to coalesce around through change processes (Locke and Latham, 2006). This process is applied iteratively (see Figure 5.6) and is consistent with the entwinement strategy described by Sandberg and Tsoukas (2011) and the development of dynamic capabilities described by Teece (2007).

Communities-of-practice are key components of the temporary social structures referred to in Chapter 1 and are based on forms of interaction and communication between and among individuals; connections which can be continuously broken off and remade (Martin and Lee, 2015). Communities-of practice can be considered social networks (Wenger, 2010). Mitchell (1969) defined a social network as "a specific set of linkages among a defined set of persons, with the additional property that the characteristics of these linkages as a whole may be used to interpret the social behavior of the persons involved". Cross et al. (2006) have demonstrated how social network analysis improves the efficiency of communities-of-practice in terms of delivering innovative solutions by making seemingly

invisible interactions visible leading to more successful interventions. The link between networks and OP is documented in the literature (Brass et al., 2004). Tacit understanding and knowledge transfer are facilitated by social networks (Glykas, 2011). Interestingly the social network approach considers organisations as a system of objects (e.g. people, groups, organisations) joined by a variety of relationships i.e. not all pairs of objects are directly joined, and some are joined by multiple relationships. According to Tichy et al. (1979) "network analysis is concerned with the structure and patterning of these relationships and seeks to identify both their causes and consequences. The multilevel applicability of the network perspective suggests that it can add insight to several content areas." The overlap with critical realism is evident (Buch-Hansen, 2014).

In terms of the contextualist approach to understanding organisational change outlined in Chapter 3 (Pettigrew, 1987) content refers to the particular areas of transformation under investigation, in this case OE. Pettigrew's context has outer and inner elements to it. The outer context refers to the "social, economic, political, and competitive environment in which the organisation operates" and the inner context to the "structure, corporate culture, and political context within the organisation through which ideas for change have to proceed." In the SSL approach shown in Figure 5.4 the outer context aligns with the external environment (EE) and the inner context to the social system operating at the time of the interventions. Pettigrew's process of change refers to the actions, reactions, and interactions from the various interested parties. This aligns with the intervention plans developed by communities-of-practice through application of the SSL. Critical realists highlight the transformational nature of the social world. Here the combination of the communities-of-practice and application of the SSL reproduces and transforms these transient social structures.

The argument described above is that the introduction of the OE framework or SSL to PM brings focus to OE and enables organisations be the best they can be in the circumstances they find themselves. An overview of the OE framework is shown in Figure 5.9. The framework has the ten interdependent social systems factors as its foundation. These produce a fuller description of the context of importance at the time any intervention is made. The factors have been observed to influence OE or OP to some extent either individually or in combinations within the literature; however, as an emergent system the social system should consider them holistically. The OE framework represents a middle-range process theory where PM plays a subordinate role, providing key indicator information to determine how effective the organisation's intervention has been. This middle-range theory is underpinned by the theoretical concepts outlined Chapter 3, specifically those which contribute to the hatched area highlighted in Figure 3.12 and expanded upon in Appendix 3.1. The focus on emergent knowledge and know-how, sense-making and decision-making by communities-of-practice to reconfigure the social system and shape interventions such that they are more likely to impact OE and OP is critical, coupled with realist evaluation theory to explain why the interventions gave the outcomes they did. This approach may also provide an alternative theoretical framework to organisational control theory for PMM, one grounded in social systems and practice theory and supported by adopting a critical realist frame-of-reference. Case study research will be undertaken to test the theory that the SSL enables organisations become the best they can

be in the circumstances they find themselves by encouraging the workforce to create purposeful social intervention plans which make business processes and performance measures more relevant. Chapter 6 will describe these studies and the realist evaluation undertaken to identify the most likely causal explanations and interpretations of the observed events.

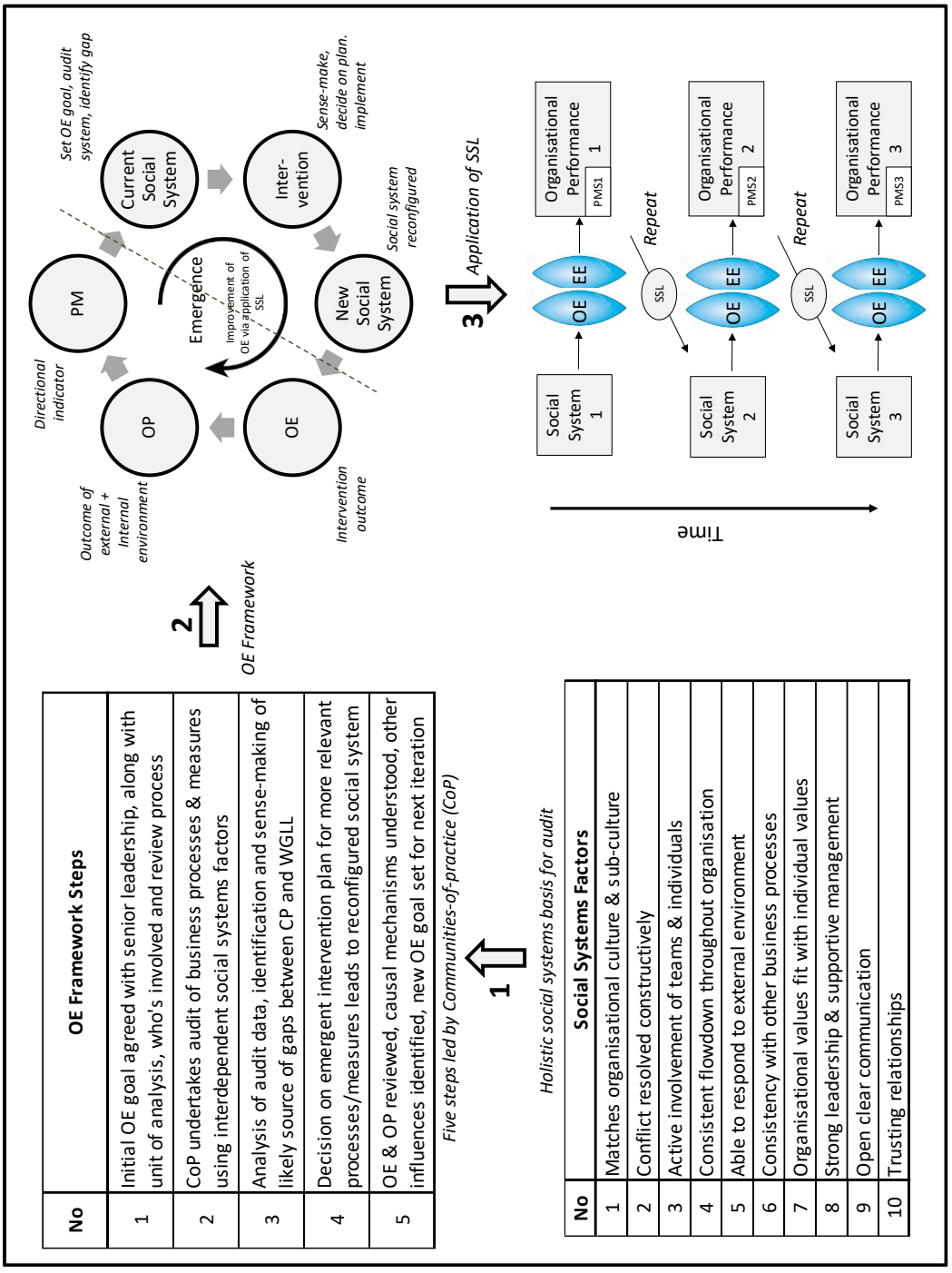


Figure 5.9: Overview of OE Framework

6. Case Studies: Action Research, Interventions and Realist Evaluation

6.1 Introduction to Case Study Approach

The potential for the theory of practice to link various theoretical approaches and use their strengths under a joint conceptual frame can guide research.

Chapter 5 describes the development of a middle-range theory proposing the link between PM and OE is mediated by the nature of the social system operating in the organisation at the time of an intervention. Ten interdependent social systems factors mediate the social system. Communities-of-practice are used to better understand the social system and the business processes and performance measures in operation, and then develop intervention plans aimed at changing how these interact to promote delivery of the OE goal.

This chapter describes the application of the middle-range theory to three case study organisations to explore whether it provides a more relevant approach which better reflects business need in practice, thereby narrowing the theory-practice gap. The theory-building potential of Action Research is recognised in the literature where there is the intention to take action based on social intervention (MacLean and MacIntosh, 2003; Pawson et al., 2004; Byrne, 2013). Action Research can accommodate history and agency thereby facilitating the development of transferable knowledge in complex social systems (Byrne, 2013). The case studies were selected to help theory-building, test elements of it and demonstrate its generalisability. The impact of using the SSL is assessed and explained to establish whether or not the postulated link can be supported. Critical realism has been selected as the research philosophy for this work because of its suitability for investigating causality in complex social systems. Causation in critical realism is not linked to a regular succession of events but by explaining the means through which events are generated. Bhaskar (1998) defines causality by "if and only if it is the case that some event E would not have occurred, under the conditions that actually prevailed but for (the operation of) X." Causality is inferred by identifying the means by which structural entities and contextual conditions interact to produce a particular set of complex sociotechnical events (see Chapter 4 and, in particular, the section on Realist Evaluation).

This chapter describes case study research undertaken in a global food company, a multi-business chemicals site and an industrial products manufacturing site respectively and is presented in the following format:-

1. Background to Case Study Organisations
2. Organisational Effectiveness Goals
3. Organisational Effectiveness Audits
4. Intervention Plans and Outcomes
5. Causal Mechanisms Explaining Outcomes
6. Case Study Findings.

The case study research looked at different industries and combinations of scale and configuration i.e. single business/single site, multi-business/single site and multi-site/single business, to test the robustness of the theory and the generalisability of the findings (Meredith, 1998). In each case the SSL protocol outlined in Section 5.4 was followed rigorously, in particular the 5-step intervention process for creating a social systems perspective reproducibly. The focus of the research was different in the three case studies with specific elements of the SSL framework examined in case studies 1 and 2, building to its full use in case study 3. Specifically, case study 1 focused on the efficacy of the intervention process, in particular steps 2, 3 and 4, while case study 2 examined the potential of communities-of-practice to introduce emergent solutions. The duration of the case studies ranged from eighteen to thirty months. More detailed descriptions of the three case studies are presented in appendices 6.1, 6.2 and 6.3. The qualitative and quantitative research methods for the case studies and SSL framework are summarised in Section 4.8 (Methodological Choice). Selection and access to case study organisations and the pre-work undertaken to determine their suitability and readiness is described in Section 4.6 (Research Strategies) and the timelines captured Section 4.7 (Time Horizon). For case study 3 the data collection process for the Organisational Climate and Employee Engagement Survey is outlined in Section 4.8 (Data Collection and Analysis).

6.2 Summary of Case Study Research

Background to Case Study Organisations

Case Study 1 – Global Food Company

This company operates in a global market with an overall growth rate of 3-4%. Growth in Europe and North America is relatively flat whereas demand in Asia and Latin America for less sophisticated products to meet local market tastes and requirements is strong. The company operates two sites in the UK, employing c. 400 people under a single senior leadership team.

Until recently technical knowledge and capital investment were entry barriers to this industry; however, with the greater availability of capital and the socialisation and more ready transfer of knowledge, competition has increased. To respond to this the Company elected to improve its profitability and return on capital by concentrating on revenue growth, manufacturing efficiency and product differentiation. The UK organisation chose to strengthen its relative competitive position by focusing on product differentiation. At the corporate level the Key Performance Indicators (KPIs) reflect financial (revenue, earnings, cash flow, earnings per share etc.) and Health & Safety metrics. In the UK a BSC approach was used to capture a plethora of local measures (financial, customer, internal process, learning & innovation and risk management) which support the corporate KPIs. Similar measures were applied on both UK sites. By mid-2013 the senior leadership team had come to the conclusion that the BSC approach was having little impact on what was happening in practice on the shop floor or at the working level across the UK support

functions and was seeking a way to bring greater engagement with and focus to PM and OP.

The researcher has provided continuous improvement training to the UK organisation for a number of years. In discussion with the Operations Director on how to address the organisation's engagement and focus issues it was agreed to adopt the social systems approach described in Chapter 5. The case study work was undertaken between late 2013 and mid-2015. In early 2014 the Company announced it was initiating a three-year transformation programme to allow it to grow in emerging markets, invest in new technology and reduce costs in its more expensive locations. The Company proposed to reorganise its manufacturing operations worldwide and have lower cost production located closer to emerging markets. Investments were announced for Asia and the USA to capture market share in China and the Americas. In the UK the Company indicated it planned to close older, less efficient production lines and reduce 130 positions. The decision to downsize the UK organisation was taken part way through the case study and interrupted the flow of the work.

Case Study 2 – Multi-business, Multi-functional Chemicals Site

This multi-business, multi-functional chemicals site belongs to a large multinational corporation. It has a number of different businesses located on it and a population of over 1000 people comprising commercial, technical and production personnel for each of the businesses as well as support functions such as HR, purchasing and finance. The site is located in an expensive part of Europe. Most of the businesses operating on the site face increasing competition from organisations based in less expensive parts of the world.

The senior business directors from the various businesses meet together as the site leadership group under the chairmanship of an independent site manager whose role it is to ensure the utilities and central services required by the various businesses are delivered and the site operates as efficiently and effectively as possible. The site manager maintains the facilities and common utilities, ensures corporate policies are implemented consistently and is the interface with the local authorities. The site manager is the corporation's representative and operates as the local landlord; the businesses are tenants on the site.

The performance measures adopted by this organisation are typical of a large company. At the corporate level there are financial (revenue, earnings, cash flow, earnings per share) and core value (safety & health, environmental sustainability, respect for people, ethical behaviour) metrics. At the site level each business and function has broadly similar local performance measures (for example: cost, quality, customer complaint rate etc.) many of which have to be reported globally and contribute to the delivery of more generic corporate metrics.

The senior leadership group had feedback from junior managers that new supervisors felt they were not being sufficiently well prepared for their supervisory roles, that there was a lack of consistent approach and different interpretations to processes and measures on the site and a frustration with the need to produce some measures considered as non-value adding but corporately imposed. In addition, the senior leadership group considered the

financial performances of the majority of businesses on the site needed to improve to deliver the growth required to prosper in an increasingly competitive environment and believed leveraging consistent good leadership and management practices across the site would enhance the understanding and delivery of key performance measures and contribute to an improved financial outcome for each SBU.

The researcher had provided the site with continuous improvement and soft skills training for a number of years. The site leadership group knew of the researcher's background in HR and organisational development and asked whether an alternative to the corporate standard internal training package was available, which provided an opportunity to use the social systems approach described in Chapter 5. It was important to the leadership group they had a resource that was known on site, had credibility and could be trustixd. The case study work was undertaken between early 2014 and late 2015.

Case Study 3 – Global Supplier of Industrial Products

This organisation makes industrial products for sale to converters globally. It is a SBU of a much larger company. The case study focused on the organisation's UK site which manufactures technically demanding products and employs c. 200 people. The global SBU faces major competition from Asian suppliers. Global supply has doubled since 2010 and now exceeds global demand by 30%. Competition is fierce with Asian producers exporting to Europe, undercutting European producers and adversely impacting their financial performances. Imports from Asia have grown rapidly and now represent two-thirds of sales made in Europe. For the last few years the profitability of the SBU in the UK has been close to breakeven. After recording a loss in 2012 the decision had been taken to reduce UK employee numbers by 15%. The parent company also indicated the SBU was no longer of strategic importance and would be divested at an appropriate time.

The performance measures adopted by the SBU were typical of a large company and aligned with the parent company's metrics. At a corporate level it has financial (revenue, earnings, cash flow, earnings per share) and core values (SHE, quality, respect for people, ethics) metrics. At a regional level it operates a dashboard approach with safety, ethics, financial and operational excellence indicators and at the site level has local manufacturing performance measures focused on safety, output, efficiency, cost and On-Time-In-Full (OTIF) delivery (Tregaskis et al., 2013). The challenge for the site was to improve its performance by delivering more output with fewer people and re-skill the workforce to compete with an increasing Asian threat. This involved restructuring and embarking on a change programme so that the UK site could better compete in a rapidly changing European and global marketplace. The researcher had provided the site with HR and continuous improvement support for many years. Organisational change is acknowledged to be a context-dependent, unpredictable, non-linear process (Balogun and Johnson, 2005) relying on people, processes and their interactions for success. Given the requirement to engage the workforce in a change process the site manager was interested to evaluate the social systems perspective as an alternative, people-centred approach. The case study work was undertaken between mid-2013 and early 2016.

Organisational Effectiveness Goals

For each case study organisation the approach taken was to explain the OE framework to the senior leadership team as outlined in step 1 of section 5.4 in Chapter 5. In discussion with the researcher each senior leadership team defined the initial OE goal as the target outcome for the intervention process. The background to how each organisation's OE goal was arrived at is presented below.

Case Study 1 – Global Food Company

This organisation used a standard BSC process to monitor performance. Thirty two metrics covering five key areas (financial, customer, internal process, learning & innovation and risk management) were reviewed monthly by the senior leadership team. Ownership for individual performance measures was assigned to the appropriate member of the senior leadership team based on functional responsibility. Short-term countermeasures could, in principle, be introduced if a performance measure showed signs of deviating from plan. However, in practice the BSC process wasn't influencing what was happening at any level.

In late 2013 the OE framework was explained to the senior leadership team emphasising the social systems perspective which links PM to OE. This fitted well with what the senior team believed they wanted and the requirement to translate the sites' issues into an OE goal was discussed. The senior leadership team could see the local PM system was ineffective. They felt a lack of trust between functions and managers and scepticism regarding others' motives were contributing features but had no evidence to support this. Any proposal to move away from the current BSC process was viewed a significant change that would need agreement from the senior leadership team on the scope of the change and how it would be implemented. A PM process reset would be a major undertaking with consequences across both UK sites so needed careful consideration and broad buy-in. The senior leadership team set the initial OE goal as:

- Understand the 'current position' (CP) in terms of the social systems factors and determine 'what good looks like' (WGLL) from a social systems perspective
- Clarify roles and responsibilities between the management group and the senior leadership team and between the functions in relation to performance measures
- Develop an alternative PM process where everyone can see directly where their contribution fits in ('line of sight') and share this with the workforce.

Success would see the senior leadership team achieve a consensus on where the gaps were in the current PM process, clarify the relationship between the senior leadership team and the management group and between functions, agree a modified PM process which allows all employees to see where their contribution fits in and share this in a constructive manner with the workforce. The unit of analysis for this work was the senior leadership team of ten people because they held the accountability for the overall performance of both UK sites and would be responsible for the introduction of any new PM system.

Case Study 2 – Multi-business, Multi-functional Chemicals Site

There were two issues of particular concern to the site leadership group. The first issue was an awareness of inconsistencies across the site in the processes adopted and interpretation of a number of performance measures as a result of the businesses operating independently. The site leaders believed if good practice was enhanced and applied uniformly across the functions and businesses this would increase measurement consistency and improve overall competitiveness. However, they were unclear on how to make this happen constructively as exchanges between managers from the various functions and businesses were infrequent and unstructured. The second issue was the feedback contained in the employee survey relating to management capability and a decreasing level of trust in the organisation. Every manager had received employee survey feedback on engagement and performance completed by their direct reports. While there is some aggregating of responses within business units, obtaining an integrated picture of how people feel across the multi-business site was difficult. However, the site leadership group knew that within the forty individual small surveys reported there were common, unfavourable responses from a significant proportion of the workforce.

With these issues in mind the site leadership group set the OE goal as:

- Sharing good management practice on processes and measures across functions and businesses
- Having stronger and more interactive relationships between managers and their workforces

Success would see managers behave in a more responsive and supportive manner towards their people and modify local processes and measures to reflect good practice using the social systems approach described. The unit of analysis was a management group of approximately one hundred people comprising the site leadership group, middle-managers and first-line supervisors from multiple functions and businesses.

Case Study 3 – Global Supplier of Industrial Products

The site was in the process of restructuring when the case study started. The challenge facing the site leadership team was to operate with fifty fewer people, increase output significantly and maintain its safety, efficiency and OTIF performances. This would require substantial change in how the managers and the workforce operated both in terms of job content and skills required. The site leadership team was concerned the workforce's reaction to the scale of the change required might represent a barrier to progress and a threat to the site's ultimate survival.

From previous work undertaken by external consultants the site leadership team acknowledged the management group, including first-line supervisors had a number of weaknesses, in particular, poor communication skills and an inability to performance manage staff and hold people accountable for delivery. The site leadership team realised improvements had to be made across all levels and in all areas if the UK entity was to remain sustainable.

With these challenges in mind the senior leadership team set the OE goal as:

- Having a workforce more willing to embrace change and focused on performance
- Having a workforce with greater trust in the organisation and the local management team
- Having a local management team more prepared to explain and deal with difficult situations, including managing key metrics proactively, and progress the change process

Success would see all employees having a greater understanding of and commitment to the need for change and greater willingness to develop new skills, and managers more actively leading change with a greater willingness to tackle difficult issues. Together these ought to deliver a better manufacturing performance and a site more able to survive in a rapidly changing competitive environment. The unit of analysis was the site population of c. 200 people.

As described in step 2 of section 5.4 in Chapter 5 the initial OE goal was provided as guidance to appropriate communities-of-practice within each case study organisation to inform their OE audit of the social system.

Organisational Effectiveness Audits

As described in step 3 of section 5.4 in Chapter 5 appropriate communities-of-practice undertook an OE audit of the social system in operation within the organisation concentrating on understanding the CP and WGLL positions in terms of the ten social systems factors and identifying the CP-WGLL gap.

Case Study 1 – Global Food Company

The technique of exploring WGLL and comparing it to the CP was used to establish whether this element of the SSL provided a valuable enabling route for identifying the priority factors and interventions for the organisation to work on to deliver its OE goal. This is described in more detail in Appendix 6.1. Following the OE audit the social systems factors selected to address were:-

1. *Trusting relationships*
2. *Open clear communications*
3. *Consistency with other business processes*
4. *Strong leadership and supportive management*
5. *Consistent flow-down throughout organisation*

The belief was this would get managers and teams working more closely together on performance measures, clarify relationships and produce and share widely a modified PM process which would influence more directly what happens on the shop-floor and in the support functions. In early 2014 the parent company announced a major transformation programme which included closing older manufacturing lines in the UK and making 30% of the workforce redundant. Products made in the UK would be transferred to operating plants elsewhere in the world, facilitated by the UK 'experts'. The scale and nature of the imposed changes surprised the UK workforce and resulted in a rapid loss of trust in the organisation and poor morale i.e. the social system changed as a result of an exogenous shock (Frank and Fahrbach, 1999). The case study activities stopped for a period of time

while the UK leadership team grappled with what restructuring meant for the two UK sites and the workforce.

The scale of the change programme for the UK organisation was unprecedented. In discussion with the researcher the senior leadership team, again operating in community-of-practice mode, saw the transformation requiring:

- Focus and a clear sense of purpose
- Clear responsibilities for the design and delivery of the change
- Collaboration and working as a single team, removing artificial boundaries
- No hierarchy in problem solving
- Clear communications
- Timely decision-making

Having recognised the potential of the social systems approach to engage people in change, the senior leadership team reviewed the OE goal and considered it still valid. The need to work as a team, clarify roles and responsibilities for the future, communicate clearly and in a timely fashion and introduce an improved PM process was even more relevant for sites challenged on cost. The senior leadership team believed the outcome from the OE audit could make a valuable contribution to the change process required for the 70% of employees not leaving the organisation. Organisational change can lead to unintended outcomes (Balogun and Johnson, 2004, 2005). The approach applied to facilitate transformation of this social system is termed conditioned emergence (MacLean and MacIntosh, 2003).

Case Study 2 – Multi-business, Multi-functional Chemicals Site

Although there was semi-quantitative audit data from the employee surveys it was agreed management and employee discussion groups would be set up under the researcher's guidance to collect more qualitative information from across the businesses on the root cause(s) of the unfavourable survey responses. In this case study the use of communities-of-practice (Wenger, 2010; Wenger and Snyder 2000) was explored to establish whether this element of the SSL provided a valuable enabling route for identifying emergent interventions to help deliver the OE goal.

Subsets of employees from various functions and businesses operating as communities-of-practice met to discuss the current position (CP) and what good looks like (WGLL). Managers collated the feedback into a more concise view of what their teams felt WGLL. Employee survey information, direct feedback from the discussion groups and direction from the site leadership group were used as inputs for the OE audit. Having mapped the audit feedback onto the factors in the OE framework the site leadership group agreed to concentrate initially on three factors:

1. *Strong leadership and supportive management*
2. *Open clear communications*
3. *Consistent flow-down through organisation*

Addressing these three factors became the focus of the intervention plan to increase the effectiveness of the management team across the site and deliver the OE goal.

Case Study 3 – Global Supplier of Industrial Products

During discussions on how best to undertake the OE audit the parent company announced a plan to introduce an annual employee survey worldwide, aimed at increasing employee engagement. The survey would be carried out anonymously and managed by an external professional organisation that specialises in employee engagement and performance surveys. It is interesting to note a proportion of the forty-five questions contained in the survey are similar to those used in the High-Performance Organisation framework described by de Waal and van der Heijden (2015).

Given the site was dealing with the ramifications of downsizing and the challenge of beginning a major change programme the site manager was unwilling to undertake two similar data gathering and intervention planning exercises simultaneously. The decision was taken to test whether the employee survey data could be used as input for the OE audit. The unit of analysis for the employee survey was also the site population of c. 200.

Once the employee survey questionnaire was available a small group of managers mapped the survey questions onto the ten factors in the OE framework with the researcher's guidance (see Appendix 6.3 – Case Study 3 (Industrial product manufacturing organisation). Care was taken to ensure the questions were aligned to the most appropriate factor. A benefit of using the employee survey was that there would be access to independent annual information based on consistent data not only from the case study site but also from the parent company's other UK and European operations which would allow external comparisons to be made. While the company's other locations would not be implementing an intervention plan based on the OE framework the ability to compare the outcome of applying this approach on the case study site with other approaches used elsewhere would be of interest.

The site leadership team based the OE audit on the 2013 employee survey results mapped onto the ten factors. The individual scores for the mapped questions were used to produce an average score for each factor (see Appendix 6.3 – Case Study 3 (Industrial product manufacturing organisation). The site leadership team elected to create an intervention plan centred on the three lowest scoring social systems factors (excluding *Conflict Resolved Constructively* due to lack of sufficient data, see Appendix 6.3, page 50). These were:-

1. *Trusting relationships*
2. *Strong leadership & supportive management*
3. *Open clear communication*

Addressing these three factors became the focus of the intervention plan aimed at delivering the OE goal of greater understanding and willingness to embrace change and trust in the organisation leading to improved OP.

Intervention Plans and Outcomes

As described in step 4 of section 5.4 in Chapter 5 the communities-of-practice were also charged with developing an intervention plan aimed at closing the CP-WGLL gap based on the priority factors. This is a decision oriented, disciplined process based on the output from the OE audit. Step 5 reviews the outcome with the respective leadership teams and plans for the next iteration and is covered in the Case Study Findings section.

Case Study 1 – Global Food Company

The intervention plan was based on the five factors emanating from the OE audit (WGLL analysis) combined with the transformational needs of the UK sites. The agreed intervention plan alighted on six activities captured in Table 6.1. Workshops with employees and management from both sites were held to discuss these activities. This is described in more detail in Appendix 6.1 – Case Study 1 (Global food organisation).

The six activities brought the workforce together to help them make sense of why change was necessary and be involved directly in developing a new set of core values and measurements for the restructured UK organisation. This was an important step in rebuilding trust in the organisation. The senior leadership team believed the social systems approach provided a flexible framework to support the people and process changes associated with the restructuring activities and helped shape a new PM process. In particular, the senior team identified the value of the conversations the organisation had when applying the SSL. The WGLL discussions had enhanced the understanding of some of the key intra-organisation interactions e.g. the strength and nature of relationships and agreement on a common purpose. Having a consensus on WGLL gave the UK organisation an updated set of individual, group and macro-level goals to coalesce around through the transformation process (Locke and Latham, 2006). The presence of a coherent, shared set of goals and beliefs was helpful in the UK organisation's particular circumstances.

Social System Factor	No.	Intervention Plan Element
Trusting relationships	1	Development of business values
Open clear communication	1 2	Development and communication of strategy plan Development of a robust, sustainable business-wide communication process
Strong leadership and supportive management	1	Development of clear roles and responsibilities
Consistency with other business processes	1	Realignment of routine meeting structure to improve performance response
Consistent flow-down throughout organisation	1	Realignment of critical business measures with the strategic plan and day-to-day decision-making to provide 'line of sight'.

Table 6.1: Case Study 1 - Intervention Plan

Case Study 2 – Multi-business, Multi-functional Chemicals Site

The researcher ran exploratory sessions with the site leadership group and middle managers on the site (30 people) on leadership and engagement which described WGLL for this group. With this in mind the elements of the intervention plan were those captured in Table 6.2.

Social System Factor	No.	Intervention Plan Element
Strong leadership and supportive management	1	Introduce mentoring process for newly appointed managers focused on support and ability to deliver management responsibilities
	2	Management development programme: *Developing leadership skills*
	3	Management development programme: *Dealing with unconscious bias*
Open clear communication	1	Management development programme: *Meaningful communication*
Consistent flow-down throughout organisation	1	Deliver lean training for managers focused on optimising processes and removing bureaucracy across site
	2	Introduce self-improvement plan for each manageraligned with 3 selected social systems factors

Table 6.2: Case Study 2 - Intervention Plan

Evaluation feedback from the workshops indicated that they had provided a forum for open and honest exchange and reflection on individual and organisation performance. Some post workshop perspectives are captured below and are a subjective measure of the impact of applying the social systems framework through a communities-of-practice approach:-

- Managers are less defensive, they understand there can be more than one right answer, talking and discussing was important, decisions didn't have to be made only by managers, they need a range of approaches and it was beneficial to think differently.
- Managers are more prepared to question assumptions; the most common actions were to get more feedback from others and seek greater involvement of the workforce.
- Managers had a better view on their own communication styles, their limitations and how people responded to them. More face-to-face, interactive communication was needed and less use of e-mail.
- Managers need to get to know their people better and recognise people's styles are different.

As a result of the feedback from the management development sessions the researcher extended the workshops to include:-

- *Collaborative working*
- *Leading teams in times of stress*

The development programme for the management group of 30 was then rolled out to first-line supervisors (a further 70 people). Post programme employee voice sessions, where the workforce were encouraged to voice any concerns and suggestions for improvement, indicated that the workshops had had a positive influence on communication and

management behaviour. This provides qualitative evidence the intervention plan was having an effect.

Case Study 3 – Global Supplier of Industrial Products

The OE framework takes a more holistic approach to PM considering people, processes and their interactions rather than simply focusing on processes therefore the intervention plan captured in Table 6.3 is more focused on people and relationships than would have been the case with a conventional improvement plan undertaken by this organisation. The community-of-practice comprising the site leadership team and key middle-managers believed the success or otherwise of this approach would be evident in the employee survey results and the local manufacturing performance measures over the cycle (Tregaskis et al., 2013).

In this case study application of the SSL was tested over two iterations to determine whether the framework provides an enabling route to address the challenges facing this organisation. The longitudinal aspects of this study allowed the proposed interdependency of the social systems factors to be explored.

The data comparing the survey results taken from 2015 and 2014 mapped onto the factors is reproduced in Table 6.4 for the case study site and the parent company's other operations in the UK and Europe. The score for each factor is the average of the individual scores for the questions comprising that factor. The questionnaire used in all locations was identical as was the statistical analysis undertaken by the external specialist and the subsequent mapping of the survey questions to the factors. Based on the number of respondents responses with differences of $\geq$5 in averaged scores between 2015 and 2014 were considered statistically significant for the case study site whereas differences of ≥3 were considered significant for the company's other operations in the UK and Europe. The details are contained in Appendix 6.3 – Case Study 3 (Industrial product manufacturing organisation) and Appendix 6.5.

Social System Factor	No	Intervention Plan Element
Trusting relationships	1	Employee engagement programme - annual feedback on Employee Survey to employees
	2	Share Site Strategy & Vision with all on site through interactive process
	3	Recommence operator visits to customers, representing organisation at key customers
Strong leadership and supportive management	1	Extended Leadership Team & First-Line Supervisors to attend external leadership training programme *Leadership topics include leadership, strategy, change, teams, culture & coaching.* *Management topics include role of the manager, change, influencing & presenting, managing individual performance, effective communications & building high perfoming teams*
	2	Further training for line managers on Performance Management process specifically based on the feedback on accountability
	3	Strengthen Learning & Development team
	4	Introduce competency assessments for employees with feedback
Open clear communication	1	Communicate strategy across site via presentation and storyboard
	2	Introduce visible factory concept via electronic screens to show business performance, SHE updatess, plant performance etc
	3	Improve face-to-face communications by extended leadership team (weekly walkabouts, monthly presentation)
	4	Share detailed Innovation strategy & Vision with all on site through line managers
	5	European President/Operations Director communications to site via Town Hall sessions
	6	Reintroduce monthly newsletter

Table 6.3: Case Study 3 - Intervention Plan

Table 6.4 is colour coded. In the 2015 columns average factor scores coloured green have increased by ≥5%, those in red have decreased by ≥5% for the case study site. For the Company's UK and European operations the difference between these factors is meaningful at ≥ 3%. To be colour coded the average of all the questions mapped to a factor must increase or decrease by 5 (case study site) or 3 (UK & Europe).

Factors	Site		UK		Europe		Difference 2015-2014		
	2014	2015	2014	2015	2014	2015	Site	UK	Europe
Matches organisational culture & sub-culture	41	46	54	56	66	66	5	2	0
Conflict resolved constructively	24	27	45	44	60	59	3	-1	-1
Active involvement of teams & individuals	48	50	57	59	64	65	2	1	1
Consistent flowdown throughout organisation	44	48	60	59	68	68	4	-1	0
Able to respond to external environment	48	54	59	58	68	68	6	0	0
Consistency with other business processes	35	37	42	43	51	52	2	1	1
Organisational values fit with individual values	48	52	59	59	68	67	4	0	-1
Strong leadership & supportive management	29	30	45	45	56	58	1	0	2
Open clear communication	34	41	51	53	63	63	7	1	0
Trusting relationships	18	29	40	40	64	61	11	0	-3

Table 6.4: Average Social Systems Factors Scores for Site, UK and Europe

Four factors increase by ≥5 for the case study site while none in the company's UK operations change by ≥3 and one in the company's European operations decreases by ≥3. The data in Table 6.4 suggests the intervention plan improved the employees' view of the case study site's performance on *Open clear communication* and *Trusting relationships* but did not influence the employees' perception overall of *Strong leadership & supportive management* compared to the 2014 baseline. Interestingly, the intervention plan also appears to have influenced the *Able to respond to external environment* and the *Matches organisational culture & sub-culture* factors.

For the case study site application of the intervention plan based on the OE framework resulted in 47% of the individual question scores increasing by a meaningful difference (i.e. ≥5%) compared to the 2014 baseline (see Appendix 6.5). The case study site saw greater improvement in the responses to the survey questions than the company's other operations in the UK where less than 5% of the scores increased by ≥5%. This comparison is considered meaningful given the HR practices at the case study site and at the company's other UK operations are identical. For the Company's European operation the differences between 2015 and 2014 were small with some evidence of loss of trust in the Company.

Overall it would seem that application of the OE framework to the case study site has made a significant improvement to the outcome of the 2015 employee survey on engagement and performance. Although the intervention plan focused on the three lowest scoring factors an improvement was observed across almost half of the questions comprising the other factors supporting the argument that the ten factors are interdependent i.e. the significant improvements in trust and communication at the case study site influenced

other social systems factors positively. From an analysis of the patterns contained in survey results (see Appendix 6.3 – Case Study 3 (Industrial product manufacturing organisation)) a level of interdependency between the social systems factors can be postulated as shown in Figure 6.1.

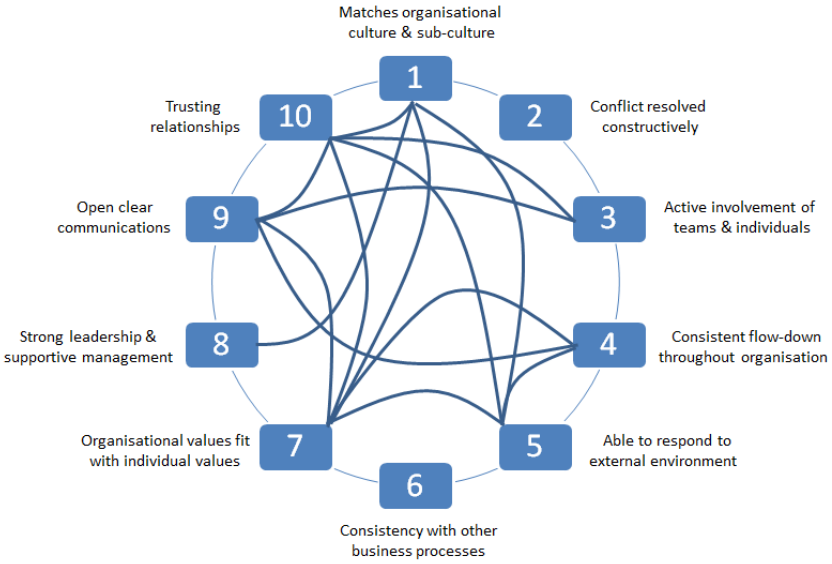


Figure 6.1: Interactions between Factors for Case study Site

The employee survey data was collated in such a way that it was also possible to extract the responses from the middle-managers as a subset of the site's feedback. There was no specific intervention plan being applied to this group; however, it is clear that being directly involved in the development of the site plan through 2014 was sufficient to cause a substantial improvement in the middle-managers' response to the 2014 survey compared to 2013 as shown in Table 6.5. Given the small number of respondents the responses for this group are considered statistically significant if the difference is ≥15 between averaged scores. Seven factors are seen to improve further supporting the interdependency of the social system factors.

Factors	Mgmt			Difference	
	2013	2014	2015	14-13	15-14
Matches organisational culture & sub-culture	61	84	80	22	-3
Conflict resolved constructively	14	86	63	72	-23
Active involvement of teams & individuals	67	78	68	10	-10
Consistent flowdown throughout organisation	81	86	79	5	-6
Able to respond to external environment	68	86	75	18	-11
Consistency with other business processes	71	57	75	-14	18
Organisational values fit with individual values	74	91	75	17	-15
Strong leadership & supportive management	46	63	50	17	-13
Open clear communication	50	67	61	17	-6
Trusting relationships	50	67	61	17	-6

Table 6.5: Average Social Systems Factors Scores for Management

Causal Mechanisms Explaining Outcomes

Events are the building blocks of empirical research (Fleetwood and Hesketh, 2006b). Wynn and Williams' (2012) principle of explication of events (see Chapter 4, Figures 4.2 and 4.3 and Table 4.3) outlines the need to establish the details of events being investigated as the basis of causal analysis. In order to establish whether the SSL, and in particular the WGLL discussions and subsequent social interventions, had an impact it is necessary to develop a causal transitive explanation relating the empirically observed experiences to various events that took place. In complex systems the cause will rarely be the intervention on its own; rather what is important is how the intervention works in relation to all the components of the system and to other relevant systems i.e. the mechanism will be complex (Byrne, 2013). Wynn and Williams' principle of explication of structure and context looks to identify the components in the structure that are causally relevant, the contextual influences and other actualised powers which might contribute to the outcome of interest. Complex social systems bring into play a multitude of structural entities and contextual factors.

Case Study 1 – Global Food Company

An important contextual factor was that the processes associated with the communities-of-practice and actions emanating from them were supported by the leadership team and seen as constructive engagement by the management team and the shop-floor in a renewal process. Other observed events associated with the transformation process, for example, redundancies were also contributing to the context creating an environment of uncertainty, low trust, fear and poor morale.

The observed outcomes of a greater understanding of the need for change, clarity on the future direction of the business, a better grasp of key organisational interactions, agreement on a common purpose and a more measureable way to determine organisational progress may be related to one or more events. However, the perceived contributing events were all activated by the intervention plan based on the five priority factors identified from the WGLL discussions. The causal powers supporting the observed outcomes resided in the combination of the senior leadership team and functional managers, the communities-of-practice brought together in the workshops and the SSL. The connections and interdependencies between these component structural entities were driven primarily by the application of the SSL. The lens acted as the initiator of the emergent behaviour ultimately expressed through the observed events. It is possible that other less visible events contributed to the outcomes; for example, the practical requirement to run operations with fewer people. Here the causal powers would lie with the line managers and operating teams; however, there is no evidence to suggest that this happened in a widespread and consistent manner if at all.

Case Study 2 – Multi-business, Multi-functional Chemicals Site

The approach of using communities-of-practice to better understand and reflect the complexity of social systems was examined to determine whether this component of the SSL helped provide an enabling route to help formulate emergent interventions.

Communities-of-practice are recognised for being able to build and exchange knowledge, transfer good practice and develop members' capabilities through mentoring and coaching. This is described by Wenger and Snyder (2000) as a social theory of learning. Community-of-practice membership typically self-selects and exists for as long as there is interest in maintaining the group. A more detailed description of the activities undertaken in this case study is captured in Appendix 6.2 – Case Study 2 (Multi-business, multi-functional chemicals organisation). As in case study 1 important contextual factors were that the communities-of-practice and actions emanating from them were supported strongly by the site leadership group, contributing to communities-of-practice was viewed positively, actions associated with managers' self-improvement plans were incorporated to managers' individual performance plans, challenging, sharing and developing ideas on performance measures for broader use across the site was encouraged and positive inclusion of the workforce in decision-making relevant to them was undertaken.

The senior leadership group had mandated the communities-of-practice with the powers to act. The observed experiences from applying the SSL through communities-of-practice was a more open and less hierarchical organisation with greater involvement of the managers and workforce and a more collaborative culture. Where it made sense good practice was adapted and applied to processes and performance measures across the site resulting in them being better understood and more meaningful in their specific contexts (Mitleton-Kelly, 2011). The development of human capital within the management teams led to stronger and more interactive relationships. The site leadership group believe the introduction of the SSL had a positive impact on the site's overall OE through a more flexible and confident management team and increased involvement of employees. This was confirmed in feedback from the employee and management workshops.

The events that led to the observed experiences included a significant management development programme, the introduction of a mentoring process for newly appointed managers, greater involvement of the workforce in decision-making relevant to them and a change in organisational culture. The mechanisms associated with these events earth back to the relevant social structures. The communities-of-practice were temporary structural entities, configured with the intent of using the WGLL approach to help define more relevant social interventions that supported the delivery of the OE goal and development of the operating social system.

Case Study 3 – Global Supplier of Industrial Products

The OE framework was applied over 30 months during which time three employee surveys were undertaken. The approach of utilising WGLL and communities-of-practice to better understand and reflect the complexity of social systems was used to create intervention plans focused on further developing the social system in operation in the organisation. The aim was to deliver the OE goals and, by association, improve the manufacturing metrics the site was measured on.

To establish whether the SSL had an impact on the workforce leading to greater understanding and acceptance of the organisation's need to change it is necessary to develop a causal transitive explanation relating the observed experiences to the events

that took place. As before the principle of explication of structure and context looks to identify the components in the structure that are causally relevant, the contextual influences and other actualised powers which might contribute to the outcome of interest. The components of the social structure of interest here included the senior leadership team, the middle-managers, the SSL, the corporate employee survey and the workforce.

For each case study the six-step framework proposed by Bygstad and Munkvold (2011) was used to help identify and evaluate the likely mechanism(s) behind the main events (Bygstad, 2010). This six-step framework involves:

1. Description of events
2. Identification of key components
3. Theoretical re-description (abduction)
4. Retroduction: Identification of candidate mechanisms
5. Analysis of selected mechanisms and outcomes
6. Validation of explanatory power

1. Description of events

For each case study events considered as important contributors to the outcome of interventions were identified and discussed and the results of undertaking these activities in terms of the impact on the priority social systems factors captured.

Case Study 1 – Global Food Company

Six events were identified as important contributors to case study 1:

1. In response to UK business' decision to focus on product differentiation and the observation that the PM system was failing to influence outcomes the decision was taken to change the PM system (2013).
2. Decision to apply the OE framework to the UK business after recognition by UK management that upgraded PM and management processes weren't fit for purpose (Q4, 2013)
3. OE Audit to identify WGLL-CP gap and select the social systems factors to work on (Q4, 2013)
4. Corporate decision to restructure UK business (Q1, 2014)
5. UK management decision to apply the OE framework to support the people communication and development part of the restructuring plan (Q3, 2014)
6. Execution of the intervention plan (Q4, 2014 to Q2 2015)

The results of undertaking these activities in terms of the impact on the five social systems factors are captured above. Overall the outcome for the workforce was a greater understanding of why the changes had to be made and a feeling of having contributed to the restructured organisation. The leadership team saw these as important steps in rebuilding trust, developing new relationships, defining common goals and positioning the UK for the future.

Case Study 2 – Multi-business, Multi-functional Chemicals Site

Three events are identified as important contributors to case study 2:

1. The development of the initial OE goal based on employee survey results and leadership concern over inconsistent management practices (Q1, 2014).
2. The completion of the OE Audit to identify WGLL-CP gap and selecting the social systems factors to work on (Q2, 2014)
3. The shaping and execution of the management intervention plan (Q3, 2014 to Q3, 2015).

The development programme was delivered to 100 managers across the site (leadership group, middle-managers and first-line supervisors). The site leadership group and managers perspectives on the development programme described above are a subjective measure of the impact of applying the social systems framework through a communities-of-practice approach. Employee feedback provided supporting qualitative evidence the intervention plan was having an effect. Communication processes were more interactive, more people were involved in shaping the processes and, where appropriate, knowledge and good practice were shared to develop and improve the consistency of various processes and performance measures across the site.

Case Study 3 – Global Supplier of Industrial Products

Three events are identified as important contributors to case study 3:

1. The development of the initial OE goal based on the senior leadership team's concerns for the future of the site and previous external consultant assessments of leadership and management on site.
2. The decision taken by the parent company to introduce a worldwide annual employee survey on engagement and performance.
3. The shaping and execution of the management intervention plan based on WGLL and communities-of-practice.

As shown in Table 6.4 in comparison to the company's other UK and European operations trust, leadership and management, and communications were issues on the case study site prior to the intervention plan and became the focus of it. The observed outcomes from the activities supporting *Trusting relationships, Strong leadership and supportive management* and *Open clear communications* led to a more positive organisational climate as reflected in the 2015 employee survey results. The contributing events were all activated by the intervention plan based on the three priority factors identified from the WGLL discussions. The causal powers supporting the observed outcomes resided in the social structure comprising the community-of-practice (senior team and the middle-managers), the employee survey and the SSL. The SSL again acted as the initiator of the emergent behaviour ultimately expressed through the observed events. It is again possible that other less visible events contributed to the outcomes; for example, the practical requirement to run operations with fewer people. Here the causal powers would lie with the line managers and operating teams; however, there is no evidence to suggest this occurred. Other mechanisms associated with the HR activities, for example, the reduction in numbers and

the corporate remuneration decision also contributed to the context creating an environment of uncertainty, low trust and poor morale.

2. Identification of the Key Components

Key components are entities with causal powers. The network of objects comprising the social structures of interest in the case studies typically included some or all of the leadership team, various communities-of-practice comprising combinations of middle and first-line managers and the workforce, various HR practices, the SSL, and the researcher as described in Appendices 6.1, 6.2 and 6.3.

3. Theoretical Re-description

As outlined in Chapter 4 theoretical re-description can be based on social theory or more limited middle-range theory. Relevant theories should be identified, compared and integrated to increase theoretical sensitivity and understand events in greater depth.

Case Study 1 – Global Food Company

The initial interest in adopting the social systems approach was to improve the efficacy of the UK organisation's PM process and clarify roles and responsibilities between the senior leadership and management groups. However, the business re-engineering process introduced in 2014 refocused the case study onto a more significant challenge. The activities undertaken during the case study align with progression of the UK elements of the global organisation's new business strategy, summarised as downsizing and restructuring of a relatively expensive, mature manufacturing organisation. However, this can be reconceptualised as a social systems project rather than a re-engineering one. The UK organisation had to adapt quickly and identify and implement new, more effective, 'post-restructuring' practices. The success of the people change process would drive where the UK organisation's performance would ultimately earth to. The link between practice theory and social systems theory, the need for sense-making through a period of change, the complexity of a rapid and disruptive change process, the need for emergent solutions and a focus on more consensus-based decision-making all point to this project being more about how people understand and adapt to change such that the entity they are aligned to comes out stronger post-restructuring and they feel positively engaged with the new organisation following significant social change.

Case Study 2 – Multi-business, Multi-functional Chemicals Site

The interest in adopting the social systems approach was to improve the relationship between the management team and their workforces and also encourage the development and use of good practice across a multi-business, multi-functional site. The OE framework refocused the case study into the scoping, shaping and execution of a management development programme with a broader remit and outcome than initially proposed by the site leadership group. As in case study 1 this can be reconceptualised as a social systems project with a focus on whether and how communities-of-practice can change the behaviour of social systems rather than simply the delivery and application of a learning and development programme for managers. Barney and Felin (2013) believe greater

understanding of how capabilities are built and the effect the architecture of human and social interaction has in determining the aggregate outcomes and collective capabilities observed is needed and call for research into multi-level human capital and behaviour theory at the micro-level, stating that "organizational scholars need to engage in the hard work of specifying unique theories of aggregation that appropriately represent the social interactional and contextual factors that shape behavior and performance in organizations." Social capital and human capital are important components of an organisation's operating social system. Trust and social capital take time to build within organisations but can be lost quickly through actions the collective consider inappropriate. The activities undertaken in the intervention plan were designed to respond to site leadership, middle-manager and employee concerns extracted from the WGLL discussions and the employee surveys and address recognised gaps in the skills and knowledge of the management team and issues with performance measures and processes. Human capital is a complex, multi-level concept involving not only the knowledge, skills and abilities of individuals but also social capital and organisational culture.

Case Study 3 – Global Supplier of Industrial Products

The interest in adopting the social systems approach was to develop a more positive attitude towards change, increase trust in the organisation and leadership team and improve the management team's willingness to address difficult situations. As in the two previous case studies this can be reconceptualised as a social systems project rather than the delivery of a change programme.

The activities undertaken in the intervention plan were designed to respond to the employee concerns extracted from the survey and developed through WGLL discussions with the management team. They focused on the rejuvenation of the communications process involving face-to-face interactions between managers and employees to discuss the organisation's strategy and future, the introduction of competency assessments and development plans and learning and development processes for management and leadership teams. Social capital and human capital are important components in an organisation's social system. Trust and social capital are hard to build but can be lost quickly through actions the collective consider inappropriate, in this case the business decision to reduce numbers and a corporate decision to dispose of the SBU and also modify the remuneration process with very little notice.

4. Retroduction: Identification of candidate mechanisms

Retroduction is one of Wynn and Williams' (2012) five methodological principles (see Chapter 4) and is considered at the heart of the critical realism explanatory model, being rooted in the ontology of emergence and the epistemology of explanation. Mingers (2004a) noted that with retroduction "we take some unexplained phenomenon and propose hypothetical mechanisms that, *if they existed*, would generate or cause that which is to be explained." Retroduction is an iterative process occurring over time as new information is accumulated. It may well signal a range of mechanisms are involved at various levels which interact to produce the events to be analysed. Events are explained by proposing existing

or new mechanisms (or powers) capable of producing them in the specific contextual circumstances of that time.

Although the contextual circumstances changed markedly during the case studies the research question of 'what caused the events associated with the observed experiences to occur?' remains valid because the object of interest continues to be the operating social system in the organisation. In each case study the network of objects with the causal powers of interest was similar comprising the leadership team, communities-of-practice reflecting various combinations of middle and first-line managers and the workforce, various HR practices, the SSL, and the researcher. In each case study the intervention plan initiated a set of events aimed at improving business processes and is a consequence of underlying exercised mechanisms. Mechanisms are unobservable and comprise powers such as causes, motives, considerations, choices and collective social actions at various levels in the organisation (Blom and Moren, 2011). It is proposed that these powers are mediated and work through social interaction and social and material structures such as routines and practices etc. (Espejo, 2003). The generative mechanisms of the social structures outlined above are different to those of their component entities.

The candidate mechanism proposed to be in operation here is the social intervention mechanism shown in Figure 6.2 which comprises the expert and emergent inputs communities-of-practice can provide through their collective knowledge and understanding of the strengths and weaknesses of existing business processes and measurement approaches and the increase in the level of consensus on and understanding/sense-making of the modifications which facilitates implementation. The approach adopted in this work is based on the collective social action model described by Coleman (1986), sometimes referred to as the macro-micro-macro model. The model seeks to show that explanation of change at the macro-level involves macro states influencing the behaviour of individual actors resulting in the subsequent generation of new macro states. Building on Coleman's work Hedstrom and Swedberg (1996) outlined three different types of social mechanism, namely situational, action-formation and transformational, which reflect how macro-level social situations impact individuals, how individuals absorb and process the effect of these macro-level events and how a number of individuals, through their actions and interactions, generate new macro-level outcomes. The first two mechanisms involve individuals operating individually whereas the third involves a number of individuals operating collectively and is social in nature, overall a combination of sense-making and decision-making. In terms of Figure 6.2 applying the OE Framework (macro-micro) is enabled by the operating social system and identifies opportunities for improvement through the OE audit. This allows individuals from communities-of-practice to input to and discuss the OE audit of the operating social system and generate action opportunities (micro-level) before interacting with one another to produce a collective emergent outcome (micro-macro) which delivers a reconfigured social system. Social interaction can be both a part of a social intervention mechanism and a mediating condition where the mechanism is sometimes activated by interventions and sometimes activates interventions (Blom and Moren, 2010, 2011).

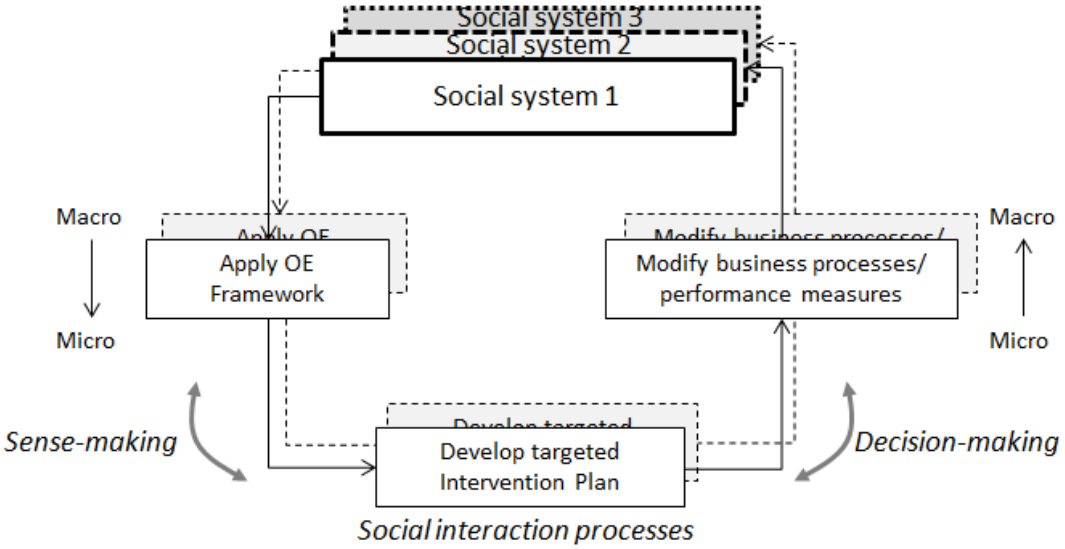


Figure 6.2: Social Intervention Mechanism

The context is the organisation's operating social system (Blom and Moren, 2010; Bygstad and Munkvold, 2011). By leveraging the knowledge of the collective workforce through social interaction using communities-of-practice new ideas to improve business processes and/or performance measures are generated, then prioritised and a targeted intervention plan developed and executed resulting in modifications to the existing social system. The reconfigured social system further leverages the developing knowledge of the workforce as part of a self-reinforcing process by the iterative application of the SSL leading to yet more ideas for OE improvement. Evans and Davis (2005) noted that in order to achieve sustainable financial performance organisations need effective knowledge management capabilities to be able to reconfigure themselves and adapt to environmental change. The SSL's power to change the social system depends on acceptance by the senior leadership team and the workforce that the outcome from applying the OE framework will be the mechanism to change the social system.

5. Analysis of Selected Mechanisms and Outcomes

According to Pawson and Tilley (1997) realist evaluation is about theory testing and refinement. At its simplest level realist evaluation focuses on CONTEXT + MECHANISM = OUTCOME. The method is a commonplace one (see Chapter 4). As Pawson and Tilley state "The logic utilises a 'configurational' approach to causality, in which outcomes are considered to follow from the alignment, within a case, of specific combination of attributes." As shown in Figure 6.2 the context is the operating social system i.e. the interpenetrating structure which exists within the organisation. In the case studies the social system has a self-reinforcing social intervention mechanism which is proposed as the explanation for the observed outcomes.

At the macro (social systems) level the result of a targeted intervention plan is a change in how the social system operates through a modified business process or how it interprets a

performance measure. Application of the OE framework leads to the interventions described in more detail in Appendices 6.1, 6.2 and 6.3. This iterative process is repeated in a 'plan-do-review' cycle (Deming, 2000).

Case Study 1 – Global Food Company

The observed outcomes of a greater understanding of the need for change, clarity on the future direction of the business, a better grasp of key organisational interactions, agreement on a common purpose and a more measureable way to determine organisational progress may be related to one or more events, all of which were activated by the intervention plan based on the priority social systems factors identified from the WGLL discussions. The causal powers supporting the observed outcomes reside in the senior leadership team and functional managers, the communities-of-practice brought together in the workshops and the SSL in this example. This specific configuration is central to the outcome. The connections and interdependencies between these component structural entities were driven by the application of the SSL. The SSL acted as the catalyst for the emergent behaviour ultimately expressed through the observed events and empirical evidence. When an organisation is moved away from equilibrium, as happened here, established patterns of work and behaviour are disrupted and new ways of working created, often linked to the emergence of new forms of organisation (Mitleton-Kelly, 2003).

Case Study 2 – Multi-business, Multi-functional Chemicals Site

The observed outcomes from the management development programme and the improvement in the consistency of processes and measures across the site were activated by the intervention plan based on the social systems factors identified by the site leadership group. The emergent causal powers supporting the observed outcomes reside in the social structures comprising various combinations of the site leadership group, the management teams, the SSL and the communities-of-practice brought together for the workshops. The SSL again acted as the catalyst for the emergent behaviour ultimately expressed through the observed outcomes. When learning leads to new behaviours the organisation can be said to have adapted and evolved (Mitleton-Kelly, 2003).

Case Study 3 – Global Supplier of Industrial Products

The observed outcomes, namely the improved employee and management survey scores, from the improved communications processes related to the events outlined above, were activated by the intervention plan based on the social systems factors identified by leadership team. The causal powers supporting the observed outcomes reside in the social structure comprising the community-of-practice (senior team and middle-managers), the employee survey and the SSL The SSL is central to the outcome acting as the catalyst for the emergent behaviour ultimately expressed through the observed events and empirical evidence. Tests for the presence of a mechanism include seeking out and identifying collateral implications of the mechanism (Miller and Tsang, 2010). As mentioned in Chapter 4 the more observable outcomes (the ends) that are logically attributable to the proposed mechanism (the means) the more compelling is the case for it (see case Study Findings).

6. Validation of Explanatory Power

It is possible that other events and mechanisms ongoing in the various case study organisations at the time of the interventions contributed to the observed outcomes described above. For example, in case study 1 union action seeking clarity on the future of people's employment as part of the ongoing discussions about job reductions may have influenced the leadership team and the employees. In this case the causal powers would lie with HR, the line managers, the union representatives and operating teams and would be explained by one or more industrial relations/HR mechanisms. Alternatively the line managers and the 70% of remaining employees may have decided that they simply had to operate differently to meet the business requirements with fewer people. These mechanisms can't be dismissed but there is no formal empirical evidence to support either of them. The mechanism with the strongest explanatory power in relation to the evidence is the one selected as the most plausible reason for the outcomes. Corroborating evidence to support the proposed mechanism came from the senior leadership team who continue to use the OE framework and the workforce who took part in the various workshops.

In case study 2 the social mechanism outlined above is the one selected as the most plausible reason for the outcomes. Corroborating evidence to support the proposed mechanism comes from the site leadership group and the various management teams who believed the events outlined above were responsible for the progress.

In case study 3 the parent company's actions on remuneration was recognised as decreasing trust in the organisation in the company's other sites whereas on the case study site trust improved despite this action. The social mechanism outlined above is again selected as the most plausible reason for the outcomes. Corroborating evidence to support the proposed mechanism comes from the longitudinal data contained in the detail of the employee survey responses, the impact on the other social systems factors via their interdependencies and the observations of the senior management team.

Case Study Findings

Case Study 1 – Global Food Company

The validity of the OE framework is confirmed by the fact that the organisation used the social systems approach to provide a flexible support tool for the people and process changes which occurred during the period of the case study including the restructuring of the UK organisation. The senior leadership team commented on the value the organisation obtained from using the OE framework because discussions of the factors enhanced the understanding of some of the key interactions within the organisation i.e. the strength and nature of relationships, management decision-making and consistency and agreement on a common purpose. At the corporate level, they felt they now had an understanding of why the organisation had been the way it was prior to restructuring and how it might be changed. Specifically, they felt the conditioned emergence approach had produced a new set of operational routines which supported a more learning & innovation focused organisation (MacLean and MacIntosh, 2003). Having a clear consensus on WGLL gave the senior leadership team a more measurable assessment of organisational progress which

they liked. Operationally the intervention plan brought people together to help them understand why change was necessary and give them the opportunity to influence the outcome. In addition, the workforce was involved directly in developing a new set of core values for the restructured UK organisation which played an important role in rebuilding trust.

For the future, the senior leadership team considered the OE framework had potential as a reference and social systems scorecard to monitor progress towards individual and organisational development. They proposed that, by agreeing a 'baseline standard' for each of the ten factors and creating a simple relative scale to measure performance versus WGLL, a simple roadmap for the business could be produced. The senior leadership team believed the OE framework was flexible enough to be used to monitor the health of core business systems involved in the PM of the organisation, a department or an individual, or to provide a data-driven means of justifying where progress towards a desired state has been achieved.

This case study looked to establish whether the WGLL component of the SSL helped provide an enabling route to address the significant challenges facing organisations. The evidence from this study indicates it is a useful technique to gain consensus to build an intervention plan around. The factors initially selected to work on in case study 1 overlap with those selected in the other two case studies perhaps reflecting a similarity in the contexts the three organisations find themselves or possibly the presence of a hierarchy within the social systems factors. A summary of the findings from all three case studies are captured in Table 6.7.

Case Study 2 – Multi-business, Multi-functional Chemicals Site

The validity of the OE framework is confirmed by the fact that the organisation did something different as a result of applying it. Not only were the issues progressed not the ones initially identified as the OE goal by the site leadership group but they were also addressed in a different way and the scope extended. Only by taking a social systems approach were the underlying causes of some of the issues identified and addressed. While there were some common issues across the businesses and functions the context specific requirements resulted in a much broader range of outcomes than the site leadership group had imagined at the start of the process.

Case study 2 emphasises the importance of getting communities-of-practice comprising people from within the organisation with relevant experience and seniority involved in discussing and challenging all aspects of PM and organisational improvement. The feedback from the site leadership group, management and the workforce confirms applying a social systems approach to local performance measures helped achieve OE, specifically here through challenging, developing and optimising good practice and improving understanding of the measures. Managers recognised that measures were driving actions, not all of which were helpful and some of which needed changing. The learning was to focus on what was meaningful locally and could be influenced positively, accept what couldn't be changed or wasn't relevant and spend less time on them.

By applying the OE framework the key underlying issues were clarified and a tailored intervention plan defined to deliver the OE goal. The outcome for the organisation was:

- A more open and less hierarchical approach resulting in greater involvement of the workforce and a more collaborative culture.
- Development and sharing of good practice on processes and measures resulting in the local performance measures becoming better understood and more meaningful.
- Growth of leadership & management skills resulting in greater confidence in dealing with employees.
- Gaps in managerial skills dealt with in a constructive manner resulting in more confident managers.

The site leadership group confirmed their OE goal had been met and felt the OE framework had enabled the broader management team to reflect on their own behaviours and how they interacted with their teams and each other. The site leadership group admitted they had not previously made time for this and had underestimated the impact the people, processes and their interactions had on their process based decisions.

The leadership group believe the introduction of a SSL had a positive impact on the site's overall OE through the increased involvement of employees and a more flexible and confident management team. This is reflected in the responses from the employee and management feedback sessions and supports the argument that PM systems will have a more positive impact on OE if mediated by a social systems approach.

Case study 2 looked to establish whether the use of communities-of-practice helped provide an enabling route to address the significant challenges facing organisations. The evidence from this study indicates it is a useful technique to generate emergent ideas and gain consensus around which to build an intervention plan.

Case Study 3 – Global Supplier of Industrial Products

The benefit of applying the SSL over an extended period was examined within a single business. The introduction of a SSL to PM brings focus to OE and increases the potential for the organisation to be the best it can be. By managing the factors the measures take care of themselves. The social systems factors focus on the 'means', the performance measures represent the 'ends'. The site had just reduced its workforce by 15%, the workforce knew the business was to be divested and trust in the organisation was low. The challenge for the site was to increase output with fewer people such that its unit cost improved. There are a number of local manufacturing performance measures, considered here as collateral implications of the mechanism, which allowed the site leadership team to determine whether progress was being made. These include output (how much product is produced), efficiency (how efficiently raw materials are used) and unit cost (fixed cost per unit produced). While it is difficult to determine the impact of the intervention plan on the manufacturing measures directly, after two iterations of the SSL approach the observed experience was an improved organisational climate as measured using employee surveys, greater engagement of key middle-managers and a more effective manufacturing operation with increased output, lower unit cost and no adverse impact on efficiency,

safety or OTIF as shown in Figure 6.3. These observable indicators provide indirect support for the presence of the mechanism (Miller and Tsang, 2010).

In Figure 6.3 the local manufacturing measures for 2014 and 2015 are compared to the 2013 baseline along with headcount, safety and OTIF. The 2013 position is taken as 100% and changes from 2013 shown for 2014 and 2015. The performance of the site did not decline following the headcount reduction; quite the reverse, the output increased, the unit cost decreased and the efficiency, safety and OTIF remained at 2013 levels.

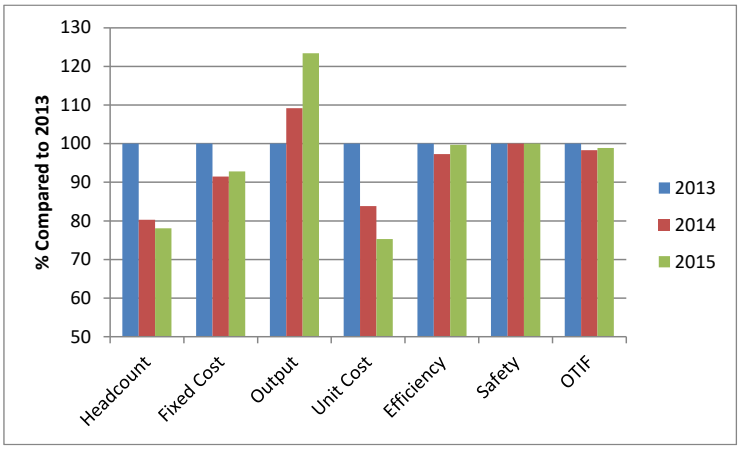


Figure 6.3: Selected Local Manufacturing Performance Measures for Case Study Site

6.3 Conclusion from Case Studies

Validation of the OE Framework

Applying the SSL to the case study organisations changed behaviours and outcomes. Feedback from the case study organisations indicated use of the social systems approach brought an emergent, interactions-focused perspective to business processes and local measures which made them more relevant for the business and more meaningful for the workforce.

The organisation involved in case study 1 used the SSL to develop a new set of core values, establish a new PMM process centred on line-of-sight and assist them through major change. With the organisation in case study 2 the impact was to improve the manager/employee relationship and the consistency of how performance measures were understood and applied. With the organisation in case study 3 the impact of the social systems approach is evident from improved employee engagement scores and local manufacturing measures. The leadership teams involved in each organisation acknowledged the OE framework provided a flexible support tool during periods of change. There is no evidence from the case studies of the need to include additional factors. There was a degree of commonality in the social systems factors selected by the organisations

after reviewing the OE audit data (see Table 6.6) which may suggest there is a hierarchy in the factors or reflects the state of social system in operation in the organisations at the time the case studies were undertaken, or a combination of both.

Case Study 1	Case Study 2	Case Study 3
1. Trusting relationships	1. Strong leadership and supportive management	1. Trusting relationships
2. Open, clear communications	2. Open, clear communications	2. Strong leadership and supportive management
3. Consistency with other business processes	3. Consistent flowdown throughout organisation	3. Open, clear communications
4. Strong leadership and supportive management		
5. Consistent flowdown throughout organisation		

Table 6.6: Table of Factors Worked After Reviewing the OE Audit Data

The contention of this thesis is the social system operating in the organisation is the context for virtually everything that happens and is fundamental to how effectively the organisation performs. The researcher proposes that since the factors worked on in the intervention plans reflect identified gaps in the social system from the perspective of those in the organisation, these case study organisations' social systems were in broadly similar states. A review of their respective organisational backgrounds shows lack of trust, management capability and communication issues in all three organisations. In addition, there were business performance concerns in all three organisations with downsizing and increased uncertainty in two. These underlying characteristics led to the choice of the factors to be worked on. Had these businesses been performing well and growing it is possible the intervention plans would have focused on other factors. Therefore the researcher considers the social system in operation at the time is the primary determiner of the factors to be worked on rather than there being a hierarchy. The choice of factors reflects the social system, the context, perceived by the community-of-practice at the time and is an inside-out view. Because the factors are interdependent there is a need to audit all ten factors. Although the intervention plans were built around the factors listed in Table 6.6 improvements were registered in other factors suggesting one or more of these factors strongly influences other factors. There is also evidence that the richness of interactions between the factors increases as the social system works more effectively.

The leadership team in case study 1 believe that by agreeing a 'baseline standard' for each of the ten factors and creating a numerical scale to measure performance versus 'what good looks like' a simple roadmap for a business can be produced. In case study 2 an optimised OE audit process was developed. Discussion groups were set up to collect information and reconvened to review progress at various stages. In case study 3 the OE audit was based on an extensive employee survey and was considered sufficient to apply the framework to because it was broad in nature, consistent and repeated annually. The three case studies demonstrate the robustness and flexibility of the OE framework. The findings from the case studies validate the framework and are summarised in Table 6.7. A number of findings (1-5) were common to all three case studies. For the other findings (6-9) evidence for them exists in either one or two of the case studies. This doesn't mean the finding isn't common to other case studies but that no evidence was observed in the work done to date.

No.	Case Study Findings	Case 1	Case 2	Case 3
1	The outcome of the case studies validates the proposition that a PM system has a more positive effect on OE when mediated by a social systems approach	X	X	X
2	The OE framework puts the focus on and provides a structured roadmap to address the softer qualitative elements of PM	X	X	X
3	Applying a social systems approach to how existing performance measures are delivered achieves better OE	X	X	X
4	People, processes and their interactions are important for effective PM as measured by the organisation and by the delivery of agreed OE goals	X	X	X
5	The social systems approach helps maintain focus on performance in rapidly changing business environments.	X	X	X
6	Discussions of the social systems factors enhances the understanding of the social interactions that need to occur in organisations to improve performance	X	X	
7	The social systems approach provides a measure of progress towards individual and organisational development	X	X	
8	There is a correlation between applying the OE framework and improvements in hard local manufacturing performance measures			X
9	Interactions were identified between the social systems factors demonstrating interdependency			X

Table 6.7: Summary of Findings from the Case Studies

Case study findings 1, 3, 4, 5 and 8 in Table 6.7 support individual elements of the Contribution to Knowledge presented in Section 7.3.

Appendix 6.7 captures the observations from the case studies at an operational level. These observations may be of practical value for organisations contemplating applying the OE framework.

Do the Case Study Findings Validate the Underlying Assumptions?

The five underlying assumptions presented in Chapter 3 can now be tested against the case study findings.

1. The assumption that the '*nature of the social system operating in an organisation plays a fundamental role in defining how that organisation performs'* is supported by the case study findings, in particular those of case study 3. The social systems factors focus on the 'means', the performance measures represent the 'ends'. By managing the social systems factors the measures can take care of themselves as shown by the improvement observed in the local manufacturing measures included in case study 3.
2. The assumption that '*an organisation's complex behaviour and latent capability influences the development, implementation and outcome of interventions aimed at improving PM and OE'* is supported by the case study findings, in particular those of case studies 1 and 2. Making business processes and performance measures more relevant by applying the SSL improves OE. Audits of the social systems factors allowed emergent intervention plans to be developed that changed behaviours and outcomes in each case study organisation.
3. The assumption that *'by taking an 'inside-out', social systems approach to organisational practice, social systems initiated interventions can improve OE, with PM providing a directional indicator of the impact'* is supported by the case study findings, in particular those of case studies 2 and 3. The iterative process refines the intervention plan and the likelihood of making the organisation's business processes and performance measure more relevant to the OE goal. The combination of taking an 'inside-out' approach and a social systems perspective provides an effective way of engaging with the operational complexity

people introduce. It puts people, processes and their interactions at the centre of PM and delivers success through business activities optimised by applying the SSL.

4. The assumption that *'by combining organisational theories centred on social systems and practice, explanations of how social systems initiated interventions change the behaviour of organisations and influence performance can be described'* is supported by conducting critical realism-based explanatory case study research and demonstrating that application of the SSL is a plausible explanation for the OE changes observed in the three case studies. Case study research is well suited to unravelling the interactions of people and processes in complex social systems and undertaking theory building (Meredith, 1998; Anderson et al., 2005; Easton, 2010; Welch et al., 2011).
5. The assumption that '*an approach grounded in social systems and practice theory provides an alternative framework to organisational control theory as a theoretical foundation for PMM, explaining various phenomena associated with PMM and reducing the PMM theory-practice gap'* is supported by the middle-range process theory outlined in Chapter 5 which incorporates a number of theoretical concepts to form the social systems driven approach applied in this chapter. The findings from the case study research demonstrated that taking an 'inside-out', social systems approach can reduce the PMM theory-practice gap and, as such, can also offer an alternative theoretical framework to organisational control theory for PMM, one grounded in social systems and practice theory.

In each of the case studies a holistic, social systems perspective was taken. The findings from the case study research have enhanced the understanding of the interaction between PM, social systems and OE. The development of a middle-range management theory based on a wider organisational viewpoint explains how social interventions can bring focus to OE and enables organisations be the best they can be in the circumstances they find themselves. PM plays an important but subordinate role, providing key indicator information to determine how effective the organisation's response has been.

With reference to the Contribution to Knowledge presented in Section 7.3:

Assumption 1 supports elements 1 and 2.
Assumption 2 supports element 2.
Assumption 3 supports element 2.
Assumption 4 supports elements 3 and 4
Assumption 5 supports element 4.

7. Discussion, Conclusion, Limitations and Broader Applicability

7.1 Discussion

The inability of PM to reflect the uncertainties organisations face is the primary contributor to the PMM theory-practice gap

This chapter provides the answer to the research question posed in Chapter 1. It presents a new middle-range management theory which has been field-tested and grounded and is focused on making an organisation the best it can be using the resources at its disposal and in the economic circumstances it finds itself. The approach also provides an alternative theoretical framework to organisational control theory for PMM, one grounded in social systems and practice theory and supported by adopting a critical realist frame-of-reference. Moreover, adopting a social systems perspective may have general applicability across other business processes.

PM systems fail to predict OP reliably because organisations face futures so inherently unknowable that is it impossible to comprehend the full range of potential outcomes open to them. This thesis explores whether considering PM from a social systems perspective can 1) reduce the PMM theory-practice gap by focusing on the organisation's 'means' to achieve improved OE (or OP) rather than on the 'ends' and 2) provide a theoretical framework for PMM grounded in social systems and practice. An important conclusion from Chapter 3 underpinning this work is that organisational reality is a social construct (Sayer, 1992, Easton, 2010) delivered through practice (Feldman and Orlikowski, 2011). The social system and associated working practices in operation within an organisation play a fundamental role in how that organisation performs through the processes of sense-making (Maitlis, 2005; Balogun and Johnson, 2005; Rouleau and Balogun, 2011) and decision-making (Luhmann, 1995, Seidl and Becker, 2006; Ahrne et al., 2016). Proactive reconfiguring of the social system to improve business processes and/or performance measures is core to the development of the OE framework described in Chapter 5 and applied in Chapter 6. Performance, PM and PMM are also social constructs (Lebas and Euske, 2004; Guerard et al., 2013) influenced by practice (Bourne, 2008; Richard et al., 2009) and meaningful only in a decision-making context (Lebas and Euske, 2004; Melnyk et al., 2014). The social system, practice, PM, sense-making and decision-making all contribute to organisational reality with the social system setting the intervention context for the organisation at any point in time.

Social systems emerge from people's interactions and reconstitute themselves continuously as part of their ongoing existence. Reconfiguring the social system through an iterative process of adaptive social intervention is proposed as the 'means' by which organisations can be made the best they can be in the environmental circumstances they find themselves. The 'ends' (i.e. measures of OE and OP), as described by PM, are considered indicators of progress rather than absolute measures, signalling directionally

whether or not an organisation's interventions have been effective in changing its internal business processes to respond to any external or internal opportunity or threat capable of affecting its performance. It is possible for the 'means' to point in one direction and the 'ends' to point in another because of countervailing circumstances. There is concern within the PMM research community that the theoretical foundations of the field are not sufficiently robust. In an attempt to address this gap Bititci et al. (2018) suggested one possible theoretical framework for PMM might be grounded in organisational control theory but also called for "the development of a number of competing theoretical frameworks that enable better integration of existing and new knowledge in the field." This thesis proposes such an alternative, grounded in social systems and practice theory.

In Chapter 1 the research question posed was:

- How does looking from a holistic, social systems perspective enhance our understanding of performance measurement and organisational effectiveness from a wider organisational viewpoint?

In summary, the answer to this question is:

1. The social system operating in the organisation mediates the link between PM and OE. A middle-range management theory (termed SSL) is presented which uses the latent powers of social systems to improve OE through an iterative process centred on people's interactions and behaviours. PM plays a supporting role, signalling directionally whether the outcome of social systems initiated change has been beneficial or not. PM provides input and output information, reconfiguring the social system provides the intervention context.
2. The primary gaps in knowledge identified from the PMM literature are 1) how to make PMM more relevant for the dynamic environments organisations face today and 2) the absence of a robust theoretical foundation for PMM. These gaps are addressed by focusing on the development and use of the middle-range theory which integrates concepts from social systems, complexity and practice theories, and Mode 2 research. This approach 1) reduces the PMM theory-practice gap by recognising the performance focus needs to be on the social system rather than on PM and 2) provides a theoretical framework for PMM grounded in social systems and practice theory.
3. The middle-range theory has been field-tested in its intended field of application through case study research and grounded using a generative mechanism approach taken from realist evaluation theory to explain why the interventions gave the outcomes they did. Managing the social system resulted in improved performance outcomes.

The research objective of this work is to develop knowledge on whether the effectiveness of PM can be improved by considering PM from a social systems perspective. The design objective is to develop and test a framework for improving the effectiveness of PM. Theories of management are normative theories because they are based on the beliefs, values and aspirations of people; theories of managing are theories of effectiveness and aim to produce generalisations that are actionable (Argyris, 1996). This thesis interprets and explains three particular strands of research to explore whether their synergy can support a new middle-range management theory linking social systems and PM to help explain and reduce the PMM theory-practice gap. The first relates to how the literature has progressed in understanding the role social systems play in determining people's behaviour

in organisations and what this means for the effectiveness of PM. The second relates to how the integration of social systems theory, complexity theory, practice theory and critical realism can aid understanding and explanation of how specific interventions change the behaviour of organisations and influence OE and ultimately OP. The third relates to the potential to build middle-range management theory from Mode 2 knowledge to reduce the theory-practice gap. The argument presented is it is the nature of the social system operating in the organisation at the time of any intervention which is important for OE and, by steering the behaviour of the organisation towards a Mode 2 approach, OE can be made the best it can be with the resources the organisation has at its disposal and in the economic circumstances it finds itself. PM provides important directional performance information to determine how effective the interventions have been. The main research findings can be summarised as:

- The link between PM and OE is mediated by the social system operating in an organisation.
- People's interactions and behaviours can be reconfigured on an iterative basis to create more purposeful and targeted interventions leading to more effective OE outcomes.
- PM has a subordinate role to the social system, providing valuable directional data.
- By recognising the social system as the context that makes the difference and a means to Mode 2 knowledge it is possible, using realist evaluation theory, to explain how, by introducing appropriate social intervention mechanisms, improvements in OE are effected.
- This approach can offer a theoretical framework for PMM, one grounded in social systems and practice theory, and supported by realist evaluation theory.

These findings suggest social systems have a fundamental role to play in PM and OE, can provide an explanation of how organisational behaviours influence performance, and offer an alternative theoretical framework for PMM. Five underlying assumptions were developed in Chapter 3, based on relevant literature described in Chapters 1 to 4, to investigate the contention that social systems have an important role to play in PM and OE in general. The validity of these assumptions was supported by the specific case study findings summarised at the end of Chapter 6 and is examined from a broader PM perspective in the remainder of this discussion.

Assumption 1: The nature of the social system operating in an organisation plays a fundamental role in determining how that organisation performs.

If this assumption can be supported it potentially answers the question of "how and under what circumstances PM makes a difference" (Bourne et al., 2013). It does so by recognising people are the complex, unpredictable entity in the system (Daft and Weick, 1984; Daft and Lengel, 1986; Frank and Fahrbach, 1999; Fleetwood and Hesketh, 2006a; Spitzer, 2007; Miller and Tsang, 2010) and focuses attention on them rather than on developing ever more complicated PM frameworks (Neely et al., 2000, Watts and McNair-Connolly, 2012; Nielsen and Nielson, 2015) to address what are, in practice, unknowable and therefore unpredictable organisational outcomes. There is resonance here with Susman and Evered's (1978) comment that as research methods and techniques become ever more sophisticated their usefulness for solving practical problems diminishes. Bourne et al. (2005) posed the

question under what circumstances does PM positively impact OP and noted that organisational context, PM content and process influences the outcome. They defined context as the combination of the organisation's external (i.e. competitiveness of the industry, the economic and political situation) and internal (i.e. structure, culture, management style and resources) environments. The literature supports a range of external environmental factors impacting OP, in some cases making the major contribution (Van Aken, 2005), albeit there is no comprehensive framework to describe this. Bourne et al. (2005) noted the impact of the internal environment has been researched extensively and has many contributing elements. Some of these elements overlap with the social systems factors described in this thesis.

Figure 7.1 shows the results of applying the SSL to reconfigure the social system operating in one of the case study organisations as measured by the feedback from corporate employee surveys on engagement and performance mapped onto the social systems factors. While the specific WGLL goals were identified and executed by communities-of-practice and relate to specific events associated with the intervention plan (see Chapter 6) an alternative measure of progress could be determined by comparing the case study organisation's engagement and performance survey results to the average of the parent company's other locations. All sites were expected to undertake local improvement activities in response to the survey output for their location but only the case study site applied the SSL. The employee survey data for 2014 provided the baseline, the 2015 results shows the progress made. Whereas the factor scores for the parent company's other operations were very similar over both years (see Appendix 6.3 – Case Study 3 (Industrial product manufacturing organisation) application of the SSL to the case study site, using WGLL actions focused on three selected factors, delivered a statistically significant improvement in the 2015 results compared to the 2014 baseline. It is interesting to observe all ten factors improved despite the intervention plan focusing only on three, supporting the interdependent nature of the ten factors.

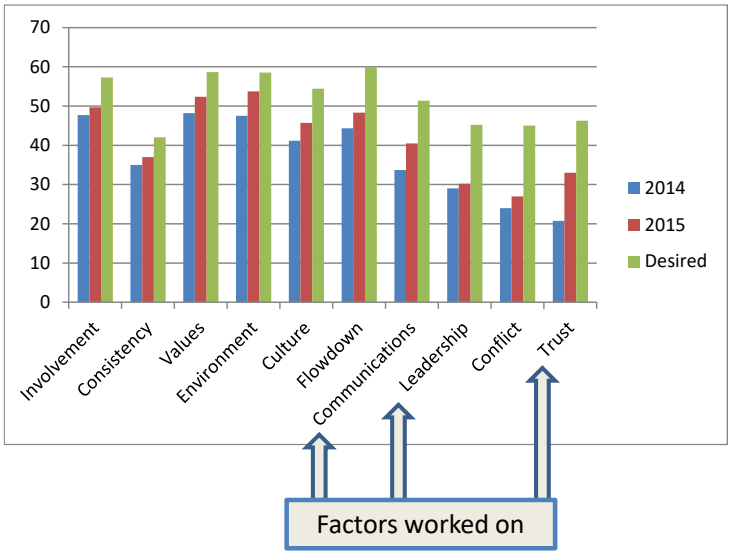


Figure 7.1: Modifying the Social System in Practice

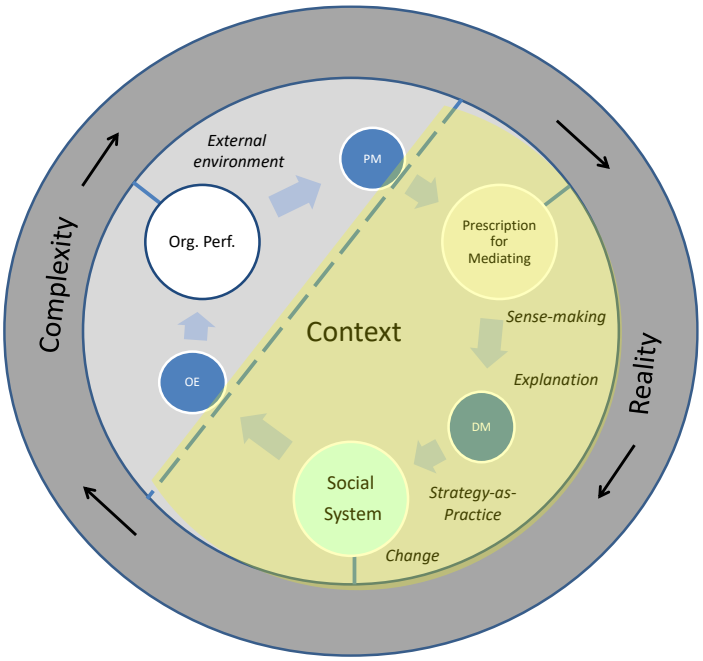
Figure 7.1 demonstrates application of the SSL influenced people's engagement and behaviour and Figure 6.3 shows the impact of these changes in terms of local manufacturing performance measures for this case study organisation. The manufacturing measures provide indirect support for the presence of the social intervention mechanism (Miller and Tsang, 2010). The use of the SSL changed behaviours and outcomes in all three case study organisations as described in Chapter 6 and Appendices 6.1, 6.2 and 6.3, supporting assumption 1.

Assumption 2: An organisation's complex behaviour and latent capability influences the development, implementation and outcome of interventions aimed at improving PM and OE.

Figure 5.4 (reproduced below) shows how the social system mediates OE which in turn influences OP. The SSL elements involved in mediating the PM-OE link are highlighted in yellow. The framework involves an iterative activity of reviewing business processes and performance measures from a social systems perspective, and taking the internal and external environmental circumstances into account. Critical to this is application of the OE framework and, in particular an audit of the social system in operation (see Figure 5.9). Knowledgeable transient social structures (here, the senior leadership team, appropriate communities-of-practice and the SSL) with emergent powers are charged with understanding and explaining what is happening at the social systems level, creating an appropriate intervention plan and implementing this through various change and strategy-as-practice activities. This undertaking relies on use of a self-reinforcing social intervention mechanism to reconfigure the way the social system operates. The argument made here is that by applying the SSL the community-of-practice's latent knowledge and know-how can be leveraged to proactively shape interventions and make key business processes, including PM, more effective through changes in people's interactions and behaviours leading to improved OE. This approach was used in the three case studies to successfully deliver the OE goals identified by the respective leadership teams and supports assumption 2.

Specifically an appropriate community-of-practice undertakes an audit of the social system in operation at the time (the current position, CP) based on the set of ten interdependent social systems factors developed in Chapter 5. The community-of-practice generates a view of what good looks like (WGLL) and produces an emergent, consensus-based intervention plan, based on their latent knowledge and know-how, guided sense-making (Maitlis, 2005) and decision-making, to close the CP-WGLL gap. These plans changed behaviours and outcomes in each of the case study organisations by reconfiguring the social system in operation (see Figure 5.9). The social systems factors came from the combination of semi-structured interviews and focus group outcomes and are regarded as a holistic set of leading indicators for PM and OE. These factors align with the means-oriented criteria contained in models of OE (Cunningham, 1977; Quinn and Rohrbaugh, 1983) and were identified as associated with OP either individually or in combination through the literature review included in Chapter 5. However, in line with complexity theory and critical realism,

and to properly reflect the contextual circumstances, an audit of the social system needs to consider all ten interdependent factors holistically.



PM: Performance Measurement; OE: Organisational Effectiveness; DM: Decision-Making

Figure 5.4: How Social Systems Mediate Performance

Assumption 3: By taking an 'inside-out', social systems approach to organisational practice, social systems initiated interventions can improve OE, with PM providing a directional indicator of the impact.

The argument that the nature of the social system operating within the organisation mediates the link between PM and OE is supported by evidence generated through semi-structured interviews and focus groups (Chapter 5) and case studies (Chapter 6), and is underpinned by theories from social systems, complexity, practice and management (Chapter 3). The empirical work uses in-depth interviews, focus groups and case study research to look at PM from inside organisations and from a social systems perspective, and takes the position that if management researchers seek to influence organisations not only must they do this by taking an 'inside-out' approach but they also need to do so by ensuring their activities align with the organisation's ways-of-working (MacLean et al., 2002).

For an organisation to be the best it can be one requirement is that its business processes and measures are as relevant as possible. Application of the SSL creates intervention plans linked to an 'inside-out' audit of the social system that makes the business processes and performance measures more relevant to the continuously changing external and internal

environments. The social system factors focus on the 'means' whereas the performance measures are representations of the 'ends'. The use of communities-of-practice to identify the CP and WGLL, and then create intervention plans targeted at closing the CP-WGLL gap, increases the potential to better understand the context and processes impacting the measures (Cuthbertson and Piotrowicz, 2011). The iterative process updates the intervention plan for known changes in the internal and external environments. The 'inside-out' approach puts people, processes and their interactions at the centre of PM. By managing the factors the measures take care of themselves. This is relevant as the inability of conventional PMM processes to reflect the rate of change and uncertainty businesses face today has been recognised (Lebas and Euske, 2004; Melnyk et al., 2014; Micheli and Mari, 2014).

Jensen (2001) advocated defining a true (single dimensional) score for measuring OP and encouraged "managers to use the measures of the drivers of performance to understand better how to maximize their score." Jensen's use of value maximisation puts PM in a supporting but subordinate role to a single-valued objective function. Jensen distinguished between the outcome (the single performance measure) and the inputs or decision variables (the management of the value drivers) that can affect the true performance measure and acknowledged that knowledge of the value drivers sits inside the operating unit. In this thesis the SSL uses communities-of-practice to access knowledge of the value drivers from inside the organisation. The SSL also puts PM in a supporting but subordinate role, in this case to the social system. Jensen's single-valued objective function can be considered the ultimate 'end' while the social system may be viewed the primary 'means', the main value driver.

Each of the case studies described in Chapter 6 applied the SSL and delivered a series of OE goals more effectively than had the SSL not been used. PM, although optimised during the interventions, played a subordinate role, acting as a provider of directional information (Dubnick and Frederickson, 2011; Bourne et al., 2013), supporting assumption 3.

Assumption 4: By combining organisational theories centred on social systems and practice, explanations on how social systems initiated interventions change the behaviour of organisations and influence performance can be described.

Fleetwood and Hesketh (2006b) suggested that while the under-theorising of positivism is recognised by many researchers the lack of explanation is not. Hesketh and Fleetwood (2006) proposed the empirical and theoretical issues associated with positivism lie in empirical researchers' tendency to ignore meta-theory, and concentrate on more empirical work, believing that it is enough to identify statistical connections rather than being able to explain what underpins them (see also Tsoukas, 1989).

Micheli and Mari (2014) argued PM is under-theorised and should be viewed "as a fundamentally epistemic and pragmatic act, rather than as the determination of the 'true value' of organisational performance." PM should be considered as "a form of insight i.e. a

way of looking at the world, and not a form of knowledge of how the world is" (Bohm, 1980). Micheli and Mari went on to outline the principles of a pragmatic epistemology of measurement. They took a similar view to Guerard et al. (2013) and Lebas and Euske (2004) and considered measurement as an assignment rather than a determination, producing context specific information. They promoted PM as a knowledge-based process as opposed to an empirical determination, recommended reformulating PM systems and proposed shifting the focus of measurement to relevant organisational processes and activities through detailed comparison of what is measured and what happens in practice. This aligns broadly with the approach taken in this thesis.

The research undertaken in this thesis draws on Mode 2 knowledge, adopts a critical realist philosophy aligned with the emergentist approach of Archer (1995) and uses a number of theoretical concepts to form the basis of the understanding supporting the creation of the middle-range theory. This middle-range theory is a product of management theory research underpinned by the existing organisation theory described in Chapter 3 and targeted at bridging the theory-practice gap. Chapter 5 identified a social systems link between PM and OE. By integrating the theories of social systems, complexity, practice and management, and adopting a critical realist approach the middle-range theory offers an explanation of how the social system operating in an organisation mediates the PM-OE link.

The overlap with complexity theory/systems thinking is clear and the use of critical realism gives a more rigorous philosophical grounding as well as providing a route to investigate complex organisational phenomena in a holistic manner and a response to calls for creating theories that are systems-oriented (Mingers, 2011a, 2011b; Wynn and Williams, 2012). By recognising the social system as the context that makes the difference within an organisation then by introducing a social intervention mechanism on an iterative basis, it is possible, using critical realism, to explain how organisations can become the best they can be in the circumstances they find themselves. The message is keep PM as simple as possible (Spitzer, 2007; Micheli and Mari, 2014) and focus on the social system that underpins it. This theory provides a potential basis for further theoretical generalisations and a framework of value to practitioners (see Broader Applicability of the Social Systems Lens).

Critical realism is adopted because it looks to explain what is seen and experienced in terms of a reality consistent with what is observed. According to Wynn and Williams (2012) "the nature of reality is not easily and unproblematically apprehended, characterized, or measured, which means humans experience only a portion of it." The choice of critical realism is supported by where this research sits within Burrell and Morgan's four paradigms for organisational analysis, the increasing recognition in economics, finance and social science that organisations are complex social systems and adopting the scientific method produces inconclusive results, a recognition that complexity theory/systems thinking and critical realism share fundamental principles, that critical realism can offer a way to close the theory-practice gap and, increasingly, it is the philosophy being selected by researchers and practitioners working with complex social systems be that in health, housing, IT or marketing.

Pawson and Tilley's (1997) realist evaluation methodology is used to provide an explanation of how the social intervention mechanism works (or doesn't) in particular contexts or settings. The social system is seen as the contextually significant entity. The transient social structure with the relevant causal powers would typically comprise the senior leadership team, appropriate communities-of-practice and the SSL. There may or may not be a need for a separate change agent. The SSL acts as the catalyst for the social interventions which reconfigure the operating social system. Social interventions are complex systems that operate inside a bigger complex system which is the organisation's broader social system. Gathering information on how the interventions impact the outcome, how the contextual circumstances at the time affect the outcome and on the specific mechanisms that may be responsible for the change is what the realist evaluation process aims to do. This process can be summarised as CONTEXT + MECHANISM = OUTCOME. In this case the CONTEXT is the operating social system, the MECHANISM is the self-reinforcing social intervention mechanism described in Chapter 6 and depicted in Figure 6.2 and the OUTCOME is the reconfigured social system. The modified social system has a mediating effect on OE, with PM used to provide directional information on the impact on performance and important, but not exclusive, input for the next cycle of this iterative activity.

Case study research is well suited to unravelling factors and relationships contained within complex social systems and undertaking theory building (Meredith, 1998; Anderson et al., 2005; Easton, 2010; Welch et al., 2011). It is also more means-oriented and helps the researcher understand why specific events occur or don't occur (Meredith, 1998). Critical realism is well-suited to case study research, is aligned with complexity theory, provides a robust framework for investigating real problems and their underlying causes, and offers a way to close the theory-practice gap. Critical realism's strength lies in its ability to develop causal explanations for complex phenomena. It is being adopted in organisation and social science research increasingly (Easton, 2010; Wynn and Williams, 2012, Mingers et al., 2013). Given the epistemological principles of critical realism the research question becomes what caused the specific event of interest to occur? The methodological principles outlined in Chapter 4 have been used in Chapter 6 to demonstrate the application of the SSL is the most plausible explanation for the OE changes observed in the three case study organisations, supporting assumption 4.

In reviews of sense-making in organisations during strategic change and the role of middle-managers Balogun and Johnson (2004, 2005) and Rouleau and Balogun (2011) explored the social processes of interaction between middle-managers as they try to make sense of change interventions. Their research used a qualitative single case study design (Yin, 1994) and, as here, was undertaken from inside the organisation because the focus was on how employees made sense of change events. They observed that lateral informal communication processes between middle-managers contribute to intended and unintended consequences and play a critical role in the unpredictable, emergent nature of change. Balogun and Johnson (2004, 2005) acknowledged the call for more understanding of how micro organisational social processes influence strategy formation and change; in particular the roles of actors other than the senior leaders (Jarzabkowski, 2004) and also recognised people to be agents who construct their own work environments (Tsoukas and Chia, 2002). The work contained in this research addresses some of these gaps.

Balogun and Johnson (2004, 2005) adopted a sense-making approach to their studies. They defined schemata as the mental models held by individuals that influence whether and how people respond to events (Labianca et al., 2000) i.e. templates against which people can match organisational experiences and determine what they mean (cf. model-dependent realism, Hawking and Mlodinow, 2010). Organisational or group schemata represent the level of shared understanding needed for coordinated activity to happen. Common understanding at the individual level leads to what is accepted as enacted reality at the group level via routines, systems and beliefs etc. When individuals face change they tend to move into a conscious sense-making mode. According to Balogun and Johnson sense-making is a conversational and social process, entailing a wide variety of formal and informal communications methods. The social processes of interaction are used to make sense of new requirements and responsibilities i.e. organisational reality is socially constructed and delivered through practice and sense-making. The social system operating in the organisation i.e. the existing ways of thinking which individuals have about their organisation, provides the context within which change is initially made sense of. Balogun and Johnson (2005) termed this *old schemata* and added "*sensemaking triggers* are the events and happenings identified as triggering intersubjective sensemaking during change, and include the various *designed change goals and interventions*, the encountered *behaviour of other organizational actors*, and the *design flaws.*" Balogun and Johnson went on to outline *developing schemata* which represent "the interpretations that change recipients arrive at through their social processes of interaction." These developing schemata support the *emergent change outcomes*, the observed experiences, which become visible through the actions and behaviours of people in the organisation. Figure 7.2 shows how these concepts operate together as a sense-making process and deliver emergent and unpredictable outcomes as people develop particular interpretations about imposed changes through social processes of interaction.

In terms of Figure 7.2 within the SSL developed in Chapter 5 and applied in Chapter 6, rather than responding to imposed changes, transient social structures are required to generate emergent outcomes and introduce change capable of closing the gap between the CP and WGLL through the interventions they invoke. Communities-of-practice enter into a guided sense-making process (Maitlis, 2005) involving face-to-face conversations and interactions focused on intended change outcomes although inevitably there is the potential for unintended consequences. The intention of the community-of-practice is to replace the old group schemata with a new one i.e. reconfigure the old social system to a new one, one more able to deliver the change required. As Balogun and Johnson commented "through this cyclical sense-making process, earlier schemata and outcomes become the ground for subsequent sense-making through the mediation of social processes of interaction", adding "new sense-making triggers are constantly encountered as recipients interact with each other and attempt to arrive at some shared new meaning to enable them to once more operate together in a more-taken-for-granted manner." The sense-making triggers result from the existing context i.e. the existing social system, so that the reconfigured social system becomes an outcome of the intervention and so on.

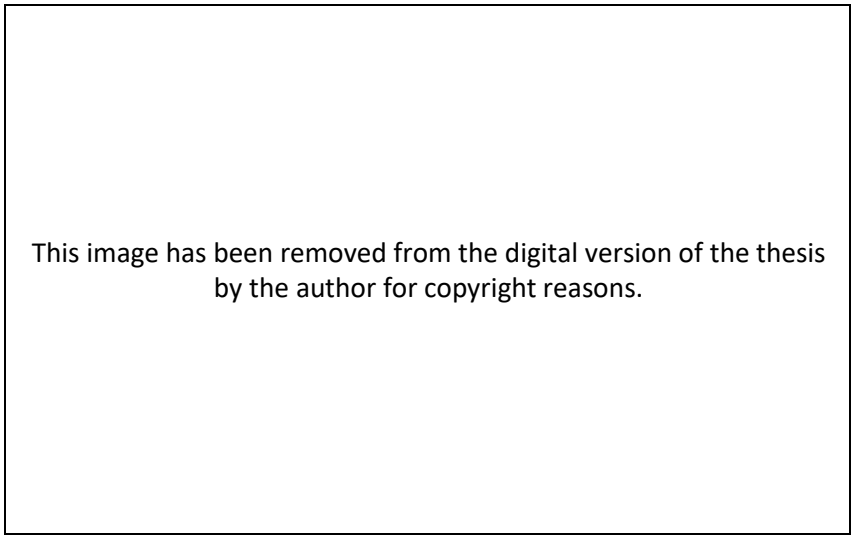


Figure 7.2: The Role of the Intersubjective Level during Change (Balogun and Johnson, 2005)

Balogun and Johnson (2004, 2005) showed that change is supported by a range of social interactions. They described vertical and lateral social processes, the former between the change agents and senior leaders and the latter between the change agents themselves. In the former senior managers effectively set the direction, in the latter decisions are made on how to make change happen. Balogun and Johnson's analysis revealed social processes range from highly formal to informal with the most effective sense-making activity happening through lateral and informal processes which is what the SSL looks to target. They noted these lateral and informal processes have received little attention in the literature and acknowledged that they may vary with the type of change and with different groups of people. Moreover, they considered the processes of interaction between individuals and groups of interest and asked how such interventions might occur and what would make them effective. The argument made here is that communities-of-practice undertaking the combination of sense-making, consensus-building and decision-making activities, focused on WGLL may well be effective at introducing change delivering improved performance outcomes. The transient social structures present as part of the SSL comprise components whose causal powers interact to produce an emergent set of causal powers under specific contingent conditions (Tsoukas, 1989). Balogun and Johnson were "able to link inter-recipient sense-making activity, in the form of social processes of interaction, to the outcomes of implementation interventions, and the acknowledged unpredictable nature of change." They noted what is key is that these processes "mediate between individuals' interpretations and the designed change interventions to create an emergent implementation process." It is proposed that the candidate mechanism in operation in the work described in this thesis is the social intervention mechanism depicted in Figure 6.2. Social interaction can be both a part of a social intervention mechanism and a mediating condition where the mechanism is sometimes activated by interventions and sometimes activates interventions (Blom and Moren, 2011). Balogun and Johnson (2005) based their observations on a longitudinal, qualitative study on middle-managers and how they responded to a change initiative noting the importance of sense-making and a wide

range of social interaction processes to deliver alignment of interpretation. Balogun and Johnson's perspective on how social interactions and sense-making shaped behaviours and change interventions contributed in part to step 3 (Analyse the audit data and identify gaps between the 'current position' (CP) and 'what good looks like' (WGLL)) of the SSL described in Chapter 5 and is aligned with the social intervention mechanism described in Chapter 6 and depicted in Figure 6.2, further supporting assumption 4.

Assumption 5: An approach grounded in social systems and practice theory provides an alternative framework to organisational control theory as a theoretical foundation for PMM, explaining various phenomena associated with PMM and reducing the PMM theory-practice gap.

The absence of a unifying theory for PMM suggests current approaches fail to address the breadth of the field, electing to focus on specific discipline outcomes as observed through various individual functional lenses. The argument made here is it is necessary to look beyond the observed functional outcomes and determine the underlying mechanism or mechanisms responsible for observed events if an explanation is to be obtained and sound foundations put in place. This thesis demonstrates that by taking a social systems perspective organisational behaviour can be changed to generate new insights into how business processes and performance measures can be made more relevant to the delivery of an organisation's performance. This is done by deliberately reconfiguring the social system operating in the organisation through the social intervention mechanism shown in Figure 6.2. According to Merton (1949) social mechanisms are the building blocks of middle-range theory. This approach can reduce the PMM theory-practice gap and also offer a competing theoretical framework to organisational control theory for PMM, one based on social systems and practice theory, and supported by realist evaluation theory.

The less than clear outcomes from applying traditional PMM systems further emphasise the need for a different approach. It should be said however, that a lack of empirical association between various performance measures and OE doesn't mean a causal relationship doesn't exist between them, it may just be too complex to 'observe' using the standard statistical techniques deployed. Equally, even if a consistent association is observed using statistical techniques the relationship identified provides no theory or explanation as to why the link exists (Hesketh and Fleetwood, 2006).

The perspective described in this research is also consistent with observations that current PMM systems are not fit-for-purpose in today's dynamic environment (Melnyk et al., 2014). However, whereas Melnyk et al. proposed a less focused but more resilient PMM system to deal with this, this thesis replaces performance management by understanding and reconfiguring the social system as the appropriate solution. Definitions of performance measure, measurement and management are given in Appendix 1.1. The difference between performance management and understanding and reconfiguring the social system is that in the former PM is usually the definitive input whereas in the latter it is simply a directional indicator alongside others. Moreover, reconfiguring the social system is based on a holistic view of the organisation with interventions created based on this broader

view. By looking from inside the organisation at the operation of the holistic social system rather than taking a narrower PMM perspective only, this thesis offers an alternative route to address the gap Melynk et al. refer to.

The potential to build middle-range management theory from Mode 2 research as a means to reduce the theory-practice gap has been investigated by a number of authors (Partington, 2000; MacLean et al., 2002; Van Aken, 2005). According to Van Aken (2005) organisation theory research can be used to support management theory research. Building on this, theories supporting social systems, complexity, practice and management have been used to provide the understanding behind the creation of a middle-range management theory linking PM, social systems and OE aimed at reducing the PMM theory-practice gap. This middle-range theory, termed the SSL, provides new insight into how organisations perform; a way of looking at them through a social systems lens with the aim of making them the best they can be in the circumstances they find themselves, supporting assumption 5. The work started from the perspective of PM but ends with the contention that the social system operating in the organisation is fundamental to how effectively it performs with PM playing a supporting role. The SSL can be considered a technological rule, providing a general solution concept to design specific interventions that produce a desired outcome in a given setting. This technological rule and solution concept is based on a 'thick' description which underpins understanding and enables its translation from the general to the specific. The 'thick' description was built on field testing and grounding.

Barney and Felin (2013) outlined how complex, non-linear and emergent social aggregation is core to microfoundations of competitive advantage and called for new research in multi-level human capital and behaviour theory at the micro-level, stating that "organizational scholars need to engage in the hard work of specifying unique theories of aggregation that appropriately represent the social interactional and contextual factors that shape behavior and performance in organizations." The middle-range theory presented in this thesis helps address Barney and Felin's and Balogun and Johnson's questions on the social processes that influence behaviour and change in organisations.

Recognising the social system is the context for virtually everything that happens in an organisation and emerges from people's recursive interactions, the middle-range theory (SSL) presented here creates transient social structures with the capacity for emergent learning and change, and reconfigures the social system on an iterative basis to embed this learning and change into the organisation to improve OE. Realist evaluation helps management researchers relate abstract conceptual analyses of organisational events with observed experiences to identify particular interactions of causal powers occurring in specific contextual circumstances and provide a theoretical explanation for the observed outcomes, in this case the social intervention mechanism described in Chapter 6 and depicted in Figure 6.2. By introducing these enabling infrastructures and new ways-of-working, application of the SSL helps close the PMM theory-practice gap and creates organisations more capable of remaining sustainable in dynamic environments (Mitleton-Kelly, 2003). It also provides a competing theoretical foundation to organisation control theory for PMM.

7.2. Conclusion

This research has confirmed that people, processes and their interactions can have a profound impact on how organisations perform. Organisations are unpredictable complex social systems whose distinctive activity is decision-making. They are heterogeneous entities whose capabilities, behaviours and circumstances are unique, emerging from their histories and previous decisions. Organisational reality is a social construct delivered through practice. PM is a social construct that supports decision-making but only partially describes organisational reality and as such is but a directional indicator of performance. Social systems emanate from networks of purposeful people interactions. These interactions create the capacity for learning, sense-making, emergent behaviour and change in organisations. Scanning for and sensing the interactions between people, business processes and measures provide information on their interrelationships and their impact on the operational complexity of an organisation. This can be used to shape interventions. Interventions are made in organisations with the intention of making their future states different from their present ones; however, organisations face futures so uncertain that attaching probabilities to the outcomes of interventions is meaningless.

This research addresses the primary gaps in knowledge identified from the PM literature by 1) providing a middle-range management theory which makes PM more relevant for the dynamic environments organisations face today, reducing the PMM theory-practice gap, and 2) offering a theoretical framework for PMM grounded in social systems and practice theory. The middle-range theory explains how organisations can use the latent powers of social systems to improve OE and ultimately OP. It does this by reconfiguring the operating social system using communities-of-practice to investigate and optimise the interactions between the social system and the organisation's processes and measures based on auditing ten interdependent social system factors and then applying a structured approach to leverage organisational learning and make change happen through emergent behaviour and practice. Given radical uncertainty the focus is not on predicting outcomes but on uncovering the explanatory mechanisms behind events caused by specific managed interventions with the intention of transferring those explanations to other contextual settings. Understanding the behaviour of dynamically interacting components is done using realist evaluation based on social interactions, emergent powers and social intervention mechanisms. The use of an 'inside-out' social systems approach coupled to critical realism with its focus on explanation based on the concept of generative mechanisms enables the performance 'black box' to be opened up to provide the organisation with knowledge of the causal relationships it needs. Applying the SSL to case study organisations has been shown to have changed behaviours and outcomes in these organisations. The case study work helps answer the research question and provides evidence for the five underlying assumptions developed in Chapter 3 supporting the argument that social systems have an important role to play in PM and OE in general.

People are the source of the complexity in organisations through their behaviours, interactions and decision-making. This research provides a more effective way of engaging with the operational complexity people introduce. This is done through a holistic social systems lens rather than through a specific PMM (or HRM) lens where organisational

interactions are not fully accounted for. The performance focus needs to be on the social system rather than on specific measures, although PM remains an important directional indicator of the impact of any intervention. Proactive reconfiguring of the social system replaces performance management (or HRM management) as the way to engage with the complexity of the organisation and influence its performance in practice. Managing performance in the absence of a holistic perspective is sub-optimal. The middle-range theory is not specific to PM and can potentially be applied to all other business processes. This approach may also provide an alternative theoretical framework to organisational control theory for PMM, one grounded in social systems and practice theory, and supported by realist evaluation theory. It is captured in Figure 7.3 which brings together the method to identify the social systems factors and what they cover, the fundamental assumptions, the OE Framework and the new knowledge arising from this work. The major conclusions from the research contained in this thesis are captured in Table 7.1.

No.	Major Conclusions from Research Work
1	Taking a holistic social systems approach to PM improves the effectiveness of PM
2	The link between PM and OE is mediated by the social system operating in the organisation
3	Critical realism is the philosophy of choice for investigating complex social systems
4	Critical realism provides an explanation for the PM-OE link based on mechanisms that generate certain events
5	The mechanism of importance for social systems is the social intervention mechanism
6	The social intervention mechanism applied here has broader applicability than just for PM
7	Further work should be undertaken to test the broader applicability of the social systems lens e.g. HRM etc.

Table 7.1: Major Conclusions from Research Work

In summary the key arguments are 1) organisations connect through social systems and operate through practice, therefore, any attempt to explain and influence performance needs to accommodate the effects of social systems and practice and incorporate the idiosyncrasies that come from human behaviour, in particular the capacity to make choices and take decisions on particular courses of action. Knowledge and know-how, sense-making, emergent behaviour, and decision-making are significant contributors to how organisations perform, 2) understanding how complex social systems work provides organisations with a way to create the conditions to implement business processes and measures more effectively through specific interventions. The inside-out, social systems approach, developed in this thesis, does this by focusing on people, processes and their interaction. The social system leverages collective knowledge and know-how, contributes to sense-making, delivers emergent thinking, and shapes and biases decision-making. PM provides important directional performance information to determine how effective interventions have been, and 3) realist evaluation facilitates causal explanation based on social intervention mechanisms and enables the performance 'black box' to be opened up revealing proactive reconfiguring of the social system as an effective method of engaging with the complexity of the organisation and positively impacting OE.

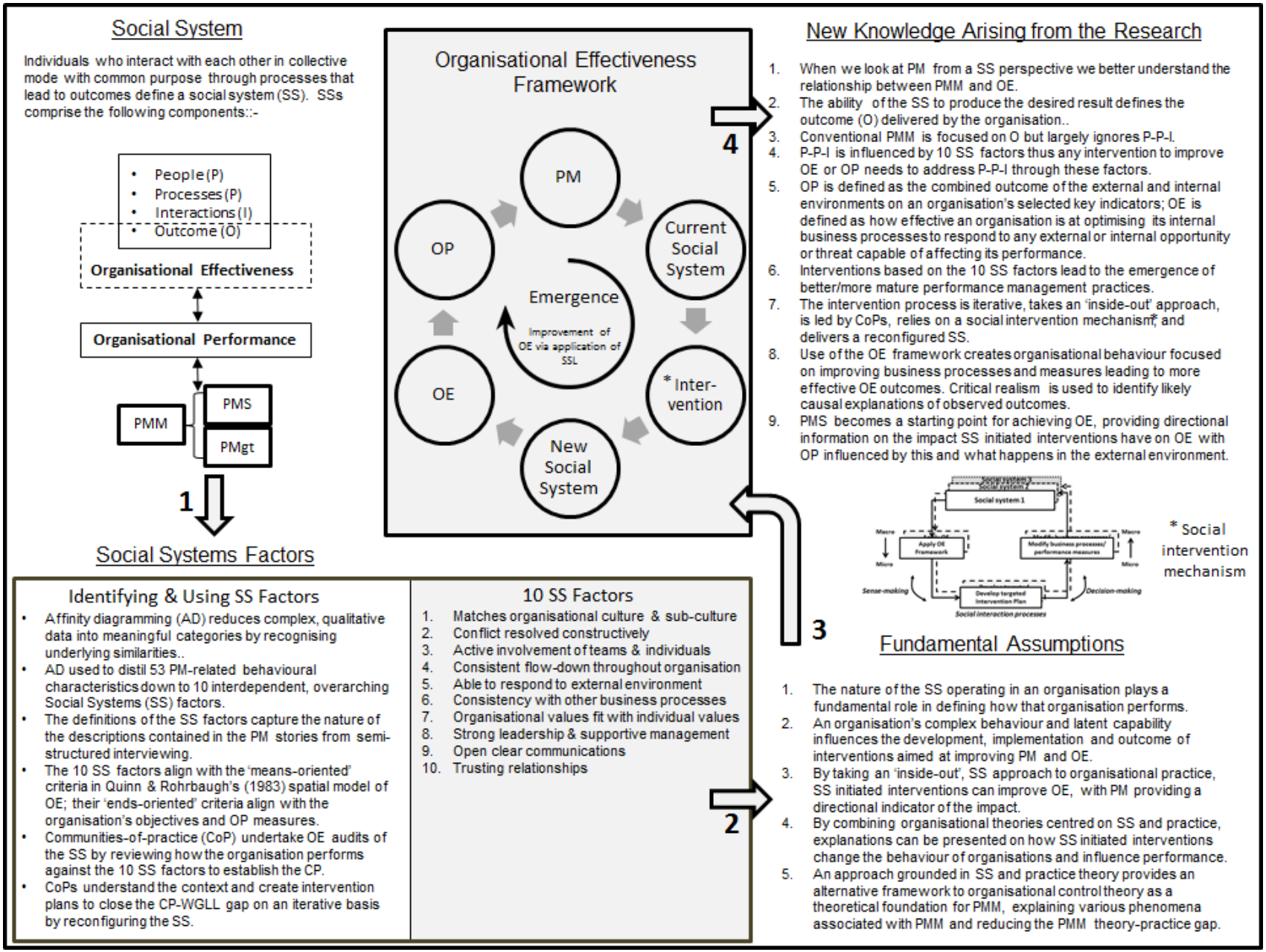


Figure 7.3: Theoretical Framework

7.3 Contribution to Knowledge

The contribution to knowledge from this thesis is summarised in points 1 to 4 below. At the end of Chapter 1, Table 1.1 provides a guide to the various interconnected strands of theory and practice that combine and build on each other to construct the four separate contributions. Table 1.1 identifies the key elements which underpin each of the contributions and the sections in the various chapters where a particular theme is expanded and developed, culminating in contributions 1 to 4 below.

1. Applying a social systems perspective to PM supports better decision-making in the dynamic, uncertain environments organisations operate in, through use of informal communities-of-practice to create emergent, purposeful interventions which positively impact OE and short-term OP outcomes by making PM and business processes more relevant.
2. The relationship between PM and OE is mediated by the social system operating in an organisation and can be modified by reconfiguring the social system through interventions created from an audit of ten interdependent social systems factors developed from PM behavioural characteristics.
3. The development of a field-tested and grounded middle-range management theory provides a structured way for practitioners and researchers to make PM more relevant and bring focus to OE in dynamic environments, reducing the PMM theory-practice gap.
4. A competing theoretical foundation to Organisational Control Theory for PMM for organisations operating in dynamic environments based on social systems and practice theory, underpinned by realist evaluation.

7.4 Limitations

While there is guidance in the literature on the fundamental role social systems play in how organisations operate (Forrester, 1971; Luhmann, 1995; Archer, 1995; Espejo, 2003; MacLean and MacIntosh, 2003; Mitleton-Kelly, 2003, 2011) little consideration has been given to their effect on PM and PMM. This provided the opportunity to develop a new middle-range theory linking PM and OE and an alternative theoretical framework to organisational control theory for PMM. However; according to Hawking and Mlodinow (2010) “there is no single theory that is a good representation of observations in all situations.” Moreover, the choice of the distinction made by an observer for an observation is arbitrary and normally results in the observer failing to recognise the presence of other equally valid alternatives (Seidl and Becker, 2006). It is possible for theories based on different conceptual frameworks to explain the same phenomenon quite successfully with different models providing better descriptions of particular observations in different situations. Reality then becomes a model-dependent interpretation (Hawking and Mlodinow, 2010). Critical realism embraces a single reality open to multiple interpretations (Fleetwood, 2013), considers observation and knowledge fallible, and a better

understanding of some of the features of the real world to be obtained by looking at the same phenomenon through different theoretical lenses (Easton, 2010). With this in mind a limitation of this work is that while it provides a holistic social systems perspective of PM and OE no attempt has been made to extend this by integrating it with theories representing other valid descriptions based on different distinctions (for example HRM, see section 7.5. Broader Applicability of the Social Systems Lens).

People, processes and their interactions are central to this thesis. The stories generating the behavioural characteristics and the focus group analyses of them were undertaken by people working for western organisations although not everyone was from the USA or Europe. The case study work is based on empirical findings from western commercial organisations albeit they operate globally. A limitation of this is that the social systems factors at the heart of the case studies validating the middle-range theory reflect western organisational culture therefore while the findings are relevant to western organisations the process of generating the factors would need to be repeated for non-western cultures where the values, norms, collective belief systems of people and societal and organisation expectations may be different. In addition, application of the SSL needs fine grained, longitudinal, collaborative research and therefore requires commitment from the senior leadership team of the organisation in terms of time and accessibility to the workforce.

7.5. Broader Applicability of the Social Systems Lens

Organisations consist of transient clusters of components or social structures that endow them with powers. A particular configuration of components bestows on an organisation the powers unique to that specific structure. People activate these powers. Hesketh and Fleetwood (2006) refer to the interaction of all causal components as a generative ensemble and suggest “we can think of the workplace, the shopfloor, the work-system or the team, as a complex web of interlocking generative ensembles, sub-configurations, sub-sub-configurations, and so on.” The SSL focuses on putting in place transient social structures with the relevant emergent causal powers to improve the PM-OE link.

The network of objects comprising the transient social structures involved directly in the case studies described in Chapter 6 were the senior leadership teams, various communities-of-practice, the researcher and the SSL. In each of the case studies other transient social structures were undertaking concurrent activities. For example, in one case study organisation a social structure comprising members of HR, the unions and management was working on downsizing activities. This social structure also has causal powers which can interact positively, negatively or not at all with the causal powers of the group targeted at improving the PM-OE link. All networks of objects operating within the organisation at a specific time influence the social system and make the context at any time unique where context here refers to the social system in operation when a particular intervention occurs.

A limited review of the OP literature demonstrates the ten interdependent social system factors defined in Chapter 5 can be identified individually or as groups within published

literature linking PM, HRM, social capital etc. to OP (or OE). These research studies are also influenced directly by the social system in operation within the respective organisations involved at the time of the study. The argument made here is that because the researchers undertaking these studies have not recognised the fundamental role of the social system around interactions and emergent outcomes, the need to take an 'inside-out' approach and the interdependency of the ten factors, their research does not present a complete picture because the context (the social system) had neither been reconfigured nor understood and accounted for fully. Using HRM as an example, it is proposed, as with the PM-OE link, the HRM element of the HRM-OE link can be viewed from the OE perspective back through the SSL. It is suggested that application of the SSL to HRM interventions via the same iterative process as outlined in Chapter 5 would enhance the effectiveness of HRM activities. This, in turn, may well influence the PM-OE link and the outcome of any other business process. Social mechanisms are unobservable and comprise powers such as causes, motives, considerations, choices and collective social actions at various levels in the organisation (Blom and Moren, 2011). In an analogous manner to the PM-OE link it is proposed that these 'HRM powers' are mediated and work through social interaction and social and material structures such as routines and practices etc. Because the social system is the context for virtually everything that happens within an organisation the mechanism proposed to be in operation in this HRM example is the same social intervention mechanism as shown in Figure 6.2 in Chapter 6. According to Hedstrom and Swedberg (1996) the same mechanisms can be found in many places in society. Organisations are complex evolving systems. This thesis proposes the social system is the 'glue' that holds an organisation together in time and space. While the social intervention mechanism (the means) proposed above is rarely observable or measurable its influence (the ends) is visible for all to see (cf. subatomic particles such as electrons (Hawking and Mlodinow, 2010)).

As outlined in Chapter 3 Evans and Davis (2005) proposed a theoretical framework which described how the internal social structure of an organisation mediated the relationship between high-performance work systems, comprising specific HR practices, and OP. As in this work Evans and Davis' framework relied on integrating other theories, in their case, the theory of social networks, exchange relationships, shared mental models and organisational citizenship behaviour, to conceptualise the internal social structure. Evans and Davis postulated high-performance work systems influenced relationships and behaviours within an organisation but recognised organisations apply many different types of HRM systems in practice. Moreover, they acknowledged these differently configured systems aren't always implemented uniformly and, in dynamic environments, modes of employment and types of employee can change. To address these complications they proposed implementation practices in different HRM circumstances required further study. While Evans and Davis recognised the role the internal social structure played, by adopting a functional HRM perspective only, they failed to understand its greater relevance to how organisations operate. The parallel with PM researchers who suggested PM systems influence organisational behaviour rather than being influenced by it, as discussed in Chapter 5, is clear. By taking a holistic social systems perspective to performance and applying the SSL Evans and Davis's concerns about the possible complications associated with the implementation of different HRM systems are circumvented.

This thesis looks at PM from a holistic, social systems perspective, arguing OE is influenced directly by people, processes and their interactions i.e. the operating social system at the time. PM and HRM researchers tend to view OP (or OE) through their particular functional lenses. PM researchers look at OP from a PM perspective and try to accommodate the social systems contribution through, for example, the introduction of social controls. HRM researchers attempt to relate HR practices to OP and accommodate the social systems contribution through, for example, the introduction of organisational social climate. PM and HRM etc. are social constructs, reflecting rather narrow and functionally-oriented ways of looking at organisations. They represent arbitrary choices of distinction made by the observer for an observation (Seidl and Becker, 2006). Irrespective of how it is observed an organisation only has one OP with multiple contributing factors. Activities associated with PM, HRM etc. all interact through the common feature of the operating social system. It is suggested that the development of the understanding of OP (or OE) has been slowed down by the practice of viewing it from a functional (PM or HRM etc.) perspective.

Figure 7.4 shows another evolving complex system where the 'glue', in this case gravity, is neither visible nor readily measureable. Although a weak force of nature, gravity controls everything in the universe. It is pervasive and shapes time and space. While Newtonian physics provided an estimate of 'the ends' it took two hundred and fifty years before Einsteinian physics provided an answer to 'the means' by proposing how all the components interact through warps and curves in the space-time fabric. The parallel proposed here is that all the transient social structures within an organisation interact to a greater or lesser extent through the social fabric that is the social system (Spitzer, 2007). These social structures have irreducible causal powers reflecting the people and process interactions at their core and only when these powers are integrated holistically can we begin to make sense of the organisational outcomes we observe.

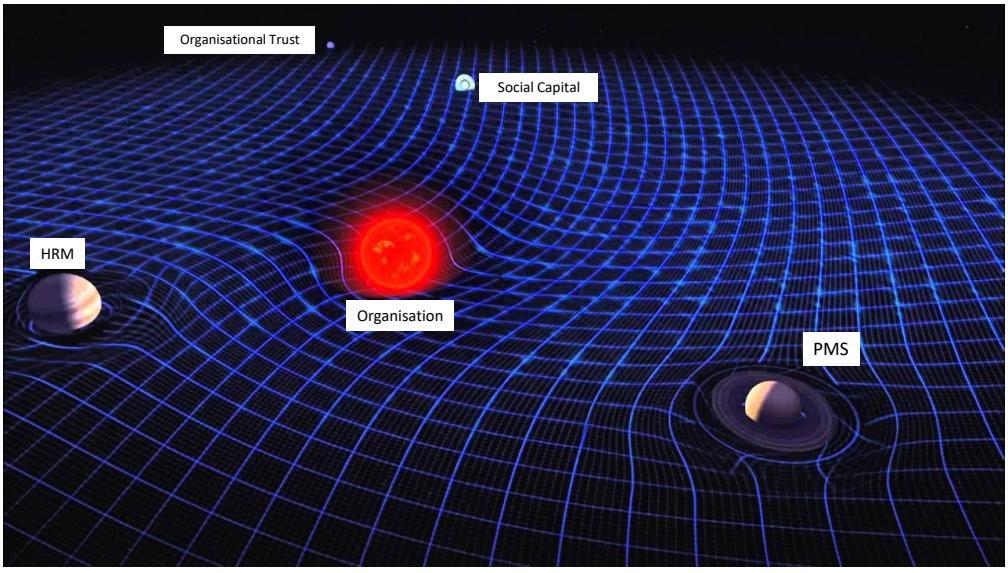


Figure 7.4: Analogy with another Complex Evolving System (adapted from www.quora.com/Science-What-is-the-fabric-of-the-space-time-and-how-it-is-related-to-the-dark-matter?)

Since people and processes are key to what organisations do and how they perform (Czarniawska, 2014; Loosemore and Cheung, 2015) it is suggested that the effectiveness of all business processes could be improved by applying the SSL as indicated in Figure 7.5. Given organisations are complex, adaptive social systems comprising many interlocking business processes whose influence and social mechanisms are difficult to represent adequately with simple measures (Hesketh and Fleetwood, 2006) it is proposed that to maximise OE the SSL should be applied collectively to all business processes.

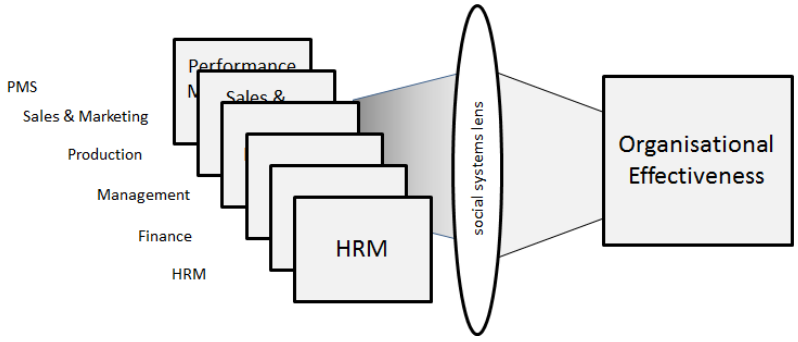


Figure 7.5: Possible Broader Application of the 'Social Systems Lens'

A lack of understanding of the role social systems play in underpinning PM, HRM, S&OP etc. and their part in causing things to happen in organisations which ultimately feeds through to OP is a current weakness of many fields of study. At present OP is characterised in the literature by theories largely reflecting functional approaches which only explain part of the story. According to Argyris (1996) a theory of managing should "include all the relevant disciplines" and "integrate these disciplines with the ones focusing on the human side of the enterprise". By taking an integrated social system approach and looking from inside the organisation at the whole rather than taking a narrower 'outside-in' subject specific perspective (e.g. focusing on PMM or HRM) this thesis offers guidance "on tools that can help managers better manage performance in more volatile settings" (Melynk et al., 2014). Determining whether the SSL, with its self-reinforcing social intervention mechanism described in Chapter 6, has broader applicability across the full range of business processes to produce a synergistic improvement in OP merits further investigation.

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Appendix 1.1: Definitions of Performance Measure, Performance Measurement and Performance Management

The definitions of performance measure, performance measurement and performance management used in this thesis are taken from the Procurement Executives' Association (1999)[1] and based on a BSC approach:-

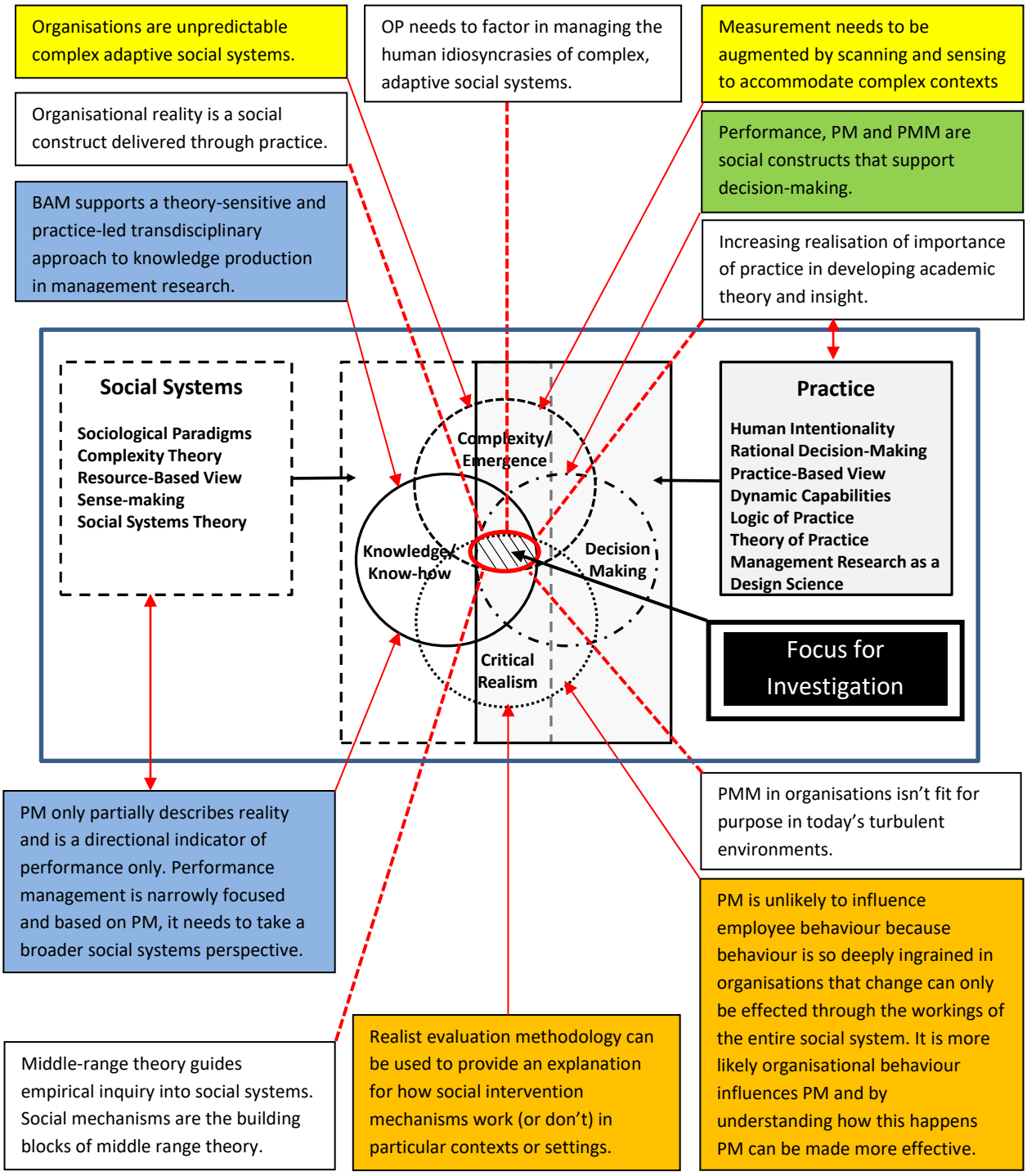
Performance measure: A quantitative or qualitative characterization of performance (Note: Lebas and Euske (2004) qualify this by acknowledging a performance measure is a surrogate indicator of performance reflecting an instance in the continuous performance creation process).

Performance measurement: A process of assessing progress toward achieving predetermined goals, including information on the efficiency with which resources are transformed into goods and services (outputs), the quality of those outputs and outcomes (the results of a program activity compared to its intended purpose), and the effectiveness of operations in terms of their specific contributions to program objectives.

Performance management: The use of performance measurement information to effect positive change in organizational culture, systems and processes, by helping to set agreed-upon performance goals, allocating and prioritizing resources, informing managers to either confirm or change current policy or program directions to meet those goals, and sharing results of performance in pursuing those goals.

1. Procurement Executives' Association (1999). Guide to a Balanced Scorecard Methodology. *Moving from Performance Measurement to Performance Management,* Washington.

Appendix 3.1: Description of Background Supporting Taking a Social Systems Perspective to Performance Measurement and Organisational Effectiveness



Appendix 5.1: Behavioural Characteristics from PM Discussions

		Characteristics by Organisation																																
No.	Social Systems Characteristics	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
1	Organisational norms	X																		X	X				X						X				
2	Organisational culture	X				X					X		X	X				X				X							X				X		
3	Consistency of behaviour	X				X	X						X	X	X																X				
4	Organisational values	X	X						X										X							X					X	X	X		
5	Communications from line managers	X	X							X				X																				X	X
6	Trust in line managers	X	X					X				X	X	X		X														X				X	
7	Team spirit		X						X														X		X		X							X	
8	Involvement		X			X			X	X	X										X					X				X					
9	Individual values		X	X	X														X						X										
10	Coaching behaviour		X											X							X	X							X		X			X	
11	Management style		X																		X							X	X				X		X
12	Value for people		X	X										X											X	X	X			X					
13	Working relationships		X	X			X		X		X			X	X				X																
14	Dealing honestly with difficult situations			X									X		X	X								X			X			X					
15	Organisational conflict			X																						X						X			
16	Organisational drivers			X	X						X																X								
17	Conflicting metrics			X	X		X								X										X								X		
18	Quantity and quality			X		X																			X								X		
19	Reputation			X	X												X		X		X			X		X									
20	Leadership			X					X		X	X				X						X							X		X				
21	Mixed messages			X			X					X			X							X											X		
22	Management reward				X			X													X		X												
23	Team culture						X							X					X															X	
24	Walking the talk						X		X	X							X						X				X								
25	Seeing the whole picture						X					X									X	X				X		X					X		
26	Managerial behaviour						X		X									X						X				X			X				
27	Understanding contribution						X			X																	X			X					
28	Decision making							X										X								X				X	X		X		
29	Focus on finances							X								X				X			X	X			X						X		
30	Senior management support							X																					X						
31	Credibility							X		X		X								X			X					X							
32	Understanding people								X																				X				X		
33	Facing the problems as one team									X																									
34	Flexibility									X																				X	X		X		X
35	Customer satisfaction									X									X		X			X		X	X	X			X				
36	People development										X							X				X		X	X					X				X	
37	Putting people first										X		X				X		X															X	
38	Diversity											X		X								X									X				X
39	Fear of change											X			X		X			X			X					X				X			
40	Realising potential												X			X													X				X		
41	Cooperation across groups												X							X															
42	Impact of change												X					X						X											X
43	Value of contribution												X	X									X												
44	Competition between teams														X									X								X			
45	Trust between teams															X						X	X							X					
46	Confidentiality															X								X					X						X
47	Sharing the load																X											X							
48	Willing to take a stand																X				X			X											X
49	Communications between teams																	X					X									X			X
50	Identifying the competition																	X								X	X		X						
51	External changes																			X						X			X					X	
52	Silo working																			X		X	X												
53	Individual principles																			X				X					X				X		

Appendix 5.2: Outcome from 35 Semi-Structured Interviews

	Organisation	PM System	Characteristics
1	Large multinational - pharmaceuticals	Formal PM process, not solely financial – development/ environment/ culture of responsibility, used and understood throughout, communicated to all levels (expectation of manager), everyone has opportunity to benefit in variable compensation, employees talk about it in a positive way, cascade process effective – not just words, reflects existing system, promotes engagement and ownership culture, focus on employee/customers/shareholders equally.	Organisational norms, organisational culture, consistency of behaviour, organisational values, communications from line managers, trust in line managers
2	Large multinational - manufacturing	Formal PM process, balanced scorecard used, good communication process in particular for safety and financial measures, strong safety culture, walk-the-talk, PM process robust but outcome for people arbitrary, culture of doing the right thing.	Organisational values, communications from line managers, trust in line managers, team spirit, involvement, individual values, coaching behaviour, management style, value for people, working relationships
3	Large multinational - manufacturing	Formal PM process, balanced scorecard used, core values includes respect for people and ethics, strict reporting guidelines, focus is on protecting the organisation's reputation. Black marks viewed poorly.	Individual values, value for people, working relationships, dealing honestly with difficult situations, organisational conflict, organisational drivers, conflicting metrics, quantity and quality, reputation, leadership, mixed messages
4	Large multinational - manufacturing	Formal PM process, focus on financial measures, focus on shareholders, seen as linked to senior management reward – what's in it for me?, distant for many employees – no opportunity to influence directly, not viewed positively – mistrust of data, high level – not cascaded effectively, not understood how it links together down through company, negative effect for some in driving behaviour, reflects a command and control approach.	Individual values, organisational drivers, conflicting metrics, reputation, management reward
5	Public sector - Social Work	Formal PM process, no reward linked to PM, purpose not clear to all – often seen as not additive. Focus on quantitative measures, not qualitative i.e. time to clear cases, not successes or value. At odds with nature of staff. Sometimes blocker between management and staff. Seen as a driver of resource leading to feelings of lack of ownership and control, mirrors sense of lack on involvement in key decisions, pushed focus to what is measured, target driven - could promote blame culture, increasing empahsis on PM - some good people left organisation, practitioners often feel not important to service.	Quality and quantity, consistency of behaviour, involvement, organisational culture
6	Large mutinational - manufacturing	Formal PM process, scorecard, benefits linked to delivery of PM shared by all, well communicated and understood, owned throughout organisation, promotes sense of belonging, reflects caring approach, some cynicim - linked to individual managers' approach, culture of reward and recognition	Consistency of behaviour, working relationships, conflicting metrics, mixed messages, team culture, walking the talk, seeing the whole picture, managerial behaviour
7	Public sector - Health	Formal PM process - no reward linked to PM (seen as driven by accountants), felt run by Finance with not enough knowledge of what is really important, seen as paper exercise - not sure why, lack of questioning - blame culture, coffee room discussion of whether measure really correct?, what's in it for me?, little engagement promoted.	Trust in line managers, management reward, decision making, focus on finances, senior manager support, credibility
8	Charity	Informal PM system, no shareholders, involvement from top/good leadership, focus on qualitative measures at operational level, success came from selecting good people.	Organisational values, team spirit, involvement, working relationships, leadership, walking the talk, managerial behaviour, understanding people
9	Small local company - engineering	No PM system, clear goals - talked directly to owner, placed success on meeting customer needs, engagement - staff stayed a long time.	Communications from line managers, involvement, walking the talk, credibility, facing the problem as one team, flexibility, customer satisfaction
10	Small local company - engineering	No PM system, no data, no engagement, high turnover of staff.	Organisational culture, involvement, working relationships, organisational drivers, leadership, people development, putting people first

Appendix 5.2 (cont.): Outcome from 35 Semi-Structured Interviews

	Organisation	PM System	Characteristics
11	Public sector - Local Government	Formal PM process, many employees don't understand metrics - mistrust, viewed targets ahead of people, inexperienced managers.	Trust in line managers, leadership, mixed messages, seeing the whole picture, credibility, diversity, fear of change
12	Public sector - Health	Formal PM process, seen as way of driving change, most employees feel removed, administration cost of PM system high versus value.	Organisational culture, consistency of behaviour, trust in line managers, dealing honestly with difficult situations, putting people first, realising potential, cooperation across groups, impact of change, value of contribution
13	Global Media	Formal PM process, identifying potential and development of people, people trust the process, consistency between managers and individuals views, managed by skilled and experienced people, coaching style in general.	Organisational culture, consistency of behaviour, communications from line managers, trust in line managers, coaching behaviour, value for people, working relationships, diversity, value of contribution
14	Public sector - Health	Formal PM process, strong emphasis on accountability, variation in success of application depending on managerial skillls, little formal training given and system viewed as overly complex	Consistency of behaviour, working relationships, dealing honestly with difficult situations, conflicting metrics, mixed messages, team culture, fear of change, competition between teams
15	Public sector - Local Government	Formal PM process, in spite of bureacratic process have skilled managers who are flexible, adaptable and able to use the process in a positive way.	Trust in line managers, dealing honestly with difficult situations, leadership, realising potential, trust between teams, confidentiality
16	Charity	No formal PM process, not the organisation joined, had become overly competitive and commercial, now have professional managers, overly bureaucratic, emphasis on image and brand.	Reputation, walking the talk, focus on finances, putting people first, fear of change, sharing the load, willing to take a stand
17	Venture Capital organisation	Formal PM process, emphasis on delivery, outputs used for key decision-making and investments. Support, coaching and skills development emphasis.	Organisational culture, managerial behaviour, decision making, people development, impact of change, communication between teams, identifying the competition
18	Tourism	No formal PM process, driven from a customer focus, need to have right skills in place and flexibility to respond to changing environment. Written values clearly visible, policed by staff, team culture driven by customers.	Organisational values, individual values, working relationships, reputation, team culture, customer satisfaction, putting people first
19	Public sector - Services	Formal PM process, strong emphasis on accountability and reporting, competitive internal environment, can lead to mistrust and blame culture, fear of change.	Organisational norms, credibility, fear of change, cooperation across groups, external changes, silo working, individual principles
20	Finance - large organisation	Formal PM process, structured and consistent across SBUs and based largely on core values, strict reporting guidelines. Managers don't have the respect for the process that it merits as believed the meaasures didn't reflect local requirements. Going through the motions. However, these are the measure that are reviewed externally.	Organisational norms, involvement, coaching behaviour, management style, reputation, management reward, seeing the whole picture, focus on finances, customer satisfaction, willing to take a stand
21	Large multinational - chemicals	Formal PM process, team was a mix of experienced and recent graduates. The experienced people knew the process well, were risk averse and gave little support to new managers who were keen to focus more on the how.	Organisational culture, coaching behaviour, leadership, mixed messages, seeing the whole picture, people development, diversity, trust between teams, silo working
22	Large multinational - chemicals	Formal PM process, owned by senior leaders but not others. No walking the talk. No penalty for not adhering to the process. Huge variation in consistency. Poor implementation by people leading to lack of crebility.	Team spirit, management reward, walking the talk, credibility, fear of change, value of contribution, trust between teams, communication between teams, silo working
23	Higher Education	Formal PM process, which had become more formalised due to external pressures, more focus on providing customer satisfaction as a supplier. Affected how people worked as now centred on bringing cash in. Conflict between departments.	Dealing honestly with difficult situations, reputation, focus on finances, customer satisfaction, people development, impact of change, competition between teams, confidentiality, individual principles
24	Higher Education	Formal process, measures driving behaviours, senior staff now have less flexibility to support academics in careers than before because measures are paramount. Must publish in right journals, teaching seen as second rate activity.	Organisational norms, team spirit, individual values, value for people, conflicting metrics, quantity and quality, managerial behaviour, focus on finances, people development, willing to take a stand
25	Higher Education	Formal process, many changes to way higher education is measured. These changes have not considered how higher education works best. Result has been competition between establishments, poaching academics who publish, not helpful, doesn't add to value of academe. But it is what funders and students look at.	Organisational values, involvement, value for people, organisational conflict, reputation, seeing the whole picture, customer satisfaction, identifying the competition, external changes

Appendix 5.2 (cont.): Outcome from 35 Semi-Structured Interviews

	Organisation	PM System	Characteristics
26	Tourism	No formal process. Strong customer focus, high turnover rate of staff, seen as stepping stone to progression in the industry, seasonal fluctuations, drives casual workers. Difficulty in getting young, casual staff to focus on customer service, created goood environment for staff. Small number of simple measures e.g. room occupancy and how satified are the customers.	Team spirit, value for people, dealing honestly with difficult situations, walking the talk, decision making, customer satisfaction, identifying the competition
27	Small local company	No formal process. Small locally owned organisation, issues with competition from larger chain organisations, couldn't compete on price, niche markets and personal customer service. Close to customer. Primary issue is to stay in the market, find ways to get new ideas to improves sales revenue.	Management style, organisational drivers, seeing the whole picture, focus on finances, credibility, customer satisfaction, fear of change, sharing the load,
28	Media company	Formal process. Many changes in organisational norms. Much more use of independent contractors. Senior managers brought in to improve performance but didn't know the culture. Created unrest by focusing on measures rather than how people achieved them. Increased stress. Focus on competition, no guaranteed contracts.	Organisational culture, management style, managerial behaviour, understanding people, confidentiality, identifying the competition, external changes, individual principles
29	Media company	Formal process, promotion to remove people from front line people management, people managers brought in, focus shifted to constructive measures, matching people skills to where they can contribute, more collegiate approach.	Trust in line managers, coaching behaviour, value for people, leadership, senior manager support, flexibility, people development, realising potential
30	Medium sized electronics company	Formal process. Close to customers, put store on customer feedback, see need to be ahead of the market, decision-making devolved, accountability taken seriously. Were run of the mill but had to move to survive. Focus on face to face meetings. Some people coped, others left.	Organisational norms, organisational values, involvement, dealing honestly with difficult situations, decision making, flexibility, customer satisfaction, diversity, trust between teams
31	Medium sized manufacturing company	Formal process. Structured approach to PM works as well-oiled machine, put store on training line managers in how to manage PM. Good flowdowns, good understanding of process, carried out well and consistently. Seen as a management responsibility, taken seriously. Hierarchical organisation.	Consistency of behaviour, organisational values, coaching behaviour, leadership, managerial behaviour, decision making, communication between teams
32	NGO	Formal process, very hierarchical, based on customer accounts, metrics set by people removed from customers, little flexibility to meet customer need other than that was already determined, prescriptive, part of national structure, no flexibility. People manage round this, but frustrating.	Organisational values, organisational conflict, conflicting metrics, understanding people, fear of change, competition between teams, individual principles
33	Large mutinational - manufacturing	Formal process. Key decisions are made at a high level based on PM outcomes. Lots of change has taken place, senior people don't have a grounding or understanding so making poor decisions, don't understand the implications of what they are doing. Decisions too short-term as that what the measure focus on.	Organisational culture, trust in line managers, management style, quantity and quality, seeing the whole picture, decision making, focus on finances, flexibility
34	Large mutinational - manufacturing	Formal process. Key local measure is skills. Reationale for this measure is to give competitive advantage. Development plan for individuals key. Had to be able to face change head on. People with skills get poached.	Communications from line managers, team spirit, coaching behaviour, mixed messages, team culture, people development, putting people first, realising potential, external changes
35	Public sector - Health	Formal process. Same PM process in pace across the organisation but effectiveness depend primarily on the line manager. Depends on how much people are involved and the communication. Needed to demostrate that every role is important, that contributions add up. Many managers saw PM as a paper exercise, just tick the boxes.	Communications from line managers, management style, flexibility, diversity, impact of change, confidentiality, willing to take a stand, communication between teams

Appendix 5.2 (cont): Representative Examples of PM Processes, Stories and Characteristics

In the three examples below the words in the stories associated with the various characteristics are in italics.

1. Multinational pharmaceutical company

PM Process: formal PM system, not solely financial – development/environment/culture of responsibility, used and understood throughout, communicated to all levels (expectation of manager), everyone has opportunity to benefit in variable compensation, employees talk about it in a positive way, cascade process effective – not just words, reflects existing system, promotes engagement and ownership culture, focus on employee/customers/shareholders equally.

Story: this Company had a detailed *weekly business communication* for all shop floor workers that included financial performance. Emphasis was put on how the actions of every individual in the company have a direct impact on profitability. *Individuals were actively encouraged to make suggestions* for improvement and many did. There was no financial gain for individuals for doing this. An operator had an idea to reduce the amount of packaging used in a high volume product. *His idea was listened to, taken forward* and resulted in a significant reduction in packaging costs. The success was *widely communicated* not just on his site but company-wide.

This is an example of how PM drove *consistent values throughout the organisation* and engendered a *team spirit* amongst staff and across sites. The operator was a good team player and had a good *working relationship* with his manager. The manager was an *excellent coach* and demonstrated a consultative *management style*.

Characteristics: trust in line managers, communication from line managers, coaching behaviour, management style, working relationships, organisational values, individual values, team spirit, value for people, involvement.

2. Multinational manufacturing company

PM Process: formal PM process, dashboard in use, global metrics, strict reporting guidelines, strong safety, respect for people and ethics approach, focus is on protecting the organisation's reputation, corporate assistance provided if metrics deviate significantly from what is expected.

Story: this Company has 'Respect for People' and 'Ethics' as two of its *core values*. It communicates its compliance in terms of 'People Incidents' monthly. A young female engineer felt that her professional advice was being undermined by a colleague who did not value her contribution. This had happened for an extended period of time and she felt it was harassment and directly related to her being female. She reported the behaviour to her line manager. Harassment advisers were involved and evidence gathered; however, the

line manager failed to take it seriously and would not accept that her colleague had behaved inappropriately. The *line manager dragged the process out* instead of working for a quick resolution. It was *not registered as a people incident*. The female engineer lost confidence in line management, patience with the company and *left the organisation*.

This is an example of how an individual line manager's fear that a people incident in his area would *affect his record* compounded an already complicated people incident. The line manager considered his and the organisation's *reputation* to be more important than *dealing honestly* with the situation. There was a *conflict* between what was explicitly the *metric* (number of people incidents) *and the goal* (good people treatment) i.e. *quantity versus quality*.

Characteristics: working relationships, individual values, dealing honestly with difficult situations, organisational conflict, quantity and quality, organisational drivers, value for people, leadership, mixed messages, conflicting metrics, reputation.

3. Public sector organisation

PM Process: formal PM system, no reward linked to PM, purpose not clear to all – often seen as not additive. Focus on quantitative measures, not qualitative i.e. time to clear cases, not successes or value. At odds with nature of staff. Sometimes blocker between management and staff. Seen as a driver of resource leading to feelings of lack of ownership and control.

Story: one of the key reportable management metrics in the Department is the *time taken from case allocated to case completed*. Practitioners put more emphasis on trying to get a good outcome. A case worker dealing with a problem family *wanted to take more time to be sure that the current issue was resolved fully*. When he discussed this with his line manager he was given guidance to *close the case even if it meant re-opening a new one soon afterwards*.

This is an example of where a case was deliberately manipulated so that a reportable high level metric measured nationally was not adversely affected. The case worker was *asked for one type of behaviour (good client outcome) but measured on another (time taken).* The practitioners felt that the metrics were too distant from what they did day-to-day.

Characteristics: quality and quantity, consistency of behaviour, involvement, organisational culture.

Appendix 5.3: Definitions of Social Systems Factors

No	Factors	Definition
1	Matches organisational culture & sub-culture	The organisation's culture and sub-cultures are based on shared attitudes, beliefs, customs, and written and unwritten rules that have been developed over time and are handed down. A collectivistic culture exists, reflected by cooperation among employees with an emphasis on collective goals for the benefit of the group. Sub-cultures can exist and reflect the behaviours that contribute to the social and psychological dynamics of part of an organisation. The performance measurement process reflects the organisation's culture or sub-cultures. Sub-cultures must match the organisation's culture for success.
2	Conflict resolved constructively	Diverse perspectives are valued. Differences of opinion, disagreements and arguments are identified and addressed quickly with a focus on facts. Those involved treat each other with respect during the resolution process. Outcomes are justified and communicated clearly and sensitively.
3	Active involvement of teams & individuals	Teamwork is important. Collective goals are defined and acted upon. Employees are routinely involved in collecting, calculating, presenting and acting-on performance data. Employees view the data as feedback on their individual and team performance and that of the wider business, are not afraid to challenge or discuss outcomes and are regularly involved in formal and informal processes to improve current performance. Employees are well-informed and healthy debate is welcomed. The performance measurement process is considered to be inclusive and combines individual and team objectives.
4	Consistent flowdown throughout organisation	Clear link between Company strategy/objectives and those of teams and individuals. 'Line of sight' exists from the top level business metrics to those on the shop floor which allows all employees to easily understand the impact of their actions on the overall business performance. Measures have a common language and reporting methodology is consistent across all departments.
5	Able to respond to external environment	The performance measurement process takes account of changes in the external environment and adapts appropriately. The ability to respond to threats or opportunities is characteristic of an agile organisation. Individuals are encouraged to react constructively to change driven by customer/competitor intelligence or other external interventions.
6	Consistency with other business processes	The performance measurement process measures the effectiveness of core business processes. Business processes are consistent with each other, well understood with clear responsibilities and have linked performance measures. The management and collection of performance measures is consistent with the business data management systems. Customer feedback is valued and acted upon.
7	Organisational values fit with individual values	The performance measurement process and individual measures are consistent with the stated norms and values of the oganisation. Organisational values are the operating principles that guide an organisation's internal conduct as well as its relationship with its customers, partners, and shareholders. Employees must be willing to put the shared objectives of the team ahead of their own. Individual values must align with organisation's values for success.
8	Strong leadership & supportive management	Provides clear direction when required, facilitates teams and individuals to develop the capabilities to undertake what needs to be done, provides development opportunities for team, drives continuous improvement, recognises good performance, deals with poor performance, can be relied on to guide, support and defend the team when appropriate. Prepared to make difficult decisions and explain why.
9	Open clear communication	The right information is communicated to the right people at the right time to ensure that performance decisions are made in a timely manner. Formal and informal information flows via verbal & electronic processes, accessible to all levels in the organisation. Open and honest two-way communication with information flowing to support the right decisions is undertaken. Business performance is displayed, updated and understood by all.
10	Trusting relationships	Trusting relationships rely on the integrity, consistency and reliability of leaders, managers and colleagues and is built up over time but can be lost readily. The organisation displays generalised resilient trust. Trust is also created between two people. Trusting relationships involve a level of inter-dependency, evident in the mutual sharing of information, thoughts and data across all levels in the organisation.

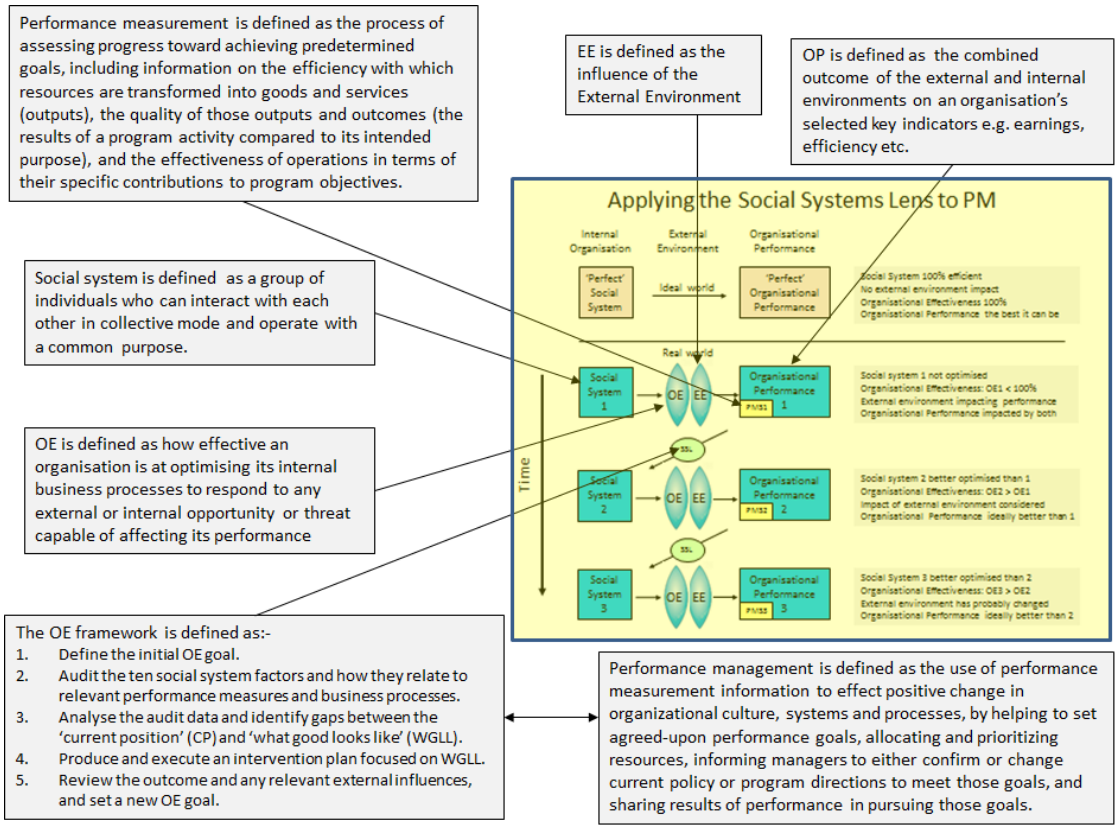
Appendix 5.4: Findings from Targeted Literature Review

Area	Authors	Date	Org Culture	Conflict Res	Active Involve	Consist flow down	External Environ	Other Busin'ss Process	Org Values	Leadship & Mgmt	Open Comms	Trust
PMS	Neely, Gregory & Platts	1995	X	X	X	X	X	X		X	X	
	de Waal	2003	x		X	x		x		X	x	x
	de Waal et al.	2004	x		X	X		X		X	X	x
	Kaplan & Norton	2004	X		X	X	x		X	X	X	
	Franco-Santos & Bourne*	2005	X		X	X	X	X		X	X	
	Bourne et al.	2005	X		X	X		X		X	X	
	Neely*	2005				X				X	X	
	Bititci et al	2006	X	x	x	x			x	X		x
	Franco-Santos et al.*	2007				X				X	X	
	Bourne	2008			X	X	x			X		
	Kaplan	2009	X			X	x	X	X	X	X	
	Nudurupati et al	2011	X	x	x	X	x	X	X	X	X	
	Franco-Santos et al.	2012	X	X	X	X	X	X	X	X	X	X
	Pidun & Felden	2013	X			X		X		X	X	
	Smith & Bititci	2017	X		X					X	X	X
HRM	Ferris et al.	1998	X			x	x		X		x	
	Leana & Van Buren	1999	X		X				X		X	X
	Bowen & Ostroff	2004	X			x	x	x	X			
	Collins & Clark	2006			X	X					X	X
	Lepak & Shaw	2008			X						X	X
	Liao, Toya, Lepak & Hong	2009	X		X		x			x		
	Takeuchi, Chen & Lepak	2009	X		X	X				X		
	Messersmith et al.	2011			X	X			X			
	Buller & McEvoy	2012	X		X	X			x			
	Bourne et al.	2013	X		x	X			x	X	X	
HPO	de Waal	2013	x		x	x	X		x	X	X	x
	de Waal & van der Heijden	2015			X	X		X		x	X	
Org Trust	Pfeffer	1998	X		X						X	X
	Zaheer et al.	1998		X								X
	Schoorman, Mayer & Davis	2007	X	X						X		X
	Fehr & Gelfand	2012	X	X	x	x			X	x	x	X
Social Capital	Tsai & Ghoshal	1998			X	X	x		X			X
	Nahapiet & Ghoshal	1998	X		X						X	X
	Cohen & Prusak	2001	X	X	X	X			X		X	X
	Watson & Papamarcos	2002	X		x	x			X		X	X
	Luthans, Luthans & Luthans	2004				X	X		X			
	Brooks & Nafukho	2006	X	X	X	X	X		X	X		X
	Smerek & Denison	2007	x		X	X	X	X	X			
	Rasmussen & Edwards	2014			X	X			X			X
	Lins et al.	2015	X						X			X
	Tantardini & Kroll	2015	X		X	X	x		X	X	X	X
Networks	Brass et al.	2004	X	X	X	X	X			X	X	X
Org. Effect	Cunningham	1977	X	X	X	X	X	X	X	X	X	X
	Quinn & Rohrbaugh	1983			X	X	X				X	
	Matthews	2011	X			X	X	X		X	X	
Change	MacBryde et al.	2014	X		X	x	x		X	X	X	

* Contained in the Franco-Santos et al. (2012) review

Appendix 5.5: Definitions of Performance Measure, Performance Measurement and Performance Management

The OE Framework is described in Chapter 5. The figure below provides definitions of the component parts. These definitions are put into context in Chapters 1 and 5 and Appendix 1.1. In the diagram below the initial social system (social system 1) delivers an initial OP (organisational performance 1) which reflects a non-optimised OE along with the influence of the external environment which will be reflected within the PMS by a number of selected local measures. The OE Framework is applied, OE goals are agreed, communities-of-practice make interventions and the social system (social system 2) is reconfigured with the intention of improving OE by making the business processes and performance measure more relevant while proactively responding to the external environment. The OP delivered (organisational performance 2) is ideally better than OP1 but may not be due to the external environment. The five-step SSL described below are then repeated iteratively.



Applying the 'Social Systems Lens' in Practice

Appendix 6.1 – Case Study 1 (Global food organisation)

Overview of Case Study Organisation

The organisation involved in this case study is a global food company. It supplies differentiated products into well-established but increasingly competitive markets around the world. Overall the global annual growth rate is 3-4%. However, growth has been relatively flat in Europe and the USA for a number of years whereas there has been significant year-on-year growth in the BRIC countries for less sophisticated products where markets continue to be developed to meet local tastes and requirements. The organisation operates two sites in the UK under a single senior leadership team and employs c. 400 people.

The products made by this company require significant technical input due to the use of specialist processing technology combined with naturally varying raw materials. Until recently the technical understanding and capital investment needed to establish economic scale in this industry acted as barriers to entry; however, with the greater availability of capital and the socialisation of technical knowledge competition has increased significantly. Most producers were now using variations of the same technology with only a limited number of differences which impact cost, product quality and performance.

The Company had a strategy to improve its profitability and return on capital by concentrating on revenue growth, manufacturing efficiency and product differentiation. The UK organisation had decided to strengthen its relative competitive position by focusing on product differentiation. At the corporate level the key performance indicators (KPIs) reflect financial (revenue, earnings, cash flow, earnings per share etc.) and Health & Safety metrics. At the UK level a BSC approach was used to capture a plethora of local measures (financial, customer, internal process, learning & innovation and risk management) which support the corporate KPIs. Similar performance measures were applied on both UK sites.

In early 2014, not long after initiating this case study, the Company announced it was initiating a three-year transformation programme to allow it to grow in emerging markets, invest in new technology and reduce costs in its more expensive locations. The Company proposed to reorganise its manufacturing operations worldwide and have lower cost production located closer to emerging markets. Investments were announced for Asia and the USA to capture market share in China and the Americas. In the UK the Company indicated it planned to close older, less efficient production lines, leading to the loss of 30% of the workforce. It was stated that this action would improve the long-term health of the UK business. The scale, speed and nature of the imposed change took most UK employees by surprise.

The researcher has had links with this UK business providing continuous improvement training to it for a number of years. The case study work was undertaken between late 2013 and mid-2015. The decision to downsize the UK organisation was taken during the period of the case study and interrupted the flow of the work.

Background to Case Study

In mid-2013 the UK business was using a standard BSC process to monitor its performance. Business performance was recorded monthly and reviewed by the senior leadership team using a process which tracked thirty-two metrics grouped into five key areas (financial (3), customer (12), internal process (8), learning & innovation (5) and risk management (4)). These metrics were largely operational in nature and reflected current business health rather than being aligned with any strategic direction. Ownership for individual performance measures was aligned with the appropriate member of the senior leadership team based on functional responsibility. In principle, short-term countermeasures could be introduced if a performance measure showed signs of deviating from plan.

In practice the BSC process was having little impact on what was happening on the shop-floor or at the working level in the support functions. In short the organisation's local performance measures weren't influencing what was happening in practice. This limitation was recognised by the senior leadership team and two changes made in mid-2013 to improve matters:

1. The extended UK management group would have greater involvement in reviewing the BSC in an attempt to make it better understood and facilitate a more effective cascade process.
2. More detailed (70 measures) and more frequent (weekly) measurement would be undertaken and reviewed with the management team as a lead into the monthly scorecard process.

It was hoped that bringing together the wider management team more frequently to review performance and measuring more things more frequently would improve the flow-down of information. Neither of the actions had the desired effect. In particular, the General Manager was concerned that the level of interaction at the weekly review was poor, with few questions asked and no actions or countermeasures emanating from these meetings. Discussions continued to take place separately outside these review sessions.

It was clear the issues in the UK organisation went further than the poor cascading of metrics. This was a symptom of a broader cultural problem within the organisation. In discussion with the Operations Manager the researcher offered to apply the OE framework to help the senior leadership team tackle their underlying issues which were being misinterpreted as a PM cascade problem.

Organisational Effectiveness Goal and Audit

In late 2013 the OE framework was explained to the senior leadership team emphasising the social systems element which links PM to OE. This fitted well with what the senior team believed they wanted. The senior leadership team could see the local performance measures were ineffective. They felt a lack of trust between functions and managers and scepticism regarding others' motives were contributing to this but had no evidence to support this. Any proposal to move away from the current BSC process was considered a significant change and would need agreement from the senior leadership team to what this might be and how it would be applied. A PM process reset would be a major undertaking

with consequences across both UK sites so needed careful consideration and broad buy-in. In discussion with the researcher the senior leadership team set the OE goal as:

- Understand the 'current position' (CP) in terms of the social systems factors and determine 'what good looks like' (WGLL) from a social systems perspective
- Clarify roles and responsibilities between the management group and the senior leadership team and between the functions in relation to performance measures
- Develop an alternative PM process where everyone can see directly where their contribution fits in ('line-of-sight') and share this with the workforce.

The unit of analysis for the OE audit was the senior leadership team of ten people because they held the accountability for the overall performance of the UK entity and would be responsible for the introduction of any new PM system. The OE audit concentrated on understanding the 'current position' (CP) at the end 2013 in terms of the ten social systems factors. Detailed discussions on the factors were undertaken centring on 'what good looks like' (WGLL) and comparing this with the CP within the UK organisation at the time. The senior leadership team were operating as a community-of-practice, each representing different functions and both sites.

Success would see the senior leadership team reach a consensus on where the gaps were in the current PM process, clarify the relationship between the senior team and the management group and between functions, agree a modified PM process which allows all employees to see where their contribution fits in and share this in a constructive manner with the workforce. In this case study the technique of exploring WGLL and comparing it to the CP was used to establish whether this element of the SSL helped provide an enabling route to address the significant challenges facing the organisation. The audit results are captured in Table 1 in order of leadership team priority:-

Element	**Effect linked to Performance Measurement**	**Notes, evidence and justification** *(WGLL – What Good Looks Like)* *(CP – Current Position at end 2013)*
1	Trusting relationships	WGLL: A well-functioning team would be characterised by a high level of trust between participants, and a level of shared (but clearly defined) business metrics and responsibilities which would result in regular exchanges of information using formal and informal processes. A level of inter-dependency which was evident in sharing of thoughts, data and resources clearly driven from most senior levels in the business through their functional areas. A high degree of service culture, even service level agreements possibly in place. *CP: Often the integration is conducted either at high level and cascaded down within a function or depends on key individual connections reaching consensus and translating through their groups as a functional push. There are high degrees of personal trust between individuals across departments but this is not so evident between the broad functions e.g. Production and Technical Engineering, Production and Customer Service, Sales and Production, Finance and Engineering, HR and other departments on training, etc. There is an unnatural scepticism at times regarding others motives.*

2	Open, clear communications	WGLL: Having the correct information being communicated with the right group of people at the right time to maximise the potential for a beneficial performance decision at the earliest opportunity. Information flowing via a number of mechanisms: formal and informal, verbal, electronic, documentary, visual at all appropriate levels in the organisation. Clear responsibilities and cause and effect relationships are understood and information flows naturally to support the right things being done. Business performance elements are visually displayed, updated and understood by all. Senior Managers and Line Managers communicate formally with their teams on a monthly basis to ensure current issues are known with a view to being addressed. *CP: Communication has been improved; however there is no consistency of message or content across all groups in a similar timeframe. Line managers do not communicate a consistent message and thus cascade communication would not be clearly evident in practice. Office staff has access to different communication channels which do not overlap with the shop floor even although the content is relevant to both. Sporadic at best and from the receiver's perspective inconsistent. Only partly supports good decision-making.*
3	Consistency with business processes	WGLL: Performance measures actually measure the effectiveness of the core business processes required to complete the necessary transactions to turn a customer opportunity into a profitable paid invoice. Processes are well understood with clear responsibilities outlined at each stage and linked performance measures which quickly highlight risks of potential failures which could affect business objectives. The management and collection of performance measures is consistent with the basic business data management systems, existing data flow paths and deviations from target or standard are quickly identified. Data is collected directly and in 'real time' from the processes as they are executed. *CP: Core business processes are not clearly identified and shared as critical across the business. Data reporting systems are not centrally integrated with the business operating systems and thus a number of key measures are not 'real time' and are recorded, calculated and reported via independent files e.g. Excel. The weekly dashboard sits in Excel containing data from a number of systems and is not available to the wider organisation as a pulse check. Clear responsibilities and ownership not well understood and thus resolution or action orientation not fully connected.*
4	Strong leadership and supportive management	WGLL: Managers are encouraged to make decisions; note assumptions and data used, and monitor the outcomes to improve organisational learning in conjunction with their Line Managers. When performance issues cannot be resolved locally then they are quickly escalated for attention of Line or Senior Managers. When necessary they provide clear guidance in a timely manner to resolve issues or conflicts recognising the risks involved in doing so for different stakeholders. *CP: There is confusion in the roles and responsibilities which exist between the senior management team and the functional leaders.*

		This has long been a topic of conversation and generated a difference of opinion but has yet to be resolved. Historically issues have tended to be pushed up to the senior management team to make decisions. Consensus has been reached at the senior level and relayed back down through the functions at times by-passing entirely discussions at the functional head level who may have reached a different conclusion. Coaching and mentoring to improve organisational learning has been established but not between these groups.
5	Consistent flow-down throughout organisation	WGLL: Clear 'line-of-sight' exists from the top level business metrics to those on the shop floor which allows all employees to easily understand the impact of their decisions on the overall business performance. Measures have a common language and reporting methodology which is consistent across all departments and reporting graphics. *CP: The strategy map exists to try and provide an opportunity to align direction with measures and measures with the daily decisions everybody needs to take. In some areas the linkage with measures at the individual, shift/team and department level is clear; however this is not mapped out to support clear explanation and the cause-effect relationships beyond senior management level would be open to question.*
6	Matches organisational culture and sub-culture	WGLL: Performance data is collected, calculated, presented and acted-on in a manner consistent with the culture of the organisation. *CP: The culture could be described as pseudo-science based – an environment pervades where technical knowledge is revered and is often based on experience rather than actual recorded data or clearly documented learning. In this way less information (performance-based) is challenged and investigated fully before decisions are made and this can lead to confusion or reduced commitment. Activities are action-based with less regard for reflection, planning and preparation and fire-fighting is common as a result. Given a number of the business measures are deeply rooted in process chemistry or product science there is a mis-match where review and planning are required and these tend to be shortened by a need to move on quickly.*
7	Organisational values fit with individual values	WGLL: Performance measurement processes and individual measures are consistent with the stated organisational values and those of individuals throughout all departments/functions. *CP: Values are embedded in the Philosophy and Mission statement documents and not readily visible to the organisation. They may be reviewed annually, however, do not necessarily underpin group decision-making or are used as a benchmark or common reference point. Progress then depends on individual values dominating the decision-making process. It should though be said that this is not perceived to be an area of intense conflict at the moment.*
8	Active involvement of teams and individuals	WGLL: Performance measurement processes are considered to be inclusive and employees are routinely involved in collecting, calculating, presenting and acting-on performance data. Employees view the data as feedback of their performance and that of the

		wider business, are not afraid to challenge or discuss outcomes and are routinely involved in formal and informal processes/events to improve current performance. Employees are well-informed and healthy debate is welcomed. *CP: Excellence (continuous improvement) activities over the last 4-5 years have created an expectation in Operational areas that involvement is a key part of change and many individuals seek to be considered. Extending beyond this functional area is a priority and is expected to go smoothly.*
9	Able to respond to external environment	WGLL: The performance measurement processes take account of changes in the external environment and where necessary can be adapted to address potential risks or opportunities which may arise. Responses to these threats or opportunities would be characteristic of an 'agile organisation'. *CP: The weekly communications and review process lends itself to responding to the external environment via comments which back up customer or sales contact. The monthly process looks more at trends. Information on affiliate markets is more difficult to obtain.*
10	Conflict resolved constructively	WGLL: Differences of opinion are identified and addressed quickly with a focus on the data content and those involved treat each other with respect during the resolution process. Outcomes are well justified and communicated clearly to all involved. *CP: Not always good as an organisation at preventing escalation of issues. Sometimes would be taken to be more of a personal slight probably because we are not yet fully data driven and the collective responsibility for shared goals is not clear.*

Table 1: Comparing 'What Good Look Like' with the 'Current Position' at end-2013

The senior leadership team acknowledged there were significant gaps across most of the factors. After extensive discussions they prioritised the factors in terms of their perception of the relative importance of addressing the gaps to deliver the OE goal. The priority order is displayed in Table 2.

In discussion with the researcher the senior leadership team elected to focus on the top five factors as the means to deliver the OE goal:

1. *Trusting relationships*
2. *Open clear communications*
3. *Consistency with other business processes*
4. *Strong leadership and supportive management*
5. *Consistent flow-down throughout organisation*

The belief was this would get managers and teams working more closely together on performance measures, clarify relationships and produce and share widely a modified PM process which would influence more directly what happens on the shop-floor and in the support functions.

Priority	Factor	Gaps Between Existing Position and 'What Good Looks Like'
1	Trusting relationships	Individual trust between functions existed based on previous relationships but overall there was a lack of trust between departments on joint measures and an unnatural level of scepticism on others motives.
2	Open, clear communication	There was no robust monthly communication process, different communication channels were used.
3	Consistency with other business processes	Key business processes were not robust and data wasn't shared as widely as needed.
4	Strong leadership and supportive management	Confusion on roles and responsibilities between the senior leadership and management teams existed with decisions regularly pushed up to senior team.
5	Consistent flowdown through organisation	Line of sight measures didn't get beyond the management team and therefore had no effect at the working level.
6	Matches organisational culture & sub-culture	Decisions were not sufficiently data driven; gut feel was used rather than data, fire-fighting was common. There was insufficient technical review or substance for a science based organisation.
7	Organisational values fit with individual values	The organisation's core values weren't driving decisions, individual values dominated the decision making process.
8	Active involvement of teams & individuals	Extending active involvement beyond Operations, where it had improved, was required.
9	Able to respond to external environment	No robust process for responding to the external environment existed.
10	Conflict resolved constructively	The organisation was not good at preventing escalation of issues.

Table 2: Prioritised Gaps Between 'Current Position' (CP) and 'What Good Looks Like' (WGLL)

Changing Business Priorities

As a result of challenging trading conditions globally, the business performance of the Group was significantly poorer than expected in 2013. A decision was taken in Q1 2014 to restructure the UK organisation as a means of giving it a more certain future. The parent company announced a major transformation programme which included closing older manufacturing lines in the UK and making 30% of the workforce redundant over 9 months. Manufacturing output was reduced and, as a result, products made in the UK would be transferred to operating plants elsewhere in the world, facilitated by the 'UK experts'. The scale and nature of the imposed changes surprised the UK workforce and resulted in a rapid loss of trust in the organisation and poor morale i.e. the social system changed as a result of an exogenous shock (Frank and Fahrbach, 1999). The UK business was faced with executing a typical episodic change as described in Chapter 3.

Following this decision the senior leadership team and functional heads were diverted immediately into a programme of re-shaping the UK organisation and re-aligning the cost structure while attempting to maintain product flow and levels of customer service. A new, short-term set of performance objectives was given to the UK leadership team focused on headcount reductions by role and department, redundancy cost control, timing for release, inventory control during re-structuring and wider cost reductions, without adversely affecting customer delivery and performance. The case study activities stopped for a period of time while the UK leadership team grappled with what restructuring meant for the two UK sites and the workforce.

Once the senior leadership team had put in place the necessary actions to deal with the immediate cost cutting requirements they turned their attention to the challenge of delivering the people change process for the 70% of employees who would remain post restructuring and have to operate in a different internal environment going forward.

Organisational change is recognised as a context-dependent, unpredictable, non-linear process where intended plans can often lead to unintended outcomes (Balogun and Johnson, 2004, 2005). Having recognised the potential of the social systems approach to engage people in change, the senior leadership team reviewed the OE goal and the priority social systems factors selected some months earlier and considered them appropriate for the change programme underway. The need to work as a team, clarify roles and responsibilities for the future, communicate clearly and in a timely fashion and introduce an improved PM process was even more relevant for sites challenged on cost. The senior leadership team believed the outcome from the OE audit could make a valuable contribution to the change process required for the 70% of employees not leaving the organisation. At this point they re-engaged with the researcher to develop and implement an updated intervention plan.

The scale of the change programme for the UK was unprecedented and the people challenges associated with the proposed re-structuring programme formidable. In discussion with the researcher the senior leadership team, again operating in community-of-practice mode, saw the transformation requiring:

1. Focus and clear sense of purpose – *compelling need for co-operation with one burning platform and shared goals which are closely aligned although they cannot be fully described.*
2. Clear responsibilities for the design and delivery of the change – *clear accountability and roles within the core teams involved in design and delivery of the change. Key roles also described in detail with newly prepared role descriptions.*
3. Collaboration and working as a single team, working across artificial boundaries and relying on others strengths – *close co-operation between key individuals from both senior management team and functional heads to form a strong single team during the consultation and implementation stages.*
4. No hierarchy in problem-solving – *everybody has a voice in decision-making and many have a role in outlining how the changes would need to be shaped in their area – this takes time but builds the commitment needed for change.*
5. Clear communication of progress and the expected outcome – *from end Q3 2014 a formal communication process to be established to cover cascading a standard information pack to all employees in the business.*
6. Timely decision-making – *dependency on those involved being clear on the timeframes by which issues need to be addressed and the push by all involved to prioritise this work over all other. Meaningful debate to take place rather than blind agreement. Timing will also be a key part of the decision-process.*

The senior leadership team understood that the people requirements associated with the successful implementation of a restructured UK business aligned well with the social systems process at the heart of the OE framework as described to them. An intervention plan was produced based on the priority social system factors already identified and the transition challenges outlined immediately above to help with the people and process

changes associated with developing the future-state and assist the development of a new PMM process. Actions linked to cost reduction and redundancies were kept separate.

Intervention Plan and Outcome

Further work on the intervention plan with the leadership team was based on the five factors selected from the OE audit (WGLL analysis) combined with the transformational needs of both sites. The agreed intervention plan alighted on six activities captured in Table 3. Workshops with employees and management from both sites were held to discuss these activities.

Social System Factor	No.	Intervention Plan Element
Trusting relationships	1	Development of business values
Open clear communication	1 2	Development and communication of strategy plan Development of a robust, sustainable business-wide communication process
Strong leadership and supportive management	1	Development of clear roles and responsibilities
Consistency with other business processes	1	Realignment of routine meeting structure to improve performance response
Consistent flow-down throughout organisation	1	Realignment of critical business measures with the strategic plan and day-to-day decision-making to provide 'line of sight'.

Table 3: Case Study 1 - Intervention Plan

The intervention plan resulted in the following gap closure activities:-

- **Activity 1: Development of business values**

  Workshops drawing representation from all areas of both plants were held to identify the core values for the restructured UK business with the aim of establishing a new set of principles. The values were consistent with some of the existing written statements in the company's Mission and Philosophy but were more clearly described and had corporate graphics to support and communicate them. They also formed part of the business launch presentation and were visible across the plant on posters and documents to reinforce the use of them. There is a need for a link between company values and individual values to reduce any inconsistencies in metric choice or unintended behavioural responses to situations.

- **Activity 2: Development and communication of Strategy Map**

  A strategy map developed by the senior management team and the functional heads was communicated throughout the organisation as part of the business-wide, General Manager led, 'New Business Vision'. The format was simplified compared to previous years and the layout altered with the assistance of an external graphics company to match the corporate branding standards. This professionally produced and simpler graphical tool was widely publicised via electronic and poster-based communication as part of other interventions mentioned below. It galvanised the understanding of what is important and streamlined consistency in decision-making.

- **Activity 3: Development of robust, sustainable business-wide communication process**

  The 'new' business emerging from restructuring was considered as a fresh start. Communication formed a key part of completing the restructuring activities and realising the value of the transition. Significant senior staff effort went into developing corporate style display materials to launch and reinforce the key messages on Strategy, Key Projects, Values and People. The communication process was extended to poster and noticeboard, electronic display, document branding. Emphasis was also placed on holding small workshop style department discussion groups to allow more questioning to enhance learning in all areas mentioned. Key managerial roles were developed to ensure that successful transfer of information and knowledge was achieved across all areas and levels. Creative technology applications were introduced to allow ready sharing.

- **Activity 4: Development of clear roles and responsibilities**

  The Continuous Improvement Manager led the intervention designed to develop a new working relationship/operating model for the senior management team and functional leaders. This challenged the thinking of the senior leadership team and provided a mechanism for functional leaders to voice concerns about the relationship with the senior team and proposed ways to align the two groups more effectively. The BSC was used to highlight the lack of clarity of roles and responsibilities and provide a shared understanding of who 'owns' each business measure via a RACI analysis. This work will extend further with the aim of establishing clear roles and responsibilities for business measures and wider decisions to enable timely decisions to be made in a consistent manner.

- **Activity 5: Re-alignment of routine meeting structure to improve performance response**

  The PMM process was investigated by the senior leadership team and functional leaders to determine whether performance improved as a result of the actions being implemented. Questions such as what meetings are held and for what purpose, who attends, are appropriate actions identified and followed through were posed to help re-align the meeting structure to improve the link with performance. This re-alignment enabled more effective weekly practices and routines (rituals) around core meetings to be documented, shared and applied by all in the business.

- **Activity 6: Re-alignment of critical business measures with Strategic Plan and day-to-day decision-making to provide 'line-of-sight'**

  The timing of this intervention depended on the status of interventions 1-5. As the direction, values and structure of the new organisation became clearer via information flow from top-down and bottom-up a 'line-of-sight' process would be established for everyone in the organisation. This will allow everyone to identify their role and how their output contributes to the higher level objectives linking business decision with the outcome.

The actions on *Open clear communications* comprised sharing the new strategy map in a more consistent and wider manner than before using electronic and poster based communications and through face-to-face sessions with small departmental discussion groups to allow questioning, enhance understanding and enable participation in the change process.

The actions on *Trusting relationships*, centred on holding workshops with representatives from all areas across both sites to establish the core values for the restructured UK business. Loss of trust in the organisation was significant. The need to build a clear link between the Company and individual values and the PM process emphasised the overlap with the *Organisational values fit with individual values* and *Active involvement of teams and individuals* factors.

The actions on *Open clear communications* comprised sharing the transformation plan and the strategy map for the UK in a consistent and detailed manner. Electronic and poster based communications, document branding and face-to-face sessions with small departmental discussion groups to allow questioning, enhance understanding and enable participation in the change process were undertaken. The impact on the UK was not well received by employees but there was a requirement to be clear about what the future looked like for both the business and individuals. Open clear communication was an important contributor to rebuilding trust.

The actions for *Strong leadership & supportive management* focused on a requirement to review, rationalise and improve the working relationship and operating model between the senior leadership team and the management group. The current BSC issue was used to highlight the problem and a responsibility assignment (RACI) analysis undertaken to clarify ownership of local performance measures so that business decisions could be made in a more timely and consistent manner. In parallel an investigation was initiated to determine how effective the current PM process was and how much of it should continue.

The actions on *Consistent flow-down throughout organisation* focused on the re-alignment of critical business measures to the new strategic plan and day-to-day decision making. To assist in the development of a new PMM process a much clearer 'line-of-sight' approach was proposed. This will allow top level measures to be broken down so that everyone can identify readily how their role and output contributes to the higher level objectives of the organisation encouraging engagement (Buller and McEvoy, 2012; Bourne et al., 2013).

In summary, from the WGLL discussions the senior leadership team elected to work on five factors. The intervention plan was constructed from considering these five factors taking into consideration the organisation's contextual circumstances and led to the six activities outlined above. The six activities brought the workforce together to help them make sense of why change was necessary and be involved directly in developing a new set of core values and measurements for the restructured UK organisation. This was an important step in rebuilding trust in the organisation. The senior leadership team believed the social systems approach provided a flexible framework to support the people and process changes associated with the restructuring activities and helped shape a new PM process. In particular, the senior team identified the value of the conversations the organisation had when applying the SSL. The WGLL discussions had enhanced the understanding of some of the key intra-organisation interactions e.g. the strength and nature of relationships and agreement on a common purpose. Having a consensus on WGLL gave the UK organisation an updated set of individual, group and macro-level goals to coalesce around through the

transformation process (Locke and Latham, 2006). The presence of a coherent, shared set of goals and beliefs was helpful in the UK organisation's particular circumstances.

An overview of the order of the key steps in the change process is captured in Figure 1.

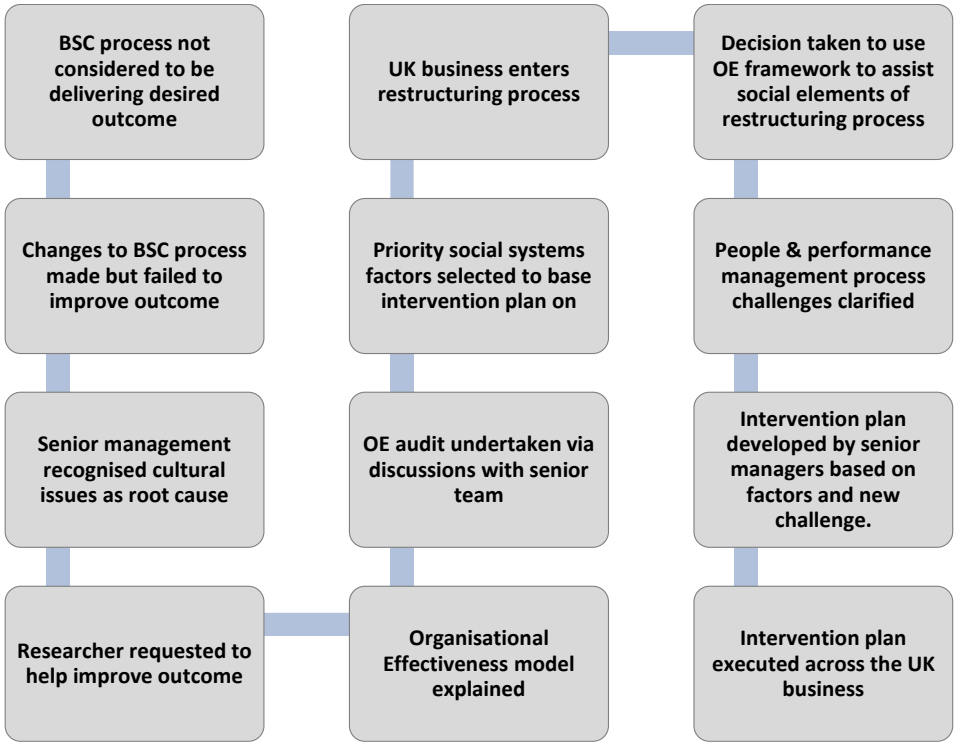


Figure 1: Order of Key Steps in Change Process

Causal Mechanisms Explaining Outcome

Events are the building blocks of empirical research (Fleetwood and Hesketh, 2006b). Wynn and Williams' (2012) principle of explication of events (see Chapter 4, Figures 4.15 and 4.16 and Table 4.9) outlines the need to establish the details of events being investigated as the basis of causal analysis. In order to establish whether the SSL, and in particular the WGLL discussions, had an impact on the workforce leading to greater understanding and acceptance of the organisation's change process it is necessary to develop a causal transitive explanation relating the empirically observed experiences to various events that took place. In complex systems the cause will rarely be the intervention on its own. Rather what is important is how the intervention works in relation to all the components of the system and to other relevant systems i.e. the mechanism will be complex (Byrne, 2013). Wynn and Williams' principle of explication of structure and context looks to identify the components in the structure that are causally relevant, the contextual influences and other actualised powers which might contribute to the outcome of interest. The components of the structure here included the senior leadership team, the organisation's normal

communications processes and HR systems, the functional managers, the SSL and the rest of the workforce. Complex social systems bring into play a multitude of structural entities and contextual factors. In this case study an important contextual factor was that the communities-of-practice process and actions emanating from them were supported by the leadership team, being part of the community-of-practice was recognised positively, and seen as constructive engagement by the management team and the shop-floor. Other observed events associated with the transformation process, for example, redundancies were also contributing to the context creating an environment of uncertainty, low trust, fear and poor morale.

As shown in Table 1 inter-group trust was already an issue prior to any restructuring actions; however, after the announcement of the downsizing programme trust in the organisation plummeted. In addition, the organisation's communication processes were inadequate and inconsistent and its key business processes were recognised as not robust. The communication of the strategy map to explain why change was necessary and what the future-state for the UK organisation looked like, the workshops to engage people in the creation of the core values of the restructured UK business, the clarification of roles and responsibilities between the senior management team and functional leaders were all events involving the key structural entities i.e. the workforce, the key managers and leaders and the SSL.

The observed outcomes of a greater understanding of the need for change, clarity on the future direction of the business, a better grasp of key organisational interactions, agreement on a common purpose and a more measureable way to determine organisational progress may be related to one or more events. However, the perceived contributing events were all activated by the intervention plan based on the five priority factors identified from the WGLL discussions. The causal powers supporting the observed outcomes resided in the combination of the senior leadership team and functional managers, the communities-of-practice brought together in the workshops and the SSL in this example. The connections and interdependencies between these component structural entities were driven primarily by the application of the SSL. The lens acted as the initiator of the emergent behaviour ultimately expressed through the observed events. It is possible that other less visible events contributed to the outcomes; for example, the practical requirement to run operations with fewer people. Here the causal powers would lie with the line managers and operating teams; however, there is no evidence to suggest that this happened in a widespread and consistent manner if at all.

The six-step framework proposed by Bygstad and Munkvold (2011) was used to identify and evaluate the likely mechanism(s) behind the main events (Bygstad, 2010). This involves:

1. Description of events
2. Identification of key components
3. Theoretical re-description (abduction)
4. Retroduction: Identification of candidate mechanisms
5. Analysis of selected mechanisms and outcomes
6. Validation of explanatory power

1. Summary and description of events

Six events are identified as important contributors to this case study:

1. In response to UK business' decision to focus on product differentiation and the observation that the PM system was failing to influence outcomes the decision was taken to change the PM system (mid-2013).
2. Decision to apply the OE framework to the UK business after recognition by UK management that upgraded PM and management processes weren't fit for purpose (Q4, 2013)
3. OE Audit to identify CP-WGLL gap and select the social systems factors to work on (Q4, 2013)
4. Corporate decision to restructure UK business (Q1, 2014)
5. UK management decision to apply the OE framework to support the people communication and development part of the restructuring plan (Q3, 2014)
6. Execution of the intervention plan (Q4, 2014 to Q2 2015)

Event 1 – Recognition that PM processes weren't delivering desired outcome.

In response to the Company strategy to improve its global financial performance the UK organisation decided to focus on product differentiation. Gaps in the UK PM and management communication processes were recognised as fundamental weaknesses and initial attempts to improve these were made through 2012/13 which failed. By mid-2013 it was recognised the steps taken to improve matters had been unsuccessful and a different approach was required.

Event 2 – Decision taken to adopt a Social System Approach to address PM issues

In late 2013 the OE framework was explained to the senior leadership team and the decision taken to adopt the social systems approach to address the organisation's issues. Under the guidance of the researcher the senior leadership team set the initial OE goal for the intervention described above.

Event 3 – Undertaking the OE Audit, identifying the underlying issues, selecting the factors to work on

The OE audit was undertaken with the senior leadership team and concentrated on understanding the CP and WGLL in terms of the ten social systems factors. Detailed discussions on the factors focused on comparing WGLL with the CP within the UK organisation. The senior leadership team acknowledged there were significant gaps across most of the factors. After extensive discussions the factors were prioritised (see Table 2) and five selected as the means to deliver the OE goal. The belief was this would get managers and teams working more closely together on performance measures, clarify relationships and produce and share widely a modified PM process which would influence more directly what happens on the shop-floor and in the support functions.

Event 4 – Corporate Decision to Restructure UK Business

In early 2014 the Company announced it was initiating a three-year transformation programme to grow in emerging markets, invest in new technology and reduce costs in its more expensive locations. This resulted in a 30% downsizing of the UK operation and the

need to reconfigure the organisation. The impact for the UK management team and workforce was significant.

Event 5 – Decision to apply the Social System Approach to new business circumstances

Having recognised the potential of the social systems approach to engage people in change, the senior leadership team reviewed the OE goal and audit and considered it still valid for the challenges ahead. The need to work as a team, clarify roles and responsibilities for the future, communicate clearly and in a timely fashion and introduce an improved PM process was even more relevant for sites challenged on cost. The senior leadership team believed the OE audit could make a valuable contribution to the change process for the 70% of employees remaining with the organisation.

Event 6 – Execution of the Intervention Plan

Work on the intervention plan was based on the prioritised factors from the OE audit (WGLL analysis) and focused on six activities described in Table 3.

The results of undertaking these activities in terms of the impact on the five social systems factors are captured above. Overall the outcome for the workforce was a greater understanding of why the changes had to be made and a feeling of having contributed to the restructured organisation. The leadership team saw these as important steps in rebuilding trust, developing new relationships, defining common goals and positioning the UK for the future.

2. Identification of the Key Components

Key components are entities with causal powers. Internally, these include, for example, the UK leadership team, the extended management group, functional specialists, the workforce and the organisation's HR practices. Externally, the parent company had a key influence on the outcomes. The network of objects comprising the social structures of interest in this case study were the UK leadership team, various communities-of-practice, the SSL, the parent company, the workforce and the researcher.

3. Theoretical Re-description

As outlined in Chapter 4 theoretical re-description can be based on social theory or more limited middle-range theory. Relevant theories should be identified, compared and integrated to increase theoretical sensitivity and understand events in greater depth.

The initial interest in adopting the social systems approach was to improve the efficacy of the UK organisation's PM process and clarify roles and responsibilities between the senior leadership and management groups. However, the business re-structuring process introduced in 2014 refocused the case study onto a more significant challenge.

The activities undertaken during the case study align with progression of the UK elements of the global organisation's new business strategy, summarised as downsizing and restructuring of a relatively expensive, mature manufacturing organisation. However, this can be reconceptualised as a social systems project rather than a re-structuring one. The

overlap between social systems and practice is shown schematically in Figure 3.12. The UK organisation had to adapt quickly and identify and implement new, more effective, 'post-restructuring' practices. The success of the people change process would drive where the UK organisation's performance would ultimately earth to. The link between practice theory and social systems theory, the need for sense-making through a period of change, the complexity of a rapid and disruptive change process, the need for emergent solutions and a focus on more consensus-based decision-making all point to this project being more about how people understand and adapt to change such that the entity they are aligned to comes out stronger post-restructuring and they feel positively engaged with the new organisation following significant social change. The approach applied to facilitate transformation of this social system is aligned with what MacLean and MacIntosh (2003) termed conditioned emergence.

4. Retroduction: Identification of candidate mechanisms

Although the contextual circumstances changed markedly during the period of the case study the original research question of 'what caused the events associated with the observed experiences to occur?' remains valid because the overriding context continues to be the operating social system in the organisation. The network of objects comprising the structures involved directly in this case study were the UK leadership team, communities-of-practice, the SSL, the parent company and the workforce. The UK organisation's leadership and management teams, HR processes and workforce represented another set of interacting objects involved in a concurrent restructuring programme for the UK organisation. From the perspective of this case study research the leadership team acted as a community-of-practice and were responsible for setting the OE goal and developing the initial WGLL descriptions and prioritisation of the social systems factors to align the intervention plan with. Application of the SSL resulted in various workshops to address the activities captured in events 2, 3, 5 and 6 and involved the leadership and management teams, functional experts and a proportion of the workforce.

The researcher viewed this network of objects as the social structure with causal powers of interest. Specifically, the completion of the OE audit and the forming of the intervention plan which resulted in the development and communication of a new business vision for the UK organisation, the undertaking of workshops with representatives from all levels of the organisation to define the core values of the restructured UK business, the development of a business-wide communication process, the clarification of leadership and management team roles and responsibilities and the re-alignment of the routine meeting structure to improve business response are a consequence of the underlying exercised mechanisms. Mechanisms are unobservable and comprise powers such as causes, motives, considerations, choices and collective social actions at various levels in the organisation (Blom and Moren, 2011). It is proposed that these powers are mediated and work through social interaction and social and material structures such as routines and practices etc. (Espejo, 2003). The candidate mechanism proposed to be in operation here is the social intervention mechanism shown in Figure 2 which comprises the expert and emergent inputs communities-of-practice can provide through their collective knowledge and understanding of the strengths and weaknesses of existing business processes and

measurement approaches and the increase in the level of consensus on and understanding/sense-making of the modifications which facilitates implementation. Social interaction can be both a part of a social intervention mechanism and a mediating condition where the mechanism is sometimes activated by interventions and sometimes activates interventions (Blom and Moren, 2010, 2011).

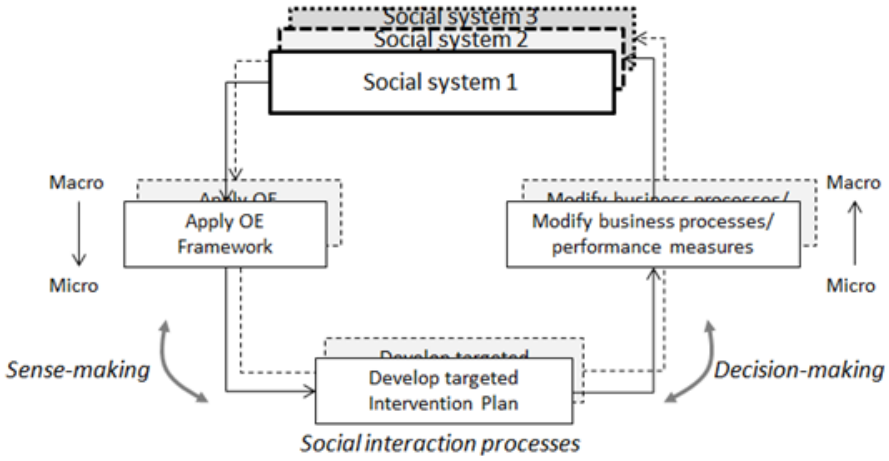


Figure 2: Social Intervention Mechanism

The context is the organisation's operating social system. By leveraging the knowledge of the collective workforce through social interaction using communities-of-practice new ideas to improve business processes and/or performance measures are generated, then prioritised and a targeted intervention plan developed and executed resulting in reconfiguring of the existing social system. The reconfigured social system further leverages the developing knowledge of the workforce as part of a self-reinforcing process by the iterative application of the SSL leading to yet more ideas for OE improvement.

5. Analysis of Selected Mechanisms and Outcomes

According to Pawson and Tilley (1997) realist evaluation is about theory testing and refinement. At its simplest level realist evaluation focuses on CONTEXT + MECHANISM = OUTCOME. As shown in Figure 2 the context is the operating social system i.e. the interpenetrating structure which exists within the organisation. In this case study the social system has a self-reinforcing social intervention mechanism which is proposed as the explanation for the observed outcomes.

At the macro (social systems) level the result of a targeted intervention plan is a change in how the social system operates through a modified business process or how it interprets a performance measure.

The observed outcomes of a greater understanding of the need for change, clarity on the future direction of the business, a better grasp of key organisational interactions,

agreement on a common purpose and a more measureable way to determine organisational progress may be related to one or more events, all of which were activated by the intervention plan based on the priority factors identified from the WGLL discussions. The causal powers supporting the observed outcomes reside in the senior leadership team and functional managers, the communities-of-practice brought together in the workshops and the SSL in this example. This specific configuration is central to the outcome. The connections and interdependencies between these component structural entities were driven by the application of the SSL. The SSL acted as the initiator of the emergent behaviour ultimately expressed through the observed events and empirical evidence. When an organisation is moved away from equilibrium, as happened here, established patterns of work and behaviour are disrupted and new ways of working created, often linked to the emergence of new forms of organisation (Mitleton-Kelly, 2003).

6. Validation of Explanatory Power

It is possible that other events and mechanisms ongoing in the organisation at the time contributed to the observed outcomes described above. For example, union action seeking clarity on the future of people's employment as part of the ongoing discussions about job reductions may have influenced the leadership team and the employees. In this case the causal powers would lie with HR, the line managers, the union representatives and operating teams and would be explained by one or more industrial relations/HR mechanisms. Alternatively the line managers and the 70% of remaining employees may have decided that they simply had to operate differently to meet the business requirements with fewer people. These mechanisms can't be dismissed but there is no formal empirical evidence to support either of them. The mechanism with the strongest explanatory power in relation to the evidence is the one selected as the most plausible reason for the outcomes.

Senior Leadership Review of OE Framework

The senior leadership team acknowledged use of the OE framework had identified a number of gaps in the business PMM process and commented on the value the organisation obtained from using the OE framework because discussions of the factors enhanced the understanding of some of the key interactions within the organisation i.e. the strength and nature of relationships, management decision-making and consistency and agreement on a common purpose. The framework proved a flexible support tool for the people and process changes associated with developing the future state of the UK business and helped in the construction of the new PMM process. At the UK business level, they felt they now had an understanding of why the organisation had been the way it was prior to restructuring and how it might be changed. Specifically, they felt this conditioned emergence approach had produced a new set of operational routines which supported a more learning & innovation focused organisation (MacLean and MacIntosh, 2003). Having a clear consensus on WGLL gave the senior leadership team a more measurable assessment of organisational progress which they liked. Operationally the intervention plan brought people together to help them understand why change was necessary and give them the opportunity to influence the outcome. In addition, the workforce was involved directly in

developing a new set of core values for the restructured UK organisation which played an important role in rebuilding trust.

For the future, the leadership team believe that by agreeing a 'baseline standard' for each of the ten factors and creating a simple numerical scale to measure performance versus WGLL a simple roadmap for the business can be produced. They add these conditions and signposts will reflect the character of the business at the time and will have to be created by the organisation in question rather than presented as a universal assessment matrix to be used by rote. There would be value in the conversations an organisation would have in developing such an analysis and benchmarking tool as the social systems factors expose some of the basic functional elements in every organisation – the strength and nature of relationships, management decisions and consistency and agreement on a common purpose. When considering organisational development and that of individuals within it such a framework would be able to be used as a reference and, if scored on a regular basis, would provide a means of monitoring progress towards a desired future state, which in itself would be engaging. The senior team believes the OE framework is flexible enough to be used to monitor the health of core business systems involved in performance management of the organisation, a department or an individual, or to provide a data-driven means of confirming where progress towards a desired state has been achieved. This extension of the OE framework may merit exploring but is not the aim of this research.

Case Study Observations

The validity of the OE framework is supported by the fact that the organisation used the social systems approach to provide a flexible support tool for the people and process changes which occurred during the period of the case study including the restructuring of the UK organisation. This specific case study looked to establish whether the WGLL component of the SSL helped provide an enabling route to address the significant challenges facing organisations. The evidence from this study indicates it is a useful technique to gain consensus to build an intervention plan around. The factors initially selected to work on in this case study overlap with those selected in the other two case studies perhaps reflecting a similarity in the contexts the three organisations find themselves in or possibly the presence of a hierarchy within the factors. A summary of the findings and operational observations from all three case studies are captured in Table 6.7 in Chapter 6 and Appendix 6.6 respectively.

Appendix 6.2 – Case Study 2 (Multi-business, multi-functional organisation)

Overview of Case Study Organisation

The organisation involved in this case study is a multi-business, multi-functional chemicals site belonging to a large multinational corporation. The site has a number of different businesses located on it and a population of over 1000 people comprising commercial, technical and production personnel and support functions such as purchasing, finance and HR. The site is located in an expensive part of Europe. Most of the businesses on the site face increasing competition from organisations based in less expensive parts of the world.

The senior business directors from the various businesses meet together as the site leadership group under the chairmanship of an independent site manager whose role it is to ensure the utilities and central services required by the various businesses are delivered and the site operates as efficiently and effectively as possible. The site manager maintains the facilities and common utilities, ensures corporate policies are implemented consistently and is the interface with the local authorities. The site manager operates as the local landlord on behalf of the corporation; the businesses are tenants on the site.

The viability of the site relies on there being a critical mass of businesses operating from this location. While the businesses are independent commercial entities the corporation's business model is to operate functionally with common corporate systems rather than as completely separate, standalone enterprises. At the SBU level the performance measures and PMM processes are common and shaped largely by the corporation's requirements in the USA. These do not always align with European norms. However, the level of commonality does provide an opportunity to maximise and leverage good practice across the site to help improve performance overall.

The performance measures adopted are typical of a large company. At the corporate level there are financial (revenue, earnings, cash flow, earnings per share) and core value (safety & health, environmental sustainability, respect for people, ethical behaviour) metrics. At the site level each business and function has broadly similar local performance measures (for example: safety, cost, quality, customer complaint rate etc.) many of which are reported globally and contribute to the delivery of more generic corporate metrics.

In 2013 the senior leadership group had received comments from junior managers that as a group felt they were not being sufficiently well prepared for their supervisory roles, that there was a lack of consistent approach and different interpretations to processes and measures on the site and a frustration with the need to produce some corporately imposed measures they considered nor relevant for the site. In addition, the senior leadership group considered the financial performances of the majority of businesses on the site needed to improve to deliver the growth required to prosper in an increasingly competitive environment and believed that leveraging consistent good leadership and management

practices across the site would enhance the understanding and delivery of key performance measures and contribute to an improved financial outcome for each SBU.

The researcher has supported the site with continuous improvement and soft skills training for several years. This was a service provided to all businesses on the site. As such the researcher had knowledge of and contact with many of the managers on the site. The case study work was undertaken between early 2014 and late 2015.

Background to Case Study

The feedback from junior managers regarding inadequate supervisory preparation and the need to improve the financial contributions the businesses based on the site were making to the corporation were ongoing concerns for the site leadership group. This was exacerbated in early 2014 by feedback from an employee survey on engagement and performance. The corporation undertakes this annual survey as part of an intention to create an atmosphere of openness, active listening and trust. Alongside other processes the corporation believes this supports improved performance and retention rates, and provides employees with greater resilience to change.

The senior leadership group met to review the most recent employee survey results and were concerned by unfavourable indicators contained in the feedback. Every manager on this multi-business site received employee survey information on engagement and performance based on feedback provided by their direct reports. While there is some aggregating of responses within business units, obtaining an integrated picture of how people feel across the site is difficult. However, the senior leadership group were aware that within the forty or so individual small surveys reported there were common unfavourable responses relating to management capability and trust in the organisation.

In addition, the senior leadership group were aware the workforce considered the site to have a poor history of responding to the results of surveys and were keen to find a way to demonstrate greater commitment to resolving employee concerns by addressing the capability and trust issues now being raised. The site leadership group considered engaging an external consultant and/or internal corporate training resources to address their and the employees' concerns but this had been tried before and had not had the desired outcome. Indeed the standard corporate approach was considered to have contributed to some of the unfavourable responses. The site leadership group knew of the researcher's background in HR and organisational development and asked whether she could provide something different to what had been done before. It was important to the site leadership group they had a resource that was known on site, had credibility and could be trusted.

In this case study the use of communities-of-practice (Wenger, 1998; Wenger and Snyder 2000; Wenger 2010) was explored to determine whether this component of the SSL helped provide an enabling route to address the significant challenges facing this organisation. Communities-of-practice are recognised for being able to build and exchange knowledge, transfer good practice and develop members' capabilities through mentoring and coaching. This is described by Wenger (2010) as a social theory of learning. Community-of-practice

membership typically self-selects and exists for as long as there is interest in maintaining the group.

Organisational Effectiveness Goal and Audit

In early 2014 there were two issues of particular concern to the site leadership group. The first was an awareness of inconsistencies across the site in the processes adopted and interpretation of a number of performance measures as a result of the businesses operating independently. The site leaders believed if good practice was enhanced and applied uniformly across the functions and businesses this would increase measurement consistency and improve overall competitiveness. However, they were unclear on how to make this happen constructively as exchanges between managers from the various functions and businesses were infrequent and unstructured. The second issue was the feedback contained in the employee survey relating to management capability and a decreasing level of trust in the organisation. This overlapped with junior managers' comments on lack of supervisory preparedness. The desire to develop a more consistent approach to PM between the businesses and functions across the site and also address employee concerns on management capability and trust was the catalyst for the site leadership group to want to change the management culture on site.

The senior leadership group wanted managers on site to behave and respond differently towards their people, in a more interactive and supportive manner, recognising there were many different constituencies involved. They also wanted to create opportunities for dialogue between managers and have role models for new and less experienced managers to follow. The OE framework was outlined to the site leadership group emphasising the social systems element linking PM and OE. The broader concept of OE was discussed and the requirement to translate the site's issues into an initial OE goal explained. Having discussed what would be involved the site leadership group were willing to explore this approach because it was different to what had been done in the past and broadly in line with what they believed they wanted. The site leadership group set the initial OE goal as:

- Sharing good management practice on processes and measures across functions and businesses
- Having stronger and more interactive relationships between managers and their workforces

In their eyes success would have managers behave in a more responsive and supportive manner towards their people and modify local processes and measures to reflect good practice. The unit of analysis was a management group of c. 100 people comprising the site leadership group, middle-managers and first-line supervisors from multiple functions and businesses.

The OE framework relies on having open, good quality information to provide clarity on what is working well and what lies behind the underlying issues. The OE framework focuses on people, processes and their interactions. Although there was semi-quantitative audit data from the employee survey it did not capture the reasons behind the responses. The researcher helped the senior managers understand the results from the employee surveys could only be considered as an indicator of the presence of issues. The survey is largely a

one-way process, heavily reliant on how well the questionnaire was constructed, with the recipient interpreting the questions as they saw them and the organisation interpreting a numerical response by integrating it with many others and referencing it to the point it was looking for information on. Neither of the two processes communicates directly nor checks each other's interpretations. In an analogous way to the '5 Whys' in continuous improvement only by digging more into the reasons for why a response was given is it possible to get to the root cause of what the recipient meant when he or she ticked a box. Attitudes and behaviours are difficult to interpret from surveys alone. The need for greater depth of understanding via two-way dialogue is vital if an informed, sustainable solution is to be achieved. Equally more understanding was needed on what lay behind the reasons for the comments from the junior managers. It was agreed management and employee discussion groups would be set up under the researcher's guidance to collect qualitative information in sufficient depth from across the businesses to get to the root cause(s) of the unfavourable responses from both employees and junior managers. This was done for three reasons:-

1. It highlighted people were being listened to and involved.
2. It demonstrated a different approach was being taken.
3. It provided additional valuable information for the OE audit.

Subsets of employees from various functions and businesses operating as communities-of-practice met to discuss the results of the employee survey with particular focus on trust and management capability. These discussions enabled the managers to collate the outcome of these discussions into a more concise view of what the employees felt was missing from the employees' perspective. The researcher organised a feedback session for all managers to share the findings from the process. The outcome from the employee discussion groups was distilled down to:

- Communication of business plans, change programmes and corporate actions were considered inadequate with minimal or no opportunity for employee comment or input
- A number of managers were relatively inexperienced and would benefit from skills development

The site leadership group also acting in community-of-practice mode wanted a more consistent approach taken with processes and measures across the site. They confirmed that the practices operated by their respective teams were not optimised and summarised the position as:

- Processes were applied differently and inconsistently across the site leading to sub-optimal performance. This contributed to poorer business outcomes and adverse employee comments

Employee survey information, direct feedback from the discussion groups and direction from the site leadership group were used as inputs for the OE audit. The employee discussions put much more substance behind survey feedback. Having mapped the audit feedback onto the social systems factors in the OE framework the researcher and the site leadership group agreed to concentrate initially on three factors:

1. *Strong leadership and supportive management*
2. *Open clear communications*
3. *Consistent flow-down through organisation*

Addressing these three factors became the focus of the intervention plan to increase the effectiveness of the management team across the site and deliver the OE goal.

Intervention Plan and Outcome

In discussion with the researcher the senior leadership group understood that if this was to be seen as something different to what had happened in the past they needed to be seen to commit to and be part of the intervention plan. In the past the senior team had shaped but not taken part in improvement activities, leaving that to line managers. The following steps were agreed with the senior leadership group as the way to develop the commitment to this social systems approach:-

- Senior management understanding and buy-in is essential – they would be involved first with a cascade process thereafter take part in the activities
- Discussions on what success would look like would occur – a more open and trusting environment between managers where sharing was encouraged and people knew where to go for support
- The plan would be publicised across the site and visibly supported by management actions – facilitated sessions to provide tools and techniques for managers would be undertaken.

The researcher led exploratory sessions with the senior leadership group and middle managers on site (30 people) on leadership and engagement focused on CP and WGLL for this extended group. These were done to create a forum for agreeing what the most successful interventions would be. These facilitated discussions were open and frank and viewed as crucial to the success of the overall improvement plan. The commitment was made by the senior leadership group that all line managers would attend the management development sessions i.e. a strong message that the site was serious about responding to the employee feedback. This was communicated widely including through the site newsletter.

It was stated the senior leadership group had deliberately chosen to take a different approach to what had been done in the past. They had chosen to work with the researcher as someone experienced in organisational development. It was important this 'consultant' knew the organisation, would be flexible and able to understand how people might feel, and could be trusted. The sessions would be interactive learning sessions; the outcome being each manager would have a better understanding of their management behaviours and a personal action plan. The sessions would also include group work for cross-business sharing of ideas and peer coaching to reduce introspective thinking and develop trust between managers for the future.

At the start of each of the management development workshops a member of the site leadership group outlined the reasons why this programme was being undertaken and what the OE goals were. This centred on addressing leadership and management issues identified by the employees primarily through the engagement and performance surveys

and employee discussion workshops and also by junior managers. It was made clear that managers may feel uncomfortable but accepting constructive criticism and being open to change was necessary. Evaluations after the workshops indicated they had provided a forum for open and honest exchange between managers and the opportunity to reflect on individual and organisation performance.

The primary outcome from the exploratory sessions was agreement to undertake management development workshops to underpin improvement of the *Strong leadership and supportive management* and *Open clear communications* factors. These were:-

- *Dealing with unconscious bias* – lots of older, male managers making decisions
- *Meaningful communication* – understanding the audience and methods of communicating
- *Developing leadership skills* – encouraging leadership development in everybody and interdependent behaviour

It was also agreed that every manager would have a personal self-improvement action plan as an output from each workshop run by the researcher. In addition, the researcher put in place a mentoring programme for newly appointed managers so they felt supported and more able to deliver their management responsibilities.

The senior leadership group recognised that one aspect stopping managers working together more effectively was that the local processes and main work streams on the site were cumbersome and inconsistent. There were also few opportunities for middle-managers to work collaboratively. To facilitate the change required in the *Consistent flow-down through organisation* factor Lean training would be delivered by the researcher with to review how to simplify processes and remove bureaucracy. What also became clear from the CP-WGLL gap discussions with the middle-managers was that within the suite of global measures they were expected to report upon some were not directly relevant to the site, for some the information flow was only one way (i.e. there was no feedback from submissions that affected anything locally), some managers were unable to explain the value of the data to their teams and therefore the quality of the input was suspect and some the managers felt ill-equipped to meet the organisation's expectations (Hudson et al., 2001). An example of the last was a 'Respect for People' metric where the global expectation was there would be 'zero people incidents' but new, inexperienced line managers felt they were given little guidance on how to prevent or manage issues in this area in practice. In addition, rather than challenge some of the less relevant global measures the site leadership position was one of compliance which frustrated many of the junior managers given the workload on them. The elements of the intervention plan are captured in Table 6.3.

Social System Factor	No.	Intervention Plan Element
Strong leadership and supportive management	1	Introduce mentoring process for newly appointed managers focused on support and ability to deliver management responsibilities
	2	Management development programme: *Developing leadership skills*
	3	Management development programme: *Dealing with unconscious bias*
Open clear communication	1	Management development programme: *Meaningful communication*
Consistent flow-down throughout organisation	1	Deliver lean training for managers focused on optimising processes and removing bureaucracy across site
	2	Introduce self-improvement plan for each manageraligned with 3 selected social systems factors

Table 6.3: Case Study 2 - Intervention Plan

The post workshop perspectives are captured below and are a measure of the impact of applying the social systems framework through a communities-of-practice approach:-

- Managers are now less defensive, they understand there can be more than one right answer, talking and discussing was important, decisions didn't have to be made only by managers, they need a range of approaches and it was okay to think differently.
- Managers are more prepared to question assumptions; the most common actions were to get more feedback from others e.g. 360° feedback, and seek greater involvement of the workforce.
- Managers had a better view on their own communication styles, their limitations and how people responded to them. More face-to-face, interactive communication was needed and less use of e-mail.
- Managers need to get to know their people better and recognise that people's styles are different.

As a result of the feedback from the management development sessions the researcher extended the workshops to include:-

- *Collaborative working*
- *Leading teams in times of stress*

The management development programme developed for the management group of 30 was then rolled out to first line managers, a further 70 people. First line managers had been advised at the start of this process that they would be involved in due course. They had been kept informed of what was happening by their line managers and by what had been communicated on site. While there was a level of scepticism from the first line managers the fact that the senior leadership group and their line managers had gone through the same process showed the organisation was serious about the process and this was something different to what had happened in the past. One observation made was that openness and discussing sensitive subjects not in your native language was difficult and some first line managers found undertaking this in English hard. In future the intent would be to hold workshops in the local language.

Employee discussion sessions were run after the management development programme was complete. People were again encouraged to voice their views. The feedback indicated the development programme and the workshops had produced a positive influence on

communication and management behaviour. This provides some evidence that the intervention plan had had the desired effect.

To accommodate the change required in the *Consistent flow-down through organisation* factor Lean management training was delivered with the aim of reviewing how to simplify local processes and remove much of the bureaucracy. This together with the learning middle-managers had taken from the management development sessions meant more people were involved in shaping the streamlined processes, providing greater buy-in to the changes introduced.

An overview of the order of the key steps in the change process is captured in Figure 1.

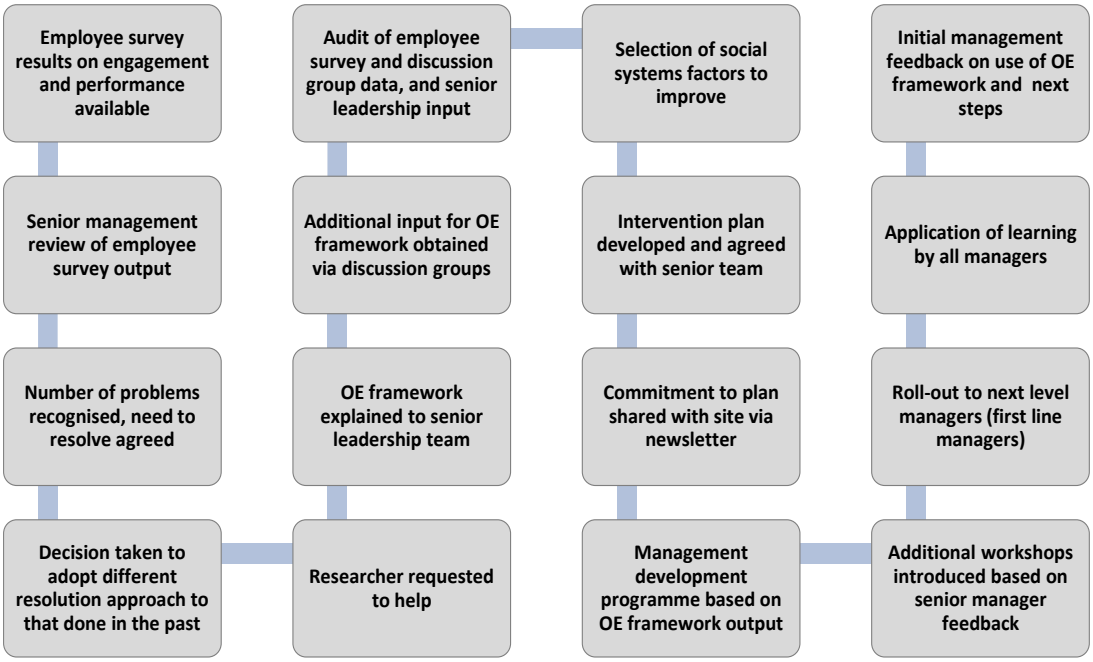


Figure 1: Order of Key Steps in Change Process

Causal Mechanisms Explaining Outcome

The approach followed below is that used in case study 1 and is taken from Wynn and Williams (2012) and Bygstad and Munkvold (2011). The components of the social structure in this case study included the site leadership group, middle-managers and first-line supervisors, the SSL, a suite of flexible, interactive learning and development solutions and the rest of the workforce. As in case study 1 important contextual factors were that the communities-of-practice and actions emanating from them were supported strongly by the site leadership group, contributing to communities-of-practice was viewed positively, actions associated with managers' self-improvement plans were incorporated to managers' individual performance plans, challenging, sharing and developing ideas on performance

measures for broader use across the site was encouraged and positive inclusion of the workforce in decision-making relevant to them was undertaken.

The site leadership group were concerned about organisational performance, capability and trust issues and believed measurement processes were being applied differently and inconsistently across the site and contributing to sub-optimal performance. The desire to develop good practice on processes and measures, leverage this across functions and businesses and have stronger and more interactive relationships between managers and their respective workforces on site was the catalyst for change. However, as the OE framework was applied different elements of this initial OE goal were refined and in some cases changed. It was an iterative process partly because it took time for people to become sufficiently comfortable with the different and more open approach.

Retroduction is one of Wynn and Williams' (2012) five methodological principles (see Chapter 4) and is considered at the heart of the critical realism explanatory model, being rooted in "the ontological assumption of emergence and the epistemological focus of explanation". Mingers (2004a) noted that with retroduction "we take some unexplained phenomenon and propose hypothetical mechanisms that, *if they existed*, would generate or cause that which is to be explained." Retroduction is an iterative process occurring over time as new information is accumulated. It may well signal a range of mechanisms are involved at various levels which interact to produce the events to be analysed. Events are explained by proposing existing or new mechanisms (or powers) capable of producing them in the specific contextual circumstances of that time. In this case study, as in the other case studies, all the methodological principles are demonstrated to a greater or lesser extent. Here the focus is on the emergent characteristics of communities-of-practice. Through a CP-WGLL process various communities-of-practice identified the benefits of different approaches to communication and employee involvement, the need to challenge certain measures, the content of a development programme for managers, a mentoring process for new managers and greater contributions from the workforce in streamlining processes in their work areas.

The observed experiences from applying the SSL through communities-of-practice was a more open and less hierarchical organisation with greater involvement of the managers and workforce and a more collaborative culture. Where it made sense good practice was adapted and applied to processes and performance measures across the site resulting in them being better understood and more meaningful in their specific contexts (Mitleton-Kelly, 2011). The development of human capital within the management teams led to stronger and more interactive relationships. The site leadership group believe the introduction of the SSL had a positive impact on the site's overall OE through a more flexible and confident management team and increased involvement of employees. This was confirmed in feedback from the employee and management workshops.

The events that led to the observed experiences included a significant management development programme, the introduction of a mentoring process for newly appointed managers, greater involvement of the workforce in decision-making relevant to them and a change in organisational culture. The mechanisms associated with these events earth back

to the relevant social structures. The communities-of-practice were temporary structural entities, configured with the intent of using the WGLL approach and identifying appropriate events that supported the delivery of the OE goal and development of the operating social system. The senior leadership group had mandated the communities-of-practice with the powers to act. The methodological principles of explication of events, explication of structures and context and retroduction are outlined in Chapter 4 and in Figures 4.15 and 4.16 and Table 4.9.

As above the six-step framework proposed by Bygstad and Munkvold (2011) was used to help identify and evaluate the likely mechanism(s) behind the main events.

1. Summary and description of events

The desire to develop best practice and collective knowledge to improve the consistency of processes and PM between businesses and functions across the site and also address employee concerns about lack of management capability and trust was the catalyst for the site leadership group to want to change the management culture on the site.

Three events are identified as important contributors to this case study:

The development of the initial OE goal based on employee survey results and leadership concern over inconsistent management practices (Q1, 2014).
The completion of the OE Audit to identify WGLL-CP gap and selecting the social systems factors to work on (Q2, 2014)
The shaping and execution of the management intervention plan (Q3, 2014 to Q3, 2015).

Event 1 – Development of the initial OE goal

In response to an employee survey and leadership concerns about inconsistent management and measurement practices the leadership group wished to change the management culture on the site. Given a history of dealing poorly with employee concerns the decision was also taken to adopt a different approach (OE framework) to respond to the content of the surveys and an initial OE goal was agreed with the site leadership group.

Event 2 – Undertaking the OE Audit, identifying the underlying issues, selecting the factors to work on

The OE audit relies on identifying the underlying issues. Although there was semi-quantitative audit data from the employee surveys it was agreed management and employee discussion groups would be set up to collect sufficient qualitative background information to apply the OE framework. Managers collated the feedback into a more concise view of what their teams felt was missing. Feedback from the employee surveys, and from the employee discussion groups and input from the site leadership group were the inputs for the OE audit. The WGLL-CP gap identified from the surveys, discussions and leadership reviews was summarised and mapped onto the OE framework resulting in leadership group agreement to concentrate on three factors. These factors became the focus of the intervention plan to increase the effectiveness of the management team across the site and deliver the OE goal.

Event 3 – Shaping and execution of the intervention plan

Exploratory sessions with the site leadership group and managers on the site (30 people) on leadership and engagement shaped the content of the management development programme to underpin improvement of the *Strong leadership and supportive management, Open clear communications* and *Consistent flow-down through organisation* factors. This process revealed a number of middle-management frustrations and had a significant impact on how the site leadership group viewed success with regard to their initial OE goal. The outcome was considerably different from the assumptions made by the site leadership group at the start of the OE framework process.

The development programme was delivered to 100 managers across the site (leadership group, middle-managers and first-line supervisors). The site leadership group and managers perspectives on the development programme captured above are a measure of the impact of applying the social systems framework through a communities-of-practice approach. Employee feedback provided supporting qualitative evidence the intervention plan was having an effect. Communication processes were more interactive, more people were involved in shaping the processes and, where appropriate, knowledge and good practice were shared to develop and improve the consistency of various processes and performance measures across the site.

2. Identification of the Key Components

The network of objects comprising the social structures of interest in this case study were the site leadership group, the middle and first-line management group, the employee surveys, the SSL, various communities-of-practice and the researcher.

3. Theoretical Re-description

The initial interest in adopting the social systems approach was to improve the relationship between the management team and their workforces and also encourage the development and use of good practice across a multi-business, multi-functional site. The OE framework refocused the case study into the scoping, shaping and execution of a management development programme with a broader remit and outcome than initially proposed by the site leadership group. As in case study 1 this can be reconceptualised as a social systems project with a focus on whether and how communities-of-practice can change the behaviour of social systems rather than simply the delivery and application of a learning and development programme for managers. Barney and Felin (2013) believe greater understanding of how capabilities are built and the effect the architecture of human and social interaction has in determining the aggregate outcomes and collective capabilities observed is needed. They call for research into multi-level human capital and behaviour theory at the micro-level, stating that “organizational scholars need to engage in the hard work of specifying unique theories of aggregation that appropriately represent the social interactional and contextual factors that shape behavior and performance in organizations.” Social capital and human capital are important components of an organisation’s operating social system. Trust and social capital take time to build within organisations but can be lost quickly through actions the collective consider inappropriate.

The activities undertaken in the intervention plan were designed to respond to site leadership, middle-manager and employee concerns extracted from the WGLL discussions and the employee surveys and address recognised gaps in the skills and knowledge of the management team and issues with performance measures and processes. Human capital is a complex, multi-level concept involving not only the knowledge, skills and abilities of individuals but also social capital and organisational culture.

4. Retroduction: Identification of candidate mechanisms

During this case study the site leadership group and middle-managers acted as communities-of-practice and were responsible for developing the CP-WGLL descriptions and prioritisation of the social systems factors to align the intervention plan with. Application of SSL resulted in the development of a context specific suite of management development programmes, self-improvement plans for the leadership, management and first-line supervisor groups, a mentoring process for newly appointed managers where less experienced managers would receive mentoring from their more experienced colleagues, and the development of a process to develop and share good practice to challenge, prioritise and improve the consistency of PM. These activities involved the leadership and management teams and a proportion of the workforce.

The researcher viewed the network of objects described above as the social structure with causal powers of interest. Specifically, the completion of the OE audit and the forming of the intervention plan which resulted in the management development programme and the outcome from the specific elements contained in it are a consequence of the underlying exercised mechanisms. The candidate mechanism proposed in operation here is the social intervention mechanism already discussed in Chapter 6 and shown in Figure 6.2. The context is again the organisation's operating social system. By leveraging the knowledge of the collective workforce using communities-of-practice at different times in the process new ideas to improve OE were generated and implemented. These actions were executed through social interactions and reconfigured the existing social system. As in case study 1 the reconfigured social system further leverages emergent knowledge by the iterative application of the SSL leading to yet more ideas for OE improvement.

5. Analysis of Selected Mechanisms and Outcomes

The context for this case study is the operating social system. The social system has a self-reinforcing social intervention mechanism which is proposed as the explanation for the observed outcomes. At the social systems level the result of new ideas for greater OE is a change in how the social system operates through a more inclusive management approach and a more confident and skilled management team. This iterative process is repeated in a 'plan-do-review' cycle.

The observed outcomes from the management development programme and the improvement in the consistency of processes and measures across the site were activated by the intervention plan based on the factors identified by the site leadership group. The emergent causal powers supporting the observed outcomes reside in the social structures comprising various combinations of the site leadership group, the management teams, the

SSL and the communities-of-practice brought together for the workshops. The SSL again acted as the initiator of the emergent behaviour ultimately expressed through the observed outcomes. When learning leads to new behaviours the organisation can be said to have adapted and evolved (Mitleton-Kelly, 2003).

6. Validation of Explanatory Power

It is possible that other events and mechanisms ongoing within this multi-business, multi-functional site at the time contributed to the observed outcomes described above but none are obvious. The social mechanism outlined above is the one selected as the most plausible reason for the outcomes. Corroborating evidence to support the proposed mechanism comes from the site leadership group and the various management teams who believed the events outlined above were responsible for the progress.

Senior Leadership Team Review of OE Framework

More than 100 managers, from the senior leadership team through to first line managers, experienced an interactive management development training process aimed at helping them deliver a plan to improve engagement and performance on the multi-business site. The intervention plan was based on the OE framework.

The senior leadership team were pleased with the progress made in getting the broader management team to work more closely together. In particular, they felt the OE framework had enabled the broader management team to reflect on their own behaviours and how they interacted with each other. The senior team admitted they had not previously made time for this and had underestimated the impact the people element had on their process-based decisions. It had also allowed the identification of learning gaps in managerial skills. The senior team want the process of assessment the framework provided to be an ongoing activity.

The line managers and employees also saw this as a worthwhile process and, after some initial scepticism, something they welcomed being involved with proactively. The employees felt two-way communications were more encouraged and more open. The workforce also credited the senior leadership group for introducing a process that listened to employees' concerns.

Case Study Observations

The validity of the OE framework is confirmed by the fact that the organisation did something different as a result of applying it. Not only were the issues progressed not the same as those initially identified as the OE goal by the site leadership group but they were also addressed in a different way and the scope extended. Only by taking a social systems approach were the underlying causes of some of the issues identified and addressed. While there were some common issues across the businesses and functions the context specific requirements resulted in a much broader range of outcome than the site leadership group had imagined at the start of the process.

The case study emphasises the importance of getting communities-of-practice comprising people from within the organisation with relevant experience and seniority involved in discussing and challenging all aspects of PM and organisational improvement. The feedback from the site leadership group, management and the workforce confirms applying a social systems approach to local performance measures helped achieve OE, specifically here through challenging, developing and optimising good practice and improving understanding of the measures. Managers recognised that measures were influencing some behaviours, not all of which were helpful. The learning was to focus on what was meaningful locally and could be influenced positively, accept what couldn't be changed or wasn't relevant and spend less time on them.

By applying the OE framework the key underlying issues were clarified and a tailored intervention plan defined to deliver the OE goal. The outcome for the organisation was:

- A more open and less hierarchical approach resulting in greater involvement of the workforce and a more collaborative culture.
- Development and sharing of good practice on processes and measures resulting in the local performance measures becoming better understood and more meaningful.
- Growth of leadership & management skills resulting in greater confidence in dealing with employees.
- Gaps in managerial skills dealt with in a constructive manner resulting in more confident managers.

The site leadership group confirmed their OE goal had been met and felt the OE framework had enabled the broader management team to reflect on their own behaviours and how they interacted with their teams and each other. The site leadership group admitted they had not previously made time for this and had underestimated the impact the people, processes and their interactions had on their process based decisions.

The leadership group believe the introduction of a SSL had a positive impact on the site's overall OE through the increased involvement of employees and a more flexible and confident management team. This is reflected in the responses from the employee and management feedback sessions and supports the proposition that PM systems will have a more positive impact on OE if mediated by a social systems approach.

This case study looked to establish whether the use of communities-of-practice helped provide an enabling route to address the significant challenges facing organisations. The evidence from this study indicates it is a useful technique to generate emergent ideas and gain consensus around which to build an intervention plan. During the OE audit process the ten factors were discussed and three factors focused on. These factors overlap with those selected in case study 1. This may reflect similarities in context between the organisations (for example: lack of trust) or possibly the presence of a hierarchy within the factors. A summary of the findings and operational observations from all three case studies are captured in Table 6.8 and Appendix 6.6: Operational Observations on Use of OE Framework from the Case Studies respectively.

Appendix 6.3 – Case Study 3 (Industrial product manufacturing organisation)

Overview of Case Study Organisation

The organisation involved in this case study is based in the UK and employs c. 200 people. It is part of a global SBU belonging to a large multinational Company. It produces technically demanding industrial products and competes in a global market with 3-5% year-on-year growth. The SBU faces major competition from new Asian suppliers. Over the last decade investment in manufacturing capacity in Asia has been significant with 75% of the industry's installed manufacturing capacity now located there, mostly in countries where people and raw material costs are less than in Europe or the USA. Given the scale of recent worldwide investment global supply has doubled since 2010 and now exceeds demand by 30%, resulting in under-loaded manufacturing assets in every region and a collapse in price. Imports from Asia have grown rapidly and now represent two-thirds of sales made in Europe. Competition is fierce with Asian producers undercutting European producers and adversely impacting their financial performances. For the last few years the profitability of the SBU in the UK has been breakeven. After recording a loss in 2012 a decision was taken to reduce UK employee numbers by 15%. The parent Company also indicated the global SBU was no longer of strategic importance to it and would be divested at an appropriate time.

The performance measures adopted by the SBU are typical of a large company and aligned with the parent company's metrics. At a corporate level it has financial (revenue, earnings, cash flow, earnings per share) and core values (SHE, quality, respect for people, ethics) metrics. Within Europe it operates a dashboard approach with safety, ethics, financial and operational excellence indicators, and at the site level has local manufacturing performance measures focused on safety, output, efficiency, cost and on-time-in-full (OTIF) delivery (Tregaskis et al., 2013). The challenge for the UK site was to improve its performance by delivering more output with fewer people and re-skill its workforce to compete with the increasing Asian threat. This involved restructuring and embarking on a change programme so that the site could better compete in a rapidly changing European and global marketplace. Organisational change such as this is context-dependent, unpredictable and non-linear (Balogun and Johnson, 2005).

The researcher has supported the site with HR and continuous improvement guidance for many years. The case study work was undertaken between mid-2013 and early 2016.

Background to Case Study

The case study site is led by a senior leadership team of six people supported by a middle-management team of a further six people and a first line management group of twelve. The age demography and low turnover of employees on site was recognised by the senior leadership team as a potential barrier to change. From previous work undertaken with

external consultants the senior leadership team had evidence that they and their management group had a number of weaknesses, in particular, poor communication skills and an inconsistent record of performance managing staff and holding people to account for lack of delivery.

In 2011 the first line management group took part in an extensive personal development programme aimed at improving their capabilities and management skills. Feedback to the senior leadership team concluded the first line management group were unable to distance themselves sufficiently from their colleagues and did not have, or did not want to apply, the skillset required to improve the performance of the teams they were now supervising. In 2013 the senior leadership team spent time with an external consultancy reviewing their skillset and the site's strategy and performance gaps. The outcome of the review was:

- The management team is too tolerant of non-delivery of actions.
- The management team spends too much time reviewing what has already happened.
- Senior leadership needs to be more direct regarding expectations.
- The site has major gaps in its strategic plan.
- Senior leadership must take full responsibility for resolving the site's issues.

The senior leadership team recognised improvements had to be made at all levels and in all areas if the site was to make the changes required to remain competitive. The climate on the site was summarised as:

- A dedicated group of people who want the site and business to do well.
- A site population too comfortable with the status quo, with few seeing the need for change, some not fully convinced, but the majority not wanting change.
- The potential consequences of not making the changes needed are not taken seriously.
- Managers are unwilling to constructively criticise. There are no consequences for non-delivery/lack of action/not complying with standards.
- A lack of trust exists in the parent company and the management team.

The site leadership team believe all managers on site have had more than sufficient exposure to management development techniques. Line managers understand the functional mechanics of the management development tool-kit but choose not to apply the contents. The site leadership team viewed this management failing as a 'working practice and relationships' issue and not a 'lack of tools or training in how to use them' problem.

The researcher was aware of the site manager's frustration at the lack of success in getting the management group to improve performance and proposed the site consider applying the OE framework because it looks at performance from a social systems perspective and considers working practices and relationships. The site manager recognised the site had a number of people issues and was interested in this approach because it takes a more holistic perspective to performance improvement, considering people, processes and their interactions as an entity rather than focusing primarily on processes.

Organisational Effectiveness Goal and Audit

The site was in the process of reducing headcount when the case study started. The challenge facing the site leadership team was to operate with fifty fewer people, increase output significantly and maintain its safety, efficiency and OTIF performances. This would require substantial change in how the managers and the workforce operated both in terms of job content and skills required. The site leadership team was concerned the workforce's reaction to the scale of the change required might represent a barrier to progress and a threat to the site's ultimate survival. After explaining the OE framework to the site leadership team they decided to explore whether it could assist with delivery of the change programme. Based largely on the analysis done by the external consultants the senior team set an initial OE goal for this intervention of:

- Having a workforce more willing to embrace change and focused on performance
- Having a workforce with greater trust in the organisation and the local management team
- Having a local management team more prepared to explain and deal with difficult situations, including managing key metrics proactively, and progress the change process

Success would see all employees having a greater understanding of and commitment to the need for change on the site and greater willingness to develop new skills. Managers would more actively lead change with a greater willingness to tackle difficult issues. Together this ought to deliver an improved manufacturing performance and a site more able to survive in a rapidly changing competitive environment. The unit of analysis was the site population of c. 200 people.

During discussions on how best to undertake the OE audit the parent company announced a plan to introduce an annual employee survey for all its businesses, aimed at increasing employee engagement. The survey would be carried out anonymously and managed by an external professional organisation that specialises in employee engagement and performance surveys. It is interesting to note a proportion of the forty-five questions contained in the survey are similar to those used in the High-Performance Organisation framework described by de Waal and van der Heijden (2015). The parent Company's expectation was individual workgroups would use the survey results to develop local plans to increase levels of engagement.

Given the site was dealing with the ramifications of downsizing and the challenge of beginning a major change programme the site manager was unwilling to undertake two similar data gathering and intervention planning exercises simultaneously. The decision was taken to determine whether the employee survey data could be used as input for the OE audit. The unit of analysis for the employee survey was also the site population of c. 200.

Once the employee survey questionnaire was available a small group of managers mapped the survey questions onto the social systems factors in the OE framework with the researcher's guidance. Care was taken with the mapping process to ensure the questions were aligned to the most appropriate factor. Nevertheless, it was recognised and accepted the questions were a generic company-wide set, not optimised for this case study.

Table 1 shows the ten social systems factors and the employee survey questions that were mapped onto them.

No	Factors	Q	Survey Dimensions	Survey Questions
1	Matches organisational culture & sub-culture	34	Diversity & Inclusion	My business has created a workplace where people wth diverse backgrounds can succeed
		26	Ethics	I do not feel pressure to compromise ethical or compliance standards to get my work done
		30	Ethics	The Company shows a commitment to ethical business decisions and conduct
		25	Ethics	I can report an unethical practices without fear of negative consequences
		9	Growth & Development	The Company provides me with the opportunity for learning & development
		10	Growth & Development	I am satisfied with the career opportunities in the Company
		11	Growth & Development	I feel there is a promising future for me in the Company
		46	Behaviour Change	I have seen positive changes taking place as a result of actions on last year's survey
2	Conflict resolved constructively	32	Diversity & Inclusion	My business has a climate in which diverse perspectives are valued
3	Active involvement of teams & individuals	15	Collaboration	My work group works effectively as a team
		8	Collaboration	I feel part of a team
		27	Collaboration	There is good teamwork and cooperation between function/departments in the Company
		6	Diversity & Inclusion	My ideas and suggestion count
		3	Diversity & Inclusion	I am appropriately involved in decisions that affect my work
		4	Innovation	I am encouraged to come up with new and better ways of doing things
		22	Innovation	When employees have good ideas, management makes use of them
		45	Behaviour Change	As a team we took action based on the feedback from last year's survey
4	Consistent flowdown throughout organisation	5	Accountability	I can see a clear link between my work and the Company's objectives
		38	Future Vision	I have a clear understanding of the Company strategy
		17	Service Quality	Where I work, we set clear performance standards for product/service quality
5	Able to respond to external environment	1	Service Quality	I have access to the resources (e.g. materials, equipment, technology etc) I need to do my job effectively
		20	Service Quality	Customer problems are dealt with quickly
		33	Speed & Agility	My business is making changes necessary to compete effectively
		7	Speed & Agility	I have the authority I need to do my job
6	Consistency with other business processes	19	Service Quality	Work processes are efficient and well organised in my part of the business
		21	Service Quality	We regularly use customer feedback to improve our processes
7	Organisational values fit with individual values	40	Engagement Index	I am proud to work for the Company
		42	Engagement Index	I would recommend this Company as a great place to work
		43	Engagement Index	Overall, I am extremely satisfied with this Company as a place to work
		41	Engagement Index	I rarely think about looking for a new job with another company
		24	Ethics	I know how to report suspected unethical behaviour
		35	Recognition	My business values my contribution
8	Strong leadership & supportive management	16	Accountability	People in my business are held accountable for their results
		18	Accountability	In my business people are rewarded according to their job performance
		36	Accountability	In my business poor performers are dealt with appropriately
		14	Growth & Development	Over the past year I have had discussions with my manager about my individual development
		13	Recognition	My manager provides me with recognition or praise for good work
9	Open clear communication	12	Accountability	My manager clearly communicates what is expected of me
		39	Future Vision	The senior leadership of the Company has communicated a vision of the future that motivates me
		2	Speed & Agility	I receive the information and communication I need to do my job effectively
		37	Transparency	The leadership of my business does agood job of communicating the reasons behind important changes that are made
		23	Transparency	There is open and honest two-way communicationin my business
		28	Transparency	I feel free to share ideas and concerns directly with leaders of my function/department
		44	Behaviour Change	I was given an opportunity to see and discuss the results from last year's survey
10	Trusting relationships	31	Transparency	I trust the leadership of my organisation

Table 1: Mapping Survey Questions to Organisational Effectiveness Factors

What became apparent from the mapping exercise was that while most factors were reasonably well covered by the survey questions two were not. For example, only one question mapped onto the *Conflict resolved constructively* factor. This limited coverage would need to be borne in mind when reviewing the outcome of applying the framework. However, a benefit of using the employee survey was that there would be access to independent annual information based on consistent data not only from the case study site but also from the parent company's other UK and European operations which would allow comparisons to be made. While the company's other locations would not be implementing an intervention plan based on the OE framework the ability to compare the outcome of applying this approach on the case study site with other approaches taken elsewhere would be of interest. It was agreed the employee survey could be used in the OE audit process because it would be repeated annually and with discussions on action planning to occur with employees there would be the opportunity to gather additional qualitative feedback

(see Figure 1). Alongside the social systems factor each question was mapped onto in Table 1 is the original employee survey dimension, for example 'Growth and Development'. The survey dimensions simply group together questions with a similar focus. The social systems factors group together questions from a social systems perspective based on the description outlined in Chapter 5. Therefore questions from a particular dimension can be spread across more than one factor. For example, the questions contained in the 'Growth & Development' dimension are split between two social systems factors. The question relating to the Company providing an opportunity for learning & development naturally sits inside the *Matches organisational culture & sub-culture* factor because developing people is a core value of the Company, whereas the question which asks whether development discussions have occurred with an individual's manager naturally sits inside the *Leadership & supportive management* factor because it is part of a being a supportive manager.

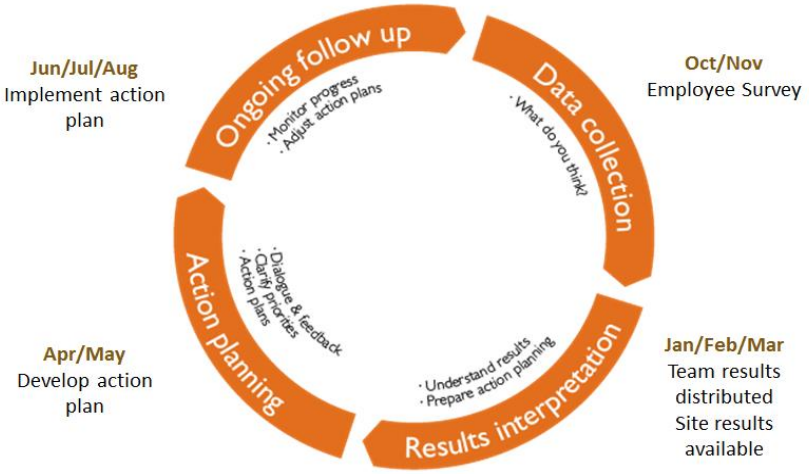


Figure 1: Employee Survey Timeline

Using the 2013 Employee Survey as Input to the OE Audit

The 2013 Employee Survey results were used as the primary input to the OE Audit. 54%, of employees at the case study site (123 people) completed the survey. The completion rate at the Company's other UK and European sites was higher at 67% (562 people) and 78% (10,134 people) respectively. The senior leadership team believed the lower response rate on the case study site reflected a relative reluctance by the site population to engage in the parent Company's employee survey given the strategy to dispose of the business.

A standard Likert scale was used in the survey. Respondents were asked to state whether they 1) strongly agreed, 2) agreed, 3) neither agreed nor disagreed, 4) disagreed or 5) strongly disagreed with each of the forty-five statements shown in Table 1. In terms of reporting, the percent favourable response comprises the strongly agreed and agreed percentages, the percent neutral response is the neither agreed nor disagreed percentage

and the percent unfavourable response comprises the disagreed and strongly disagreed percentages as shown in Figure 2.

Sample Results

Report Grouping	Valid Returns	Percent Favorable	Percent Neutral	Percent Unfavorable	2015 Percent Favorable	2015 Percent Unfavorable
Overall	500	20 20	20	20 20	40%	40%
Data Group 1	100	20 20	20	20 20	40%	40%
Data Group 2	3				--	--

Bar Chart

To facilitate the interpretation of results, responses are grouped into three categories:

Percent Favorable - Top two most favorable responses (i.e. Strongly Agree & Agree)

Percent Neutral - Neither favorable nor unfavorable response (i.e. Neither Agree nor Disagree)

Percent Unfavorable - Bottom two least favorable responses (i.e. Strongly Disagree & Disagree)

2015 Percent Favorable

The percentage of respondents who selected the top two most favorable responses (i.e. Strongly Agree and Agree).

2015 Percent Unfavorable

The percentage of respondents who selected the most unfavorable responses (i.e. Disagree and Strongly Disagree).

Figure 2: Extract from Employee Survey Report on Format

The external professional organisation managing the employee survey provided guidance on where differences are statistically meaningful based on the number of respondents. This guidance is replicated in Figure 3.

When comparing your results to those of other groups or to previous survey results, use the following guidelines to determine whether differences are meaningful.

If number of respondents in smallest unit compared is...	Look for differences in Percent Favorable of...
1000 or more	3 percentage points or more
100 or more	5 percentage points or more
50 to 99	10 percentage points or more
Less than 50	15 percentage points or more

Figure 3: Extract from Employee Survey Report on Meaningful Differences

The case study site and the Company's other UK operations have in excess of 100 respondents but less than 1000 therefore differences of ≥5% between questions in successive years can be taken as meaningful. For Europe where the number of respondents is approximately 10,000 differences of ≥3% between questions can be considered meaningful. The parent Company's expectation is that after the survey results are made available workgroups on all sites would review the output and develop appropriate action plans to enhance employee engagement and performance as part of an iterative process.

The detailed results from the 2013 employee surveys for the case study site, the Company's UK and European facilities are shown in Appendix 6.4. The information displayed shows the

social systems factors, the survey dimensions, the questions asked and the percent favourable responses. The individual questions are sorted into social system factor groups as per the mapping shown in Table 1. The data in the columns under the header '% Favourable Response' in Appendix 6.4 shows the percent favourable responses for the case study site and the Company's UK and European operations respectively. The data in the column under the heading 'EU-Site' is the difference in the % favourable response between the data reported as representing the average of the Company's European operations and the case study site. Differences of 30% or more are highlighted in red, and between 20-29% in orange. As can be seen the bulk of the questions falling into these categories reside in the *Trusting relationships, Strong leadership and supportive management* and *Open communication* factors. Specifically the biggest 'EU-Site' gaps relate to lack of trust in the leadership of the organisation; lack of open, two-way communication; not having a motivating future vision for the site; and not dealing with poor performance. In addition, there was a poor score recorded for the business' ability to create a workplace where people from diverse backgrounds can succeed which is contained in the *Matches organisation culture and sub-culture* factor.

The individual scores for the mapped questions were used to produce an average score for each of the ten social systems factors. These are denoted as Average Score in Appendix 6.4 and are reproduced in Table 2 with the corresponding numbers for the Company's UK and EU sites for comparison. The UK and EU data represent the averaged responses for all sites in the UK and Europe respectively.

	Social Systems Factors	Site 2013	UK 2013	EU 2013	
1	Matches organisational culture & sub-culture	45	57	65	
2	Conflict resolved constructively	20	42	58	Exclude
3	Active involvement of teams & individuals	48	58	62	
4	Consistent flowdown throughout organisation	52	65	70	
5	Able to respond to external environment	57	61	68	
6	Consistency with other business processes	41	43	53	
7	Organisational values fit with individual values	55	63	69	
8	Strong leadership & supportive management	31	46	54	
9	Open clear communication	39	55	63	
10	Trusting relationships	19	43	64	

Table 2: Average Social Systems Factor Scores in 2013

On advice from the researcher the site leadership team selected the three lowest scoring social systems factors which also have the largest 'EU-Site' differences (excluding *Conflict resolved constructively* which was insufficiently covered) to build the site's initial intervention plan around. These are highlighted in grey and were:-

1. *Trusting relationships*
2. *Strong leadership & supportive management*
3. *Open clear communication*

Intervention Plan and Outcome

The Intervention plan was developed and implemented by a community-of-practice comprising the senior leadership team and the middle-manager group who together have responsibility for the site's performance. Using the initial OE goal taken from the external consultants' analysis and the low scoring questions colour coded red and orange in Appendix 6.4 and linked to the three social systems factors selected above, the community-of-practice considered the gap between the 'current position' (CP) and 'what good looks like' (WGLL) to create the initial intervention plan shown in Table 3.

Social System Factor	No	Intervention Plan Element
Trusting relationships	1	Employee engagement programme - annual feedback on Employee Survey to employees
	2	Share Site Strategy & Vision with all on site through interactive process
	3	Recommence operator visits to customers, representing organisation at key customers
Strong leadership and supportive management	1	Extended Leadership Team & First-Line Supervisors to attend external leadership training programme *Leadership topics include leadership, strategy, change, teams, culture & coaching.* *Management topics include role of the manager, change, influencing & presenting, managing individual performance, effective communications & building high perfoming teams*
	2	Further training for line managers on Performance Management process specifically based on the feedback on accountability
	3	Strengthen Learning & Development team
	4	Introduce competency assessments for employees with feedback
Open clear communication	1	Communicate strategy across site via presentation and storyboard
	2	Introduce visible factory concept via electronic screens to show business performance, SHE updatess, plant performance etc
	3	Improve face-to-face communications by extended leadership team (weekly walkabouts, monthly presentation)
	4	Share detailed Innovation strategy & Vision with all on site through line managers
	5	European President/Operations Director communications to site via Town Hall sessions
	6	Reintroduce monthly newsletter

Table 3: Case Study 3 - Intervention Plan

This was targeted at:

- Improving employee trust in the leadership of the organisation by introducing an employee engagement programme based on the annual survey and more direct involvement
- Creating a process to share a vision of what the site's future strategy looked like and updating this regularly
- Improving the site's communication processes using a range of methods
- Addressing the leadership and management teams' inconsistent approach to performance.
- Strengthening the Learning and Development team to work on increasing the site's capabilities to compete.

The OE framework takes a more holistic approach to PM considering people, processes and their interactions rather than simply focusing on processes therefore the intervention plan was more focused on people and relationships than would have been the case with a traditional improvement plan generated by the management team. The community-of-practice comprising the site leadership team and middle-managers believed the success or otherwise of this approach would ultimately be evident in the future employee survey results and the local manufacturing performance measures (Tregaskis et al., 2013).

The intervention plan on *Trusting relationships* centred on sharing the organisation's strategy in detail with all employees because of the uncertainty felt by the workforce regarding the organisation's future. This was delivered by the senior leadership team and

middle management group and done through a series of interactive presentations and poster sessions covering the key areas for the future. The results of the employee survey and the proposed intervention plans were also shared with the workforce and the decision taken to recommence proactive visits to key customers by shop-floor employees thereby demonstrating trust in this group to develop supportive relationships with customers.

The intervention plan on *Strong leadership & supportive management* focused on dealing more appropriately with good and poor performance and providing learning and development opportunities for employees. The former included the requirement for further leadership and management training, specifically constructed to target the gaps identified from the results of the 2013 survey. The latter included the application of a new competency and development process for shop-floor personnel. This process enabled individual employees to understand their strengths and weaknesses and be directly involved in their development plan. It also allowed managers to quantify the capabilities of individuals and the manufacturing teams and identify the level and scope of training needed to meet the requirements of the business. This represented a significant increase in the site's investment in people development. While the site leadership team considered the managers on site had had sufficient management training they accepted that not responding appropriately to the content of the employee survey would be viewed poorly.

The intervention plan on *Open clear communication* centred on improving the depth and breadth of what was communicated to employees and how this was done. It was acknowledged existing communication processes were not proving particularly effective. Interactive, informal management presentations with small numbers of people, a revamped newsletter and the introduction and use of electronic displays in all work areas to share information was used to get more people engaged in understanding the business position, the site strategy and the challenges lying ahead.

Given the employee survey for 2014 was issued shortly after the intervention plan was communicated the senior leadership team saw the 2014 survey results, when available, as a consistency check on the 2013 output rather than providing any measure of progress. The 2015 survey results would be the first data set to indicate whether the intervention plan had any measurable effect. An intervention plan based on employee feedback which included contributions from the workforce was seen as a way of beginning to rebuild trust in the organisation.

Outcome of Intervention Plan

Over the period of the case study three employee surveys were undertaken (2013, 2014 and 2015). The survey data is shown in Table 4. On the case study site 54%, 59% and 51% of employees (in each case in excess of 100 people) completed the survey in 2013, 2014 and 2015 respectively. For the Company's other UK and European operations the comparable numbers were 67%, 77% and 71% (c. 550 people) and 78%, 83% and 81% (c. 10,000 people) respectively.

No	Factors	Q	Survey Dimensions	Survey Questions	Site	UK	EU
1	Matches organisational culture & sub-culture	34	Diversity & Inclusion	My business has created a workplace where people wth diverse backgrounds can succeed	7	4	0
		26	Ethics	I do not feel pressure to compromise ethical or compliance standards to get my work done	8	2	0
		30	Ethics	The Company shows a commitment to ethical business decisions and conduct	5	-2	-3
		25	Ethics	I can report an unethical practices without fear of negative consequences	4	3	2
		9	Growth & Development	The Company provides me with the opportunity for learning & development	12	4	2
		10	Growth & Development	I am satisfied with the career opportunities in the Company	-1	2	0
		11	Growth & Development	I feel there is a promising future for me in the Company	-3	1	-1
		46	Behaviour Change	I have seen positive changes taking place as a result of actions on last year's survey	5	0	4
2	Conflict resolved constructively	32	Diversity & Inclusion	My business has a climate in which diverse perspectives are valued	3	-1	-1
3	Active involvement of teams & individuals	15	Collaboration	My work group works effectively as a team	-3	-1	0
		8	Collaboration	I feel part of a team	4	-1	0
		27	Collaboration	There is good teamwork and cooperation between function/departments in the Company	5	4	2
		6	Diversity & Inclusion	My ideas and suggestion count	-4	8	2
		3	Diversity & Inclusion	I am appropriately involved in decisions that affect my work	1	1	2
		4	Innovation	I am encouraged to come up with new and better ways of doing things	7	1	1
		22	Innovation	When employees have good ideas, management makes use of them	4	-2	1
		45	Behaviour Change	As a team we took action based on the feedback from last year's survey	11	0	5
4	Consistent flowdown throughout organisation	5	Accountability	I can see a clear link between my work and the Company's objectives	-3	-1	-1
		38	Future Vision	I have a clear understanding of the Company strategy	7	2	1
		17	Service Quality	Where I work, we set clear performance standards for product/service quality	8	-3	1
5	Able to respond to external environment	1	Service Quality	I have access to the resources (e.g. materials, equipment, technology etc) I need to do my job effectively	7	0	0
		20	Service Quality	Customer problems are dealt with quickly	1	-4	0
		33	Speed & Agility	My business is making changes necessary to compete effectively	13	1	0
		7	Speed & Agility	I have the authority I need to do my job	4	2	1
6	Consistency with other business processes	19	Service Quality	Work processes are efficient and well organised in my part of the business	2	1	1
		21	Service Quality	We regularly use customer feedback to improve our processes	8	19	12
7	Organisational values fit with individual values	40	Engagement Index	I am proud to work for the Company	-1	-2	-2
		42	Engagement Index	I would recommend this Company as a great place to work	7	-1	-5
		43	Engagement Index	Overall, I am extremely satisfied with this Company as a place to work	8	1	-2
		41	Engagement Index	I rarely think about looking for a new job with another company	1	1	0
		24	Ethics	I know how to report suspected unethical behaviour	7	2	1
		35	Recognition	My business values my contribution	3	0	0
8	Strong leadership & supportive management	16	Accountability	People in my business are held accountable for their results	-6	-4	3
		18	Accountability	In my business people are rewarded according to their job performance	-3	0	0
		36	Accountability	In my business poor performers are dealt with appropriately	1	4	3
		14	Growth & Development	Over the past year I have had discussions with my manager about my individual development	10	2	2
		13	Recognition	My manager provides me with recognition or praise for good work	4	-1	0
9	Open clear communication	12	Accountability	My manager clearly communicates what is expected of me	3	0	1
		39	Future Vision	The senior leadership of the Company has communicated a vision of the future that motivates me	3	1	-1
		2	Speed & Agility	I receive the information and communication I need to do my job effectively	7	1	1
		37	Transparency	The leadership of my business does agood job of communicating the reasons behind important changes that are made	19	1	0
		23	Transparency	There is open and honest two-way communicationin my business	6	0	0
		28	Transparency	I feel free to share ideas and concerns directly with leaders of my function/department	3	5	1
		44	Behaviour Change	I was given an opportunity to see and discuss the results from last year's survey	22	3	5
10	Trusting relationships	31	Transparency	I trust the leadership of my organisation	11	0	-3

Table 4: 2015 Survey Results and Meaningful Differences

Fewer employees completed the survey in 2015 than in 2014 across the case study site, the UK and Europe. The case study site's senior leaders believe this may be a reaction to a corporate decision to delay the implementation of the 2015 salary increment and reduce performance-based compensation as a result of the Company not meeting its corporate 2014 profit objectives. This delay was applied worldwide and announced in the month salary increases were expected. Corporate actions which impact the basis of the relationship between employee and employer and viewed as unfair by the employees can damage trust. If the foundations of this relationship are disturbed then actions aimed at improving performance, irrespective of how well they are executed locally, may well not deliver the desired outcome. Table 4 shows the difference in scores between 2015 and 2014 (the baseline year) for each survey question.

The columns entitled Site, UK and EU refer to the case study site, the Company's UK and European operations respectively. In each case the number quoted is the 2015 percentage minus the 2014 percentage. Differences of ≥5% are meaningful for the case study site and the Company's UK operation; differences of ≥3% are meaningful for the Company's European operation. The Site, UK and EU columns are colour coded green if there is a meaningful increase and red if there is a meaningful decrease. The three numbers in yellow

are linked to a question (21) which changed in 2015 and has been ignored in the comparative analysis.

Analysis of the 2015 Survey Results

For the case study site application of the intervention plan based on the OE framework resulted in 47% of the individual question scores increasing by a meaningful difference (i.e. ≥5%) compared to the 2014 baseline. The case study site saw greater improvement in the responses to the survey questions than the parent Company's operations in the UK where less than 5% of the scores increased by ≥5%. This comparison is considered particularly meaningful given the HR practices at the case study site and at the Company's other UK operations are virtually identical and a statistically similar number of respondents were involved. It is suggested the significant difference in outcome demonstrates the benefit of taking a social systems approach to planning interventions.

For the Company's European operations the differences between 2015 and 2014 were small with evidence of loss of trust in the Company. It is possible the impact of the salary delay is responsible for the poorer scores contained in the *Organisational values fit with individual values, Matches organisational culture and sub-culture* and *Trusting relationships* factors where the questions relate to ethical conduct, trust in the leadership of the organisation and whether the company is a good place to work.

Overall it would seem that application of the OE framework to the case study site has made a significant improvement to the results of the 2015 employee survey on engagement and performance compared to the 2014 baseline. Although the intervention plan focused on the three lowest scoring factors improvement was observed across almost half the questions in the employee survey supporting the argument the ten factors are interdependent i.e. the significant improvements in trust and communication at the case study site influenced other social systems factors positively, more than offsetting the adverse impact of the 2015 remuneration changes.

2015 Survey Results Mapped to Social Systems Factors

The detailed results from the 2013, 2014 and 2015 employee surveys are shown in Appendix 6.5. The table captures the social systems factors, the survey dimensions, the questions asked and the percent favourable responses. The individual questions are grouped into factors as per the mapping shown in Table 1. The data in the columns under the header 'Percent Favourable Response Data' reproduce the percent favourable responses for the case study site and the Company's UK and European operations respectively. The data in the columns under the headers '2015-2014' and '2014-2013' are the differences in the percent responses between the years stated. As before, given the number of respondents involved, differences of ≥5% are considered meaningful for the case study site and the Company's other UK operations and differences of ≥3% for the Company's European operations.

The results of the 2015 employee survey in terms of the average social systems factors scores (%) are shown in Table 5 for 2014 and 2015. 2014 is the benchmark year. The

average factor score is the arithmetical mean of the responses to the survey questions making up each factor as shown in Table 2 for 2013. Table 5 shows the survey results mapped onto the factors for the case study site and the parent company's other operations in the UK and Europe. The questionnaire used in all locations was identical as was the statistical analysis undertaken by the survey company and the subsequent mapping of the survey questions to the factors.

When combining the results of *n* questions for *m* people the significance threshold values applied were based on those for *n* x *m* people in the survey for a single question. Therefore in the 2015 columns average factor scores coloured green have increased by ≥5%, those in red have decreased by ≥5% for the case study site. For the Company's UK operation *n* x *m* exceeds 1000 for 7 of the 10 factors i.e. those with more than 1 question. The difference between these factors is meaningful at ≥ 3%, the same as for the Company's European operation. To be colour coded the average of all the questions mapped to a factor must increase or decrease by 5 (case study site) or 3 (UK & Europe). Four factors increase by ≥5 for the case study site while none in the company's UK operations change by ≥3 and one in the company's European operations decreases by ≥3.

Factors	Site		UK		Europe		Difference 2015-2014		
	2014	2015	2014	2015	2014	2015	Site	UK	Europe
Matches organisational culture & sub-culture	41	46	54	56	66	66	5	2	0
Conflict resolved constructively	24	27	45	44	60	59	3	-1	-1
Active involvement of teams & individuals	48	50	57	59	64	65	2	1	1
Consistent flowdown throughout organisation	44	48	60	59	68	68	4	-1	0
Able to respond to external environment	48	54	59	58	68	68	6	0	0
Consistency with other business processes	35	37	42	43	51	52	2	1	1
Organisational values fit with individual values	48	52	59	59	68	67	4	0	-1
Strong leadership & supportive management	29	30	45	45	56	58	1	0	2
Open clear communication	34	41	51	53	63	63	7	1	0
Trusting relationships	18	29	40	40	64	61	11	0	-3

Table 5: Average Social Systems Factors Scores for Site, UK and Europe

The data in Table 5 suggests the intervention plan improved the employees' view of the case study site's performance on *Open clear communication* and *Trusting relationships* but did not influence the employees' perception overall of *Strong leadership & supportive management* compared to the 2014 baseline. Interestingly, the intervention plan also appears to have influenced the *Able to respond to external environment* and the *Matches organisational culture & sub-culture* factors.

When the detail of the *Strong leadership & supportive management* factor is examined (see Appendix 6.5) it becomes apparent that management actions relating to developing people through the competency and development process and recognising their contributions were registered as improving by employees but the overall factor score was brought down by employees believing the management team continues not to hold people sufficiently

accountable for their results with poor performance not being appropriately dealt with. Specific training had been given to line managers on how to deliver clear messages on good and poor performance but this remains an area of weakness for line management on the case study site as perceived by the employees. The action plans undertaken in the company's other UK operations resulted in no significant differences in any of the social systems factors. The intervention plans on these sites were determined by what the local management teams there felt appropriate. For the company's European operations there is evidence for a reduction in the *Trusting relationships* factor.

Patterns in the 2013-2015 Survey Results

By interrogating the data in detail a number of patterns and observations can be proposed. Care needs to be taken with the interpretation of the observations because it can be argued the initial mapping process was subjective. However, from a detailed analysis of the difference scores between 2015 and 2014, and 2014 and 2013 taken from the survey results contained in Appendix 6.5 a level of interaction between the social systems factors can be postulated as shown in Figure 4.

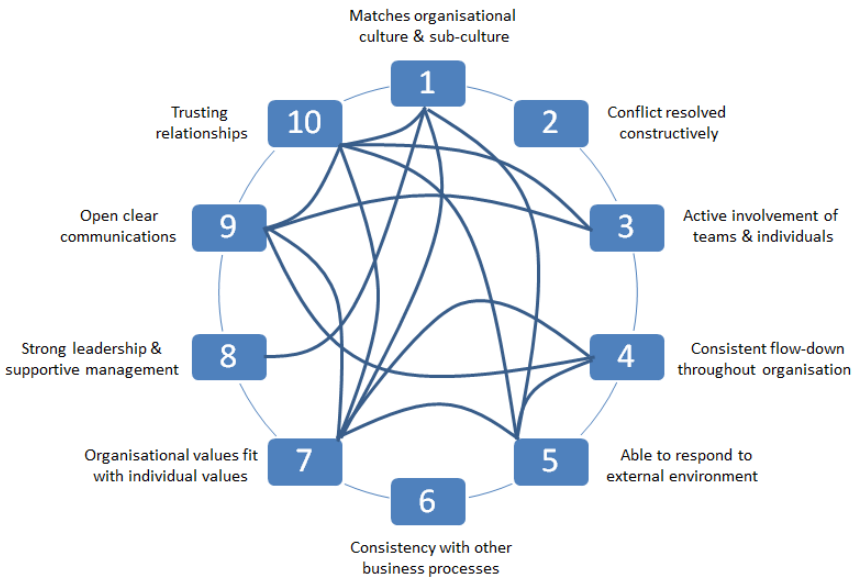


Figure 4: Interactions between Factors for Case-study Site

The intervention plan focused on the three lowest scoring factors i.e. *Trusting relationships, Strong leadership & supportive management* and *Open clear communication*. Based on the data contained in Appendix 6.5, as can be seen in Figure 4, the *Trusting relationships* factor is proposed to interact with a number of other social systems factors. Where there is evidence of a significant change in the level of trust in the organisation then this appears to correlate to a number of other factors. For the case study site the initial survey score to the question *"I trust the leadership of my organisation"* was very low (19% favourable). Lack of

trust can be seen to limit open and honest two way communication, reduce how much people like working for the organisation and cause employees to question the Company's ethical conduct. The focus on *Open clear communication,* in particular, communication of a vision by senior leadership aligns with pride in the Company and an understanding of the Company's strategy. *Open clear communications* and *trusting relationships* appear to be interlinked. This organisation already had a strong organisational culture. By having trust and communications as key elements of the intervention plan other factors, notably organisational culture, the ability to respond to the external environment and the fit between organisational and individual values were re-enforced. The different, more interactive approach taken by the senior leadership team in 2015 was recognised positively by the workforce. When senior leadership explained the reasons behind important changes being made and outlined more clearly what the site's future looked like, employees felt the business was making the necessary changes to respond to the external competitive environment (see Table 5).

The data also suggests that the competency and development process introduced by the senior leadership team is viewed positively by employees. This was supported by direct feedback from employees. They felt more in control of their personal development, more prepared to get involved with continuous improvement activities and better able to deal with the external environment.

The employee survey data was collated in such a way that it was also possible to extract the responses from the middle-managers as a subset of the site's feedback. There was no specific intervention plan being applied to this group; however, it is clear that being directly involved in the development of the site intervention plan through 2014 was sufficient to cause a substantial improvement in the middle-managers' response to the 2014 survey compared to 2013 as shown in Table 6.

Factors	Mgmt			Difference	
	2013	2014	2015	14-13	15-14
Matches organisational culture & sub-culture	61	84	80	22	-3
Conflict resolved constructively	14	86	63	72	-23
Active involvement of teams & individuals	67	78	68	10	-10
Consistent flowdown throughout organisation	81	86	79	5	-6
Able to respond to external environment	68	86	75	18	-11
Consistency with other business processes	71	57	75	-14	18
Organisational values fit with individual values	74	91	75	17	-15
Strong leadership & supportive management	46	63	50	17	-13
Open clear communication	50	67	61	17	-6
Trusting relationships	50	67	61	17	-6

Table 6: Average Social Systems Factors Scores for Management

Given the small number of respondents the responses for this group are considered statistically significant if the difference is ≥15 between averaged scores. Seven factors are

seen to improve. Analysis of the survey results for the management group suggests the presence of interactions between the social systems factors as shown on Figure 5.

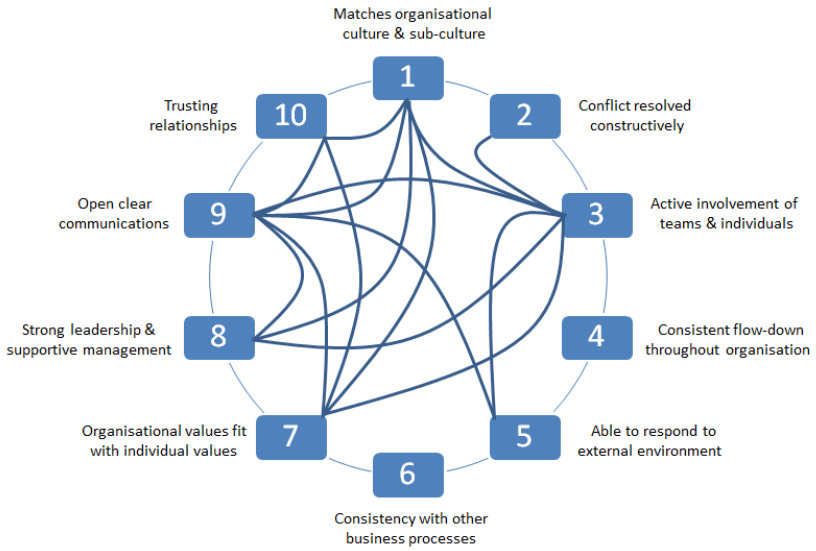


Figure 5: Interactions between Factors for Management Group

The working relationship between the site's senior leadership team and the management group through 2014 was strong as the intervention plan aimed at improving the workforce's perception of trust and communications on site based on the OE framework was discussed, developed and executed (the community-of-practice activities). The close working relationship is reflected in the increased number of interactions between the *Active involvement of teams & individuals* factor and other factors compared to the pattern for the site in Figure 4, whereas *Consistent flow-down throughout organisation* is absent given the content of the intervention plan and the role of this group.

Comparing Figures 4 and 5 the balance of interactions across the factors is different. However, what this does appear to do is reinforce the presence of interdependencies between the factors in the framework. This may also be seen as a check on the health of the particular social system in operation.

This case study demonstrates the OE framework can be applied across whole organisations or small, specific sub-groups but the outcome will vary depending on the level of interaction between people and processes when the analysis is done. For example, here the close working relationship between the leadership team and the management group in 2014 resulted in the management group feeling more engaged with the organisation which was reflected in a significant increase in favourable responses in the 2014 survey compared to 2013. This was 12 months ahead of the rest of the site registering an improvement in organisational climate. However, actions taken by the site leadership team in 2015 to clarify roles and responsibilities resulted in the management group being less engaged in 2015 than they were in 2014 with a consequent small decrease in favourable responses. For the

management group to return to the more positive state reflected in the 2014 survey response, the site leadership team needed to consider how to re-inforce the relationship with this group through the 2016 intervention plan.

An overview of the order of the key steps in the change process is captured in Figure 6.

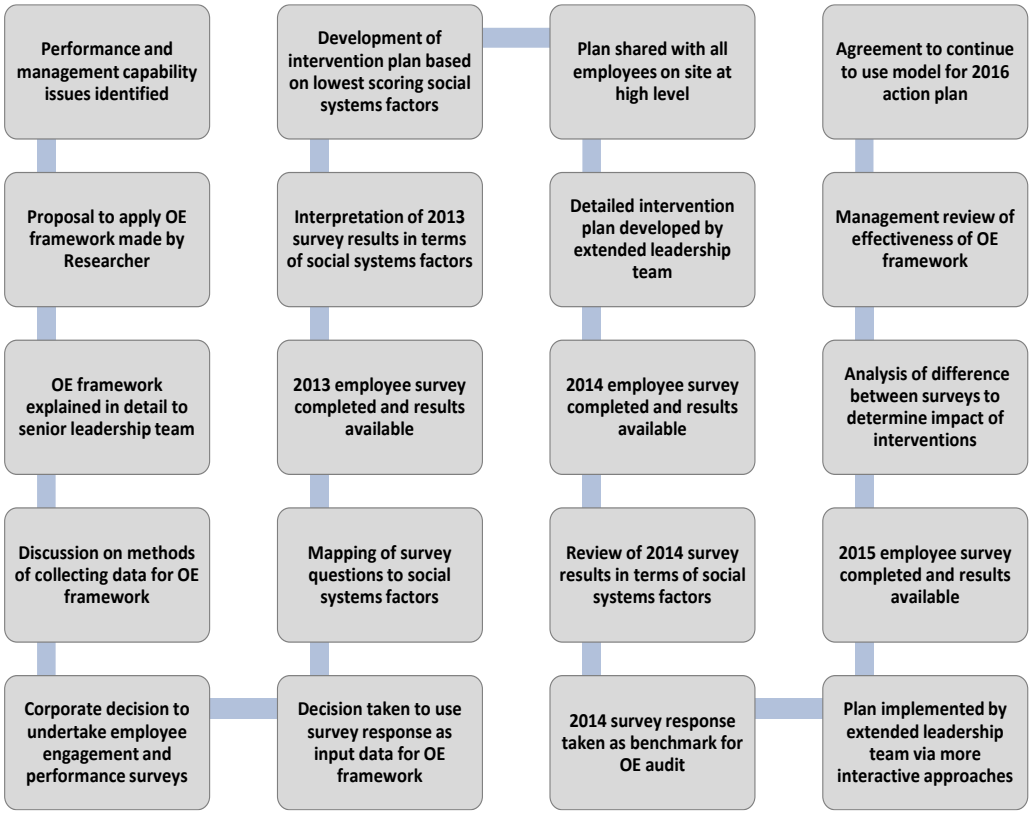


Figure 6: Order of Key Steps in Change Process

Causal Mechanisms Explaining Outcome

In this case study the OE framework was applied over 30 months during which time three employee surveys were undertaken. The approach of utilising WGLL and communities-of-practice to better understand and reflect the complexity of social systems was used to create intervention plans focused on further developing the social system in operation in the organisation. The aim was to deliver the OE goals and, by association, improve the manufacturing metrics the site was measured on.

The principle of explication of events outlines the need to establish the details of events being investigated as the basis of causal analysis. In order to establish whether the SSL had an impact on the workforce leading to greater understanding and acceptance of the organisation's need to change it is necessary to develop a causal transitive explanation relating the observed experiences to the events that took place. As before the principle of explication of structure and context looks to identify the components in the structure that are causally relevant, the contextual influences and other actualised powers which might

contribute to the outcome of interest. The components of the social structure of interest here included the senior leadership team, the middle-managers, the SSL, the corporate employee survey and the workforce. The six-step framework used in case studies 1 and 2 was followed to identify the most likely causal mechanisms (Bygstad and Munkvold, 2011).

1. Summary and description of events

Three events are identified as important contributors to this case study:

1. The development of the initial OE goal based on the senior leadership team's concerns for the future of the site and previous external consultant assessments of leadership and management on site.
2. The decision taken by the parent company to introduce a company-wide annual employee survey on engagement and performance.
3. The shaping and execution of the management intervention plan based on WGLL and communities-of-practice.

Event 1 – Development of the initial OE goal

In response to leadership team concerns about the site's future performance following a downsizing project and an external consultant's assessment of management skills the site leadership team took the decision to adopt the OE framework. The initial OE goal was focused on a desire to have a workforce more willing to embrace change and focused on performance, with greater trust in the organisation and a local management team more prepared to deal with difficult situations. Success would see employees having greater commitment to the need for change and greater willingness to develop new skills, and managers more actively leading change with a greater willingness to tackle difficult issues. Together it was proposed this would deliver a better manufacturing performance.

Event 2 – Introduction of annual corporate employee survey of engagement and performance and the prioritisation of social systems factors for the intervention plan

The OE audit relies on identifying the underlying issues. Although the initial intention was to use employee communities-of-practice to understand the gap between CP and WGLL the introduction of an annual corporate employee survey on engagement and performance resulted in this quantitative data set being used as the primary input for the OE audit. The output from the survey was mapped onto the ten factors and the three lowest scoring factors selected by the leadership team as the basis for the intervention plan.

Event 3 – Shaping and execution of the intervention plan

The site leadership team and the middle-manager group used the WGLL approach to develop an intervention plan aimed at addressing the three factors selected from the OE audit. This would be the site input into the action planning step in the corporate process.

The site leadership team and the middle-manager group (12 in total) took part in an extensive leadership development programme. A complementary management development programme was delivered to 12 first-line managers. The competency and development process was developed and applied to 130 manufacturing personnel over an

eighteen-month period.

As shown in Table 6 in comparison to the company's other UK and European operations trust, leadership and management, and communications were issues on the case study site prior to the intervention plan and became the focus of it. The observed outcomes from the activities supporting *Trusting relationships, Strong leadership and supportive management* and *Open clear communications* led to a more positive organisational climate as reflected in the 2015 employee survey results. The contributing events were all activated by the intervention plan based on the three priority factors identified from the WGLL discussions. The causal powers supporting the observed outcomes resided in the social structure comprising the community-of-practice (senior team and the middle-managers), the employee survey and the SSL. The SSL again acted as the initiator of the emergent behaviour ultimately expressed through the observed events. It is again possible that other less visible events contributed to the outcomes; for example, the practical requirement to run operations with fewer people. Here the causal powers would lie with the line managers and operating teams; however, there is no evidence to suggest this occurred. Other mechanisms associated with the HR activities, for example, the reduction in numbers and the corporate remuneration decision also contributed to the context creating the potential for uncertainty, low trust and poor morale.

2. Identification of the Key Components

The network of objects comprising the social structures of interest in this case study were the community-of-practice comprising the site leadership and middle-management groups, the SSL, the workforce and the researcher.

3. Theoretical Re-description

The initial interest in adopting the social systems approach was to develop a more positive attitude towards change, increase trust in the organisation and leadership team and improve the management team's willingness to address difficult situations. As in the two previous case studies this can be reconceptualised as a social systems project rather than the delivery of a change programme.

The activities undertaken in the intervention plan were designed to respond to the employee concerns extracted from the survey and developed through WGLL discussions with the management team. They focused on the rejuvenation of the communications process involving face-to-face interactions between managers and employees to discuss the organisation's strategy and future, the introduction of competency assessments and development plans and learning and development processes for management and leadership teams. Social capital and human capital are important components in an organisation's social system. Trust and social capital are hard to build but can be lost quickly through actions the collective consider inappropriate, in this case the business decision to reduce numbers and a corporate decision to modify the 2015 compensation process.

4. Retroduction: Identification of candidate mechanisms

During this case study the site leadership group and middle-managers acted as a community-of-practice and were responsible for developing a context specific intervention plan. The network of objects identified above can be considered as the social structure with the causal powers of interest. The candidate mechanism proposed in operation is the social intervention mechanism already discussed in case studies 1 and 2 and shown in Figure 6.2 in Chapter 6. The context is again the organisation's operating social system. By leveraging the knowledge of a community-of-practice ideas to improve OE are generated and implemented. These actions are executed through social interactions and by default modify the existing social system. The reconfigured social system further leverages emergent knowledge by the iterative application of the SSL leading to yet more ideas for OE improvement.

5. Analysis of Selected Mechanisms and Outcomes

The context for this case study is the operating social system. The social system has a self-reinforcing social intervention mechanism which is proposed as the explanation for the observed outcomes. At the social systems level the outcome of new ideas for greater OE is a change in how the social system operates through a more inclusive management approach and a more informed, confident and skilled workforce. This iterative process is repeated in a 'plan-do-review' cycle.

The observed outcomes, namely the improved employee and management survey scores, from the events outlined above, were activated by the intervention plan based on the factors the leadership team identified to focus on. The causal powers supporting the observed outcomes reside in the social structure outlined above. The SSL is central to the outcome acting as the initiator of the emergent behaviour ultimately expressed through the observed events and empirical evidence. Tests for the presence of a mechanism include seeking out and identifying collateral implications of the mechanism (Miller and Tsang, 2010). As mentioned in Chapter 4 the more observable outcomes (the ends) that are logically attributable to the proposed mechanism (the means) the more compelling is the case for it.

6. Validation of Explanatory Power

It is possible that other events and mechanisms ongoing within this organisation at the time contributed to the observed outcomes. During the period the parent company's action on compensation was recognised as decreasing trust in the organisation in the company's other sites whereas on the case study site trust improved. The social mechanism outlined above is the one selected as the most plausible reason for the outcomes. Corroborating evidence to support the proposed mechanism comes from the longitudinal data contained in the detail of the employee survey responses, the impact on the other social systems factors via their interdependencies and the observations of the senior management team.

Senior Leadership Team Review of OE Framework

The site leadership team summarised their reflections of the OE framework as follows:-

1. Applying the OE process brought new insight into improving performance, confirming the benefits of using a social systems approach.
2. It was revealing to observe interactions between the factors and how actions focused on one factor could impact others.
3. Using the employee survey questions as the input for the OE audit did not represent fully the data set required so the picture may not be complete.
4. It was interesting to observe how the organisation's performance management process for employees was disconnected from local and corporate performance measures.

Case Study Observations

In this case study the benefit of applying the SSL was examined over an extended period. The challenge for the site was to increase output with fewer people such that its unit cost improved. The events delivered as a result of the intervention plan included sharing the organisation's strategy with all workgroups via interactive processes allowing greater employee involvement; management development and a new competency and development process for employees. In addition, typical visible factory actions and greater management accessibility was used to increase workforce engagement and improve understanding of the business position, the site strategy and the challenges ahead. There are a number of local manufacturing performance measures, considered here as collateral implications of the mechanism, which allow the site leadership team to determine whether progress was being made. These include output (how much product is produced), efficiency (how efficiently raw materials are used) and unit cost (fixed cost per unit produced). While it is difficult to determine the impact of the intervention plan on the manufacturing measures directly, after two iterations of the SSL approach the observed experience was an improved organisational climate as measured using employee surveys, greater engagement of key middle-managers and a more effective manufacturing operation with increased output, lower unit cost and no adverse impact on efficiency, safety or OTIF. These observable indicators provide indirect support for the presence of the mechanism (Miller and Tsang, 2010).

The local manufacturing measures for 2014 and 2015 are compared to the 2013 baseline in Figure 7 along with headcount, safety and OTIF. The 2013 position is taken as 100% and changes from 2013 shown for 2014 and 2015. The performance of the site did not decline following the significant headcount reduction; quite the reverse, the output increased, the unit cost decreased and the efficiency, safety and OTIF remained at 2013 levels.

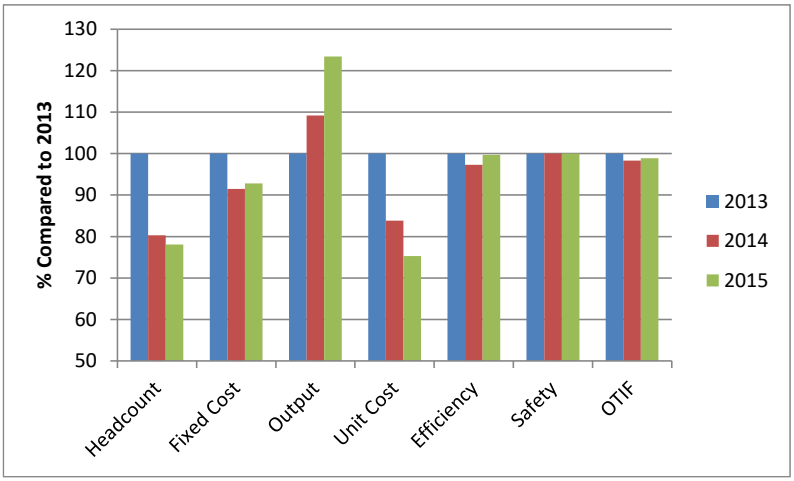


Figure 7: Selected Local Manufacturing Performance Measures for Case Study Site

Appendix 6.4: Average Factor Scores for 2013 and Selection of Social Systems to Focus On

No	Factors	Q	Survey Dimensions	Survey Questions	Site 2013	UK 2013	EM EA 2013	% Favourable Response	EU-Site
1	Matches organisational culture & sub-culture	34	Diversity & Inclusion	My business has created a workplace where people with diverse backgrounds can succeed	33	53	70		37
		26	Ethics	I do not feel pressure to compromise ethical or compliance standards to get my work done	79	87	85		
		30	Ethics	The Company shows a commitment to ethical business decisions and conduct	64	80	81		
		25	Ethics	I can report an unethical practices without fear of negative consequences	59	72	75		
		9	Growth & Development	The Company provides me with the opportunity for learning & development	41	48	59		
		10	Growth & Development	I am satisfied with the career opportunities in the Company	28	33	45		29
		11	Growth & Development	I feel there is a promising future for me in the Company	11	26	40		
					Average Score	45	57	65	5
2	Conflict resolved constructively	32	Diversity & Inclusion	My business has a climate in which diverse perspectives are valued	20	42	58	Exclude	
3	Active involvement of teams & individuals	15	Collaboration	My work group works effectively as a team	73	68	69		
		8	Collaboration	I feel part of a team	61	66	76		
		27	Collaboration	There is good teamwork and cooperation between function/departments in the Company	31	44	48		
		6	Diversity & Inclusion	My ideas and suggestion count	50	59	64		
		3	Diversity & Inclusion	I am appropriately involved in decisions that affect my work	48	55	61		
		4	Innovation	I am encouraged to come up with new and better ways of doing things	49	67	66		
		22	Innovation	When employees have good ideas, management makes use of them	24	44	53		29
					Average Score	48	58	62	6
4	Consistent flowdown throughout organisation	5	Accountability	I can see a clear link between my work and the Company's objectives	50	66	72		22
		38	Future Vision	I have a clear understanding of the Company strategy	45	60	68		23
		17	Service Quality	Where I work, we set clear performance standards for product/service quality	60	68	71		
					Average Score	52	65	70	7
5	Able to respond to external environment	1	Service Quality	I have access to the resources (e.g. materials, equipment, technology etc) I need to do my job effectively	76	74	80		
		20	Service Quality	Customer problems are dealt with quickly	53	55	59		
		33	Speed & Agility	My business is making changes necessary to compete effectively	38	50	57		
		7	Speed & Agility	I have the authority I need to do my job	59	65	74		
					Average Score	57	61	68	8
6	Consistency with other business processes	19	Service Quality	Work processes are efficient and well organised in my part of the business	34	45	52		
		21	Service Quality	We regularly use customer feedback to improve our processes	48	40	54		
					Average Score	41	43	53	4
7	Organisational values fit with individual values	40	Engagement Index	I am proud to work for the Company	60	70	73		
		42	Engagement Index	I would recommend this Company as a great place to work	49	52	64		
		43	Engagement Index	Overall, I am extremely satisfied with this Company as a place to work	48	51	66		
		41	Engagement Index	I rarely think about looking for a new job with another company	47	54	59		
		24	Ethics	I know how to report suspected unethical behaviour	84	94	91		
		35	Recognition	My business values my contribution	40	54	63		23
					Average Score	55	63	69	9
8	Strong leadership & supportive management	16	Accountability	People in my business are held accountable for their results	34	47	59		25
		18	Accountability	In my business people are rewarded according to their job performance	15	29	34		
		36	Accountability	In my business poor performers are dealt with appropriately	8	21	38		30
		14	Growth & Development	Over the past year I have had discussions with my manager about my individual development	52	66	70		
		13	Recognition	My manager provides me with recognition or praise for good work	46	65	67		21
					Average Score	31	46	54	2
9	Open clear communication	12	Accountability	My manager clearly communicates what is expected of me	54	69	73		
		39	Future Vision	The senior leadership of the Company has communicated a vision of the future that motivates me	15	33	49		34
		2	Speed & Agility	I receive the information and communication I need to do my job effectively	57	67	71		
		37	Transparency	The leadership of my business does a good job of communicating the reasons behind important changes that are made	24	47	53		29
		23	Transparency	There is open and honest two-way communication in my business	19	39	54		35
		28	Transparency	I feel free to share ideas and concerns directly with leaders of my function/department	66	72	77		
					Average Score	39	55	63	3
10	Trusting relationships	31	Transparency	I trust the leadership of my organisation	Average	19	43	64	1

Appendix 6.5: Detailed Results for 2013, 2014 and 2015 Employee Survey Results for Case Study Site, UK and Europe

No	Factors	Q.	Survey Dimensions	Survey Questions	2015-2014			2014-2013			Percent Favourable Response Data						
					Site	UK	EU	Site	UK	EU	Site 2013	Site 2014	Site 2015	UK 2013	UK 2014	UK 2015	EMEA 2013	EMEA 2014	EMEA 2015
1	Matches organisational culture & sub-culture	34	Diversity & inclusion	My business has created a workplace where people with diverse backgrounds can succeed	7	4	0	-3	-3	1	33	30	37	53	50	54	70	71	71
		26	Ethics	I do not feel pressure to compromise ethical or compliance standards to get my work done	8	2	0	-16	-5	0	79	63	71	87	82	84	85	85	85
		30	Ethics	The Company shows a commitment to ethical business decisions and conduct	5	-2	-3	-9	-2	0	64	55	60	80	78	76	81	81	78
		25	Ethics	I can report an unethical practices without fear of negative consequences	4	3	2	-5	-4	2	59	54	58	72	68	71	75	77	79
		9	Growth & Development	The Company provides me with the opportunity for learning & development	12	4	2	-6	-3	1	41	35	47	48	45	49	59	60	62
		10	Growth & Development	I am satisfied with the career opportunities in the Company	-1	2	0	2	-2	1	28	30	29	33	31	33	45	46	46
		11	Growth & Development	I feel there is a promising future for me in the Company	-3	1	-1	10	1	1	11	21	18	26	27	28	40	41	40
		46	Behaviour Change	I have seen positive changes taking place as a result of actions on last year's survey	5	0	4					12	17		28	28		36	40
2	Conflict resolved constructively	32	Diversity & inclusion	My business has a climate in which diverse perspectives are valued	3	-1	-1	4	3	2	20	24	27	42	45	44	58	60	59
3	Active involvement of teams & individuals	15	Collaboration	My work group works effectively as a team	-3	-1	0	1	0	2	73	74	71	68	68	67	69	71	71
		8	Collaboration	I feel part of a team	4	-1	0	2	3	1	61	63	67	66	69	68	76	77	77
		27	Collaboration	There is good teamwork and cooperation between function/departments in the Company	5	4	2	-2	-6	1	31	29	34	44	38	42	48	49	51
		6	Diversity & inclusion	My ideas and suggestion count	-4	8	2	2	-3	0	50	52	48	59	56	64	64	64	66
		3	Diversity & inclusion	I am appropriately involved in decisions that affect my work	1	1	2	-6	-3	0	48	42	43	55	52	53	61	61	63
		4	Innovation	I am encouraged to come up with new and better ways of doing things	7	1	1	-1	0	2	49	48	55	67	67	68	66	68	69
		22	Innovation	When employees have good ideas, management makes use of them	4	-2	1	2	7	4	24	26	30	44	51	49	53	57	58
		45	Behaviour Change	As a team we took action based on the feedback from last year's survey	11	0	5					18	29		47	47		52	57
4	Consistent flowdown throughout organisation	5	Accountability	I can see a clear link between my work and the Company's objectives	-3	-1	-1	2	-1	-2	50	52	49	66	65	64	72	70	69
		38	Future Vision	I have a clear understanding of the Company strategy	7	2	1	-13	-10	-8	45	32	39	60	50	52	68	60	61
		17	Service Quality	Where I work, we set clear performance standards for product/service quality	8	-3	1	-11	-3	2	60	49	57	68	65	62	71	73	74
5	Able to respond to external environment	1	Service Quality	I have access to the resources (e.g. materials, equipment, technology etc) I need to do my job effectively	7	0	0	-8	1	1	76	68	75	74	75	75	80	81	81
		20	Service Quality	Customer problems are dealt with quickly	1	-4	0	-5	1	2	53	48	49	55	56	52	59	61	61
		33	Speed & Agility	My business is making changes necessary to compete effectively	13	1	0	-14	-7	0	38	24	37	50	43	44	57	57	57
		7	Speed & Agility	I have the authority I need to do my job	4	2	1	-9	-5	-2	59	50	54	65	60	62	74	72	73
6	Consistency with other business processes	19	Service Quality	Work processes are efficient and well organised in my part of the business	2	1	1	1	-3	-1	34	35	37	45	42	43	52	51	52
		21	Service Quality	We regularly use customer feedback to improve our processes	8	19	12	-2	2	2	48	46	54	40	42	61	54	56	68
7	Organisational values fit with individual values	40	Engagement Index	I am proud to work for the Company	-1	-2	-2	-6	-5	-3	60	54	53	70	65	63	73	70	68
		42	Engagement Index	I would recommend this Company as a great place to work	7	-1	-5	-11	-5	-1	49	38	45	52	47	46	64	63	58
		43	Engagement Index	Overall, I am extremely satisfied with this Company as a place to work	8	1	-2	-10	-2	0	48	38	46	51	49	50	66	66	64
		41	Engagement Index	I rarely think about looking for a new job with another company	1	1	0	-4	-6	-2	47	43	44	54	48	49	59	57	57
		24	Ethics	I know how to report suspected unethical behaviour	7	2	1	-5	-3	0	84	79	86	94	91	93	91	91	92
		35	Recognition	My business values my contribution	3	0	0	-3	-2	0	40	37	40	54	52	52	63	63	63
8	Strong leadership & supportive management	16	Accountability	People in my business are held accountable for their results	-6	-4	3	-5	-3	5	34	29	23	47	44	40	59	64	67
		18	Accountability	In my business people are rewarded according to their job performance	-3	0	0	3	2	5	15	18	15	29	31	31	34	39	39
		36	Accountability	In my business poor performers are dealt with appropriately	1	4	3	0	-2	1	8	8	9	21	19	23	38	39	42
		14	Growth & Development	Over the past year I have had discussions with my manager about my individual development	10	2	2	-7	1	0	52	45	55	66	67	69	70	70	72
		13	Recognition	My manager provides me with recognition or praise for good work	4	-1	0	-1	0	1	46	45	49	65	65	64	67	68	68
9	Open clear communication	12	Accountability	My manager clearly communicates what is expected of me	3	0	1	-5	-3	-1	54	49	52	69	66	66	73	72	73
		39	Future Vision	The senior leadership of the Company has communicated a vision of the future that motivates me	3	1	-1	-3	-5	-5	15	12	15	33	28	29	49	44	43
		2	Speed & Agility	I receive the information and communication I need to do my job effectively	7	1	1	-1	0	2	57	56	63	67	67	68	71	73	74
		37	Transparency	The leadership of my business does a good job of communicating the reasons behind important changes that are made	19	1	0	11	-6	1	24	13	32	47	41	42	53	54	54
		23	Transparency	There is open and honest two-way communication in my business	6	0	0	-1	0	2	19	18	24	39	39	39	54	56	56
		28	Transparency	I feel free to share ideas and concerns directly with leaders of my function/department	3	5	1	-12	-5	0	66	54	57	72	67	72	77	77	78
		44	Behaviour Change	I was given an opportunity to see and discuss the results from last year's survey	22	3	5					35	57		70	73		69	74
10	Trusting relationships	31	Transparency	I trust the leadership of my organisation	11	0	-3	-1	-3	0	19	18	29	43	40	40	64	64	61

Differences ≥ 5% are meaningful for the case-study site and the Company's UK operation. A threshold value of ≥ 3% is applied to the Company's European operation. Green is favourable, red is unfavourable.

Appendix 6.6: Detailed Results for 2013, 2014 and 2015 Employee Survey Results for Management Team

No	Factors	Q	Survey Dimensions	Survey Questions	2015-2014	2014-2013	% Favourable Responses M gmt 2013	M gmt 2014	M gmt 2015
1	Matches organisational culture & sub-culture	34	Diversity & Inclusion	My business has created a workplace where people wth diverse backgrounds can succeed	-11	29	57	86	75
		26	Ethics	I do not feel pressure to compromise ethical or compliance standards to get my work done	0	14	86	100	100
		30	Ethics	The Company shows a commitment to ethical business decisions and conduct	0	14	86	100	100
		25	Ethics	I can report an unethical practices without fear of negative consequences	14	0	86	86	100
		9	Growth & Development	The Company provides me with the opportunity for learning & development	-11	43	43	86	75
		10	Growth & Development	I am satisfied with the career opportunities in the Company	-8	28	43	71	63
		11	Growth & Development	I feel there is a promising future for me in the Company	-7	28	29	57	50
		46	Behaviour Change	I have seen positive changes taking place as a result of actions on last year's survey	-5	43		43	38
2	Conflict resolved constructively	32	Diversity & Inclusion	My business has a climate in which diverse perspectives are valued	-23	72	14	86	63
3	Active involvement of teams & individuals	15	Collaboration	My work group works effectively as a team	-11	15	71	86	75
		8	Collaboration	I feel part of a team	4	14	57	71	75
		27	Collaboration	There is good teamwork and cooperation between function/departments in the Company	7	-14	57	43	50
		6	Diversity & Inclusion	My ideas and suggestion count	-25	0	100	100	75
		3	Diversity & Inclusion	I am appropriately involved in decisions that affect my work	-11	-14	100	86	75
		4	Innovation	I am encouraged to come up with new and better ways of doing things	0	29	71	100	100
		22	Innovation	When employees have good ideas, management makes use of them	-32	43	14	57	25
		45	Behaviour Change	As a team we took action based on the feedback from last year's survey	-25	100		100	75
4	Consistent flowdown throughout organisation	5	Accountability	I can see a clear link between my work and the Company's objectives	-12	0	100	100	88
		38	Future Vision	I have a clear understanding of the Company strategy	-7	14	43	57	50
		17	Service Quality	Where I work, we set clear performance standards for product/service quality	0	0	100	100	100
5	Able to respond to external environment	1	Service Quality	I have access to the resources (e.g. materials, equipment, technology etc) I need to do my job effectively	0	29	71	100	100
		20	Service Quality	Customer problems are dealt with quickly	-25	14	86	100	75
		33	Speed & Agility	My business is making changes necessary to compete effectively	-21	28	43	71	50
		7	Speed & Agility	I have the authority I need to do my job	4	0	71	71	75
6	Consistency with other business processes	19	Service Quality	Work processes are efficient and well organised in my part of the business	18	-14	71	57	75
		21	Service Quality	We regularly use customer feedback to improve our processes	-12	29	71	100	88
7	Organisational values fit with individual values	40	Engagement Index	I am proud to work for the Company	-25	14	86	100	75
		42	Engagement Index	I would recommend this Company as a great place to work	-11	15	71	86	75
		43	Engagement Index	Overall, I am extremely satisfied with this Company as a place to work	-36	29	57	86	50
		41	Engagement Index	I rarely think about looking for a new job with another company	-8	0	71	71	63
		24	Ethics	I know how to report suspected unethical behaviour	0	0	100	100	100
		35	Recognition	My business values my contribution	-12	43	57	100	88
8	Strong leadership & supportive management	16	Accountability	People in my business are held accountable for their results	-33	42	29	71	38
		18	Accountability	In my business people are rewarded according to their job performance	-5	0	43	43	38
		36	Accountability	In my business poor performers are dealt with appropriately	-4	15	14	29	25
		14	Growth & Development	Over the past year I have had discussions with my manager about my individual development	2	0	86	86	88
		13	Recognition	My manager provides me with recognition or praise for good work	-23	29	57	86	63
9	Open clear communication	12	Accountability	My manager clearly communicates what is expected of me	-11	0	86	86	75
		39	Future Vision	The senior leadership of the Company has communicated a vision of the future that motivates me	-16	15	14	29	13
		2	Speed & Agility	I receive the information and communication I need to do my job effectively	0	14	86	100	100
		37	Transparency	The leadership of my business does a good job of communicating the reasons behind important changes that are made	7	29	14	43	50
		23	Transparency	There is open and honest two-way communication in my business	-18	29	14	43	25
		28	Transparency	I feel free to share ideas and concerns directly with leaders of my function/department	0	14	86	100	100
		44	Behaviour Change	I was given an opportunity to see and discuss the results from last year's survey	-12	100		100	88
10	Trusting relationships	31	Transparency	I trust the leadership of my organisation	-23	86	0	86	63

Differences ≥ 5% are meaningful for the case-study site and the Company's UK operation. A threshold value of ≥ 3% is applied to the Company's European operation. Green is favourable, red is unfavourable.

Appendix 6.7: Operational Observations on Use of OE Framework from the Case Studies

The table below captures the observations from the case studies at an operational level. Nine of the observations were common to all three case studies. The observations are of practical value for organisations contemplating applying the OE framework.

No.	Observations from Organisations	Case Study		
		1	2	3
1		x	x	x
2	Management must be open-minded enough to implement model.	x	x	x
3	Model gives different outcome to conventional process-driven approach.	x	x	x
4	Model encourages ownership of improvement plan.	x	x	x
5	Model applicable from diverse management groups to complete organisations.	x	x	x
6	Unit of analysis must be identified before model applied.	x	x	x
7	Application of model reflects specific character of unit of analysis.	x	x	x
8	Ongoing external facilitation not needed if internal support for model exists.	x	x	x
9	Audit process key step in applying model.	x	x	x
10	Model helps structure response to employee concerns.		x	x
11	Model helped shape actions during restructuring process.	x		x
12	Model provides learning opportunity for management.	x	x	
13	Interactions identified between factors, demonstrating interdependency.			x
14	Certain factors may form a foundation level specific to unit of analysis.			x
15	Correlation between organisational effectiveness & business performance.			x
16	Improvement plan is specific to unit of analysis, must be refreshed if environment changes.			x
17	Improvement plan doesn't give same outcome when applied to other units of analysis.			x
18	Number & richness of interactions between factors reflects health of social system.			x
19	Discussion of factors enhances understanding of social interactions in organisation.	x		
20	Model provides scorecard for progress towards individual & organisational development.	x		