Department of Marketing

Value Co-Creation: Exploring the effects of collaborating with a proactive generation of customers.

by

Matthew James Alexander

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Acknowledgments

Completing this thesis has been a challenging, but at all times rewarding, journey of self-discovery for someone who never thought that it would be possible. All good journeys require companions and I am extremely fortunate in having had some of the best.

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He gives power to the weak, and to those who have no strength He increases might. Even the youths shall faint and be weary, and young men shall utterly fall. But those who wait on the Lord shall renew their strength; they shall mount up with wings like eagles, they shall run and not be weary, they shall walk and not faint.
(Isaiah 40:29-31)

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Abstract

Value Co-Creation plays a central role within the Service-Dominant Logic of marketing. However, value co-creation is largely conceptual and lacks empirical evidence around both the appropriate contexts and conditions for collaborative co-creation and effects on firms and customers. Using a mixed methods research design this thesis explores value co-creation through a sequential-exploratory, multi-phase approach. The first study is exploratory and qualitative with results influencing two further empirical studies, one quantitative and the other mixed method.

This first study used expert ratings and in-depth interviews to explore value co-creation within a three-stage purchasing cycle. The results indicated differing approaches and a conceptual model is presented highlighting conditions under which firms might take advantage of opportunities for value co-creation.

The second study used experiments to test the effect of co-creating on consumers; in particular, the role of trust and equity in co-created exchanges. The results showed how in co-created exchanges, trust and relationship investment are key in improving customer intentions, and how co-creating can reduce the negative impact of perceived inequity.

The third study used a mixed methods approach to consider the indirect effect of co-creating on other customers. A case study approach with a public transport provider revealed how co-creation at railway stations might affect passenger behaviour. A hierarchical linear modelling study shows how co-creation at station level has an indirect effect on affective and conative loyalty.

The thesis contributes to our understanding of value co-creation by reinforcing the contexts and conditions where collaborative forms of co-creation might be best employed. The thesis also shows how co-creating affects the consumers involved and the implications of this for firms. Finally, the thesis contributes by revealing how co-creating with a relatively small group can have a positive effect on a wider group of customers.

(84,588 words excluding references and appendices)

‘*Today the customer is in charge and whoever is best at putting the customer in charge makes all the money*’

Stephen F. Quinn, Senior Vice President for Marketing, Wal-Mart

This thesis is dedicated to my father Stephen James Alexander, a man who works hard, makes the best of his abilities and always has time for his family.

Chapter 1. Introduction

Service delivery is an interactive and dynamic process where the customer has always played an important, participative role (Auh, Bell, McLeod, & Shih, 2007; Baker, Cronin Jr, & Hopkins, 2009; Berry, 1995; Claycomb, Lengnick-Hall, & Inks, 2001; Dong, Evans, & Zou, 2008; Gummesson, 1995; Toffler, 1980). Conceptually, this role is usually played out within a traditional exchange process with customers 'outside the firm' within a 'value chain' epitomizing the 'unilateral role of the firm in creating value' (Prahalad & Ramaswamy, 2004b, p. 6). However, the customer process element of service delivery is more than a passive exchange of money for goods or services. Services marketing identifies how customers are inseparable to the service encounter (Bateson, 1985; Zeithaml, Parasuraman, & Berry, 1985) i.e. actively involved in the creation of service value manifested by: undertaking duties normally associated with service employees (Mills & Morris, 1986; Schneider & Bowen, 1995); increasingly by engaging with self-service technology (Dabholkar & Bagozzi, 2002; Meuter, Bitner, Ostrom, & Brown, 2005; Meuter, Ostrom, Roundtree, & Bitner, 2000); or by cooperating and working collaboratively with service personnel (Prahalad & Ramaswamy, 2000; Rowley, Kupiec-Teahan, & Leeming, 2007).

Our understanding of the role of consumers in recent years has evolved from passive recipients of goods and services to proactive collaborators in the activities of an organisation (Fournier & Avery, 2011; Prahalad & Ramaswamy, 2000, 2004a; Schau, Muñiz Jr, & Arnould, 2009; Sheth & Uslay, 2007; Zwick, Bonsu, & Darmody, 2008); an evolution triggered by the increased complexity, global presence and knowledge intensity that firms are exposed to requiring a more effective use of resources (Rowley, et al., 2007) including those brought by customers (Claycomb, et al., 2001; Lengnick-Hall , Claycomb, & Inks, 2000). Firms are redefining their perspectives of the resources available to include customers as participants in, not merely recipients of, service delivery (Claycomb, et al., 2001; Lengnick-Hall , et al., 2000; Möller, 2006; Prahalad & Ramaswamy, 2000) and:

> Organisations that treat their customers as only end user consumers of their services will lose the service game to organizations that involve their customers in a variety of other roles that deepen the customer service provider relationship (Schneider & Bowen, 1995, p. 84).

It is the context of changing roles (as proactive participants in the service process) and changing perspectives of the customer (as a valued resource) that has precipitated the concept of Value Co-Creation.

Value Co-Creation has gained considerable prominence through its inclusion within Service-Dominant Logic (S-D logic), a radical new perspective on marketing that forms the conceptual grounding for this thesis (Vargo & Lusch, 2004a, 2006, 2008b, 2010). This pre-theory of marketing (Vargo, 2007) suggests a paradigmatic shift in our understanding of how value is created and one of the ten foundational premises of S-D logic is that 'the customer is always a co-creator of value' (Vargo & Lusch 2008b, p.8). S-D logic suggests that value is not created by the firm but by the customer *in use* as a co-creator of value and resource integrator. Crucially for this thesis the term within S-D logic does not have to represent direct interaction or collaboration but occurs within all forms of exchange. The premise is largely conceptual and is relates more to our fundamental understanding of value creation with the changing nature of firm and customer collaboration only included as a subordinate element (Lusch & Vargo, 2006c). Many other authors, however, use the term co-creation as representative of the growing role that customers play in organisations and the blurring of the boundaries between firm and customer activity (Prahalad & Ramaswamy, 2004a; Zwick et al 2008; Schau et al 2009). It is suggested that firms should endeavour to develop more innovative ways to involve customers as interactive participants of the Value Co-Creation process (Prahalad & Ramaswamy, 2004c). This thesis focuses on value co-creation that occurs through direct interaction and collaboration.

It has been suggested that S-D Logic does not go far enough in recognising the shift in the way that organisations 'elicit value from customers' (Macdonald, Wilson, Martinez, & Toossi, 2011, p. 672) and a universal definition is elusive (Minkiewicz, Evans, & Bridson, 2010; Ostrom et al., 2010; Schau, et al., 2009). Conceptualisations are scattered and fragmented with Schau et al (2009) observing that co-creative actions:

> Have not been clearly identified and categorized in a uniform or generalizable way, nor has the nature of their value creation been revealed. In essence, we know that value is cocreated, but we do not know how, which makes replicating successful cocreation strategies within a product category and even within the firm difficult and transferring successful practices from one product domain to another nearly impossible (Schau, et al., 2009, p. 31).

It seems that, under certain conditions, some firms might derive success from a cocreation strategy (Jaworski & Kohli, 2006; Prahalad & Ramaswamy, 2004a). But it is less clear if collaborative forms of value co-creation would be universally beneficial with many authors highlighting pitfalls and risks associated with closer collaboration with customers (Gray, et al., 2007; Kalaignanam & Varadarajan, 2006; Oliver, 2006; Rust & Thompson, 2006). Consideration is needed on how the enhanced role played by customers within service encounters impacts on both consumer and firm, something largely missing from S-D logic (Sweeney, 2007) but which could impact consumer welfare and ultimately firm performance (Rust & Thompson, 2006).

The speed in which academics are advocating a paradigmatic shift within the marketing discipline (Arnould, 2006; Lovelock & Gummesson, 2004; Vargo, 2007) and the desire to set value co-creation up as a foundation of marketing (Sheth & Uslay, 2007) is somewhat in juxtaposition with the lack of clarity over the concept and how it impacts both firm and customer (Hoyer, Chandy, Dorotic, Krafft, & Singh, 2010; Ostrom, et al., 2010; Schau, et al., 2009; Zwick, et al., 2008). The need to co-create, refine and advance S-D logic through empirical study is encouraged (Brown , 2007). Vargo and Lusch (2011) (custodians of S-D logic) present it as open-source requiring input from a community of scholars to generate, test, transform or, if appropriate, abandon the theory (Gummesson, Lusch and Vargo, 2010). The following sections of this chapter outline the aims of the thesis and research objectives aim to address this knowledge gap through a literature review and three related empirical studies. The chapter concludes with an overview of the chapters of the PhD.

1.1 Thesis Aim

The overall aim of the research was to:

> **Investigate the value co-creation concept and its impact on consumer behaviour and firm performance.**

This broader aim was designed to explore both the nature of value co-creation, (considering how environmental and operating conditions may influence the way firms engage customers as collaborators) and also to explore how value co-creation might affect both firms and customers. This aim was influenced by recent texts relating to value co-creation which highlight many unexplored issues. There is consensus among authors that many aspects of value co-creation are not well understood (Hoyer, et al., 2010; Schau, et al., 2009). In particular authors highlight a need to understand the conditions for value co-creation (Gustafsson, A. in Ostrom, et al., 2010) and build understanding in how to 'manage co-created services because the underlying mechanisms that link consumers and organizations are not well understood' (Bolton, R. in Ostrom, et al., 2010, p. 24). The debate of issues such as these is seen as fundamental to the development of marketing to prevent the field 'playing catch-up with the dynamics of a structural real-world shift taking place in front of our eyes, one that is fundamentally altering the very nature of relationships among individuals and institutions (Ramaswamy, 2011, p. 195).

Value co-creation is a hypernym (or superordinate term (Lusch & Vargo, 2006c)) encompassing activity from the phenomenological determination of value by an individual when creating value-in-use to the highly interactive areas of co-design and co-innovation. The thesis was designed to provide some explanation of both the conditions under which collaborative co-creation practices might best be utilised but also consider the effects of these on firms and customers. The research aim is explored through three research objectives, outlined in the next section.

1.1.1 Research Objectives

It is the knowledge gap relating to conditions under which value co-creation might be best utilised that leads to the first research objective:

Objective 1: *To consider the operating contexts and conditions that influence approaches to value co-creation within the service encounter.*

This research objective is initially explored through study 1 and relates to the need to better understand how different firm and environmental conditions might influence how firms attempt to engage with customers more closely as collaborators and the prerequisites needed to ensure that such exchanges are mutually beneficial.

Objective 2: *To investigate the impacts of value co-creation on the consumer.*

The second research objective considers how consumer collaboration in co-creation might have direct effects on consumer behaviour under certain conditions. Specifically, in study 2 the effect of trust firstly and then equitable (and inequitable) situations on consumer behaviour are explored.

Question 3: *To explore the extent to which firms benefit from collaborating with customers through value co-creation.*

The final research objective is explored through all studies but principally in study 3 exploring how successful relationships between a firm and customer groups can result in indirect benefits for a firm.

1.2 Research Approach

After an initial period of immersion in the literature surrounding S-D Logic and Value Co-Creation it was decided that a multi-study approach to the PhD which would enable both the broad exploration of this relatively (at the time) unexplored concept but also that each study would be able to 'stand-alone' for submission to appropriate journals. The data collection for study 1 (see below) was conducted in summer 2009 and submitted to an academic journal in 2010 and then, subsequently, resubmitted to another journal in early 2011 where it is currently in the review process. Study 2 was undertaken in late 2009 and submitted to an academic

conference in early 2010. Study 3 was undertaken in summer 2010 and there is a planned submission to an academic journal in early 2012. As a result studies 2 and 3 relate to the broad research aim but were initially designed to address different research objectives. The broad approach is a holistic, mixed methods study (Caracelli & Greene, 1993) where multiple studies, using a range of qualitative and quantitative methods, explore different facets of a common conceptual framework – value co-creation. The research design approach is displayed in Figure 1-1. This approach suggested that an alternative approach to thesis structure and writing was required. As a result chapters 4 – 6 are standalone in that they contain elements of literature review and all feature methodology, findings and a brief discussion. The thesis is overviewed in the following section.

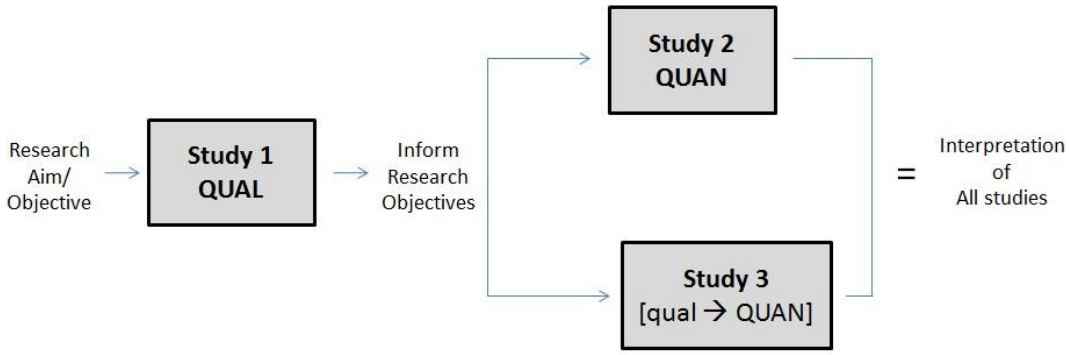

Figure 1-1 Research Approach

1.3 Thesis Overview

The thesis structure meets the needs of the subject area, the philosophical approach and research design. An initial literature review (**Ch.2**) is followed by a chapter addressing the philosophical underpinning of the thesis and the research design (**Ch.3).** The next chapter (**Ch.4**) is empirical and presents the methodology and results of an exploratory, qualitative study (Study1) investigating the value co-creation context. The findings of study 1 suggested that existing theories could be used as lenses to understand the value co-creation concept and these theories are explored by further empirical study. The following two chapters introduce two further studies, with an experimental research study (**Ch.5**) testing the effect of co-creating on consumer outcomes (study 2), followed by a multi-level study (study 3)

exploring the indirect effects of value co-creation activity (**Ch.6**). All studies explore different impacts of value co-creation on customers and firms. A discussion chapter follows (**Ch.7**) which considers the broad contribution of the three empirical studies against the research objectives and considers the impacts on our understanding of value co-creation. The concluding chapter (**Ch.8**) outlines the main contribution of the thesis. A summary of each chapter is as follows:

Chapter 2 reviews the literature associated with value co-creation. Initially the chapter explores the changing role of the customer through concepts which pre-date value co-creation but nevertheless have influenced the concept, namely, customer participation, co-production, mass customisation, and relationship marketing. The chapter continues by introducing S-D Logic as an alternative 'worldview' of marketing presented by Vargo and Lusch (2006b, 2006c, 2011; 2004a, 2004b, 2006, 2008a, 2008b, 2008c; 2010; 2010). S-D Logic suggests that marketing has, or is at least in the process of, a paradigm shift away from a goods-dominant logic (where firms embed goods with value which is then passed on to customers) to a service-dominant logic (where firms offer value propositions converted to value in use by customers, phenomenologically, through co-creation and resource integration). One foundational premise of S-D Logic is that 'the customer is always a co-creator of value' and the final section of the chapter specifically addresses value co-creation and how it has been conceptualised in the literature. A definition is presented and discussed and the benefits and drawbacks associated with engaging customers as collaborators in particular contexts are explored.

Chapter 3 introduces the research design strategy for the PhD. Initially, the post-positivist and constructivist worldviews are discussed and critiqued. The worldview adopted by the thesis is pragmatism offering an alternative to the other, dualistic, research philosophies. The research objectives suggest a mixed methods approach and the pragmatist worldview supports this by allowing researchers the use of both narrative and numerical forms of data (Creswell, 2009; Creswell & Plano Clark, 2011; Morgan, 2007; Teddlie & Tashakkori, 2009); a pluralistic approach allowing researchers in the social sciences to focus attention on the research problem and adopt the most appropriate methods (Creswell, 2009; Morgan , 2007; Teddlie & Tashakkori, 2009). This chapter introduces the main approaches for collecting mixed

methods data and argues for an adaptation of mixed methods designs resulting in the use of a *sequential exploratory, multi-phase* design where an initial qualitative study (Ch.4) is followed by two quantitative studies (Ch.5/6).

Chapter 4 presents the results of the exploratory qualitative study (Study 1) which investigated how co-creation occurs within the service encounter in a range of service firms. Using a combination of expert ratings and in-depth interviews the concept was explored within a three stage purchasing cycle. The results indicated how firms differ in their approach to value co-creation and a conceptual model is presented highlighting the conditions under which firms can take best advantage of opportunities for value co-creation explored before, during and after the point of direct exchange. The study highlights the conditional nature of some forms of value co-creation requiring more in-depth understanding at a conceptual, empirical and practical level.

Chapter 5 investigates the effects of value co-creation using theory suggested in chapter 4. This second study introduces two experiments; the first exploring the moderating effect of trust on consumer willingness to pay a price premium and continue purchasing with a firm under conditions where trust and value co-creation are manipulated. The second experiment used equity theory to explore the extent to which increased customer inputs to the service exchanges could be affected by perceived inequity.

Chapter 6 explores the extent to which co-created exchanges might have indirect benefits for other customers. This chapter uses *Generalised Exchange Theory* as the basis for exploring these effects. The study explores the indirect effects of value co-creation between a rail company and community groups at local railway stations on a wider customer base. A series of case studies and other extant literature are used to develop hypotheses which are tested using a multi-level study where 1381 surveys collected at 60 railway stations forms the first level of data, and a set of independent ratings of each railway station along with objective data on the stations forms the second level.

Chapter 7 presents an overarching synthesis of the results of all three studies and explores the implications of the findings for the research aim and objectives. The

data for all three studies is used, where appropriate, with all three objectives. The chapter discusses the operating conditions that facilitate value co-creation; the role of the customer in value co-creation introducing a co-creation consumer impact matrix; and finally the effects of value co-creation on the firms including both direct and indirect outcomes.

Chapter 8 reflects on the value co-creation concept and presents the three main contributions of the thesis which relate to: the contextual nature of value co-creation, effect on the consumer, and the wider, indirect benefits that can result from firm engagement in value co-creation activity. Theoretical and managerial implications are presented along with suggestions for future research.

The following chapter presents a review of literature relating to S-D Logic, value co-creation and other related concepts. Conditions under which co-creation might be fostered and the benefits and challenges of engaging customers as collaborators in co-creation are considered.

Chapter 2. Literature Review

This chapter reviews the literature associated with value co-creation accounting for the background, development and debate surrounding the concept. The first section explores precursors to co-creation highlighting how changing views of consumer roles have been precipitated through concepts such as relationship marketing and mass customisation.

The second section introduces and explores Service-Dominant Logic (Vargo & Lusch, 2004a) a proposed new 'worldview' of marketing centring on a shift in focus from dyadic exchanges of 'goods' to 'service for service' exchanges within and between networks and service systems (Vargo & Lusch, 2008b). Key to service-dominant logic and this thesis is the foundational premise that 'the customer is always a co-creator of value' (Vargo & Lusch, 2008b, p. 9) a statement with implications for the way in which customers derive value from purchases but which also hint at a change in the fundamental nature of interactions between customer and firm. The logic will be discussed alongside reactions and its implications for research.

The third section of the chapter presents a discussion of value co-creation focussing on the plurality of conceptualizations and perspectives within the literature. The section attempts to draw together both complementary and divergent viewpoints and presents the definition adopted within this thesis. Despite the widespread adoption of value co-creation (or related concepts) by the academic community there is little understanding of the conditions within it would be most successfully adopted as a normative strategy for engaging customers as collaborators. The chapter concludes by exploring conditions under which co-creation might have both a positive and negative impact on firms and customers.

2.1 Background to and Precursors of Co-Creation

Co-creation is more than simply a label to place on contemporary firm/customer interactions. Although the concept has no easily identifiable genesis a range of

precursory ideas and concepts can be identified which have contributed to a significant shift in our perspectives on, and management of, customer/firm interactions; changes which have, in part, led to the paradigm-like shift suggested by Service-Dominant logic, challenging existing marketing logic and the way businesses understand and interpret the roles of firm and customer. The first step is to consider how changing perspectives of customers has led to new ways of understanding value and value creation.

2.1.1 The changing nature of 'Value' and the role of the customer

Ramírez (1999) argues that in the 20th century, value was firmly embedded in the production process of the value chain and value creation was essentially sequential and 'value-adding'. The customer, far from being a co-creator was viewed more as a destroyer of the value created for them by producers (Ramírez, 1999) this is captured by accounting systems that steadily right off the value of assets over a period of depreciation. Value equalled the price the customer paid for the product or service they were provided. In opposition to this view, Ramírez presented an argument, going back some 300 years, for a system where customers create value or 'more exactly co-create and even co-invent it both with their suppliers and their own customers' (Ramírez, 1999, p. 51). Ramírez argued that terminology surrounding the customer has become steadily misunderstood. Terms such as value (which semantically cannot reside in a good), customer consumption (which paradoxically can mean both to destroy and to accomplish/complete) and service (recast from vertical to horizontal relationships allowing for greater co-creation) are all examples of a flawed understanding of service interaction, relationships and the roles played by the various actors (Ramírez, 1999). This role shift is already underway in business to business relationships. Prahalad (2000, p. 1) recognises that 'major business discontinuities such as deregulation, globalization, technological convergence, and the rapid evolution of the internet have blurred the role that companies play in their dealings with other businesses'. Despite widespread debate over the role of the firm in the changing competitive environment Prahalad and Ramaswamy (2000, p. 1) argue that the role of the customer 'the agent that is most dramatically transforming the industrial system as we know it' has largely been ignored. This observation is

attention grabbing but not strictly accurate. Wikström (1996) observed that interest is gradually moving away from products and factories and is concentrated more on processes surrounding the customer. This orientation, Wikström (1996) observes, is not exactly new and concepts such as ‘‘customer orientation’, ‘close to the customer’, ‘customer segmentation’ and ‘niche marketing’ are well known and tested, alongside ‘direct marketing’, ‘database marketing’ etc. These concepts (whatever their underlying goals) are united by one common denominator - a focus on the customer. Value is no longer created ‘for’ the customer but ‘with’ the customer and by ‘incorporating the customer’s value creation into the system’ (Wikström, 1996, p. 9).

The understanding of how ‘value’ is generated is central to the understanding of co-creation and the development of new ways of understanding the marketing process. Normann and Ramírez (1993) talk of successful companies moving away from simply *adding* value to *reinventing* it[1] within a ‘value-creating system ... within which different economic actors, suppliers, business partners, allies, customers – work together to co-produce value’ (Normann & Ramirez, 1993, p. 66). The concept of a value-creating system recognises that products and services are the result of a complex series of activities, economic transactions and arrangements among stakeholders along with technical and organisational specialists (Normann & Ramirez, 1993). Rather than thinking of products and services in 2-dimensional and tangible terms Normann and Ramírez (1993, p. 68) reconceptualise them as ‘frozen activities, concrete manifestations of the relationships among actors in a value-creating system’. Value can no longer be conceived as occurring in sequential chains but in ‘complex constellations, the goal of business is not so much to make or do something of value for customers as it is to mobilize customers to take advantage of proffered density and create value *for themselves*’ (Normann & Ramirez, 1993, p. 69). The focus of activity is therefore shifting from the thing exchanged to one on the process of exchange. Competition is no longer centred on companies but the offerings that these companies can ‘co-create’ with customers (Ramírez, 1999), and, as these offerings increase in complexity, the relationships that are required to produce them do also (Normann & Ramirez, 1993). Customers now have a much

[1] Emphasis added

more ‘prominent role in the final value realisation’ and traditional roles of firm and customers are ‘becoming more complex and intertwined, and where the players have to be able to develop new collaborative competencies’ (Möller, 2006, p. 914). The shift in understanding outlined above is related to several related, but distinct concepts which have emerged over the last 30 years (see Figure 2-1) beginning with the recognition in the late 1970’s that customers could play a more participative role, developed through the 1980s with customers considered surrogate labour. The 1990’s saw the growth of technology allowing customers to further contribute to firm activities.

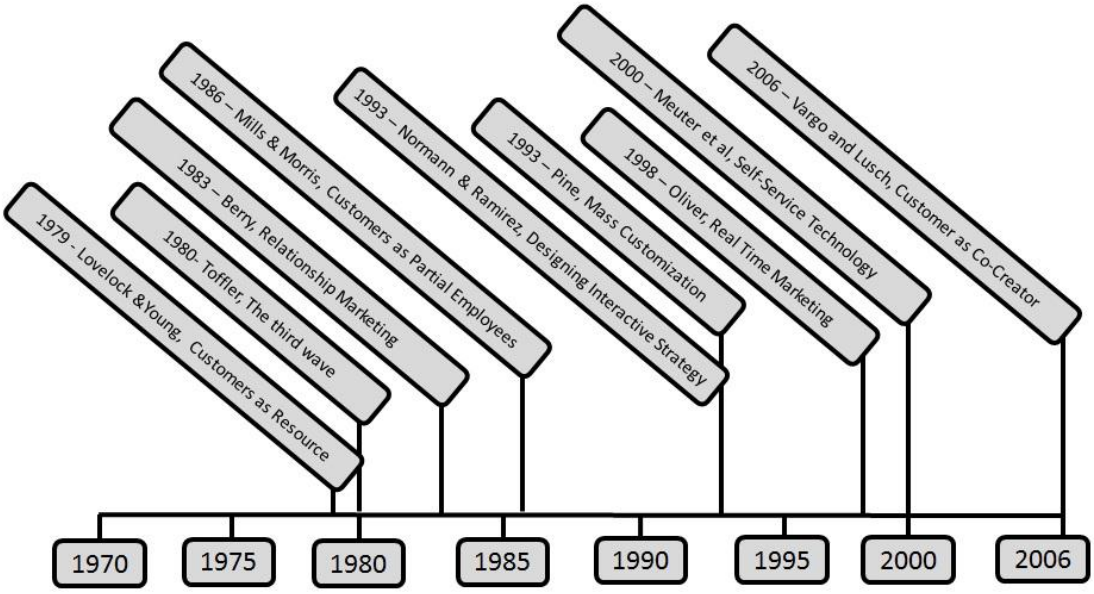

Figure 2-1 Precursory Concepts to Value Co-Creation

2.1.2 Customer Participation

The potential for customers to play a participative role was conceived in the 1970’s by authors such as Lovelock (1979) and developed throughout the 1980’s and 90’s in conjunction with the growth of the services marketing field (Bettencourt, 1997; Bowen & Jones, 1986; Czepiel, Solomon, & Surprenant, 1985; Larsson & Bowen, 1989; C. A. Lengnick-Hall, 1996; Schneider & Bowen, 1995). Customer participation research is largely represented by three streams (Dong, et al., 2008). Firstly, an economic rationale for increasing customer participation based on

potentially economic benefits by co-opting customers as labour substitutes (Larsson & Bowen, 1989; Lovelock & Young, 1979; Mills & Morris, 1986), an approach criticised by Bendapudi and Leone (2003) who identify a need to explore the impact of participation on customer satisfaction.

The second stream focuses on the management of customers, the use of employee management-like techniques (Bendapudi & Leone, 2003) and the potential benefits of this on perceived service quality through enhanced socialization (Claycomb, et al., 2001). Schneider and Bowen (1995) observe how businesses that involve customers consider them 'to be a part of the firm's human resources' (Schneider & Bowen, 1995, p. 85). In cases such as these customers adopt both customer and producer roles and firms adopt an alternative perspective of customers as an additional productive human resource available to the firm – partial employees - and manage performance on that basis (Bettencourt, 1997; Schneider & Bowen, 1995).

The last theme is concerned with motivation to co-create. Much of this theme centres on self-service technologies (Dabholkar & Bagozzi, 2002; Meuter, et al., 2005; Meuter, et al., 2000; Reinders, Dabholkar, & Frambach, 2008) and the importance of customer readiness variables and other motivational traits that stimulate trial.

Importantly, literature on customer participation suggests that as the level of participation increases, customer may become proportionally more committed to the co-creation process (Dong, et al., 2008; Wilson, Zeithaml, Bitner, & Gremler, 2008) and perceive higher service quality. So, the first step to understanding how perspectives have changed is recognising how the customer role has changed. In conjunction with this change was the growth of relationship marketing, essentially concerned with how, and more importantly how often, firms and customers interact and how these interactions might be best exploited.

2.1.3 Relationship Marketing

The roots of relationship marketing (RM) lie in moves to shift marketing from a transactionary approach focussed on customer attraction to a relational approach where attraction was an intermediate step and the primary objective was retention

and maintaining successful relationship exchange (Berry , 1983; Morgan & Hunt, 1994). Berry (1983, p. 25) defined RM as 'attracting, maintaining and – in multi service organisations – enhancing customer relationships', the core of RM was in interpersonal interaction between buyer and seller and that relationships grow over time through repeated exchange, building competitive advantage through the development of bonds and increased retention (Berry & Parasuraman, 1991). RM aims to build (and where appropriate terminate) relationships at a profit 'so that the objectives of all parties involved are met; and this is done by mutual exchange and the fulfilment of promises' (Grönroos, 1994, p. 9). Relationship marketing is normally operationalized through frequent contact with customers throughout the relationship through surveys and mail shots; formal feedback such as focus groups and other, informal methods such as comments and complaints (Oliver, Rust, & Varki, 1998)

Problems with relationship marketing stem perhaps from a lack of a common understanding, Harker (1999) points to 26 different definitions of the concept and Harker and Egan (2006) observe that there is no common *lingua franca* for RM. It is also argued that relationship marketing 'relationships' are in fact unidirectional with information largely flowing from customer to firm for use in databases (Oliver, et al., 1998):

> RM is often comprehended as a firmer grip on the customer, much like the fisherman's relationship to the fish; more sophisticated equipment and techniques make it less probable that the fish will get off the hook (Gummesson, 1994b, p. 9).

The relationship marketing process is, therefore, largely firm driven and therefore differs from value co-creation which requires greater input from consumers.

Relationship marketing is enabled by the increased 'functionality of electronic information services and their corresponding rapid decrease in costs' (Oliver, et al., 1998, p. 31). Technological growth underpins a general shift from RM to CRM (Customer relationship management) which has blurred the boundaries of RM (Vargo & Lusch , 2010). Relationship marketing is criticised from several other quarters, including questions over RM being justified in terms of the bottom line making the relationship analogy less believable, in short 'firms are more interested in the attraction of the relationship metaphor than in relationship marketing itself'

(Harker & Egan, 2006, p. 232) and relationships are more about improving 'marketing productivity through efficiency and effectiveness' (Mattson, 1997, p. 449). This has led to some academics advocating an alternative perspective where RM is viewed in the context of networks, and interactions (Gummesson, 1994a, 2004a).

Grönroos (2006, p. 299) recognises that through 'creating interactive contacts with customers during their use of goods and services, the firm develops opportunities to co-create value with them and for them'. This implies a stronger, more customer focussed, and relational approach. Service-centred models of marketing imply a need to 'develop close and trusting relationships to increase customer perceived value' (Matthing, Sanden, & Edvardsson, 2004, p. 480), when services are complex and have customised elements delivered over a series of encounters 'the relationship between the service provider and consumer is key' (Crosby, Evans, & Cowles, 1990; Dellande, Gilly, & Graham, 2004, pp. 78-79). Relationship marketing, therefore, adds a further dimension by recognising the benefits of creating longer term relationships with customers but criticised for a focus on ensuring repeat transactions as opposed to meaningful relationships and an underlying focus on performance enhancement (Palmatier, 2008). Other precursors to co-creation focus on technological developments namely mass customization and real-time marketing.

2.1.4 Mass Customization

The provision of individualized products (without associated cost and complexity) is made possible through technological breakthroughs and new management approaches encompassed in mass customization (Pine II, 1993):

> Mass customization ... [permits] the production of individual physical products at costs relatively consistent with the earlier production of mass products at scale (Oliver, et al., 1998, p. 30).

By combining technological improvements and making better use of feedback loops, products can be improved over time (Oliver, et al., 1998) and customers benefit from more choice in their purchases. A combination of the low unit costs of mass production processes with the flexibility of individual customization can have

the potential for considerable operational and customer benefits such as increased loyalty, market leadership, productivity and profitability (Hart, 1995).

Gilmore and Pine (1997) developed four variations on mass-customization. One of these is referred to as ‘collaborative customization’ which sees firm and customer working together to satisfy the needs of the customer via a system that allows an efficient operationalisation of exact wants. The idea of collaborative processes was identified by Udwadia and Kumar (1991) who use the term co-constructors to describe the process of development where customer ideas could be transformed into products and services through collaboration.

Technological developments enable firms to customise easily and without a large reduction in efficiency as a result the ‘transition of manufacturing from mass-production to mass-customisation and the transition of customers from service recipients to service co-producers are closely intertwined’ (Kalaignanam & Varadarajan, 2006, p. 170). Other authors highlight the relevance of mass-customization to firm-customer collaboration (Meuter, et al., 2000; Normann & Ramirez, 1993, p. 68) and Ramirez (1999) observes that the growth of technological innovation makes value creation more interactive and synchronous. Mass-customization allows customers to be more involved in the purchase of both goods and services through technological advances but centres on choosing amongst predetermined options (choosing the colour of a car or the technical specifications of a laptop) and therefore has limitations. Real-time marketing offers an ‘entirely new and revolutionary paradigm in marketing’ and merges relationship marketing and mass customization with goods and services generated ‘uniquely suited to individual customers and their evolving needs’ (Oliver, et al., 1998, p. 36). Real-time marketing provides a sequential link ‘from mass marketing to large segment marketing, niche marketing, relationship marketing, and marketing to segments of one’ (Oliver, et al., 1998, p. 30). Real-time marketing offers a broad hint in the direction of co-creation as it facilitates the creation of ‘the ultimate customer solution: products that uniquely fit individual needs and constantly and dynamically change to meet the on-going evolution of those needs’ (Oliver, et al., 1998, p. 30). Mass customisation and real-time marketing move closer to concepts of cocreation and the final concept which is

both a precursor and a component of value co-creation (see section 2.3) is that of co-production.

2.1.5 Customers as Co-producers

Co-production and customer participation have similarities in that both are concerned with mobilizing customers to undertake altered roles within the transaction process. Co-production has been the subject of a considerable amount of conceptual and empirical study (see Auh, et al., 2007; Bendapudi & Leone, 2003; Etgar, 2006, 2008; Kalaignanam & Varadarajan, 2006; Lusch , Brown, & Brunswick, 1992; Oliver, 2006; Prahalad & Ramaswamy, 2000; Sweeney, 2007) which highlights how customers are increasingly socialized into acting as co-producers everyday whether it be through self-service (e.g. an ATM machine) or by cooperating with service providers in the production and consumption process (e.g. healthcare). Co-production benefits customers who by their nature prefer the 'do-it-yourself' option even when an interpersonal option is available and time-saving and monetary incentives are controlled for (Bateson, 1985). Meuter et al (2000) observed that more than half of all bank transactions were now conducted online (this figure will no doubt be much higher today). This can be compared with the growth in online shopping, petrol pay at pump, travel purchases, airline self-check-in, and supermarket self-scanning. All these activities have Self-service technologies (SST) in common and require customers to take a participative role, independent of direct firm input (Meuter, et al., 2005; Meuter, et al., 2000). Meuter et al's (2000, p. 69) studies identified that SSTs had the ability to 'delight' customers giving them the ability to solve problems and co-create services resulting in customers 'being amazed at what they can accomplish by themselves' suggesting that value for customers is enhanced through co-production.

Alongside mainly 'customer participation' forms of co-production are other forms where customers co-produce the core offering itself. Normann and Ramirez (1993) cite Swedish based, global furniture giant IKEA whose business success cannot simply be attributed to a lower cost base and low prices. Instead IKEA is able to:

> Keep costs down because it has systematically redefined the roles, relationships, and organizational practices of the furniture business. The result is an integrated business

> system that invents value by matching the various capabilities of participants more efficiently and effectively than was ever the case in the past (Normann & Ramirez, 1993, p. 67).

By mobilizing customers to adopt enhanced roles (product assembly, delivery); through the absorption of a 'script'; the provision of tools (pencils, tape, and notepaper) and a carefully designed store layout IKEA 'wants its customers to understand that their role is not to *consume* value but to *create* it' (Normann & Ramirez, 1993, p. 67). This approach differs from customer participation in that co-production becomes central to the success of the organisation not simply an opportunity to co-opt customers.

Co-production studies play an important role in building understanding of value co-creation by challenging the fundamental nature of value creation and 'from a management and research perspective...requires that we consider a multiplicity of values, held in relations with multiple actors' (Ramírez, 1999, p. 55). Co-production, in both individual and community contexts, can serve to improve business performance and support innovation (Gibbert, Leibold, & Probst, 2002; Rowley, et al., 2007) and, with customers also acting as partial employees (Evans, Stan, & Murray, 2008), reduces operational costs by undertaking tasks normally associated with service employees. The limitations of the concept lie in its focus on engagement within a production process, in other words during the service encounter and this limits its viability as a universal term for understanding the changing nature of interactions between a firm and its customers. The final section considers the impact of these concepts on the firm and its customers.

Despite close association between the precursory concepts (such as that between relationship marketing, mass customisation and real-time marketing) none of the concepts are unified by one conceptual frame of reference. However, all concepts emerge against a backdrop of change within the marketing discipline and calls for new perspectives on the marketing economy. Shostack (1977) made an early call for the 'breaking free' of services marketing from product marketing this was soon added to by other authors critical of marketing's reliance on a microeconomic maximisation paradigm (Webster, 1992) or the 'four P's' which Day and Montgomery (1999) state may be no more than a handy framework. Rust (1998)

attempted to redefine the role of services by suggesting the services research is not a niche field but the dominant and defining part of the business environment. Other authors suggested the need for a paradigm shift (Gummesson, 1995; Achrol & Kotler, 1999; Sheth &Parvatiyar, 2000) and it is from this movement for change and the various antecedents discussed above that a new dominant logic for marketing (Vargo & Lusch, 2004a) emerges. Service Dominant Logic (S-D Logic) presents a paradigm-like shift away from conventional marketing theory concerned with the marketing of goods and services (Gummesson, et al., 2010; Vargo & Lusch, 2004a). S-D Logic was introduced with the purpose of 'illuminating the evolution of marketing thought toward a new dominant logic' and is represented by: a move from a goods dominant view in which tangible output and discrete transactions were central, to a service dominant view, in which intangibility, exchange processes, and relationships are central (Vargo & Lusch, 2004a, p. 2).

2.2 Service-Dominant Logic

2.2.1 Roots

Service-Dominant Logic (S-D logic) is, by and large, the product of a Journal of Marketing paper (Vargo & Lusch, 2004a) a subsequent book (Lusch & Vargo, 2006b) and further development in a special issue of the Journal of the Academy of Marketing Science (Vargo & Lusch, 2008b). The essence of service-dominant logic is that:

> Service provision is the fundamental purpose of economic exchange and marketing – that is, service is exchanged for service. We believe this logic is applicable not only to markets and marketing, but also to society (Lusch & Vargo, 2006a, p. xvii).

Vargo and Lusch (2004a) outline the various schools of thought that have influenced marketing (see Table 2-1) and demonstrate how marketing has evolved from economic roots to encompass more social elements. S-D Logic represents an 'evolution, rather than a revolution' of marketing (Gummesson, et al., 2010, p. 10) and 'a broader perspective of markets compared with traditional perspectives that focus on the exchange of goods' (Chandler & Vargo, 2011, p. 37).

Timeline	Stream of Literature	Fundamental ideas or propositions
1800-1920	**Classical and Neoclassic Economics**	• Value embedded in 'matter' through manufacturing • Goods become commodities • Wealth in society created by acquisition of stuff
1900-1950	**Early/Formative Marketing**	• Commodities/institutions/functions • Focus on transaction and output • Adding value to commodities • Marketing provides utility
1950-1980	**Marketing Management**	• Marketing mix, optimizes performance • Value 'determined' and 'embedded' • Focus on 'satisfying' customers
1980-2000+	**Marketing as a Social and Economic Process**	• Services marketing • Market orientation • Relationship marketing • Quality management • Value and supply chain management • Network analysis

Table 2-1 Schools of Thought Influencing Marketing based on (Vargo & Lusch, 2004a, p. 3)

Of fundamental importance to S-D Logic, therefore, is a shift from what is termed a 'goods-dominant' to a service-dominant logic (Vargo & Lusch, 2008b). This is underpinned by six differences between the approaches (see Table 2-2). Some key highlights of the change in approach are: the change from exchanging for goods to exchanging service for service; the role of goods as transmitters of operant resources rather than an end product; the role of the customer in the process as a co-creator of value and as an operant resource (active participant) rather than operand resource (to be segmented, targeted etc.) (Lusch , Vargo, & O'Brien, 2007; Merz, He, & Vargo, 2009); and the determination of value by the end user in use, not the firm in production and; wealth being the result of gaining operant rather than operand resources.

Resources	Goods-Dominant	Service-Dominant
Primary Unit of Exchange	People exchange for goods. These goods serve primarily as *operand resources*	People exchange to acquire the benefits of specialized competences (knowledge and skill) or services. *Operant Resources*
Role of Goods	Goods are *operand resources* and end products. Marketers take matter and change its form, place time and possession	People exchange to acquire the benefits of specialized competences (knowledge and skill) or services. *Operant Resources*
Role of Customer	The customer is the recipient of goods. Marketers do things to customers (segment, penetrate, distribute, promote) customer is an *operand resource*	The customer is a co-creator of service. Marketing is a process of interaction with the customer. Customer is primarily an *operant resource* (occasionally *operand)*
Determination and meaning of Value	Value is determined by the producer. It is embedded in goods and defined in terms of 'exchange-value'	Value is perceived and determined on the basis of *value in use*. Value results from beneficial application of resources. Firms make value 'propositions only'
Firm-Customer Interaction	The customer is an *operand resource.* Customers are acted upon to create transactions with resources.	Customers are active participants in relational exchanges and co-production
Sources of economic growth	Wealth is obtained from surplus tangible resources and goods. Wealth consists of owning, controlling and producing operand resources	Wealth is obtained through the application and exchange of specialized knowledge and skills, representing the right to future use of *operant resources*

Table 2-2 Role of operand and operant resources in distinguishing goods-dominant from service-dominant logic based on (Vargo & Lusch, 2004a, p. 7)

S-D Logic challenges marketing to become a core competency of a firm not just a management function (Vargo & Lusch, 2004a) where firm aims should not be to sell units of output but provide customised services measured by units of satisfaction (Vargo & Lusch, 2004a). S-D Logic suggests that production and consumption are parts of continuous process rather than discrete activities and 'superordinates service (the process of providing benefit) to products (units of output that are sometimes used in the process)' (Lusch , et al., 2007, p. 6).

Customers are not recipients of value but heavily involved in the value creation process (Etgar, 2006) as operant resources (i.e. those that act upon operand resources – principally employees and customers) and operand resources themselves (resources that are acted upon to produce an effect – products, technology etc.) (Vargo & Lusch, 2004a). The logic or 'pre-theory' as it has also been termed (and how it will be discussed in this chapter) (Vargo, 2007) was illustrated in the original S-D Logic paper (Vargo & Lusch, 2004a) through eight foundational premises (FPs) which form the cornerstones of the pre-theory. The FPs were subject to further development in the 2006 text-book on S-D Logic (Lusch & Vargo, 2006b) and one more FP was added (Lusch & Vargo, 2006c), in 2008 a special issue of the Journal of the Academy of Marketing Science was published in which Vargo and Lusch (2008b) provide further elaboration and add a final FP. These foundational premises are summarised in Table 2-3 and are discussed in the following section.

2.2.2 S-D Logic Foundational Premises

FP's	Current Foundational Premise	Original foundational premise	Comment/explanation
FP1	Service is the fundamental basis of exchange	**The Application of Specialized Skills and Knowledge is the Fundamental Unit of Exchange**	The application of operant resources (knowledge and skills), 'service,' as defined in S-D logic, is the basis for all exchange. Service is exchanged for service
FP2	Indirect exchange masks the fundamental basis of exchange	**Indirect Exchange Masks the Fundamental Unit of Exchange**	Because service is provided through complex combinations of goods, money, and institutions, the service basis of exchange is not always apparent
FP3	Goods are a Distribution Mechanism for Service Provision		Goods (both durable and non-durable) derive their value through use – the service they provide
FP4	Operant resources are the fundamental source of competitive advantage	**Knowledge is the fundamental source of competitive advantage**	The comparative ability to cause desired change drives competition
FP5	All economies are service economies	**All Economies are Services Economies**	Service (singular) is only now becoming more apparent with increased specialisation and outsourcing
FP6	The customer is always a co-creator of value	**The Customer is Always a Co-Producer**	Implies value creation is interactional
FP7	The enterprise cannot deliver value, but only offer value propositions	**The Enterprise Can Only Make Value Propositions**	Enterprises can offer their applied resources for value creation and collaboratively (interactively) create value following acceptance of value propositions, but cannot create and/or deliver value independently
FP8	A service-centred view is inherently customer oriented and relational	**A Service-Centred View is Customer Oriented and Relational**	Because service is defined in terms of customer determined benefit and co-created it is inherently customer oriented and relational
FP9	All social and economic actors are resource integrators	**Organisations exist to integrate and transform micro-specialised competences into complex services that are demanded by the marketplace**	Implies the context of value creation is networks of networks (resource integrators)
FP10	Value is always uniquely and phenomenologically determined by the beneficiary		Value is idiosyncratic, experiential, contextual, and meaning laden.

Table 2-3 Service Dominant Logic foundational premise modification and additions (Vargo & Lusch, 2008b)[2]

[2] FP 1 – 8 Were introduced in the 2004 Journal of Marketing Paper (Vargo & Lusch, 2004a), FP 9 was added in the 2006 Textbook (Robert F Lusch & Vargo, 2006b), FP10 was added and others updated in the 2008 Journal of the Academic of Marketing Science special issue (Vargo & Lusch, 2008b).

FP1: Service is the fundamental basis of exchange

S-D logic is concerned with the exchange of skills and knowledge rather than tangible goods with some kind of embedded value (Vargo & Lusch, 2004a) and represents a departure from economics based theories of marketing. Value instead becomes a benefit of the exchange of skills and service. In this FP Vargo and Lusch highlight a philosophical shift away from the work of economists such as Smith (1904) whose view of the relationship between skills and exchange was concerned only in that which produces tangible goods that are then exported and contribute to wealth generation (Vargo & Lusch, 2004a). Vargo and Lusch use the work of Bastiat (1860) and Mill (1929) to introduce the key S-D Logic premise that *service* is exchanged for *service* and humans create value by using their skills as *operant* resources to transform matter into utility (Vargo & Lusch, 2004a).

FP2: Indirect exchange masks the fundamental basis of exchange

Vargo and Lusch posit that the industrial revolution brought about a change in the way customer and provider interacted. Rather than exchanging skills and knowledge directly with a source producer, industrialised societies introduced bureaucracy and vertical marketing (Vargo & Lusch, 2004a). Industrialised work practices and micro-specialisation of tasks created systems where workers interact with internal rather than external customers and the traditional exchange of skills and services was largely lost (Vargo & Lusch, 2004a). This problem is not unique to manufacturing organisations and service firms providing intangible products in a 'service industry' are not necessarily customer focussed and are also subject to indirect exchanges masking the fundamental unit of exchange (Vargo & Lusch, 2004a).

FP3: Goods are a Distribution Mechanism for Service Provision

In the new dominant logic 'goods are not the denominator of exchange; the common denominator is the application of specialized knowledge, mental skills, and, to a lesser extent, physical labour (physical skills)' (Vargo & Lusch, 2004a, p. 8). The essence of this FP is supported by other authors within the service marketing field (Gummesson, 1995; Prahalad & Ramaswamy, 2000) who recognise that goods are essentially tangible objects which can transfer knowledge, skills and services. The importance of the physical product is not the product itself but the services it can

render (Vargo & Lusch, 2004a). Goods can also act as a means through which higher end states of satisfaction can be reached through the experiences they facilitate (Pine & Gilmore, 1999).

FP4: Operant resources are the fundamental source of competitive advantage

In S-D Logic knowledge is an operant resource, the 'foundation of competitive advantage and economic growth and the key source of wealth' (Vargo & Lusch, 2004a, p. 9). In S-D Logic knowledge is endogenous. By engaging in competition and receiving information through profits organisations enter a knowledge-discovery process. It is only through the application of this knowledge through the supply chain that a firm is able to make effective value propositions to customers (Vargo & Lusch, 2004a). This FP draws together various theories of marketing which: highlight the importance of knowledge types in industrial development (Mokyr, 2002); the endogenous role of knowledge in competitive theory (Barabba, 1996; Hunt, 2000) and the importance of knowledge in the value chain (Normann & Ramirez, 1993).

FP5: All economies are service economies

S-D logic proposes that service economies have always been present and it is only through increased specialisation of firms that services are more apparent (Vargo & Lusch, 2004a) as opposed from manufacturing type firms. Each new economic era is highlighted 'by the increased refinement and exchange of knowledge and skills, or operational resources…services and the operant resources they represent have always characterised the essence of economic activity' (Vargo & Lusch, 2004a, p. 10).

FP6: The customer is always a co-creator of value

Traditional manufacturing perspectives viewed customer and provider as separated to maximise efficiency. The service centred view, with its focus on continuous processes, ensures that the customer is always involved in the co-creation of value. Whilst goods provide services for customers (FP_3), customers must 'learn to use, maintain, repair and adapt the appliance to his or her unique needs, usage situation, and behaviours' (Vargo & Lusch, 2004a, p. 11). Customers continue the marketing process by consuming products and creating value in their purchases. The

shift to S-D logic suggests a move towards integration, customisation and relationship marketing by designing 'evolving offerings that meet customers' unique, changing needs' (Vargo & Lusch, 2004a, p. 11). Recognising a weakness in the goods dominant view expressed this FP stating was changed to *the customer is always a co-creator of value* (Vargo & Lusch, 2008b). Although this change included the proviso that co-production is embedded within co-creation. The use of the co-creation in term in S-D Logic is central to this thesis and discussed in section 2.2.3.

FP7: the enterprise cannot deliver value, but only offer value propositions

S-D logic opposes the view that value is embedded into a good upon production. Rather, value is only produced when a good is sold or consumed (Vargo & Lusch, 2004a). Enterprises do not create value, only value propositions; 'the customer must determine value and participate in creating it through the process of co-production' (Vargo & Lusch, 2004a, p. 11). Goods have only value potential and customers must be able to understand how the value potential can be translated to meet their needs through co-production. The role of value in S-D Logic is an extension of the work of Gummesson (1998) and Grönroos (2000) who have both re-evaluated the notion that value is somehow embedded into a good during production.

FP8: A service-centred view is inherently customer oriented and relational

A service centred approach is focussed not on producing *for* the customer but *with*[1] the customer. In S-D logic 'interactivity, integration, customisation and co-production are the hallmarks of a service centred view and its inherent focus on the customer and the relationship' (Vargo & Lusch, 2004a, p. 11). In S-D logic the relationship with customers is fundamental and transcends the transaction itself. FP8 was developed by combining several complementary views on marketing including the notion that profits come from satisfaction rather than units sold (Kohli & Jaworski, 1990; Narver & Slater, 1990) and the emphasis on relationships and interaction in services marketing (Gummesson, 1998). In S-D Logic the customer is involved in the co-creation of value and is always the determinant of that value.

[1] Emphasis added

Similarly, whatever the duration, there is always a relational aspect to any transaction (Vargo & Lusch, 2008b).

FP9: All social and economic actors are resource integrators

This FP was added by Vargo and Lusch (2006) in a subsequent book chapter in order to provide a 'framework for a theory of the firm' (Vargo & Lusch, 2006, p. 53) and recognise the increasingly specialisation of service providers and the role of the organisation in packaging these micro-specialism's into services. In recognition of the work of Arnould (2006) this FP was refined to recognise the role that individuals and households play in resource integration (Vargo & Lusch, 2008b). Actors will create value unique to their context through the process of integrating their own resources (Arnould, Price, & Malshe, 2006; Baron & Warnaby, 2011) and those of their own networks (Vargo & Lusch, 2011a). Baron and Warnaby (2011, p. 211) suggest that individuals possess stocks of operant resources which Arnould et al (2006) classify in terms of physical, social and cultural. Physical resources would include energy, emotions and strength and levels of physical resources which 'may prompt the customer to adopt different strategies in employing their own and the firms [resources]' (Arnould, et al., 2006, p. 93). Social resources would include family relationships, involvement with brand communities or customer tribes and commercial friendships, customers 'deploy these social resources to others which affects word of mouth ...[and] outcomes for other consumers such as brand choice' furthermore 'participation in co-consuming groups provides and reinforces consumers' operant resources' (Arnould, et al., 2006, p. 94). Finally, cultural resources include specialized knowledge and skills, life expectancies and histories and imagination. Arnould et al (2006, p. 94) note that customers with 'large endowments of cultural operant resources tend to be oriented around abstraction, subjectivity and self-expression' while those with smaller amounts are 'oriented around mastering material constraints on consumption aspirations, functionality, and tradition'.

The importance of the resource integration role to firms is suggested by Lusch and Webster (2011, p. 132) who stress that 'to be truly customer centric, the firm has to think not about optimizing the firm and its activities but how to support customers in

their resource integration and value cocreation activities' suggestive that some customers may not possess the resources needed by the firm. Furthermore Arnould et al (2006, p. 95) suggest that the 'type, quantity and quality of customer operant resources brought to an exchange process affect the value customers seek from the exchange and the roles they expect themselves and firms to play in exchange'.

FP10 Value is uniquely and phenomenologically determined by the beneficiary

This FP was added to indicate the extent of individuality in the value generation process. Phenomenological suggests the individual nature of value determination without suggesting prior knowledge of the service or product involved (Vargo & Lusch, 2008b) and indicates a contextual nature to co-creation. Chandler and Vargo (2011, p. 38) identify that the contexts in which actors are embedded will alter how they 'draw upon one another as resources'. Contexts define the actors within them and value-in-use has more recently been referred to as value-in-context for this reason (Chandler & Vargo, 2011; Merz, et al., 2009; Vargo, 2008; Vargo, Maglio, & Akaka, 2008).

The customer within S-D Logic is central with FP's 4, 6, 8, 9, 10 all related to the changing role (or at least a change in understanding of the role) of the customer within marketing. FP4 focuses on knowledge as the key source of competitive advantage knowledge that can be gained from the customer as well as through other sources of feedback. FP6 is central to this thesis and is discussed in the following section. FP8 provides an alternative perspective to 'relationship' marketing suggesting that relationships are a positive state rather than a normative goal for firms and addresses some of the criticisms of RM which were introduced earlier in this chapter. The resource integrator role (FP9) is also important to consider for this thesis as if customers do not have the appropriate resources (in the form of physical, cultural and social (Arnould, et al., 2006) then the value-in-context that a customer is able to derive may suffer, this suggests a need for educating the customer within the service encounter particularly if, as a co-creator or co-producer, the expectations of involvement is higher. FP10 relates to the individual nature of value creation (given FP6 and 9) leading to the notion of value in context derived by customers (Chandler

& Vargo, 2011). The following section offers a more in-depth analysis of co-creation from the S-D Logic perspective.

2.2.3 Co-Creation and the customer within Service Dominant Logic

S-D Logic places a heavy emphasis on operant, over operand, resources. Vargo and Lusch (2008c) argue that a goods-dominant approach sees firms routinely undervalue operant resources in the form of customers. Customers, in the S-D Logic world, are not simply operand resources to be 'segmented, targeted, and manipulated through judicious manoeuvring of the marketing mix' but 'endogenous to the value creation process' making them 'along with employees, the central assets of the firm' (Vargo & Lusch, 2008c, p. 33). Instead, firms take on facilitating roles, supporting and serving customer value co-creation rather than vice-versa. In S-D logic producer and customer roles are indistinct, value is always co-created 'jointly and reciprocally, in interactions among providers and beneficiaries through the integration of resources and application of competences' (Vargo, et al., 2008, p. 254). The notion of exchange in S-D logic is encapsulated in the notion of service for service. Chandler and Vargo (2011, p. 41) highlight 'how each actor draws on its resource and competences to directly serve another actor... a reciprocal dyad because both actors service each other, which is an important aspect of value co-creation because both actors are active participants in the exchange process'.

Despite more recent clarification, there is some confusion evident in some source literature about the nature of value co-creation within S-D logic. The original FP6 in the 2004 paper stated that *the customer is always a co-producer* and, according to the 2008 update of S-D Logic:

> 'As we have further discussed and elaborated, our view of S-D logic since 'Evolving... was published, we have caught and corrected some of the more critical lexicographic slips that had become apparent. Examples are the change of FP6 from 'The customer is always a co-producer' to 'The customer is always a co-creator of value' (Vargo & Lusch, 2008b, p. 2).

One of the purposes of the 2008 're-launch' of S-D Logic was an opportunity to react to and address many of the comments, supportive statements and recommendations made about S-D Logic in the commentaries on S-D Logic published in the original Journal of Marketing issue (Day et al., 2004), the

contributions made by some 50 authors to the S-D Logic text book (Lusch & Vargo, 2006b) and subsequent special issues (Aitken, Ballantyne, Osborne, & Williams, 2006). Within the article Vargo and Lusch (2008b, p. 2) recognise that:

> The goods-centric nature of the language of commerce can be seen in the core lexicon: 'product,' 'production,' 'goods,' 'supplier,' 'supply chain,' 'value-added,' 'distribution,' 'producer,' 'consumer,' etc. This foundational lexicon reflects more than just words available to talk about goods; it reflects an underlying paradigm for thinking about commerce, marketing, and exchange in general. This presents a problem for any attempt at discussing and describing a counter paradigmatic view, such as S-D logic. Often, there are no generally acceptable, counter-paradigmatic, or even neutral, words available. Thus, it often becomes convenient, if not necessary, to employ a G-D logic lexicon to describe an S-D logic foundation.

However, within the seemingly simple lexicographic change to FP6 lies a somewhat more complex issue and Lusch and Vargo discuss 'Value cocreation' as a hypernymic term (Vargo, 2008) encompassing two distinct components:

> The most encompassing of these is the *cocreation of value*. This concept represents a rather drastic departure from G-D logic, which views value as something that is added to products in the production process and at point of exchange is captured in value-in-exchange (i.e. price). S-D Logic, however, argues that value can only be created with and determined by the user in the 'consumption' process and through use or what is referred to as value-in-use. Thus, it occurs at the intersection of the offerer and the customer over time either in direct interaction or mediated by a good… [*Co-production*] involves the participation in the creation of the core offering itself. It can occur through shared inventiveness, co-design, or shared production of related goods, and can occur with customers and any other partners in the value network (Lusch & Vargo, 2006c, p. 284).

Co-creation of value, therefore, is ever present to some degree, in all transactions. FP6 becomes a positive, rather than a normative, statement reinforcing this (Vargo & Lusch, 2008b). Co-production becomes a distinct concept but nested within co-creation (Lusch & Vargo, 2006c; Lusch , et al., 2007) suggesting that aspects of value co-creation are, to varying degrees, a target, allowing firms to engage more closely and collaborate with customers. The umbrella term used to describe value co-creation and the recognition that many terms are understood in 'goods-dominant' language is important for this dissertation and will be revisited within section 2.4.

Using the logic of Vargo and Lusch firm's cannot *encourage* customers to be co-creators; customers *are* co-creators. Despite Vargo and Lusch's attempt to clarify the meaning of value co-creation it is likely that some authors in the area will advocate a more *collaborative* approach to value co-creation (more co-production than

cocreation perhaps), as opposed to S-D Logic's *phenomenological* 'cocreation of value' (see Moeller (2008) and the response by Vargo (2008) for an example of conceptual confusion surrounding cocreation in S-D Logic).

Value co-creation commences with value propositions made by the supplier and customers determine value only when the product or service is used or consumed. Cocreation of value is desirable as it affords organisations the opportunity to better understand their product or service from the perspective of the customer and identify their needs and wants (Lusch & Vargo, 2006b).

The implication for relationships between firms and customers is clear, they are to be cherished and invested in. In fact, S-D Logic obviates the need for a specific customer orientation (Vargo & Lusch, 2008c) as the value-in-exchange aspect of S-D Logic 'demands a customer orientation' (Vargo & Lusch, 2008c, p. 33). S-D Logic also implies relationship marketing, not in simply in terms of repeat business but in terms of interactivity and collaboration. The relational approach is, therefore, positive within a service approach (as opposed to normative) (Vargo & Lusch, 2008c). However the emphasis played on the contribution of the customer suggests that 'a shift is needed in the way that organisations elicit value from customers' (Macdonald, et al., 2011, p. 672).

There are many positive reactions to S-D Logic from those from broadly within the marketing domain (Day, et al., 2004). Some authors (Dong, et al., 2008, p. 123; Etgar, 2008) highlight the important of changes in our understanding of value that S-D Logic has brought and the recognition of the changed role of customers. Maglio and Spohrer (2008) assess the value of S-D logic in provide a potential philosophical foundation for service science (the study of service systems). Other authors' correctly identify that 'empirical work in the areas of customer involvement and co-production (i.e. co-creation) and network marketing highlight that S-D marketing practice is still in its infancy' (Brown , 2007; Winklhofer, Palmer, & Brodie 2007, p. 81). Whilst Vargo and Lusch are identified as custodians of S-D logic in recent papers (Gummesson, et al., 2010; Lusch & Vargo, 2011; Vargo & Lusch, 2011b) they have attempted to open out the debate and clarify that they:

> Do not own S-D logic; we view it as open source and ultimately will need the active support of a community of scholars co-creating, refining and advancing it, if it is to move forward (Lusch & Vargo, 2011, p. 1304).

To continue it is necessary therefore, to attempt to produce a conceptualisation of value co-creation one which brings together the many disparate, semantic and conceptual perspectives into a workable definition and the following section explores the various perspective on co-creation, introduces a definition and considered how it impacts on design, process and also explores the contexts within which both firms and customers might benefit from co-created activity.

2.3 Value Co-Creation

Outside of S-D Logic, value co-creation (in various semantic guises) appears with increasing frequency within academic journals and conferences (Frow, Payne, & Storbacka, 2010; Gummesson & Mele, 2010b; Horbel, Woratschek, & Popp, 2010; Hoyer, et al., 2010; Kohler, Hautz, Matzler, & Fuller, 2010; Minkiewicz, et al., 2010; Schau, et al., 2009; Sheth & Uslay, 2007; Zwick, et al., 2008). The importance of co-creation as a representation of value generation taking place between customers and organizations is growing, evident in its status as a research priority for both the Science of Service (Ostrom, et al., 2010) and also by the Marketing Science Institute (MSI). Generating a definition of co-creation and attempting to build consensus between views requires discussion of not only the concept itself but also of other closely related concepts, prosumption, customer knowledge management, co-production and solution selling. The terms co-exist in some papers and in some cases appear mutually exclusive (Ramírez, 1999; Rowley, et al., 2007; Wikström, 1996). As a result these alternative terms will be introduced and differentiated from the construct central to this thesis.

2.3.1 Defining Co-Creation

Prosumption

The term prosumption (an amalgamation of production and consumption) is widely attributed to Toffler (1980) who, argues that prosumption was predominant in pre-industrial society until the industrial revolution drove a wedge between production and consumption components, mirroring FP2 of S-D Logic (Vargo & Lusch, 2004a). Ritzer (2010) notes the recency and importance of prosumption and crucially identifies similarities with Prahalad and Ramaswamy's work on co-creation (2004b). Zwick et al (2008) refer to value co-creation and prosumption as the same concept. Also noteworthy is Ritzer's (2010) discrimination between 'traditional prosumers' (those who clear their own tray in fast food restaurants) and new forms of prosumption particularly those related to Web 2.0 platforms (e.g. Facebook, Twitter and Amazon). This suggests a relationship not dissimilar to that identified by Vargo and Lusch (2006c) between co-creation of value and co-production. Given the focus

of this dissertation on both firm and customer value co-creation activities using terms like prosumption is likely to confuse the main aim of the thesis, and although there may be cause to explore how firms choose to engage with the communities of prosumers who engage with web 2.0 type platforms (Dholakia, Blazevic, Wiertz, & Algesheimer, 2009; McAlexander, Schouten, & Koening, 2002; Rowley, et al., 2007; Schau, et al., 2009) the similarities identified between value co-creation and prosumption are such that terms can be conflated.

Customer Knowledge Management

Customer Knowledge management (CKM) as outlined by Gibbert, Leibold, and Probst (2002, p. 460) is concerned with 'gaining, sharing, and expanding the knowledge residing in customers, to both customer and corporate benefit. It can take the form of prosumerism, mutual innovation, team-based co-learning, communities of co-creation, and joint intellectual property (IP) management' see Table 2-4 for descriptions of these concepts (noting the considerable conceptual overlap). Key to a successful CKM strategy is that managers must focus on the knowledge residing in the customer rather than knowledge about the customer (Gibbert, et al., 2002).

CKM Style	Description
Prosumerism	Essentially an extension of co-production with the customer being given opportunities to create their own value (e.g. IKEA)
Team Based Co-Learning	Addresses the benefits associated with building team-based value chain learning relationships utilizing customer knowledge (e.g. Amazon)
Mutual Innovation	Focuses on the role customer play in the development of new and innovative products and services
Communities of Co-Creation	Where customer groups with expert knowledge can work together over extended periods to create and share knowledge (MS beta testing)
Joint Intellectual Property	Probably the most intense involvement between customer and corporation with firms essentially being 'owned' by customers. Customer success equals firm success.

Table 2-4 Types of CKM based on (Gibbert, et al., 2002, pp. 464-466)

The concepts included by Gibbert et al (2002) have clear overlap with value co-creation as outlined in this chapter. Managing customer knowledge, involvement in the activities of a firm (to varying degrees) and a contribution to the creation of value through relationally focussed interactions are central to a S-D Logic view of Value

co-creation and, therefore, CKM as a discrete concept is assumed to be a encompassed by value co-creation in this thesis.

Co-Production

The customer role as final adjudicator of any new product or service, and thereby its success, is discussed by Kristensson et al (2002) who conceive co-producing customers as co-innovators in new product or service development and a source of profitable ideas. This view moves beyond basic harnessing of abilities in production or allowing customer to self-customise to recognizing the important inputs customers can have to the work of an organisation.

Wikström (1996) approaches co-production from the customer perspective and attempts to relate the concept to experience and knowledge gained from industrial markets. Wikström defines co-production as 'buyer-seller social interaction and adaptability with a view to attaining further value' (Wikström, 1996, p. 10) and is concerned with how conceiving the customer as a producer affects exchange where:

> The interaction between the parties should generate more value than a traditional transaction process, during which seller and buyer meet briefly, exchange finished products and services and then go their separate ways (Wikström, 1996, pp. 6-7).

Wikström (1996, p. 11) also suggests that a business logic involving co-production 'pre-supposes a very much longer relationship between buyer and seller, and a highly refined distribution of roles'. Deepening relationships benefit firms who acquire more knowledge of their customers allowing them to adapt quicker and can make interactions more efficient and speed up new product/service design. However, when Wikström's paper was published he notes that co-production in customer markets was 'limited to interacting and adapting, resulting in customized offerings' and that:

> Given the programmed procedures for interacting and the lack of channels back into the company, very little learning – adaptive or generative – is likely to accompany the interaction. This appears to be the case not only in design and production, but in after –sales activities as well' (Wikström, 1996, p. 16)

Ramírez (1999) recognises that co-production has a long intellectual history but it is only through socio-technical breakthroughs that it has been realised in practice. Ramírez (1999, p. 55) observes that in co-production 'it is co-produced offerings`,

not the ‘business unit’ actors`, which become the central unit of (competitive) analysis’. This view resonates strongly with S-D Logic and reinforces the changing roles within the customer firm relationship. Co-production shares some similarities with value co-creation but does perhaps have goods dominant connotations (discussed in a later section). Co-production is argued as a subordinate part of co-creation and therefore would limit the scope of the thesis. Another related concept which has seen increased academic interest over the last decade is that of solutions and solution selling. The relevance of this will be discussed in the next section.

Solutions and Solution Selling

Evanschitzky, Wangenheim and Woisetschläger (2011, p. 657) define a solution in line with Sawhney (2006) as ‘individualised offers for complex consumer problems that are interactively designed and whose components offer an integrative added value by combining products and/or services so that the value is more than the sum of the components’; likewise, solution selling is defined in line with Tuli, Kohli and Bharadwaj (2007) a ‘relational process comprising the definition of the customer requirements, customization, and integration of goods and services, their deployment, and post-deployment support’. Key to the offering of solutions is the importance of on-going dialogue between firm and customer. Solution selling overlaps with value co-creation in that the customer’s role is of equal importance in the process. It is argued that solutions embody the new service-dominant logic (Cova & Salle, 2007, 2008; Sharma, Iyer, & Evanschitzky, 2008; Tuli, et al., 2007) and the topic was also included within Vargo and Lusch’s 2006 book on S-D logic (Lusch & Vargo, 2006b; Sawhney, 2006). The links between value co-creation and solution selling are highlighted by Cova and Salle (2008) who state that the elaboration of solutions results from a value co-creation process involving actors from both the supply network and the customer network. In the solution process offerings are co-created with the customer in a highly interactive process of needs definition and refinement (Salonen, 2011) which takes place over an extended period of intensive interaction and dialogue (Storbacka, 2011). In line with S-D logic and Value Co-Creation, ‘customer/supplier cooperation and co-creation become increasingly important as the long-term solution process requires an intimate cooperation’ (Töllner, Blut, & Holzmüller, 2011, p. 717). The intensive process of dialogue and

individualisation required within the solution process clarifies the increasing 'need to assess value that arises in the customer's space and through their usage process' (Macdonald, et al., 2011, p. 672). Solution selling is, perhaps, enabled by the more active role played by the customer but is, as observed by Tuli et al (2007) still largely controlled by the firm. Solutions are enabled by value co-creation and therefore do not provide a suitable overarching term. Other definitions and conceptualizations of cocreation predate S-D Logic but which have relevance for this thesis, are considered in the next section where the definition used within the thesis is presented.

Value Co-Creation: a consensus of understanding?

Several authors see value co-creation as offering more than simply the transference of work from firm to customer (Etgar, 2006; Hoyer, et al., 2010; Ostrom, et al., 2010; Ramaswamy, 2009). There are close relationships to S-D Logic in Schau et al (2009, p. 30) who highlight how traditional views see firm and customer as separate and discrete with customers' as exogenous and passive recipients of firm value creation efforts. With co-creation customers not only co-create value but are involved in innovation and become endogenous to a firm (Schau, et al., 2009; Zwick, et al., 2008). The aggregation of customers into segments for ease of management is challenged by 'the emergence of connected, informed, empowered, and active consumers' (Prahalad & Ramaswamy, 2004b, p. 6) where firms act as facilitators and partners to pro-active customers (Zwick, et al., 2008).

The work of Prahalad and Ramaswamy (2000, 2002, 2004a,b; Prahalad, 2004) in particular pre-dates S-D Logic definitions and remains widely cited. Prahalad (2004) outlines multiple approaches to customer engagement (approaches which are also discussed by Payne Storbacka and Frow (2008) but termed as co-production to increase confusion!) and these are listed in Table 2-5:

Stage	Type of Engagement	Engagement Method
1st Stage	Persuasion of customers through advertising and promotion	Emotional and physical engagement in the act of co-production.
2nd Stage	Self-service	Transfer of work from firm to customer. Customer is a co-producer.
3rd Stage	Staging an experience	Customer is involved and engaged, but the context is firm driven.
4th Stage	Customers enabled to solve problems	Service is available but customers must navigate their way around requiring customer time, effort and skill
5th Stage	Customers co-design and co-produce products and services	Customers have work, service and risks transferred from the firm, and both the customer and the firm benefit

Table 2-5 Co-creation Stages (based on Prahalad, 2004, p. 23)

In all of the stages outlined in Table 2-5 the common features are that, increasingly, risks are shared and it is the firm that decides how it will engage the customer. Note that these are referred to as co-creation stages but the terminology in the table uses the term producer! Nevertheless, a 'firm centred' approach to co-creation is questioned by Prahalad (2004) who suggests that customers are seeking new ways to engage with firms, driven by: ubiquitous connectivity enabling customers to be increasingly better informed and networked; the convergence of technologies; and the globalisation of information. As a result of these factors Prahalad (2004, p.23) presents four implications of this evolutionary process:

- Co-Creation suggests networks rather than dyadic firm customer interactions. Customer communities are integral, whether by developing product strategy or new distribution channels;
- The outcome of engagements (dyadic or network) is the co-creation of value; what are co-created are the experiences. Physical products and services are artefacts around which experiences are co-created;
- New building blocks are needed for the co-creation of value. These are dialogue (rather than one-way communication from the firm to the customer), access and transparency to information (to avoid and eliminate the asymmetry of information between the firm and the customer), and risk assessment (an explicit dialogue among customers, customer communities, and the firm of risk) (discussed in more detail in section 2.3.4);
- No single firm can provide the total co-creation experience. Often, a network of firms must work together to provide a unique co-creation experiences.

Further similarities are observed between S-D Logic and Prahalad and Ramaswamy's work. Point 2 above is suggestive of FP3 (goods are distribution mechanisms for service provision) and Point 4 resonates with the resource integration aspects. As with latter S-D Logic developments (see Vargo & Lusch, 2008b) Prahalad and Ramaswamy are also very clear about what value co-creation is not and this is summarised in Table 2-6:

What Co-Creation Is Not	What Co-Creation Is
Customer focus	Co-Creation is about joint creation of value by the company and the customer. It is not the firm trying to please the customer
Customer is king or customer is always right	
Delivering good customer service or pampering the customer with lavish customer service	Allowing the customer to co-construct the service experience to suit her context
Mass customisation of offerings that suit the industry's supply chain	Joint problem definition and problem solving
Transfer of activities from the firm to the customer as in self-service	Creating an experience environment in which customers can have active dialogue and co-construct personalized experiences; product may be the same but customers can construct different experiences
Customer as product manager or co-designing products and services	
Product variety	Experience variety
Segment of one	Experience of one
Meticulous Market Research	Experiencing the business as customers do in real time
	Continuous dialogue
Staging experiences	Co-constructing personalized experience
Demand-innovation for new products and services	Innovating experience environments for new co-creation experiences

Table 2-6 What Co-Creation is (and is not) (Prahalad & Ramaswamy, 2004b)

Some of these points differ from Table 2-5 above in particular the role of co-design (which by its very use of 'co' suggests an interactional exchange) and appear restrictive. Subsequent papers adopt a more pluralistic approach to what constitutes value co-creation (McColl-Kennedy, Vargo, Dagger, & Sweeney, 2009). Sheth and Uslay (2007, p. 305) offer a wide spectrum of variants including:

> Co-conception (military and defence contracts), co-design (Boeing and United Airlines), co-production (IKEA), co-promotion (word of mouth), co-pricing (eBay negotiated pricing), co-distribution (magazines), co-consumption (utility), co-maintenance (patient-doctor), co-disposal (self-serve), and even co-outsourcing (captive business process outsourcing).

Möller (2006, p. 915) suggests that co-creation of value can range from 'the value created within the supplier-customer dyad to the value sought through the network relationships of the supplier and the customer' and Lemke, Clark and Wilson (2010, p. 3) also prefer to identify co-creation as having specific forms including 'co-production or participation in the product/service design process...another is contact with other customers in the consumption process'.

The opportunities for co-creation within customer/firm exchanges are highlighted by many authors with the customer role of particular significance (Ballantyne & Varey, 2006a; Grönroos, 2006; Gummesson, 2004b; Payne, et al., 2008). Developing interactions allows firms to directly engage itself in value fulfilment for the customers (Grönroos, 2006; Gummesson, 2004b). Interaction *with* customers is a central activity in marketing (Ballantyne & Varey, 2006b; Gummesson & Mele, 2010b) allowing the sharing of knowledge resources between actors with value being derived through interaction. The deeper level of involvement (from customers) implied here is identified (Etgar, 2006; Horbel, et al., 2010; Hoyer, et al., 2010; Minkiewicz, et al., 2010; Ramaswamy, 2009), alongside their importance within the activities of the firm:

> Customers co-create value, co-create competitive strategy, collaborate in the firms' innovation process and even become endogenous to the firm' (Schau, et al., 2009, p. 30).

However, much like the co-opting of customers as partial employees (Mills & Morris, 1986) and increasing participation for financial benefit of the firm (Bendapudi & Leone, 2003) the idea that value co-creation is exploitative persists:

> From a Marxist perspective, therefore, co-creation also signifies the exploitation of customers even if co-productive activities are engaged in voluntarily and, at times, with a significant degree of enjoyment' (Zwick, et al., 2008, pp. 179-180).

Zwick et al (2008, p. 163) observe that situating customers squarely in the centre of firm activities allow organisations to work 'with and through the freedom of the customer' but that this is dependent on added labour input from customers to create value-in-use. Zwick et al (2008, p. 168) view co-creating customers as an 'autonomous, unpaid, and creative consumer workforce' and Prahalad and Ramaswamy (2004b, p. 164) encourage firms to 'use customers as a source of competence and put them to work'. Arguably, there may not be much between the terms of value co-creation and co-production and indeed attempts to delineate them by Bolton (in Ostrom, et al., 2010, p. 24), where co-creation is described as a 'collaboration in the creation of value through shared inventiveness, design, and other discretionary behaviours, and 'co-production' is more narrowly defined as participation within parameters defined by the focal organization (e.g. selecting from predetermined options', seem to merely expand the co-production definition from Lusch and Vargo (2006c) and highlight the firm centred nature of co-production. This delineation brings us back to Vargo and Lusch's notion of value co-creation as a hypernym. This was discussed in detail in section 2.2.3 but essentially within value co-creation the superordinate 'co-creation of value' described by Vargo and Lusch (2006c) is a positive state rather than a normative goal for organizations and that customers regardless of willingness or ability always derive value in use. The subordinate notion of co-production involves participation in the core-offering of the organization and occurs at various points within the value cycle and with various network actors.

The status of co-production within S-D Logic as sub-ordinate to the co-creation of value is questioned by this thesis as within the service encounter co-creation activity involves a myriad of activities which may have, in the past, been defined in more 'goods-dominant' ways. For example the co-opting of customers as partial employees is generally understood in 'goods-dominant terms' (partial employee, labour substitute) in the same way that 'producer' was identified by Vargo and Lusch (2008b) as fundamentally goods dominant. Within a S-D Logic world co-creating activities are more complex than simply transferring work to the customer or simply

'getting customers involved with creating the product or service' (as observed by Ballantyne, Williams, & Aitken, 2011, p. 180). Participants in a co-created service encounter often derive 'value-in-use from participation' (Schau, et al., 2009, p. 31) and within a range of 'co-producing' activities, from self-service to co-design there are opportunities for all actors to derive value in use from the encounter. All aspects of value co-creation have potential, therefore, to result in an aggregate optimal value greater than the sum of two (or more) local optima, as in the case of exchange' (Sheth & Uslay, 2007, p. 305). Therefore, a criticism of the Vargo and Lusch perspective is the assumption that co-production represents 'the joint activities of the firm and the customer in the creation of *firm output*[1]' (Vargo, 2008, p. 211). It is both the potential for the term 'production' to be misinterpreted as some form of customer participation which contributes only to the output of the firm and the wide spread adoption of co-creation (however the term itself is used) in a pluralistic sense within contemporary marketing research that suggests it is more appropriate for this thesis.

This thesis argues that the hypernymic status of value co-creation (Lusch & Vargo, 2006c) is central to furthering understanding of how firms and customers co-create and within this umbrella term can be found a wide range of activities and interaction that can generate value for network actors.

The definition used within this thesis is as follows:

> *Value co-creation is a situation where value is created jointly and reciprocally by a firm, its customers and other network actors, where the resultant value-in-use is greater than that of its component parts. Value co-creation occurs in direct interaction between a firm, its customers and suppliers through collaboration and dialogue, or mediated by a good and determined phenomenologically by the customer.*

Value Co-Creation, therefore, involves customers through diverse concepts such as co-design (Plé & Cáceres, 2010; Prahalad, 2004), co-innovation (Schau, et al., 2009), shared inventiveness (Lusch & Vargo, 2006c; Ostrom, et al., 2010) , co-conception, co-promotion, co-pricing but also in more basic activities such as co-disposal (Sheth & Uslay, 2007) with the proviso that these activities can benefit customers as much as the firm. The thesis attempts to present value co-creation in a

[1] Emphasis added

more inclusive way encompassing both the value outcome of direct interaction but also, where appropriate the 'non-interactive contributions from customers and suppliers and contributions from other stakeholders in a focal network' (Gummesson, 2011, p. 192) a similar position is adopted by Ballantyne, Williams and Aitken (2011) and Ramaswamy (2011).

This section has revealed that seemingly disparate conceptualisations of the term (Value Co-Creation, Cocreation, co-creation, co-production, and prosumption) have a great deal in common and that myriad delineations and definitions would benefit from a greater consensus. Zwick et al (2008) term value co-creation a 'label' and suggest that the Prahalad and Ramaswamy (Prahalad & Ramaswamy, 2004c) concept of co-creation is paralleled by that of Vargo and Lusch (Vargo & Lusch, 2004a) whilst observing that prosumption and co-creation are essentially one and the same. Earlier co-production research of the 1990's (Ramírez, 1999; Wikström, 1996) also mirrors many aspects of value co-creation. As a result the definition of the concept of value co-creation introduced here attempts to draw all elements together and encompass the broad spectrum of applications identified within the extant literature. The following sections of this chapter explore how value co-creation can be designed into the service encounter and investigates appropriate contexts and the potential benefits and drawbacks.

2.3.2 Co-Creation Design

> Marketing thought leaders understand that trying to manage and control a mass of protean and agentic consumers cannot be undertaken with the same rudimentary tools that may have worked when consumers were still imagined as more or less passive participants with homogenous needs and wants' (Zwick, et al., 2008, p. 171).

Designing for cocreation requires not only a redesign of an organisations culture and practices but also of its customers, challenging and converging traditional and distinct roles of firm and customer (Prahalad & Ramaswamy, 2004b). The definition in the previous section places equal importance on both firm and customer in the cocreation process. The shift in corporation mind-set may be significant, affecting both underlying culture as well as the operations of an organisation (Auh, et al., 2007). Therefore, if firms wish to design their organisations to gain maximum

benefit from cocreation then harnessing customer skill, knowledge and competences is central to the endeavour.

Within the cocreated exchange the role of the employee as an operant resource is also crucial. Employees (in S-D Logic terms) are both operand and operant resources; operand in that they are resources of the firm and operant in that they are 'an entity that acts on both firm resources and customers' (Oliver, 2006, p. 120). Oliver (2006, p. 123) observes that a firms intermediaries are 'paramount to the mutual satisfaction endeavour'. Customers see employees as synonymous with the firm and therefore cannot react positively with the firm whatever the level of service offered if employees do not have a positive demeanour (Oliver, 2006).

Prahalad and Ramaswamy (Prahalad & Ramaswamy, 2004a, 2004b, 2004c) advocate approaching co-creation around the four dimensions of dialogue, access, risk and transparency (DART) outlined in Table 2-7. The DART dimensions give an indication of the responsibilities of the firm within co-created exchanges. The traditional benefits of keeping customers at arm's length through limited access and information asymmetry must be discarded in favour of a much more open and interactive approach. But customers have their role to play also and this is discussed in the next section.

DART Dimension	Implications
Dialogue	Dialogue requires interactivity, deep engagement, and the ability and willingness to act on both sides. Partners must be equal in the process and understand any rules of engagement. Dialogue promotes shared learning and communication and creates and maintains loyal communities.
Access	Effective dialogue is difficult for firms if customers do not have the same access to information as the firm. Access is about giving customers a knowledge base and tools to be more effective co-creators. Access may be to both firms and customer communities.
Risk	If customers are to becoming increasingly active co-creators then they should be prepared to shoulder some of the risks or at least understand the risk-benefits of alternate modes of interaction and engagement.
Transparency	Customers expect transparency in the interactions with firms and transparency erodes the unequal benefits firms have received in the past through information asymmetry.

Table 2-7 DART Dimensions (Prahalad & Ramaswamy, 2004a, 2004b)

Normann and Ramirez (1993, p. 69) some 10 years prior to S-D Logic recognised the importance of 'educated' customers:

> Companies create value when they make not only their offerings more intelligent but their customers (and suppliers) more intelligent as well…to win, a company must write the script, mobilize and train the players, and make the customer the final arbiter of success or failure.

Prahalad and Ramaswamy (2000) suggest that firms must learn to harness competence, manage personalised experiences, recognise customers as competitors and prepare the organisation for change. These four key directions and their sub-processes are summarised in Table 2-8. The use of words such as 'encourage', 'mobilize' and 'educate' are critical and serve to reinforce the key role that customers play within the process and that knowledge of this role, and the expectations contained within have to be engendered within the customer by the firm.

Process	Sub-process	Key elements
Harnessing Customer competence	Encouraging active dialogue	Dialogue (between firm and customers) is now between equals as customers are now information rich. Dialogue must evolve and retain customer interest.
	Mobilizing customer communities	Firms need to recognise the growth, and harness potential power, of online communities of customers.
	Managing customer diversity	Customers have different levels of skill and experience. Products and services that are flexible enough to cope with these differences must be developed.
	Cocreating personalized experiences	Firms must recognise the role that customers increasingly wish to play in shaping their own experiences as distinct from customisation.
Managing the personalised experience	Managing multiple channels of experiences	Customers can now choose from multiple methods of engagement with firms (online, face to face, phone), the more environments firms can provide, the more customers they might attract.
	Managing variety and evolution	Firms must create a variety of products that can adapt to the changing needs of customers, not the other way around.
	Shaping customer expectations	This relates to the importance of educating (and being educated by) customers as an educated customer can be an advocate and activist for a firm.
Recognising customers as competitors		Customers now have the information tools to negotiate with firms from a stronger knowledge base. Customers also increasingly influence pricing through mechanisms such as auctions.
Preparing the organisation	Governance	Accounting systems must be able to account for human and information capital.
	Pricing	Greater reliance of project management approaches to pricing needed.
	Flexibility	Organisations need to be highly flexible 'velcro' firms to meet the dynamic, changing needs of customers.
	Employees	The co-creation environment has the potential to be highly stressful for employees and, as such, strong organisational values are needed and leaders who can provide support mechanisms for staff.

Table 2-8 Customer Competences (Prahalad & Ramaswamy, 2000)

Ramírez (1999, p. 59) observes that 'customer effectiveness becomes as much of a corporate worry as own employee effectiveness', customer productivity is as important as internal and suppliers. Inevitably customer performance (good or bad), represents a business opportunity, for the firm or its competitors.

Extant, customer participation literature gives some indications as to how customers may be encouraged to participate. The growth of self-service technology

(SST) in the 1980's and 90's led to research surrounding customer use of this technology and how it could be promoted (Bateson, 1985; Dabholkar & Bagozzi, 2002; Meuter, et al., 2005; Meuter, et al., 2000). Customers had to come to terms with the technology and 'engage in new behaviours' (Meuter, et al., 2005, p. 63). Successful SST use required customers to know what was expected of them (role clarity), be motivated to engage in desired behaviours (motivation), and have the necessary knowledge and skills to fulfil their responsibilities (Schneider & Bowen, 1995). Firms needed to introduce employee management practices and socialise customers to enable them to fulfil the role of a partial employees (Claycomb, et al., 2001; Schneider & Bowen, 1995). Oliver observes that much as firms might 'train' customers, it is also beholden for customers 'to assess the needs of the provider and [assess whether they have] the means to deliver these needs' (Oliver, 2006, p. 121). This, Oliver states, requires 'reverse-engineering' as customers are not accustomed to acting in this manner (Oliver, 2006). In satisfaction terms firms would have expectations of customers who would have to meet, or exceed, those expectations to increase loyalty from the firm. In summary designing for co-creation requires engineering both for the firm, the customer and employees. The co-creation takes place within a process and this is discussed in the following section.

2.3.3 Co-Creation Processes

Vargo and Lusch (2004a) suggest that marketing, within an S-D Logic framework, should be viewed as a series of processes and resources used by the supplier to create value propositions which support the co-creation of value. The view of cocreation being embedded within a process has long been supported. Schneider and Bowen (1995) advise firms to consider what behaviours they expect of their customers across the stages of an encounter. Wikström (1996, p. 12) suggests that co-production often takes place in 'one of the activities in a value-creating process, but rarely in all of them'. More recently Rowley et al (2007, p. 137) discuss how 'marketing intelligence is embedded in dynamic co-creation processes that involve customers as partners rather than subjects'.

There are many examples of firms involving customers within stages of an exchange process. Wikström (1996) highlight how firms like Dell and IKEA involve

customers within the design (pre-purchase) phase of the process. Within the production (purchase) phase customers increasingly take on roles that would previously have been undertaken by a firm such as using SST's, constructing DIY furniture or making online purchases or 'consuming' services. Post-purchase phases might see firms offering support to customers, with the customers themselves creating value-in use and suppliers taking a supportive, co-producer role (Wikström, 1996) enabling customers to get better value from products through effective education and training (McColl-Kennedy, et al., 2009; Wikström, 1996). In this phase the customer is creating value and, should become the focus of attention of the firm.

The range of activities undertaken by customers throughout the exchange process and the varied forms of communication that take place between firm and customer at any point in the process (Ballantyne & Varey, 2006a) accentuates the need to understand the cocreation relationship between customer and firm as:

> a longitudinal, dynamic, interactive set of experiences and activities performed by the provider and the customer, within a context, using tools and practices that are partly overt and deliberate, and partly based on routine and unconscious behaviour (Payne, et al., 2008, p. 85).

Payne et al (2008) use a framework (see Figure 2-2) consisting of: *Customer value-creating processes* – in a business-to-customer relationship, the processes, resources and practices which customers use to manage their activities. In a business-to-business relationship, the processes are ones which the customer organisation uses to manage its business and its relationship with suppliers; *Supplier value-creating processes* – the processes, resources and practices which the supplier uses to manage its business and its relationships with customer and other relevant stakeholders and; *Encounter processes* – the processes and practices of interaction and exchange that take place within customer and supplier relationships and which need to be managed in order to develop successful co-creation opportunities (Payne, et al., 2008, pp. 85-86).

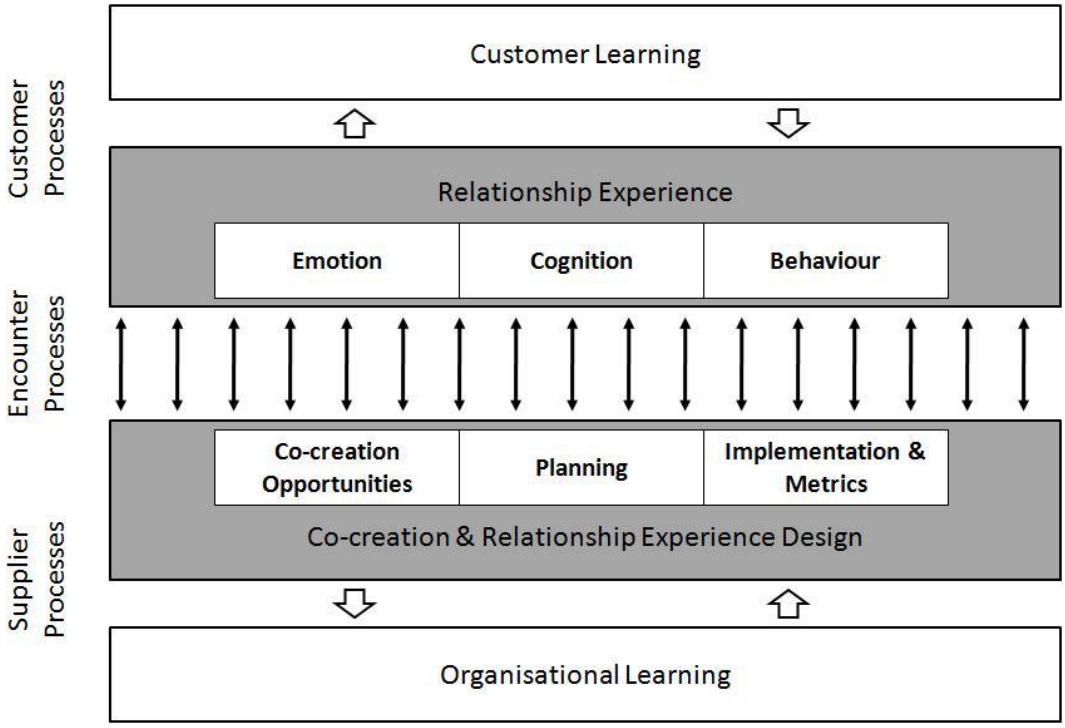

Figure 2-2 A conceptual framework for value creation (Payne, et al., 2008, p. 86)

The framework demonstrates the 'recursive nature of cocreation' (Payne, et al., 2008, p. 86) through the double-headed arrows in the centre of the model which represent the various interactive encounters between the customer and supplier occurring throughout the duration of the value creating process. The arrows between the *relationship experience* and *customer learning* indicate that the customer engages in a 'learning process based on the experience that the customer has during the relationship' (Payne, et al., 2008, p. 86) and influencing future value co-creation activities. On a similar basis the arrows between *co-creation & relationship experience design* and *organisational learning* demonstrate that 'as the supplier learns more about the customer, more opportunities become available for the supplier to further improve the design of the relationship experience and enhance co-creation with customers' (Payne, et al., 2008, p. 86).

The encounter process located between the customer and the supplier in Figure 2-2 is central to successful value co-creation. It is through encounters that actors interact and co-create value. Encounters occur through the initiative of the supplier, customer or through direct interaction. Payne et al (2008) identify three broad types of encounters that facilitate co-creation: communication encounters, usage

encounters and service encounters. Communication encounters are generated to connect with customers and promote dialog (for example brochures, home pages etc.). Usage encounters refer to customer practices when actually using a product or service (including any supporting services); this could include face to face usage. Finally, service encounters involve contact between customers and customer service personnel or contact centre (Payne, et al., 2008). Clearly, different customers will react differently to a range of encounters (Payne, et al., 2008) and these are sub-categorised in Table 2-9:

Relationship experience encounter	Customer values within encounter
Emotion-supporting encounters	Themes, metaphors, stories, analogies, recognition, new possibilities, surprise, design
Cognition supporting encounter	Scripts, customer promises, value explaining messages, outcomes, references, testimonials, functionality
Behaviour and action supporting encounter	Trial, know-how communication, usage of the product

Table 2-9 Typology of encounters (Payne, et al., 2008, p. 90)

The diversity of expectations, values and needs encapsulated within the encounters in Table 2-9 present a challenge for the supplier. Suppliers that can readily capture knowledge from customers during encounters learn which encounters are routine and which more critical (Payne, et al., 2008) and gain more understanding of the contexts and conditions where co-creating with customer is more or less appropriate, these will be explored in the following section.

2.3.4 Contexts for Co-Creation

The literature surrounding cocreation provides evidence of contexts where collaborative activity is most likely to achieve success with accompanying benefits and, vice versa, where cocreation strategies might be a drawback for firms. There is a danger when discussing concepts in conceptual terms that contexts are presented in idealised fashions something identified by Lusch et al (2007, p. 9) who suggest that

achieving collaborative competency through S-D logic is akin to a 'nirvana position'. This is also true of cocreation and Oliver in his discussion of the mutual satisfaction expectation of cocreation outlines a 'utopia' where

> Customers were of the mind-set to support their providers with no-hassle fair profits, courteous dealings, complete honesty in returns, and deservedly positive w-o-m. This strategy could engender trust between partners, a key ingredient in successful relationships (Oliver, 2006, p. 125).

This somewhat 'tongue in cheek' statement does nonetheless hint cocreation is conditional and dependent on certain characteristics within firms, customers and the products/services themselves. The following section addresses firstly the conditions where co-creation might foster benefits for firms and customers followed by those where it might be less appropriate to engage customers in co-creation activity and the drawbacks that might be associated with doing so.

2.3.5 Appropriate Conditions and Benefits

The Firm

The firm conditions required for successful co-creation are varied and widely discussed. Strong relationships between firm and customer and the ability to individualize the needs of customers are highlighted (Jaworski & Kohli, 2006; Prahalad & Ramaswamy, 2004a; Wikström, 1996), these are achieved alongside high quality interactions and dialogue between firm and customer (Auh, et al., 2007; Ballantyne & Varey, 2006a, 2006b; Grönroos, 2006; Gummesson, 2004b; Prahalad & Ramaswamy, 2004b; Schau, et al., 2009; Wikström, 1996). In-depth dialogue and interaction allows networks of firms, customers and communities of customers (Dholakia, et al., 2009; McAlexander, et al., 2002; Rowley, et al., 2007; Schau, et al., 2009) to both gather and share information. This dialogue, crucially, reinforces the inherent relational nature of S-D logic as dialogue should not be 'unidirectional, self-serving, or accomplishment by control. On the contrary, the purpose is open-ended, discovery oriented, and value creating' (Ballantyne & Varey, 2006b, p. 339).

Investment into technology and infrastructure are identified as important (Brown & Bitner, 2006; G. Day, 2004; Kalaignanam & Varadarajan, 2006; Payne, et al., 2008; Rust & Thompson, 2006) giving firms the ability to customize products and

service (Gray, Matear, Deans, & Garrett, 2007; Gummesson, 2004b; Jaworski & Kohli, 2006; Kalaignanam & Varadarajan, 2006; Payne, et al., 2008; Prahalad, 2004; Rust & Thompson, 2006). Lusch et al (2007, p. 9) describe technology as 'a pivotal force in enabling more collaboration and consequently innovation throughout the entire value network'. Advances in technology allow firms to take better advantage of the ubiquitous connectivity that customers are now in possession of (Prahalad, 2004) and engage better with communities of customers.

For the firm, benefits may include efficiencies of costs and time associated with customers being involved in self-service or other forms of participation and reducing the work of the organisation. This is highlighted with regard to SST's and co-production (Auh, et al., 2007; Dabholkar & Bagozzi, 2002; Meuter, et al., 2005). By engaging customers as co-creators firms gain asymmetric information about the marketplace and insight not readily available to competitors. Co-created activity, as a source of generative knowledge, allows firms to better meet customer needs and generate ideas for design and manufacturing (Jaworski & Kohli, 2006; Prahalad & Ramaswamy, 2004a; Wikström, 1996) alongside improvements to the customer experience (Ramaswamy, 2011). As levels of participation increase, customers may become proportionally more committed to the process (Dong, et al., 2008; Wilson, et al., 2008) and contribute even more to the process. There may also be loyalty benefits from cocreation as customers build deeper binds with organisations and develop trust towards the firm (Jaworski & Kohli, 2006), this may also have the effect of building switching barriers overcoming problems found in traditional loyalty programmes (Dowling & Uncles, 1997; Uncles, Dowling, & Hammond, 2003). Increasing involvement in customer communities may bring further benefits as customers enhance brand and relationship equity by creating exogenous loyalty programmes for firms but without necessarily requiring any firm input (McAlexander, et al., 2002; Vargo, 2009).

The firms employees may also, hypothetically, benefit from the firms increased co-creation activity. There is some evidence the perceived workload may be reduced with increased customer involvement when customers engage as co-creators. Employees may also derive positive feelings from customers assuming both are adopting appropriate roles within the exchange (Schneider & Bowen, 1995). Given

the importance of mutually beneficially outcomes from collaboration the positive conditions for the firm must be matched by those of the customer and these are considered in the next section.

The Customer

For customers, participation in online communities is an important area for cocreated activities as they allow customer to customer interaction (Prahalad & Ramaswamy, 2000; Rowley, et al., 2007). These cumulative inputs are 'stored/frozen, aggregated and made available to other customers and contributors through a value-Web' (Sweet, 2001, p. 80). Online communities only achieve value as a result of 'the scale of the cumulative input of its members and their connectedness, interactivity, and tendency to share knowledge and skill' the greater the input, the greater the value created (Sweet, 2001, p. 80). Closer engagement with communities allows increased learning and gives firms the ability to respond to customers more effectively (Matthing, et al., 2004); willing and committed customers are required to enable this process.

Involvement with co-creation activity (such as communities of users) places expectations on the customers to ensure its success. Customers must be prepared to put effort into the cocreation process, and not merely 'show up' (Claycomb, et al., 2001). Customers must transfer information and proactively contribute to the activity of the firm as the level of participation will influence the final service outcome (Claycomb, et al., 2001). The importance of knowledge as an exchanged commodity and the sharing of information between firm and customer is also central to S-D Logic and value co-creation (Maglio & Spohrer, 2008; Prahalad, 2004; Vargo & Lusch, 2004a). Deighton and Narayandas (2004, p. 20) note that successful co-creation in one firm required 'the customer to be co-producer to the point in some cases of being an investor'. Success was achieved by co-opting the customer throughout the process including design; implementation and making the customer part responsible for the outcome, evidencing the shared risk of DART (Prahalad & Ramaswamy, 2004a, 2004b).

Through involvement in co-creation as knowledgeable entities customers are 'emancipated from being a passive recipient of products and services [and]…

liberated from the ball and chain of loyalty schemes prevalent in CRM' (Gibbert, et al., 2002, p. 463). Benefits may be gained through increased involvement in co-creation. Principally, increased value-in-use is likely to be obtained by ensuring that resultant outputs meet their own unique needs and by gaining more control over the experience (Auh, et al., 2007; Bateson & Hoffman, 1999; Grönroos, 2006, p. 303). By increasing customer expertise both firms and customer benefit from improved predictability and quality in the exchange (Evans , et al., 2008) and customers may also increase their cocreation activity presenting opportunities for increased benefits (Auh, et al., 2007) in other words customers can benefit themselves by 'doing more'. There may also be both cognitive and affective benefits of engaging in cocreation activity. Increased involvement with a firm may reward customers with a sense of accomplishment, feelings of self-efficacy and overall enjoyment of the process itself (Dong, et al., 2008; Meuter, et al., 2005; Schneider & Bowen, 1995).

Ultimately engaging in cocreation activities should benefit all parties in the exchange, Auh et al (2007, p. 360) suggest that there should be a 'meaningful impact on customers' loyalty to the organization for the benefits to outweigh the costs'. Jaworski and Kohli (2006) observe that firms must be prepared to relinquish control and leave behind the more linear and traditional approaches to customer management. Other factors that lead to successful cocreation are introduced by these authors (see Table 2-10). In particular the role of trust is important along with a need for firms and customers to have complementary skills and also the firms must be open to new ideas and 'adventure' suggesting that firms must be prepared to instigate culture shifts in adopting cocreation techniques.

Factors that Lead to Successful Co-Creation Dialogs	
Trust	Trust is central in many marketing contexts. For a dialogue to be successful trust and reliance on the other must be built up over time.
Value placed on the other's insights	Without value place on other's insights conversations will inevitably become more one-sided. Value is likely to be increased when each party recognises the benefits of the interaction.
Complementary skills and perspectives	An optimal solution is more likely to be achieved if each party recognises the diversity of skills and knowledge that the other party contributes.
Depth of knowledge and experience	A successful dialogue will involve a depth of knowledge about the products/services in question. Engaging in dialogue may result in deeper knowledge surfacing.
Adventure seeking	Essentially the authors suggest that in order for a successful dialogue participants must be prepared to explore 'uncharted ideas and opportunities'.
Setting of the conversation	The importance of creating disruption free time, extending interaction over long periods of time and choosing the right participants.

Table 2-10 Factors leading to successful co-creation dialogue (Jaworski & Kohli, 2006, pp. 114-115)

Successful co-creation is, therefore, dependent on a range of attributes and conditions which when they are present can benefit both firms and customer. However, there must also be a likelihood that in other contexts, these conditions may not be present (either singly or entirely) and cocreation, therefore, may be less appropriate; these contexts will be considered in the next section alongside the drawbacks and challenges associated with unsuccessful or inappropriate co-creation.

2.3.6 Challenging Conditions and Drawbacks

If some, or all, of the conditions required for mutually beneficial value co-creation above are not present then achieving benefits from value co-creation becomes more challenging. The idealised nature of conceptual work surrounding increased levels of customer engagement is highlighted by Oliver (2006) who indicates that despite indications there is little evidence to suggest that 'firms communicate their expectations to their customers or that customers attempt to assess firms'

expectations of them' (Oliver, 2006, p. 124). In fact the situation may be quite the opposite:

> For many industries, firms and customers, mutual satisfaction will be an infrequent, if not undesired, outcome. Thus, mutually satisfying consumption is most unlikely to become a universal phenomenon – but remains a worthy goal nonetheless (Oliver, 2006, p. 124).

Firm

On the firm side the success of cocreation may be dependent on the nature of the business interaction. Auh et al (2007) suggest that firms with a B2B focus may find cocreation easier as the high degree of interaction is a more accepted part of the relationship and Sheth (2011) observes how in a B2B setting value co-creation is organized, transparent, measured and often contractual. If firms have limited interactions with customers then opportunities for co-creation will be scant. There may also be issues with the human resources of the organisation, crucial as operant resources, but may require more enhanced communication and relational skills to deal more effectively with customers and staff (Gray, et al., 2007).

The fundamental nature of the product or service involved is also likely to be important in deciding whether or not co-creation is appropriate. In circumstances where firms provide routine, low involvement purchases a more transactional approach, providing standardized products at minimal price (Jaworski & Kohli, 2006; Kalaignanam & Varadarajan, 2006; Oliver, 2006) may be preferred with customers appropriating value passively if there is a risk of resource misuse or customers not engaging. Other organisational contexts where cocreation may be less appropriate are highlighted by Jaworski and Kohli (2006) (see Table 2-11). These highlight how customer co-creation schemes may be costly for the firm and outweigh any benefits as 'the consumer becomes enlisted as a permanent member of the company's production and marketing project' (Zwick, et al., 2008, p. 173). This is reinforced by Lusch and Webster (2011, pp. 132-133) who warn that:

> The ability to actually provide the promised value depends upon carefully choosing appropriate potential customers, those with needs and preferences that are understood to be a good match for the resources and capabilities of the firm and its stakeholders. Strategy formulation is essentially a process of matching the networked firm's competencies and capabilities with customer needs and preferences, identifying latent customer demand that is relatively underserved by competitors' value proposition. 'Bad' potential customers are those who will not value the firm's resources and capabilities and will therefore be unwilling to provide reciprocal resources or service in their interactions with the marketer enterprise.

The onus, it seems, in the new S-D logic is on the careful selection of customers, far removed from segmentation to ensure that they can act in the right way as collaborators. The contexts, therefore, where customers may be less appropriate or firm contexts less facilitatory should also be considered.

When not to co-create the voice of the customer	
Time-to-Market Cost	Pressure to create a product or service quickly means lengthy interactive processes are less desirable.
Organisational Alignment Cost	If the cost of sharing information and getting agreement on aspects of the dialogue outweigh the potential benefits/insights gained from the co-creation process then co-creation should not be pursued.
Opportunity Cost	The actual expenses associated with a co-creation conversation may be minimal but the potential short term opportunity costs of not engaging the market quickly may be considerable.

Table 2-11 When not to co-create the voice of the customer - based on (Jaworski & Kohli, 2006, pp. 115-116)

The online contexts that are in a sense breeding grounds for certain types of co-creation (Rowley, et al., 2007; Schau, et al., 2009) are not present in all business contexts and as firms have traditionally benefitted from exploiting the information asymmetry between them and the individual customer (Akerlof, 1970) positive outcomes maybe difficult to achieve if customers do not have the same access and transparency to information. The DART principles outlined by Prahalad and Ramaswamy (2004a, 2004b) (particularly the provision of access and transparency) maybe be challenging for firms and require a cultural shift that firms cannot readily make.

The first drawback associated with unsuccessful (or inappropriate) co-creation for firms is associated with customer management. Essentially firms do not have the same level of control over customer training as they do with employees this may

result in increased uncertainty in exchange for customers and affect outputs. Building customers' affective bonds with an organization 'is no simple task' (Auh, et al., 2007, p. 368) and customers who do not wish to cocreate may simply abdicate their role causing disruption to the system (Auh, et al., 2007; Solomon, 1986). Alternatively, customers whose resource levels do not meet the needs of the exchange may contribute to co-destruction through accidental misuse of the firms resources (Plé & Cáceres, 2010, p. 433) simply because 'they are limited by their frame of reference'. Plé and Cáceres (2010) predict that customers may not always engage with firms with the best interest of the firm in mind, deliberate, opportunistic misuse of a firms resources (such as lying to front line employees) could have a negative outcome. Using increased access for negative ends is also observed by Fournier and Avery (2011) who outline the negative effect of Web 2.0 applications on firms when customers hijack material to circulate negative information. The warning here is that the proactive, empowered customer is not always good news for a firm.

When managing customers in a cocreated exchange firms should ensure that customers perceive the relationship as equitable (Auh, et al., 2007). However, given that customers are not paid for their contribution to the co-creative process and pay 'what the marketing profession calls a 'price premium' for the fruits of their own labour' (Zwick, et al., 2008, p. 180) then feelings of inequity may indeed occur. The greater the inputs that firms require of customers, the greater the feeling of inequity may be, on that basis firms may require to invest heavily in customer education (Eisingerich & Bell, 2008; Kwortnik & Thompson, 2009; Rafaeli, Ziklik, & Doucet, 2008) in order to ensure that customers perceive that contributing more will benefit both parties and co-created activity is not simply a form of exploitation.

Prahalad and Ramaswamy (2004a) raise other concerns relating to the effect of engaging customers as cocreators on the operational activity of the firm and related to the DART dimensions. Firstly, if dialogue is time intensive, there may be efficiency trade-offs associated with the continual need to 'train' customers and the extensive interaction needed for successful co-creation; Secondly, increased customer input into product design has implications for quality control and firms may have to invest more in this area; Transparency in interaction is potentially

intrusive and gauging access levels may be challenging; Fourthly, the individuality at the heart of co-creation, may be challenging with a heterogeneous customer base; Finally, co-creation gives customers control over the risks, but not the liabilities. Where do legal responsibilities begin and end; and, finally, there may be forecasting issues when addressing individual levels of demand customers may be willing to share in the benefits but not the risks.

Cocreating with customers is not without its risks and challenges then. When discussing how firms can make use of customer knowledge Gibbert et al (2002) identify two stumbling blocks. The first relates to internal firm culture; either a firm believes its knowledge to be superior to its customers or are unwilling to share information with customers; secondly, a firm may lack the competencies required to engage customers effectively due to inadequate systems and procedures. Alternatively managers anchored to product based organizations that excel in the design and manufacture of products may find the shift in mind-set to a service-dominant approach challenging (Salonen, 2011). Finally, if the investment into technology and infrastructure required for successful co-creation of value (Brown & Bitner, 2006; Kalaignanam & Varadarajan, 2006; Payne, et al., 2008; Rust & Thompson, 2006) does not result in increased customer equity and CLV the only likely impact is negative and directly on company performance.

Negative aspects for employees come from dealing with customers and issues relating to control of the encounter. For many service employees dealing with customers raises their 'hassle factor' (Bowers & Martin, 2007, p. 95). Employees do use customers as a source of good feeling but the circumstance of a customer giving an employee direction can result in dissatisfaction (Schneider & Bowen, 1995), suggesting that either employees need to be trained to deal with proactive customers in the cocreation exchange or vice versa. There are also potential problems if a firm has higher levels of turnover as new staff may experience problems dealing with 'old' customers placing extra pressure on training (Auh, et al., 2007).

In the service research literature there is evidence that service employees experience 'role conflict' and subsequently stress as a result of a lack of perceived control over the service encounter (Harris & Ogbonna, 2002). In cocreated

encounters customers and employees may also fight for control of encounters and therefore increase staff role stress (Bateson & Hoffman, 1999). Hsieh et al (2004) also suggest that the notion that involving customers will reduce employee workload is a fallacy as if employee workloads are reduced firms will simply reduce the number of employees and therefore the level of work is unchanged (or may increase if customers are unwilling) (Hsieh , et al., 2004). Challenging conditions are evident also for customers.

Customer

The need for proactive customers has been discussed earlier in this section but in some contexts (low involvement or expert services) cocreation may be challenging if customers are unwilling to engage or do not have the necessary skills (Gray, et al., 2007; Kalaignanam & Varadarajan, 2006). Baron and Warnaby (2011, p. 217) note that their sample was clearly 'not a random sample of users…contains the more passionate and loyal'. The implication is that only certain customers will possess the capabilities that firms may require. Rust and Thompson (2006) assess the potential impact of transferring more power to customers, in particular the negative impacts which could affect customer wellbeing, satisfaction and, potentially company performance. In particular, psychological effects on customers of a value-enhancing or, conversely, a complexity inducing effect suggest that there are circumstances when engaging customers is more or less appropriate.

Prahalad and Ramaswamy (2004b, p. 14) observe that customers have to learn that 'co-creation is a two-way street. The risks cannot be one sided. They must take some responsibility for the risks they consciously accept', if customers are unwilling to take on risk (or are naturally risk averse) co-creation may be stress inducing for customers. Rust and Thompson (2006) suggest that in some circumstances customers may actually be unable to co-create (due to lack of appropriate knowledge or access to appropriate resources). Lusch et al (2007), present six key factors that contribute to the extent to which the customer is an active participant in a service offering, these include the level of expertise, physical capital and a sense of risk taking.

Drawbacks of increased engagement for customers are less clear. Sweeney (2007, pp. 102-103) suggests that, in reference to S-D Logic, there seems to be 'next to no

discussion as to potential outcomes for organisation or customer'. Rust and Thompson (2006, p. 389) believe that the assumption that the customer is always a co-creator of value is complex and may have 'negative consequences to customer welfare'.

The effort required of customers in the cocreated exchange may be perceived as a chore or simply a firm shifting the workload onto customer shoulders (Rust & Thompson, 2006). The extent to which customers can extensively co-create with multiple firms is also disputed by Rust and Thompson (2006, p. 389) who identify problems of exchange complexity and customer motivation:

> Customers do not have the cognitive resources to customize all the products they buy [and]…may not want to customize products or to have a personalized connection with the firm.

The service revolution has brought power and control to customers but also higher levels of purchase involvement (Rust & Thompson, 2006). Customers cannot always accurately predict what they want and, therefore, may not be able to contribute to the value co-creation process; control, that firms perceive as being of benefit to the customer, may be perceived as a loss of control with customers feeling 'overwhelmed by information and choice' (Rust & Thompson, 2006, p. 389).

The notion of co-creating value with customers is intriguing, but 'we know little about how and why customers engage' (Woodruff & Flint, 2006, p. 183) and more research is needed to identify the conditions under which such activities can best benefit firms and customers. Not all firm and customer combinations will have the desire, or opportunity, therefore, to engage in co-creation dialogue. There will be circumstances and scenarios where co-creation is not desired or less appropriate. Some firms may always co-create; others may choose to co-create at certain times (or at certain points within the customer process); and there may also be firms that co-create only to a limited extent or not at all.

2.4 Conclusions

Zwick et al (2008, p. 174) observe a disconnection between:

> The language of relationship, satisfaction, and freedom pervading academic and professional discourse on co-creation, on the one hand, and the reality of increasingly rationalized systems of service production and distribution that continuously streamline and dehumanize exchange relations between customers and companies, on the other.

The authors observe that many interactions we take as customers are somewhat removed from cocreation principles and are largely governed by 'McDonaldized systems aimed at cost efficiencies, strict customer population control, and predictability' (Zwick, et al., 2008, p. 174). However, the potential for co-creation to be a successful part of an organization's strategy remains:

> If customers somehow become better customers – that is, more knowledgeable, participative, or productive – the quality of the service experience will likely be enhanced for the customer and the organisation' (Claycomb, et al., 2001, p. 1).

Empirical studies assessing the impact of co-creation are limited, not surprising given the relative recency of the concept. There are, however, some studies that address the impacts of cocreated (or related) activity.

The impact of co-creation in the health care sector is explored by Dellande, Gilly and Graham (2004) and identifies that cocreation between the provider and the customer led to increased role clarity and subsequently customer ability, motivation, compliance and ultimately goal attainment and satisfaction. Auh et al (2007) highlight implications of adopting a strategy of co-production on employees and highlight issues relating to recruitment and job-design but also identify that increasing customer contact could 'give rise to more emotional labour and concordant increases in role stress and emotional exhaustion' (Auh, et al., 2007, p. 367).

With regard to new product and service innovation there are three relevant studies which suggest benefits of involving customers in innovation. Kristensson et al (2002) indicate how users produced more original ideas than the organisations service developers and suggest a role for customers at the product design stage. Matthing, Sanden and Edvardsson (2004, p. 492) identify that adopting a proactive approach

and involving customers early and intensively, firms can facilitate learning and reduce the risk of being imitated and surpassed by competitors'. Hsieh and Chen (2005) have produced similar results in the area of new product development.

Dong et al (2008, p. 132) discovered that customer involvement in service recovery in co-created contexts increased customer skill levels and enhanced their 'likelihood to co-create in the future'. Although their research did not provide a concrete relationship between participation in co-created service recovery and future co-creation it did suggest a mediated link with role-clarity connecting the two concepts. In a community context Rowley et al (2007, p. 144) identify that the business performance of an organisation over the longer term is 'defined and determined by the extent to which its leadership of a community of potential customers, or its power and capacity to lead, is greater than that of its competitors'. For customers, Claycomb et al (2001) identify that the degree of organizational socialization and perceptions of service quality both increased as customers become more active participants in service delivery.

Despite the relative parity of empirical evidence surrounding cocreation these studies do provide enough of an indication that involving customers in the design, production, consumption and servicing of products and services is likely to impact upon customers, employees and firms.

The importance of cocreation in generating value for both customers and organizations is growing. A front line research status is crucial considering its infancy as a concept with many aspects that are not well understood (Hoyer, et al., 2010); including a need to understand 'when and how customers should be invited to actively cocreate, when to use the more traditional passive approach' (Gustafsson, A. in Ostrom, et al., 2010). Hoyer et al (2010, pp. 285-286) present other 'important' research questions, asking why the scope and intensity of cocreation varies across firms? But also, what links co-creation and its benefits?

Debates around cocreation suggest that, under certain conditions, some firms might derive success from a cocreation strategy (Jaworski & Kohli, 2006; Prahalad & Ramaswamy, 2004a). However, what is less clear is whether value co-creation is beneficial for all companies at all times, since there might be substantial risks (e.g.,

costs, complexity, and time) associated with this approach (Gray, et al., 2007; Kalaignanam & Varadarajan, 2006; Oliver, 2006; Rust & Thompson, 2006).

To explore the issues outlined in this chapter further the following chapter will discuss the most appropriate research design that can meet the needs of research gap identified and the many unexplored issues relating to value co-creation.

Chapter 3. Research Methodology

3.1 Introduction

The previous chapter identified Value Co-Creation as under-researched (Hoyer, et al., 2010; Ostrom, et al., 2010; Schau, et al., 2009) and any empirical study around the concept should therefore adopt an exploratory approach as an initial step. This chapter introduces the research design strategy adopted within the thesis. Firstly the research objectives will be reintroduced and their implications for data collection discussed. Following on three philosophical research paradigms will be introduced and discussed with a justification for selecting a pragmatist approach to the research design. This approach supported a mixed methods design and a combination of sequential-exploratory and multiphase design (Creswell, 2009; Creswell & Plano Clark, 2011) was adopted. The various phases of the research are then outlined and analysis procedures discussed.

3.1.1 Aims and Research objectives

The aim of the thesis was to:

> **Investigate the value co-creation concept and its impact on customer behaviour and firm performance.**

This broad aim was designed to explore the nature of value co-creation activity within certain marketing contexts but also to explore how value co-creation might affect both firm and customers. This research aim was influenced by unexplored issues surrounding value co-creation. There is consensus among authors that aspects of value co-creation are not well understood (Hoyer, et al., 2010; Schau, et al., 2009). In particular a need to understand the conditions for collaborative value co-creation (Gustafsson, A. in Ostrom, et al., 2010) and how to manage co-created services (Bolton, R. in Ostrom, et al., 2010). Given the lack of understanding of the concept and its impacts, replicating successful cocreation strategies is difficult and 'transferring successful practices nearly impossible' (Schau, et al., 2009, p. 31). It is

this knowledge gap relating to the conditions under which value co-creation might be exploited that led to the first research objective:

> *To what extent do operating contexts and conditions influence approaches to value co-creation within the service encounter?*

This objective was explored within a qualitative research study which is discussed in chapter 4 and provided a conceptual base for the remaining empirical aspects of the thesis. Value co-creation implies interdependency between firm and customer and chapter 2 outlined the need for extensive dialogue, access and potentially shared risk. The second and third objectives considered how engaging in co-created activities could affect both parties in the exchange. Research objective 2 was:

> *To investigate the impacts of value co-creation on the consumer.*

This objective was explored primarily through an experimental study, introduced and discussed in chapter 5, which tested the effect of co-creating on consumer behaviour. The first part of chapter 6 (a case study) also provided some qualitative evidence of the potential benefits of co-creating on the consumer. The final research objective was:

> *To explore the extent to which firms benefit from collaborating with customers through value co-creation.*

In order to achieve this objective the results from all three studies including the second part of chapter 6, which explored the indirect effect of co-creation beyond the firm – customer exchange, will be considered. The range of approaches discussed above clearly indicate a mixed methods approach to the data collection and this chapter outlines the sequential exploratory, multi-phase design where qualitative research informs the subsequent quantitative data collection designed to build on and further the results of the first stage (Creswell, 2009). Before any discussion of research design it is necessary to consider the philosophical underpinnings of mixed methods research and how this is interpreted into a research design.

3.1.2 Philosophy and Interpretation

The practice of research is heavily influenced by philosophical ideas and ideology which should be identified within any research design (Creswell, 2009).

Relationships between data and theory are 'hotly debated' and a 'failure to think through philosophical issues, while not necessarily fatal, can seriously affect the quality of management research' (Easterby-Smith, Thorpe, & Jackson, 2008, p. 56). Identifying and exploring pertinent philosophical issues is an important stage in the research process and Easterby-Smith et al (2008) identify three reasons for this: firstly, philosophical approaches are often closely linked to particular research designs and can clarify potential methods; secondly, an understanding on philosophy should clarify which designs will be successful and which not; finally, they may assist by suggesting designs and approaches which would otherwise have been outside past experience. Essentially, by making explicit the larger philosophical views they espouse, researchers are in a position to provide better justification of particular choices. This process of determining a philosophical stance requires not only a review of the differences between philosophical positions and individuals who subscribe to them (Teddlie & Tashakkori, 2009) but careful consideration of any assumptions a researcher is making about knowledge and the acquisition of knowledge when selecting a particular approach and this usually requires identifying and considering various philosophical assumptions (Creswell & Plano Clark, 2011).

The various philosophical positions are understood as a set of beliefs that guide action labelled as *paradigms, epistemologies, ontologies, methodologies* and *worldviews* (Creswell, 2003). In this thesis, the term *worldview* will be adopted as this is most closely in line with the chosen philosophical position as advocated by its proponents (Creswell, 2009; Creswell & Plano Clark, 2011; Morgan , 2007; Teddlie & Tashakkori, 2009). Creswell (2009) uses the term worldview to 'describe general orientations of the world and the nature of research that a researcher holds' (Creswell, 2009, p. 5). Crucially, worldviews are shaped 'by the discipline area of the student, the beliefs of advisers and faculty in a student's area, and past research experiences' (Creswell, 2009, p. 6).

Within social science and management research, debate over the merits of any philosophical position often take the form of 'denigrating the other point of view, or of completely ignoring its existence…it is important to understand both sides of an argument because research problems often require eclectic designs, which draw from more than one tradition' (Easterby-Smith, et al., 2008, p. 56). However, it is also

important before identifying a chosen philosophical approach to provide some justification as to the rationale for its choice and indicate the rationale for eschewing alternate approaches; this is discussed in the following section.

Most dissertations and doctoral methodologies commence with a debate between competing worldviews and debate the potential of each in relation to their own research project. Once again terminology can vary somewhat but two principle worldviews are post-positivist and constructivist (Creswell, 2009; Easterby-Smith, et al., 2008). These worldviews are often discussed at opposite ends of some kind of metaphysical continuum of research (Morgan , 2007). Guba and Lincoln (1994) are often accredited with the development of a system for comparing the different philosophical positions through the concepts of ontology, epistemology and methodology and these are shown in Table 3-1 Ontology, epistemology, methodology (Guba, 1994; Easterby-Smith, et al., 2008, p. 60

Philosophical Term	**Explanation**
Ontology	Philosophical assumptions about the nature of reality
Epistemology	General set of assumptions about the best ways of inquiring into the nature of the world.
Methodology	Combination of techniques used to enquire into a specific situation.

Table 3-1 Ontology, epistemology, methodology (Guba, 1994; Easterby-Smith, et al., 2008, p. 60)

These paradigmatic approaches are often portrayed as being in competition within a 'metaphysical paradigm' (Morgan , 2007, p. 58) which adopts a strong stand on incommensurability between ontological (and therefore epistemological and methodological) perspectives. Researchers who choose to 'operate within one set of metaphysical assumptions inherently rejected the principles that guided researchers who operated within other paradigms' (Morgan , 2007, p. 58). The paradigm also provided a solution to the 'dominant' positivist paradigm by offering researchers a range of ontological and epistemological perspectives which dominate contemporary methods textbooks (Creswell, 2003; Easterby-Smith, et al., 2008; Gill & Johnson, 2010; Jankowicz, 2005; Teddlie & Tashakkori, 2009) one of the hallmarks identified of successful paradigms (Morgan , 2007). The most widely discussed paradigms

within social science are the post-positivist and constructivist worldviews and these are discussed in the following section.

3.1.3 Positivist and Constructivist Worldviews

Post-positivism (also known simply as positivism or empirical science) represents the thinking after positivism. The approach addresses some of the more widely held criticism of positivism such as the 'value free' claims which are difficult to justify in research with human subjects yet still retains an emphasis on quantitative methods. (Creswell, 2009; Teddlie & Tashakkori, 2009). This represents a departure from pure positivism as first encapsulated by the French philosopher Comte in the 19th Century (Easterby-Smith, et al., 2008) which purported a social world existing externally and measured through objective methods. In ontological terms reality is external and objective and epistemologically knowledge is not significant unless it is observed from this reality (Comte, 1868; Easterby-Smith, et al., 2008; Gill & Johnson, 2010; Jankowicz, 2005) – for much of the 20th century this paradigm (or near variations) have been dominant within social science research (Teddlie & Tashakkori, 2009).

A post-positivistic philosophy is deterministic and seeks to demonstrate causality and reflects a need to identify and assess the causes that influence outcomes, such as those found in experiments (Creswell, 2009). For post-positivists reality remains objective and can be observed and measured as such, therefore 'numeric measures of observations and studying the behaviour of individuals become paramount' (Creswell, 2009, p. 7). Post-positivists generally adopt hypothetico-deductive approaches to research where researchers begin with a theory, develop hypotheses around a small, discrete set of ideas and test through statistical data analysis which allows them to support or refute the theory (Creswell, 2003; Teddlie & Tashakkori, 2009).

In the latter half of the 20th century an alternative worldview emerged as a reaction to the application of positivism within the social sciences (Easterby-Smith, et al., 2008; Gill & Johnson, 2010). This alternative to (post) positivism is known as constructivism (Teddlie & Tashakkori, 2009) (often associated with or termed as interpretivism (Creswell, 2009)) has subsequently developed as a viable, and extensively used, alternative (Teddlie & Tashakkori, 2009).

Constructivist researchers assume that individuals seek to understand the world in which they live and work and do so by building subjective meanings around their experiences (Creswell, 2009). Constructivist researchers seek a plurality of viewpoints as opposed to the reductionist approaches in post-positivism. As much as possible, research goals rely on individual participants' views on any situation being studied (Creswell, 2009). Within constructivist research, subjective meaning is 'negotiated socially and historically… not simply imprinted on individuals but are formed through interaction with others (hence *social*-constructivism) and through historical and cultural norms that operate in individuals' lives' (Creswell, 2009, p. 8). Research is generally conducted through inductive methods through which theories or patterns of meaning can be developed (Comte, 1868; Creswell, 2009; Gill & Johnson, 2010; Jankowicz, 2005). Methods in constructivist research are mainly associated with the gathering, analysis, interpretation and presentation of *narrative* information' (Teddlie & Tashakkori, 2009, p. 6) analysed thematically. The key differences between the two competing philosophies and the resultant implications are summarised in Table 3-2:

Research Assumption(s)	Post-Positivism	Social-constructivism
Ontology	Reality is objective and observed by the researcher	Reality is subjective and interpreted by the researcher
Epistemology	Researcher is independent from that being researched	Researcher interacts with that being researched
Human Interest	Should be irrelevant	The main drivers of science
Explanations	Must demonstrate causality	Aim to increase general understanding of the situation
Research progresses through	Hypotheses and deduction	Gathering rich data from which ideas are induced
Concepts	Need to be operationalised so that they can be measured	Should incorporate stakeholder perspectives
Units of analysis	Should be reduced to simplest terms	May include the complexity of 'whole situations'
Generalisation through	Statistical probability	Theoretical abstraction
Sampling requires	Large number selected randomly	Small number of cases chosen for specific reasons

Table 3-2 Contrasting Positivist and Constructivist Approaches

The notion of competing paradigms (worldviews) was popularized to an extent via the work of Thomas Kuhn (1970) and ensuing paradigm debates demonstrate how competitors disagree about relative merits of their positions (Dann, Nash, & Pearce, 1988; Guba & Lincoln, 1994; Teddlie & Tashakkori, 2009). Disagreements were, in part, shaped by the qualitative communities' critique of the positivist research tradition and dichotomies between the competing positions were mapped using the *ontology, epistemology, axiology;* terms with the aim of highlighting differences between the positions (Teddlie & Tashakkori, 2009) as Table 3-2 identifies. A major element of the debate between the paradigms was the incompatibility thesis which states that mixing qualitative and quantitative forms of research is inappropriate as a result of fundamental differences between the paradigms (Comte, 1868; Fay, 1999; Parasuraman, Zeithaml, & Berry, 1988). This thesis, essentially states that research methods are linked with particular research paradigms in 'a kind of one-to-one correspondence' and if different paradigms are

incompatible then the methods associated cannot be combined (Teddlie & Tashakkori, 2009, p. 15). However, in recent years a growing number of researchers are recognising that far from being incommensurable, these supposedly polarized approaches are complementary and can be used in conjunction (Fay, 1999). This is recognized to an extent by authors for example Smith (1988, p. 12) notes that it 'is not to say that the approaches can never be reconciled' despite divisions. Marketing research in particular has been criticised for a lack of diversity and failure to recognise the benefits of using additional methods when investigating dynamic, complex phenomena (Davis, Golicic, & Boerstler, 2011; Deshpande, 1983; Hudson & Ozanne, 1988). Deshpande (1983) notes how single method studies adhering to a limited set of methods introduce certain inherent biases and delimit the scope of the research. Using a range of multiple methods can produce results which are 'more compelling than single method outcomes' (Stewart, 2009, p. 382).

Mixed methods research is not as well-known as the two main traditions and has 'emerged as a separate orientation during only the past 20 years' (Teddlie & Tashakkori, 2009, p. 7). Mixed methods researchers (see Creswell, 2009; Hanson, Creswell, Clark, Petska, & Creswell, 2005; Ivankova, Creswell, & Stick, 2006; Johnson , Onwuegbuzie, & Turner, 2007; Morgan , 2007; Tashakkori & Creswell, 2007; Teddlie & Tashakkori, 2009) counter the incomparability thesis within mixed methods research with the compatibility thesis as introduced by Brewer (2006, p. 55):

> The pragmatism of employing multiple research methods to study the same general problem by posing different specific questions has some pragmatic implications for social theory. Rather than being wedded to a particular theoretical style…and it's most compatible method, one might instead combine methods that would encourage or even require integration of different theoretical perspectives to interpret the data.

On a philosophical level, researchers counter incompatibility by advancing an alternative perspective – Pragmatism (Creswell, 2009; Creswell & Plano Clark, 2011; Morgan , 2007; Teddlie & Tashakkori, 2009). This is the perspective which has been adopted within this thesis and will be introduced and discussed in the following section.

3.1.4 Pragmatist Worldview

The pragmatic philosophy can be traced as far back as Immanuel Kant, who proposed that:

> 'since our limited human efforts at inquiry can never achieve *totality*, we must settle for *sufficiency*, which is ultimately a practical rather than a theoretical matter, so that prioritizing practical over theoretical reason is an inescapable part of the human condition' (Honderich, 2005, p. 747)

Kant's First Critique of Pure Reason rests on the proposal that traditional metaphysics is based on a fundamental mistake with its presupposition that individuals can make substantive knowledge claims about a world independent of existence. Any reality claims made *a priori* are synthetic since they are not about reality *per se* but about reality as we experience it subjectively (Honderich, 2005, p. 322).

The modern theory of pragmatism is often attributed to the American philosopher C.S. Pierce (Morgan , 2007; Murphy, 1990; Rorty, 1982) who adopted the notion that 'beliefs are habits of acting rather than representations of reality' (Mautner, 2005, p. 485). For Pierce, pragmatism became a theory of meaning, with the meaning of any concept that has application in the real world occurring in the relationship between 'experiential conditions of application with observable results' (Honderich, 2005, p. 748); although for Pierce, observable results meant, in practice, experimental effects. William James, another key figure in pragmatism's development, developed this notion believing that 'true belief was one which led to successful action' (Mautner, 2005, p. 485) and, subsequently to a theory of truth as 'what works'. John Dewey (another proponent of pragmatism) adopted a naturalistic, Darwinian view (Mautner, 2005) suggesting that disinterested truth was a misnomer and that there was no clear separation between the practical and theoretical. Both James and Dewey believed that traditional problems of philosophy were a product of dualisms (theory – practice) which were out of date and somewhat taken for granted. Pragmatism is therefore associated with the notion of efficacy in practical application 'what works out most effectively in practice' and that this can serve as determination of truth (Honderich, 2005, p. 747). The view of society and culture adopted by

pragmatists is ‘essentially optimistic and progressivist, a world to be explored and made the most of, not subjected to radical criticism (Honderich, 2005).

Pragmatism offers an alternative to dualistic research philosophies which are largely concerned with ‘getting things right’ (Cherryholmes, 1992, p. 13) and insist on following strict ontological and epistemological guidelines when reporting past experiences. Pragmatism differs in that it does not maintain that theories, descriptions and explanation precede values but seeks to clarify meaning and consequence (Cherryholmes, 1992). Within a pragmatic philosophy knowledge is held to be instrumental and contextual - a device for making sense of our experiences as individuals, concepts become habits, beliefs or rules that govern our actions (Audi, 1999; Cherryholmes, 1992). Within a pragmatic methodology truth is not judged using epistemological criteria since these cannot be determined separately from research aims and researcher values. Values that ‘arise in historically specific cultural situations are intelligently appropriated only to the extent that they satisfactorily resolve problems and are judged worth retaining’ (Audi, 1999, p. 730). Research findings are important to pragmatist researchers in their ability to illuminate practical consequences of research and because ‘they are the basis for organizing future observations and experiences’ (Cherryholmes, 1992, p. 14). This notion of effects and outcomes can be applied through thinking (what might happen if you do X), practical experiences (watching what happens when you do X), or experiments (trying out X rule and observing the outcomes) (Johnson & Onwuegbuzie, 2004; Murphy, 1990).

The role of the researcher is important within pragmatic research in the same way that the social, historical and political contexts of research are important. On that basis any experiential reading of the world is fallible and subject to revision. So when asked the question as to whether or not research represents reality pragmatists do not pretend to have an answer and would ask if there was any way that one could know; essentially ‘pragmatic researchers are aware that by reading the world we are often reading ourselves’ (Cherryholmes, 1992, p. 14).

Pragmatism is the philosophical orientation most closely associated with mixed methods research (Johnson , et al., 2007) and has been defined by Teddlie and Takahashi, 2009 #1204} as:

> A deconstructive paradigm that debunks concepts such as 'truth' and 'reality' and focuses instead on 'what works' as the truth regarding the research question under investigation. Pragmatism rejects the either/or choices associated with the paradigm wars, advocates for the use of mixed methods in research, and acknowledges that the values of the researcher play a large role in interpretation of results.

The following section outlines how these contemporary researchers use pragmatism to present an alternative worldview which incorporates both quantitative and qualitative approaches.

Pragmatic research takes a middle ground in relation to research design and methodological approaches. This is driven by the pragmatists sense of unease over making any substantive knowledge claims about truth or reality (Honderich, 2005), but also the consequential and practical approach to knowledge as a device for making sense of experiences (Audi, 1999). Pragmatism, it is argued, offers epistemological justification, through pragmatic epistemic values or standards; and logic, using a combination of methods and approaches to provide the best framework for answering a particular research question (Greene & Caracelli, 1997; Johnson , et al., 2007). For Creswell (2009, p. 10), pragmatism as a worldview 'arises out of actions, situations, and consequences rather than antecedent conditions' as in post-positivism. Promoting pragmatism as a philosophical underpinning for mixed methods approaches to research, Morgan (2007, pp. 70-71) asserts that:

> Outside of introductory textbooks, the only time that we pretend that research can be either purely inductive or deductive is when we write up our work for publication. During the actual design, collection, and analysis of data, however it is impossible to operate in either an exclusively theory – or data-driven fashion.

It is this practical attitude to the philosophy of knowledge that fortifies pragmatic approaches to research. Pragmatists do not profess to prophesy truth but practical and operational consequences of certain actions within a certain context. This requires a certain amount of reflexivity on the part of the researcher as a pragmatic approach 'reminds us that our values and our politics are always a part of who we are and how we act' (Morgan , 2007, p. 70).

Pragmatism is both a general belief system for the social sciences but also used as a specific justification for combining qualitative and quantitative methods (Greene & Caracelli, 1997; Morgan , 2007). In Table 3-3 Morgan presents his alternative view to the traditional quantitative and qualitative approaches to research.

	Qualitative Approach	**Quantitative Approach**	**Pragmatic Approach**
Connection of theory and data	Induction	Deduction	Abduction
Relationship to research process	Subjectivity	Objectivity	Intersubjectivity
Inference from data	Context	Generality	Transferability

Table 3-3 A pragmatic alternative to the key issues in social science research methodology (Morgan , 2007, p. 71)

In terms of the connection of theory and data a pragmatic approach would be to rely on a form of *abductive* reasoning that shifts between both inductive and deductive approaches by converting observation to theory and then assessing through action (Morgan, 2007), this resonates with the research approach used within this thesis. Morgan (2007, p. 72) notes the 'forced dichotomies between the subjective and objective' within the metaphysical paradigm, with pragmatism, instead, relying on an *intersubjective* approach, where knowledge is created through joint actions or projects that can be accomplished by a range of methodological approaches. With regard to the inference which can be drawn from research data, pragmatists adopt the term *transferability*. This is based on the assumption that pragmatic research does not make any claim to research being 'either context-bound or generalizable; instead, we always need to ask how much of our existing knowledge might be usable in a new set of circumstances, as well as what our warrant is for making any claims' (Morgan, 2007, p.72). Pragmatists ask questions relating to how things which are learned by using one particular method (or in a particular setting) can be applied in other circumstances (Morgan, 2007).

Johnson and Onwuegbuzie (2004) do not assert that the adoption of pragmatism will end philosophical debate nor should it. However, the pragmatic stance offers researchers:

> An immediate and useful middle position, philosophically and methodologically; it offers a practical and outcome-oriented method of inquiry that is based on action and leads, iteratively, to further action and the elimination of doubt; and it offers a method for selecting methodological mixes that can help researchers better answer many of their research questions (Johnson & Onwuegbuzie, 2004, p. 17).

Pragmatic approaches allow researchers to search for and utilise points of connection between qualitative and quantitative methods by making use of both narrative and numerical forms of data (Teddlie & Tashakkori, 2009). This pluralistic approach to data collection allows researchers in the social sciences to focus attention on the research question and adopt the most appropriate approaches to derive knowledge about the problem (Creswell, 2009; Morgan , 2007; Teddlie & Tashakkori, 2009). Table 3-4 offers a summary of the three world views that have been introduced and debated within the first part of this chapter. Adopting the pragmatist perspective has particular implications which must be considered by researchers as by and large it suggests a mixed methods approach to data collection. The next section discusses the research design used within this thesis and will introduce both the notion of mixed methods research and chosen design approach.

Post-Positivist World View	• Knowledge is conjectural. Post-positivists do not claim absolute truth. On this basis a researcher fails to reject a hypothesis rather than prove one. • Post-positivistic claims are refined or abandoned and often involves theory testing. • Knowledge is shaped by data, evidence and rationality. • Researchers seek to demonstrate causality or explain situations by testing the relationship between variables. • Objectivity is crucial – researchers must address issues of validity, reliability and bias.
Pragmatist World View	• Pragmatism does not commit to one philosophy or perspective. Researchers engage with both qualitative and quantitative research. • Researchers have freedom of choice, methods can be selected that best meet the needs of the study. • Pragmatists do not see the world in absolute unity and look to a range of methods to make sense of the research problem. • For pragmatists truth is whatever works at the time and isn't based on objective or subjective perspective. • Pragmatist researchers are concerned with what and how to research. • For the mixed methods researcher, pragmatism opens the door to multiple methods, worldviews and assumptions.
Social Constructivist World View	• Meanings are phenomenologically constructed by individuals and explored through open ended questions. • Social constructivists make sense of their surroundings according to their own social perspective and gather information through face to face interaction and by visiting research settings. • Meaning generated from research is derived from social interaction and constructed through inductive approaches.

Table 3-4 Comparison of Philosophical Worldviews (based on Creswell, 2009, pp. 7-11)

3.2 Research Design

3.2.1 Mixed Methods

Mixed methods researchers have been termed the third research community (Johnson, et al., 2007; Teddlie & Tashakkori, 2009) (alongside qualitative and quantitative researchers) and date the formation of their movement to the 1980's where several authors from different countries and backgrounds including sociology, management and education 'all came to the same idea at roughly the same time'

(Creswell & Plano Clark, 2011). These ideas were gradually integrated (see Bryman, 2006) and subsequently research designs, classifications and notation systems were developed. A study of how mixed methods is being defined and used within the research field was undertaken by Johnson et al (2007, p. 123) and this produced the following definition:

> Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g., use of qualitative viewpoints and quantitative viewpoints, data collection, analysis inference techniques) for the broad purposes of breadth and depth of understanding and corroboration.

The antecedents of the mixed-methods movement can be traced back to the middle part of the 20th century. Authors such as Campbell and Fisk (1959) advocated an enhanced validation process (for quantitative research) which they termed the multi-trait-multi-method matrix. Essentially, the authors were concerned that in quantitative research there was no way, with only one method, that researchers could distinguish between 'trait variance from unwanted method variance' (Campbell & Fisk, 1959, p. 102). By using several, independent methods of measuring the same trait and using a matrix of trait-method correlations an enhanced validation of a subject could be assured. In the 1970's the notion of mixing methods moved beyond the purely quantitative approach used by Campbell and Fisk to explore the potential for converging or triangulating both quantitative and qualitative data sources (Jick, 1979). Jick (1979) recognised the strengths and weaknesses found in single measure designs and proposed that quantitative and qualitative methods should be seen as complementary. Jick (1979) saw mixed methods approaches as giving researchers the potential to achieve methodological triangulation and improve the accuracy of their judgements by collecting different kinds of data bearing on the same phenomenon. Like Campbell and Fisk's matrix approach, Jick (1979, p. 602) saw triangulation as a 'vehicle for 'cross-validation' when two or more distinct methods are found to be congruent and yield comparable data. This would allow researchers to be more confident of results and stimulate the creation of more inventive research approaches. Other authors in this period advocated a multi-source approach to gathering data (Denzin, 1978) or to incorporate qualitative elements within experimental studies (Cronbach, 1975).

An important element linking these new approaches in the 1970's was the increasing recognition that qualitative research had an important role to play in the research process as a counterpoint to quantitative research (Jick, 1979). Although these authors all advocated a mixed methods approach from within the positivist tradition they serve to indicate how utilizing a range of methodological sources could benefit the research process. Creswell and Plano Clark (2011) identify several stages of development of the mixed methods tradition and these are summarised in Table 3-5:

Stage of Development	Years	Key Features
Formative Period	1959-1979	Introduces the notion of using multiple sources in the same study for both triangulation and validity purposes.
Paradigm Debate Period	1980-1997	Addresses debate between traditional paradigms and attempts to reconcile approaches.
Procedural Development Period	1988 - 2000	Develops designs, procedures and classifications for mixed methods research.
Advocacy and Expansion Period	2003-Present	Positions mixed methods research as viable alternative to traditional qualitative and quantitative research.
Reflective Period	2003 – Present	Addresses key issues in mixed methods research, critiquing and interrogating approaches

Table 3-5 Mixed Methods Research, Stages of Development (Creswell & Plano Clark, 2011, pp. 23-25)

In recent years mixed methods approaches have expanded and there are dedicated books and journals advocating the approach (Bryman, 2006, 2007; Creswell, 2009; Creswell & Plano Clark, 2011; Hanson, et al., 2005; Ivankova, et al., 2006; Johnson , et al., 2007; Morgan , 2007; Teddlie & Tashakkori, 2009). The modern approach to mixed methods moves beyond simple triangulation to become an approach to inquiry in its own right involving both philosophical assumption and the mixing and integration of both quantitative and qualitative methods within the same study. Crucially, mixed methods, according to Creswell (2009, p. 4):

> Is more than simply collecting and analysing both kinds of data. It also involves the use of both approaches in tandem so that the overall strength of a study is greater than either qualitative or quantitative research

Creswell (2009, p. 205) notes that mixing qualitative and quantitative methods does not necessarily need to be within one study but could be found 'among several studies within a programme of inquiry' and this is the approach adopted within this thesis. Before the specific research design is discussed it is important to identify the benefits and drawbacks of a mixed methods approach to provide further justification for the approached adopted within the thesis. The principle benefits and challenges are shown within Table 3-6:

Benefits	Challenges
• Provides stronger results through triangulation of findings • Words, pictures, and narrative can be used to add meaning to numbers; • Numbers can be used to add precision to words, pictures, and narrative; • Can provide quantitative and qualitative strengths; • Researchers can generate and test a grounded theory; • Can answer a broader and more complete range of research questions because the researcher is not confined to a single method or approach; • A researcher can use the strengths of an additional method to overcome the weaknesses in another method by using both in a research study; • Can provide stronger evidence for a conclusion through convergence and corroboration of findings; • Can add insights and understanding that might be missed when only a single method is used; • Can be used to increase the generalizability of the results; • Provides a holistic understanding of phenomena.	• Can be difficult for a single researcher to carry out both qualitative and quantitative research, especially if two or more approaches are expected to be used concurrently; it may require a research team; • Researcher has to learn about multiple methods and approaches and understand how to mix them appropriately; • Methodological purists contend that one should always work within either a qualitative or quantitative paradigm; • More expensive; • More time consuming; • Some philosophical issues remain (analysing mixed results, problems of paradigm mixing) • Can encounter difficulties in the review process; • Reporting of results can be problematic within journal restraints.

Table 3-6 Strengths and Weaknesses of Mixed Methods Research (Davis, et al., 2011; and Johnson & Onwuegbuzie, 2004, p. 21)

On a practical level, the pragmatic, mixed methods approach to conducting research would appear to have much in its favour, particularly in the case of doctoral research. As this thesis was conducted over multiple years the weaknesses of the approach are largely negated as an individual has sufficient time to devote to multiple data collection projects and gaining familiarity with multiple approaches to data collection. The approach of this thesis will be to explore value co-creation in three independent but complimentary studies (chapters 4, 5, 6) which develop and inform the research aim incrementally. The results of all three studies are then synthesised in a discussion chapter (7).

The next section of this chapter introduces the mixed methods research design adopted within this thesis. Creswell (2009) advocates six forms of mixed methods research designs which are grouped under the two principle headings of sequential or concurrent designs. The terms are self-explanatory, sequential designs involve the researcher commencing with one data collection method and then after analysis, moving forward with another before a final period of analysis; concurrent designs have researchers undertaking research activities simultaneously. Given the recency of the concept and the exploratory nature of objective 1 the initial focus of the research would be exploring the concept of value co-creation and then investigating some of its forms and contexts in more depth. A *sequential exploratory or multi-phase design* were explored as both seemed to best fit the requirements of the thesis.

3.2.2 Chosen Research Design

Sequential exploratory designs (SED) (see Figure 3-3) have several uses within mixed methods approach. The primary focus is to explore a phenomenon (Creswell, 2009; Morgan , 1998) but it can also be used to assist in the interpretation of qualitative results and also allows researchers to generalize findings to different samples (a simple key to mixed methods notation is given in appendix 1).

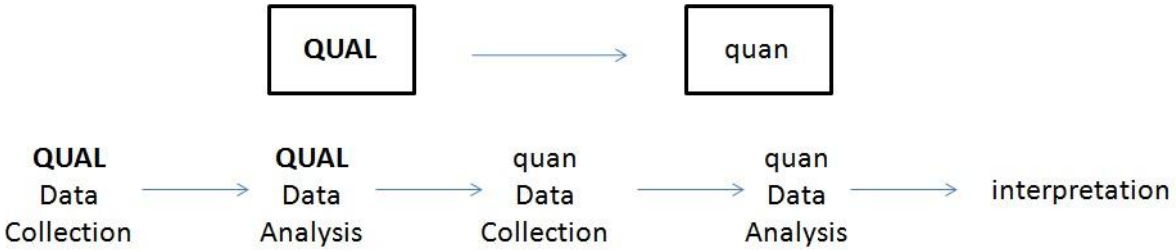

Figure 3-1 Sequential Exploratory Design (Creswell, 2009, p. 209)

A SED usually involves an initial qualitative phase of data collection and analysis followed by a second, quantitative, phase 'that *builds* on the results of the first, qualitative phase' (Creswell, 2009, p. 211). In the main, SED use qualitative data based on small samples in phase 1 and apply to a larger sample during phase 2 with the aim of phase 1, informing and developing phase 2 (Creswell & Plano Clark, 2011). The SED is used when:

- Specific measures or instruments are not available
- There is no guiding framework or theory.
- The researcher and the research problem are more qualitatively oriented;
- The researcher does not know what constructs are important to study, and relevant quantitative instruments are not available;
- The researcher has time to conduct the research in two phases;
- The researcher has limited resources and needs a design where only one type of data is being collected and analysed at a time;
- The researcher identifies new emergent research questions based on qualitative results that cannot be answered with qualitative data

(Creswell & Plano Clark, 2011, p. 87)

Because this design begins qualitatively, it is best suited for exploring a phenomenon or when a researcher needs to develop or test a phenomenon for which no test is available (Creswell & Plano Clark, 2011). The strengths and challenges of the approach are summarised in Table 3-7, in particular advantages are that the process is straightforward to implement, describe and report and useful for researchers wishing to explore a phenomenon but expand on initial qualitative findings (Creswell, 2009). SED's require considerable time to action but given the nature of PhD study this was, once again, not an insurmountable problem. Variants

of SED designs put particular emphasis on the qualitative (theory-development) or quantitative (instrument-development) elements.

Strengths	Challenges
• Separate phases make the exploratory design straightforward to describe, implement, and report; • Although designs typically emphasise the qualitative aspect, the inclusion of a quantitative component can make the approach more acceptable to quantitative-biased audiences; • This design is useful when the need for a second, quantitative phases emerges based on what is learned from the initial qualitative phase; • The researcher can produce a new instrument as one of the potential products of the research process.	• The two phase approach requires considerable time to implement, potentially including time to develop a new instrument. Researchers need to recognize this factor and build time into their study plan; • Researchers should consider using a small purposeful sample in the first phase and a large sample of different participants in the second phase to avoid questions of bias in the quantitative strand; • If an instrument is developed between phases, the researcher needs to decide which data from the qualitative phase to build the quantitative instrument and how to use these data to generate quantitative measures • Procedures should be undertaken to ensure that the scores developed on the instrument are valid and reliable.

Table 3-7 Strengths and Challenges of the SED (Creswell & Plano Clark, 2011, p. 89)

The multiphase research design (MPD see Figure 3-2) is a mixed methods approach that goes beyond sequential and exploratory designs (Creswell & Plano Clark, 2011). A MPD occurs when investigating a topic using a series of connected studies aligned sequentially. Each new study should develop and expand prior findings to address a central programme object (Creswell & Plano Clark, 2011, p. 100); MPD therefore combines both concurrent and sequential aspects of mixed methods research.

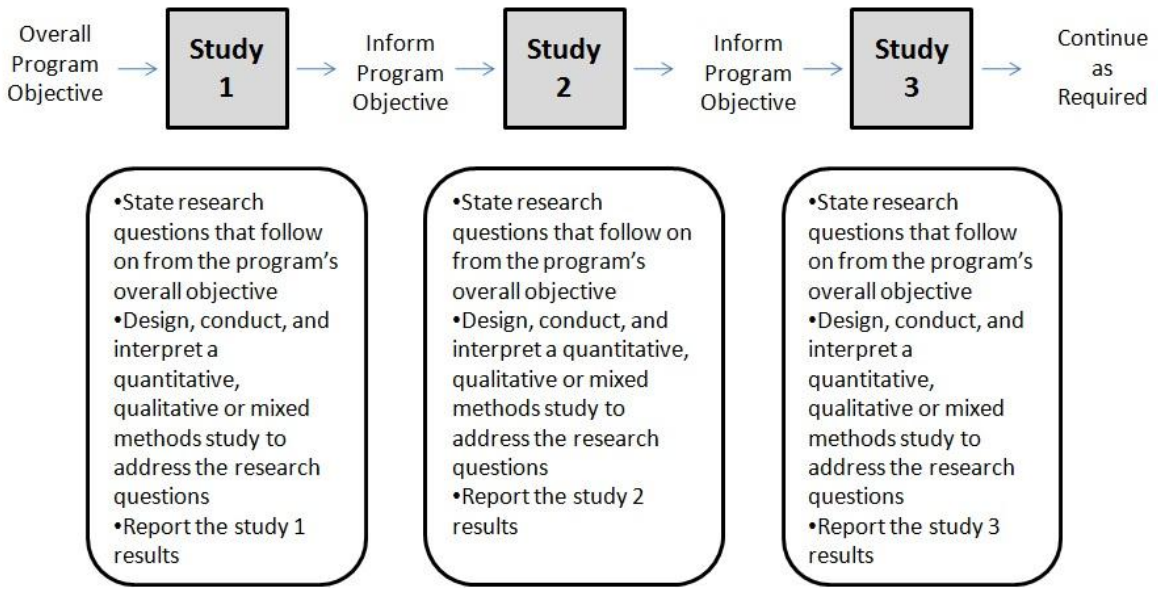

Figure 3-2 Multiphase design (Creswell & Plano Clark, 2011, p. 102)

The underlying purpose of an MPD is to investigate a series of 'incremental research questions that all advance one programmatic research objective' and is usually found within large scale, multiyear projects with multiple phases to develop an overall program of research (Creswell & Plano Clark, 2011, p. 100). The main uses of MPD are where:

- The use of one mixed methods study will not meet all the objectives
- A researcher has the resources and funding to implement over several years
- The researcher has experience of large-scale research
- The researcher is conducting an mixed methods study that is emerging, and new questions arise during different stages of the research project
- The researcher is part of a team including practitioners in addition to individuals with specific research expertise

(Creswell & Plano Clark, 2011, p. 101)

The scale of a multiphase design mean that it is likely to be conducted over several years to address one specific research objective, within the sequence of studies researchers will likely 'mirror procedures for implementing one or more of the basic mixed methods designs' (Creswell & Plano Clark, 2011, p. 101). A summary of strengths and challenges is displayed in Table 3-8. In particular the ability to publish elements from studies while still contributing to the overall

program was deemed important to this thesis along with the need to address interconnected research objectives. Once again, time limitations were not problematic but the connections between the studies would be important.

Strengths	Challenges
• The multiphase design incorporates the flexibility needed to utilize the mixed methods design elements required to address a set of interconnected research questions; • Researchers can publish the results from individual studies while at the same time still contributing to the overall evaluation or research program; • The design fits the typical program evaluation and development well; • The researcher can use this design to provide an overall framework for conducting multiple iterative studies over multiple years;	• The researcher must anticipate the challenges generally associated with individual concurrent and sequential approaches within individual research phases; • The researcher needs sufficient resources, time, and effort to successfully implement several phases over multiple years; • The researcher needs to effectively collaborate with a team of researchers over the scope of the project, while also accommodating the potential addition and loss of team members; • The researcher needs to consider how to meaningfully connect the individual studies in addition to mixing quantitative and qualitative strands within phases; • Due to the practical focus of many multiphase designs for program development, the investigator needs to consider how to translate research findings into practice through developing materials and programs; • The researcher may need to submit new or modified protocols to the institutional review board for each phase of the project

Table 3-8 Strength and Challenges of multi-phase research designs (Creswell & Plano Clark, 2011)

For this doctoral thesis there were elements of both designs which resonated with the research problem, but neither was able to offer a standalone solution. Research objective one was totally exploratory and the results of the study would inform the remaining research objectives for studies two and three. As will be explored further in chapters 4-6 the results of study one did indeed suggest further exploration of the Value Co-Creation concept using quantitative methods which informed and enhanced the initial qualitative phase. However, the research did not fall into either

the qualitative dominant theory-development or quantitative dominant instrument-development variants of SED, as the results of all three studies may have been of equal importance to the study overall. With regard to the multiphase approach the thesis was planned around interconnected research objectives and each study was planned around a specific, standalone research publication. The multi-year nature of the PhD also supported a research aim that required examination through interconnected research studies. The chosen approach is an amalgamation of both SED and MPD's and can be seen in Figure 3-3.

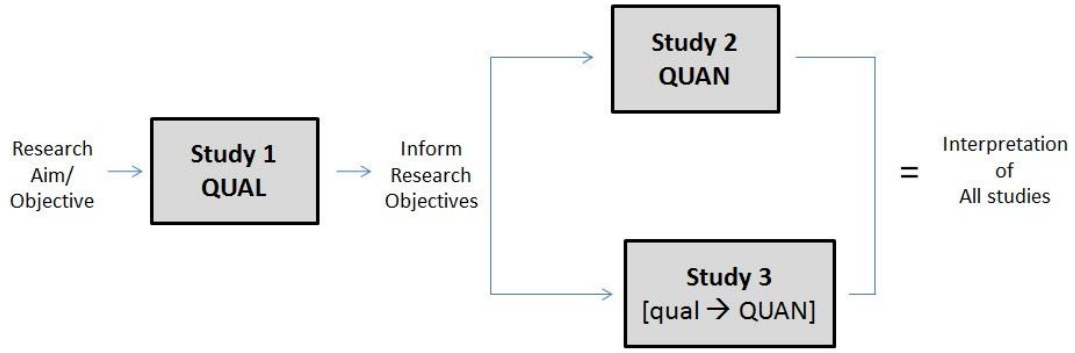

Figure 3-3 Sequential Exploratory Multiphase design (Creswell, 2009; Creswell & Plano Clark, 2011)

Figure 3-3 shows the doctoral thesis from an initial research aim (see section 3.1.1) moving to a qualitative study. After this initial exploratory phase and reference back to the overall research objectives two further studies were undertaken; study two a quantitative study, and study three a sequential exploratory design embedded within the overarching design. This Sequential Exploratory Multiphase Design (SEMD) also shares some similarities with concurrent approaches to mixed methods data collection in that the data in both study two and study three was gathered independently and then results combined during the analysis phase (Creswell, 2009; Creswell & Plano Clark, 2011) however, the data in study two and three was not collected simultaneously and both studies were informed by study one so concurrent approaches are not considered within this chapter. The design was also holistic (Caracelli & Greene, 1997) in that an overarching conceptual framework (Value co-creation and S-D Logic) guided the design and implementation of the whole study. This form of approach also had benefits in the analytical phases (see section 3.3).

The final part of this chapter considers how mixed methods research might be integrated both within SED studies and across the whole thesis in a final, analytical

chapter. The section will consider the benefits and approaches to integration followed by the approach to analysis and potential barriers. The chapter concludes with a summary.

3.3 Integrating Qualitative and Quantitative Research

Data analysis in mixed methods research does not differ in many ways from single methods approaches. In most mixed methods designs each element or phase of the research process will be analysed independently using established procedures before combining the data (Teddlie & Tashakkori, 2009). Bringing together quantitative and qualitative findings has the potential 'to offer insights that could not otherwise be gleaned' (Bryman, 2007, p. 9).

Presenting some form of combined analysis has a number of benefits. Firstly, it allows for data triangulation with data corroborated across different methods (Caracelli & Greene, 1993); secondly, integrated approaches are complementary in that they measure 'overlapping but distinct facets of the phenomenon under question' (Caracelli & Greene, 1993, p. 196); finally integration is crucial within a holistic design of mixed methods (such as that used within this thesis) as different methodological approaches are interdependent in their contribution to the understanding of a complex phenomenon (such as value co-creation) and the 'tension invoked by juxtaposing different inquiry facets is transferred to the substantive framework, which then becomes the structure within which integration occurs' in this case the research aim and objectives (Caracelli & Greene, 1997, p. 24).

Two approaches to the integration of mixed methods needs to be considered. Firstly study 3 as discussed above is represented by a stand-alone SED study and the approach to analysis and integration will be considered first. Secondly chapter 7 presents an overarching synthesis and discussion of the results of all three studies so the method of integration for this will also need consideration.

3.3.1 Approaches to Analysis

Sequential mixed data analysis occurs when the various methodological strands of a study occur chronologically such that the analysis of one part is dependent on the

previous section and could include the development of hypotheses on the basis of QUAL research. Creswell and Plano Clark (2011) present a straightforward linear strategy for collection and analysis of SED research.

Essentially the researcher must:

1) Collect the qualitative data
2) Analyse the qualitative data qualitatively using analytic approaches best suited to the research question
3) Design the quantitative strand based on the qualitative results
4) Develop and pilot test the new instrument
5) Collect the quantitative data
6) Analyse the quantitative data quantitatively using analytic approaches best suited to the quantitative, and mixed methods questions
7) Interpret how the connected results answer the qualitative, quantitative, and mixed methods questions. (Creswell & Plano Clark, 2011, p. 219)

In an SED three separate stages of analysis occur for the QUAL, QUAN and (where appropriate) combined data. This approach is validatory with the QUAN phases validating any emergent themes from the QUAL phase (Teddlie & Tashakkori, 2009) but also developmental in that exploratory designs see 'results from one to help develop or inform the other' (Caracelli & Greene, 1993, p. 196). In study 3 (see chapter 6), the QUAL phase is based on an embedded case study which is followed up with a larger QUAN study which uses a multi-level modelling approach. The data is analysed independently and then combined at the end of the chapter.

In chapter 7, data will be explored using the conceptual framework and the research objectives introduced in chapter 1. The data from the three studies will be consolidated using themes emerging from comparisons of QUAL and QUAN data using approaches suggested by various authors (Bryman, 2006; Greene, Caracelli, & Graham, 1989; Teddlie & Tashakkori, 2009), through a process of reduction, consolidation, comparison and integration into a coherent whole. These procedures follow logical steps but are in themselves alternative approaches to analysis (Creswell & Plano Clark, 2011). Therefore, although each objective was notionally linked to a specific research objective the results contained within each study may cross-inform other objectives and further triangulate findings.

Barriers to integrating qualitative and quantitative are observed in the literature but not insurmountable. Bryman (2007) groups potential barriers into three different types: firstly, there are the barriers that relate to intrinsic aspects of quantitative and qualitative research and their constituent methods; secondly, there are issues to do with the wider institutional context of mixed methods research or that particular audiences might express a preference for one of the other; finally, the third barrier relates to the skills and preferences of the researcher (Bryman, 2007). The first issue (essentially the incommensurability debate) has been discussed earlier. This is, essentially, a philosophical barrier and to avoid potential pitfalls of this no attempt has been made to quantitize QUAL data or vice versa qualitatize QUAN data, instead the triangulatory/complementary approaches are preferred as discussed previously. Secondly, mixed methods seem appropriate within a PhD concept and any examiner will need to be chosen with methods in mind, subsequent decisions, on publications will also take this second issue into account. Finally, this researcher has found the process of mixed methods rewarding and challenging in equal measure commensurate with the challenges of a PhD.

The remaining chapters of the thesis are set out in accordance with Figure 3-3. The next chapter (4) addresses the first, exploratory phase of the thesis. This phase encompasses two parts: the first is an initial rating exercise used to verify a sampling framework used for a small scale qualitative data collection exercise based around a series of semi-structured interviews which a range of service industry professionals. Chapter 5 and 6 address the remaining research objectives using an experimental approach (5) and a further mixed methods approach with a case study followed up with a multi-level hierarchical study (6). Chapter 7 provides an overarching discussion of the three empirical studies and explores the implications of these results for our understanding of how value is co-created and the conditions under which it might best be exploited in the context of the three main research objectives. Finally, a conclusion chapter (8) considers the contribution of the thesis along with the theoretical and managerial implications of the work herein.

Chapter 4. Study 1: Exploring co-creation contexts and conditions

This chapter presents the results of the initial qualitative study which addresses objective 1:

To consider the operating contexts and conditions that influence approaches to value co-creation within the service encounter.

The chapter is presented in two sections: firstly, to enable an appropriate range and sample of service firms for the study a pre-existing service classification was selected and then subject to an rating exercise to establish the extent to which the firms from each category might co-create at various stages of a purchasing cycle. Subsequently a series of interviews was conducted with managers from each of the firms represented within the scale; the methodology and results of this exercise are also presented. The chapter concludes with a conceptual model of the service encounter which presents the firm and environmental conditions in which the different types of value co-creation might be played out.

The objective suggests an exploratory study as a result it was necessary to investigate a range of organizations and explore how value co-creation occurs throughout the purchasing cycle, considering the attributes of the firms (and their customers) that determine the firms for which co-creation might be appropriate.

To explore the co-creation activity a process approach to the purchasing cycle was adopted. Payne et al's (2008) conceptual model for understanding and managing co-creation (see Figure 2-2) suggest how encounter processes are 'the interaction and exchange that take place within customer and supplier relationships and which need to be managed in order to develop successful cocreation opportunities' (Payne, et al., 2008, pp. 85-86) are most apposite. It is through encounters that parties interact and, more importantly, interact and collaborate to co-create value and these encounters occur through the initiative of supplier or customer.

Given the contextual nature of value co-creation identified in chapter 2 and the propensity for service firms to engage and involve customers in value co-creation

activities throughout the purchasing cycle (see Wikström, 1996, p. 14) the range and nature of encounters were explored within a three stage cycle (pre-purchase – purchase/consumption – post-purchase) where the dimensions of the encounter could be mapped. A sampling frame was sought that would appropriately categorize firms not 'by industry but by marketing-relevant characteristics that transcend industry boundaries' (Lovelock, 1980, p. 72). Given the relative infancy of value co-creation no agreed scale exists. Various service classification scales (Bowen, 1990; Cook, Goh, & Chung, 1999; Haywood-Farmer, 1988; Lovelock, 1980, 1983) were considered with the aim of finding a scale that utilized dimensions of value co-creation (albeit not measured as such). The scale developed by Haywood-Farmer (1988) classifies services across 3 dimensions; level of customization, labour intensity, and degree of contact and interaction. High levels of interactivity and customer contact within the service encounter and customization have both been identified as important for co-creation (Ballantyne & Varey, 2006a; Prahalad & Ramaswamy, 2004a; Vargo & Lusch, 2004a), and labour intensity (particularly in high contact firms) relates to the importance of personal interface between client and firm (Auh, et al., 2007) and the nature of information transferred (Kellogg & Chase, 1995). This scale was adopted as a starting point for the research.

Using a range of industries from the scale (see Table 4-1) multiple expert raters were used to evaluate firms on the extent of value co-creation across the three encounter stages. In order to assess their degree of agreement a form of interrater agreement was used which is discussed in the next section.

Service firm		
Public transport	**Electricity supplier**	**Travel agent**
Fast food restaurant	**Courier firm**	**Architect**
Supermarket	**Bank**	**5-star hotel**

Table 4-1 Service Firms Used for Interrater Exercise

4.1 Interrater Reliability Exercise

The reliability of ratings has its background in psychology and the work of James and colleagues (James, 1982; James, Demaree, & Wolf, 1984, 1993). James (1982, p. 816) first demonstrated how 'inappropriate uses of aggregate perceptions have

resulted in biased estimates of perceptual agreement' and was concerned that perceptual agreement carried some implication of shared psychological meaning i.e. that an aggregate mean provided an opportunity to describe a phenomenon in psychological terms.

Essentially James (1982) is suggesting that definitions of a construct at an aggregate level are defined in the same way as for the individual level. These aggregated measurements do not tell the complete story and issues of construct validity must also be addressed and the extent to which individual's scores should be aggregated in the first place (James, 1982).

A technique for assessing agreement among judgements made by a group of raters was introduced (James, et al., 1984) as a heuristic form of IRR with the purpose of the rwg (interrater reliability within-group) to 'assess whether judges gave the same rating to a target' (James, et al., 1993, p. 306). This rwg measurement was later clarified as measurement of interrater agreement (IRA) and not consistency (James, et al., 1993). Therefore, rwg was recast as 'an estimator of IRA without relying on true variance or equations from classic measurement theory' (James, et al., 1993, p. 307).

A note of caution is sounded by James about the using of IRR/IRA in that results could be affected by noise in the data if individuals received different stimuli or if there are significant differences between individuals with regard to cognitive or affective factors which might result in them assigning different meanings to the same stimulus (James, 1982). In the research in question (outlined below) individuals were all exposed to the same cues and stimuli through the rater form (see appendix 2). All individuals selected work within the same organisation (Strathclyde Business School) and all have experience in teaching and researching services marketing.

LeBreton and Senter (2008) provide a summary of IRA used to 'address whether scores furnished by judges are interchangeable or equivalent in terms of their absolute value' (LeBreton & Senter, 2008, p. 816). In the context of this first study it was the consensus between judges in relation to absolute values of ratings that was needed so IRA measurements were used.

The scales used were multi-item so the IRA measurement used was rwg(j) (James, et al., 1984, 1993) where a 'single target is rated by multiple raters on j=1 to j parallel items' (LeBreton & Senter, 2008, p. 819). The multi item rwg(j) is estimated using the following equation:

$$\mathrm{Rwg}(J) = \frac{J\left(1 - \frac{\bar{S}_{Xj}^2}{\sigma_E^2}\right)}{J\left(1 - \frac{\bar{S}_{Xj}^2}{\sigma_E^2}\right) + \left(\frac{\bar{S}_{Xj}^2}{\sigma_E^2}\right)}$$

Equation 4-1

In this equation $\bar{S}_{Xj}^2$ is the mean of the observed variances for j and σ_E^2 is the 'variance expected when there is a complete lack of disagreement among the judges' (LeBreton & Senter, 2008, p. 818). σ_E^2 , the uniform null, 'yields the largest estimate of error variance, it also yields the largest values of rwg'. σ_E^2 is calculated using the following equation:

$$\sigma_E^2 = \frac{A^2 - 1}{12}$$

Equation 4-2

Given that 'no simple equation exists for estimating the variance of the alternative null distributions' (LeBreton & Senter, 2008, p. 830) and that the ratings for this exercise were being used to create an interview sampling frame only, the uniform null distribution was deemed the most expeditious.

4.1.1 Results

The ratings form was sent to 6 academics for rating and 4 usable ratings forms were returned. The academic raters were given a brief introduction to value co-creation, and a set of dimensions of value co-creation from the literature (level of interaction and dialogue; customization of product/service; utilization customer knowledge; access to company data; customers enabled to solve problems; co-design; co-production; presence of online customer communities) (see appendix 2 for the ratings form). The raters returned their assessment on the degree of value co-creation using five-point scales for each of the stages during which value co-creation activity might take place. Ratings were given on 5 point scales for each stage of the

purchasing cycle. Data was entered and rwg(j) calculated in excel. To aid researchers calculating IRA estimates Le Breton and Senter (2008) provide an inclusive set of heuristics to use when estimating levels of IRA. The authors note that some research questions may only necessitate the establishment of moderate or little agreement. These heuristics are included in Table 4-2:

Table level of IRA	Substantive interpretation
.00 to .30	Lack of agreement
.31 to .50	Weak agreement
.51 to .70	Moderate agreement
.71 to .90	Strong agreement
.91 to 1.00	Very strong agreement

Table 4-2 Revised standards for interpreting IRA estimates (LeBreton & Senter, 2008, p. 836)

The rwg(j*)* scores and mean scores (for the purchasing cycle stages and an overall co-creation score) for the nine service contexts are shown in Table 4-3:

Service firm	$rwg_{(j)}$ score	Overall Score	Pre-purchase	Purchase/ Consump	Post-Purchase/ Service
Public transport	**0.64**	1.67	1.25	2.25	1.50
Fast food restaurant	**0.62**	1.75	1.50	2.50	1.25
Supermarket	**0.81**	2.08	1.50	3.25	1.50
Electricity supplier	**0.69**	2.17	3.00	1.25	2.25
Courier firm	**0.68**	2.75	3.50	2.75	2.00
Bank	**0.78**	3.25	3.00	4.00	2.75
Travel agent	**0.55**	3.58	4.00	3.50	3.25
Architect	**0.72**	4.00	4.00	4.33	3.67
5-star hotel	**0.97**	4.33	4.00	5.00	4.00
Mean score	**0.72**	2.84	2.86	3.20	2.46

Table 4-3 IRA and Mean Scores for Firm Sample

The firm types represent a wide range of value co-creation potential, from public transport (*M* = 1.67) to 5-star hotels (*M* = 4.33). Using the heuristics provided by Lebreton and Senter (2008, p. 836), there was moderate to very strong agreement between raters indicating consensus on the likely degree of value co-creation for nine service firms (see Table 4-3). The results of the ratings indicate variations between firms within the 3-stage purchasing cycle which warranted further exploration.

4.2 Interviews

Interviews were selected to develop a depth of understanding of a particular phenomenon most closely associated the interview method (Easterby-Smith, et al., 2008; Gillham, 2005). The depth of the interview process addresses the rich context that is the substance of meanings gathered from multiple perspectives (Punch, 2005). However, the need for a richer level of data constrains the choice of interview method. Figure 4-1 shows a typology of interview types associated with both structured and unstructured interviews:

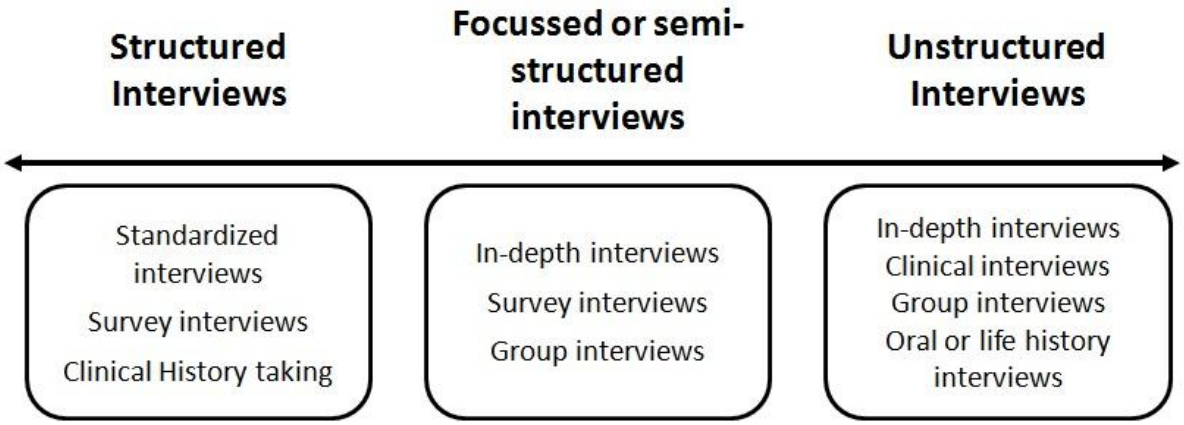

Figure 4-1 The continuum model for interviews (Punch, 2005)

Unstructured approaches give the interviewee the maximum opportunity to express their own opinions but may not facilitate comparison. The exploratory nature of the first study necessitates some kind of uniformity in the data to allow comparison between participants. Semi-structured approaches allow for an element of discovery associated with unstructured approaches, while a structured element allows an analysis in terms of commonalities between interviews (Gillham, 2005; Silverman, 2006). In this instance the researcher had control over the interview and the ability to explore the various dimensions of value co-creation but the interviewee was able to outline their understanding of the concept without being unduly influenced by the interviewer.

4.2.1 Sampling

Sampling is typically defined as probability and non-probability (Easterby-Smith, et al., 2008; Jankowicz, 2005; Teddlie & Tashakkori, 2009). Selection of one of these forms is dependent on the nature of the research project, the data being collected and the types of participants that need to be targeted (Jankowicz, 2005). Non-probability sampling is associated with gathering data from a variety of idiosyncratic viewpoints to represent a range of perspectives on a given topic (Jankowicz, 2005). Non-probability approaches (sometimes referred to as purposive (Teddlie & Tashakkori, 2009) are most commonly associated with Sequential mixed methods designs and are used so the researcher can select particular persons or events that can provide information that may not be available from other sources (Creswell, 2009, p. 178; Teddlie & Tashakkori, 2009). Some typical approaches to non-probability sampling are summarised in Table 4-4.

Sampling approach	Description
Convenience sampling	Selecting individuals for the study on the basis of convenience only.
Purposive sampling	Selecting individuals whose views are relevant to a particular issue. Includes key informant techniques and snowball sampling
Stratified sampling	Subgroups (strata) within a population are identified and individuals or groups within the strata are targeted
Quota sampling	Selecting respondents who are representative of diversity within a population

Table 4-4 non-probability sampling methods (Jankowicz, 2005; Teddlie & Tashakkori, 2009)

For the first study purposive sampling was used to target specific industry types to fit in with the chosen sample outlined in section 4.1. For expediency purposes organisations in and around the researchers work and home location were targeted. Initially the aim was to interview two or more individuals within each firm category and around 20 interviews was seen as being an acceptable number to get an appropriate level of data (Griffin & Hauser, 1993).

Getting to this figure of 20 was problematic. Some firm types proved particularly difficult to get participants to agree to interview, particularly through cold calling. Eventually targeting individuals through personal contacts and the initial cold calling yielded 13 interviewees across nine sectors, whilst this meant that some firms only

had data from one interview the level of data collected (and by this stage partially analysed) was deemed appropriate to continue. The final interview sample is indicated in Table 4-5 which also includes the coding for each interviewee used in the write up.

Firm	Position	Gender	Code for analysis
Architect	Partner	Male	Arch1
Architect	Director	Male	Arch2
Banking	Exec. Assistant	Female	Bank1
Courier	Operations Mgr	Male	Cour1
Courier	Managing Director	Male	Cour2
Energy Supplier	Training Manager	Male	Energy1
Fast Food	Manager	Male	FFood1
Hotel Manager	General Manager	Male	Hotel1
Hotel Manager	General Manager	Male	Hotel2
Public Transport	Ext. Relations Mgr	Male	PubT1
Supermarket	Store Manager	Female	SMarket1
Travel Agent	Manager	Female	Travel1
Travel Agent	Deputy Mgr	Female	Travel2

Table 4-5 Interviewee details and codes used during analysis

4.2.2 Reflexivity/Bias

It is recognised that positivist researchers avoid 'self-disclosure, because the admission of personal motives and aspirations might be seen to damage the image of independence and objectivity that they are at pains to cultivate' (Easterby-Smith, Thorpe, & Lowe, 2004 p. 59). The social-constructivist context offers a different perspective and there is a 'growing acceptance among social scientists of the need to be reflexive about their own work' (Easterby-Smith, et al., 2004 p. 59). In fact reflexivity simply enforces the fact that the researchers inhabit the world that they study and this may potential impact on the findings (Morgan, 2007). When conducting research from a pragmatism worldview of a qualitative nature it is important that a researcher is sensitive to who they are in relation to the study (Creswell, 2003). Acknowledging bias, values, personal background, gender, history

and culture may shape the interpretations within a study represents honesty in the research process acknowledging that in axiological terms interpretive research is value laden (Creswell, 2003, 2009).

There are no particular issues of bias to be reported with regard to the interview study in question in relation to the background of the researcher. However, one particular issue was the nature of the value co-creation concept and how this would be discussed with each interviewee. The PhD study required the researcher to develop a conceptual framework around the concept and develop a working definition. To avoid interviewer biasing results through the promotion of this definition and conceptualization, and given the complexity of the concept in its abstract form, a decision was made to discuss with each interviewee dimensions of value co-creation rather than the abstract whole. The concept was therefore discussed through the dimensions which are discussed in the data collection section below, aspects of value co-creation which were relevant to the study could then be extracted and interpreted during the analysis phase. Creswell (2009) also recommends that researchers consider any ethical issues that may arise from their study and these are discussed in the following section.

4.2.3 Ethical Considerations

> 'People are responsive to the apparent interest of an interviewer: and therein lies the essence of their vulnerability' (Gillham, 2005, p. 10).

Ethical issues have considerable importance in qualitative research due to the control that the researcher can exert over the information gathers and how it is recorded and interpreted (Easterby-Smith, et al., 2008). Although no vulnerable individuals were involved (Creswell, 2003) it is still important to protect the identity of individuals involved (Easterby-Smith, et al., 2008). Ethical issues pertaining to the project were discussed with the academic supervisor and the approach taken is presented in Table 4-6:

	Ethical Issue	Questions Resulting from Issue	Approach Taken
Issues arising early in the project	Competence Boundaries	*Do I have the expertise to carry out a study of good quality? Or, am I prepared to study, to be supervised, trained or consulted, to get that expertise? Is such help available?*	Researcher had prior experience of conducting qualitative studies and all decisions were made in conjunction with academic supervisor.
	Informed Consent	*Do the people I am studying have full information about what the study will involve? Is their consent to participate freely given?*	A participant information sheet was sent to individuals in advance of each interview. See appendix 3
	Benefits, Costs and Reciprocity	*What will each party to the study gain from having taken part? What do they have to invest in time energy or money? Is the balance equitable?*	Participants gave of their time freely and none of the interviews lasted more than 80 minutes.
Issues arising as the project develops	Harm and risk	*What might the study do to hurt the people involved? How likely is it that such harm will occur?*	No such issues were present within the study.
	Honesty and Trust	*What is my relationship with the people I am studying? Am I telling the truth? Do we trust each other?*	None of the interviewees were prior acquaintances so rapport had to be built through email contact and at the interview.
	Privacy, confidentiality and anonymity	*In what ways will the study intrude, come closer to people than they want? How will information be guarded? How identifiable are the individuals and organisations studied?*	All participants and their firms were assured of their anonymity for the study.
Issues arising later in, or after the project	Research integrity and quality	*Is my study being conducted carefully, thoughtfully and correctly in terms of some reasonable set of standards?*	Interview transcripts were checked by the researcher and each interviewee was offered a copy of the transcript for review.
	Ownership of data and conclusions	*Who owns my field notes and analyses: myself, my organization, my funders? And once my reports are written, who controls their diffusion?*	The research is the academic property of the University. All information will be held by the researcher. Any subsequent reports, articles or academic papers will protect the names and firms of all participants.
	Use and misuse of results	*Do I have an obligation to help my findings be used appropriately? What if they are used harmfully or wrongly?*	The findings will only be used for the purposes of this doctoral thesis and for academic publication.

Table 4-6 Ethical Issues in Qualitative Research (Miles & Huberman, 1994)

4.2.4 Data Collection

Development of the research instrument

An interview protocol was developed for use in all the interviews (Creswell, 2003). This acts as an overall guide to the interviewer, structuring the interview and ensuring that each participant is exposed to the same cues and terminology (Gillham, 2005). The protocol (see appendix 4) included headings, instructions for the interviewer (opening/closing statements), each interview question and follow ups/probes allowing space to record comments. The schedule was arranged in accordance with the five stages of a semi-structured interview (Gillham, 2005, p. 76):

1. Preparation phase: phase in which the researcher clarifies the time and place of the interview, ensures that equipment is in place and functioning correctly and that the interview location is appropriate.
2. Initial contact phase: this is a mainly social phase of the interview involving introductions (if necessary) and checking that the interviewee is happy with the physical setting of the interview.
3. Orientation phase: here the researcher can explain the purpose of the interview and guide the interviewee to how they would like them to engage, explaining how the questions will be asked.
4. Substantive phase: this is the main focus of the interview where the key questions will be asked.
5. Closure phase: where the interview is summarised and closing questions can be asked. In the research in question respondents were asked if they would like copies of the transcripts.

The research objective one demanded that the researcher discover the nature of the value co-creation activity within that particular firm and assess how the conditions under which it operates influence that approach. The questions, therefore, needed to gauge what kind of value co-creation activities occurred within the different firms and at the particular stages of the purchasing cycle. Questions were generated around particular dimensions of value co-creation from the literature and these are displayed in Table 4-7.

Dimension	Source
Customisation	(Kalaignanam & Varadarajan, 2006; Payne, et al., 2008; Rust & Thompson, 2006; Vargo & Lusch, 2004a)
Involvement / Customer Participation	(Gray, et al., 2007; Gummesson, 2004b; Jaworski & Kohli, 2006; Kalaignanam & Varadarajan, 2006; Payne, et al., 2008; Prahalad, 2004; Rust & Thompson, 2006)
Co-production	(Kalaignanam & Varadarajan, 2006; Payne, et al., 2008; Prahalad, 2004; Vargo & Lusch, 2004a)
Use of technology (online, transactional)	(Brown & Bitner, 2006; Kalaignanam & Varadarajan, 2006; Payne, et al., 2008; Rust & Thompson, 2006)
Communication (type, extent, dialogue)	(Ballantyne & Varey, 2006a; Payne, et al., 2008; Prahalad, 2004; Vargo & Lusch, 2004a)
Information/Skills Exchange	(Gray, et al., 2007; Prahalad, 2004; Vargo & Lusch, 2004a)
Nature of Transaction (Relational/Transactional)	(Gray, et al., 2007; Jaworski & Kohli, 2006; Vargo & Lusch, 2004a)

Table 4-7 Value co-creation dimensions for interview questions

These dimensions were written up as questions and cross checked for suitability by the research supervisor. A set of follow up questions and probes were also included as the interview process developed and potential themes explored. The second set of questions related to the three stages of the purchasing cycle and the final set related to the potential impacts of value co-creation on the firm in question. A semi-structured interview requires researchers to carefully word questions (so as to appear naive about the topic) and allow each individual respondent to provide a fresh commentary on events (Yin, 2003).

Data collection period

Interviews were conducted between June and August 2009. Interviews were carried out at the convenience of the participants. The interview process commenced with a participation information sheet sent to each interviewee in advance of the interview (see appendix 3). This outlined information about the study including:

- Why was the site chosen for study?
- What activities will occur at the site during the study?
- Will the study be disruptive?
- How will the results be reported? (Creswell, 2009, p. 178)

In all cases interviews occurred within the subjects own place of work to allowing a natural setting where the participant would feeling comfortable discussing the phenomenon (Creswell, 2009). Using the interview protocol the interviewees were introduced to the subject area in the entry phase and then the interviewer proceeded with each question. Interviews ranged from 40 to 80 minutes and the average interview length was 56 minutes. All interviews were recorded using a digital voice recorder which allowed for easy recording, backing up and transcribing.

4.2.5 Data Analysis

The digital files were transcribed and analysed using QSR NVivo 8, software that allows qualitative researchers to code and analyse textual (but also video and image) data. The files were uploaded as audio files and then transcribed directly into the program. The data analysis method used was template analysis (Cassell, Buehring, Symon, & Johnson, 2005; King, 2004) a method for 'thematically organising and analysing textual data' (King, 2004, p. 256). During the data analysis themes emerge and are written up in a template. Some themes may be gathered *a priori* but others will only emerge as the research progresses. Template analysis uses a hierarchical coding structure to organise data into relevant themes which fitted well with the NVivo 'tree node' structure where relevant passages to be coded into different branches of a particular tree and then recoded if necessary as the analysis proceeds. This structure is consistent with the concept of a template as outlined by King (2004). The three stages of the purchasing cycle became *a priori themes* and the

relevant dimensions of value co-creation used in the interview protocol produced data that could be coded against these three stages or against other more general theme such as the impacts of value co-creation on the firms. Using a limited number of *a priori* themes is again consistent with the approach of King (2004, p. 256) who advises against 'starting with too many pre-defined codes as the initial template may blinker analysis'. Once the themes and dimensions therein were identified and coded, the final structure was agreed with the thesis supervisor. Themes and dimensions were then analysed separately and relevant quotes extracted in preparation for the write up. The following section presents the findings of the interview phase. These are presented within the three stages of the purchasing cycle followed by a broader discussion of the results.

4.3 Results

4.3.1 Pre-Purchase Stage

Pre-purchase encounters had varying levels of importance depending on the firm context. For example, both supermarket and fast food restaurant manager indicated little or no direct contact with customers in advance of the actual service encounter although they recognized that customers interacted with websites and promotional material. In higher contact firms the pre-purchase stage was more important in establishing customer requirements through high quality interaction, exchanging knowledge with customers and integrating resources to enhance value-in-use for the customer.

Table 4-3 indicates higher scores in this stage for travel agents, hotels and architects (all scoring 4/5) and the interviews bear out these results. Interaction was use to gather information and pre-design experiences but also to guard against potential customer error:

> *'We contact them about 6 weeks before they come, trying to find out from them exactly what they would like to do when they are with us so we can pre-organize that for them (Hotel2).*

'Complicated itineraries wouldn't be so easy to plan yourself on the website, you would really need to speak to somebody to do that as it is a complex thing and it is a big deal for people as well' (Travel2).

Dialogue was seen as extremely important to one architect who stressed need for more than a basic conversation:

'Charles Rennie Mackintosh [famous architect/designer] used to live with the people he was designing houses for because then he got to know them and got to know their lifestyle, we can't do that now but you do have to get into your client's head, to know what he wants' (Arch2).

Where certain firms had a greater understanding of customers and their requirements there was strong evidence of firms maximizing levels of customer knowledge and resources to co-create the initial value-proposition:

'Because the customer is a very well-travelled person they know probably as much as you know. So therefore it's basically working together. They have the experience of the flight, they know the hotels... so they input quite a lot.' (Travel 1)

'Many of our clients can use auto CAD [computer aided design]...so quite often we will actually be given, as part of a brief the auto CAD based drawing of the existing building with their changes on it as sketching' (Arch 1).

Higher levels of customer knowledge and skills allowed firms to adopt a facilitatory role, working alongside customers and using their skills and networks and achieve mutually beneficial service encounters:

'We have a customer [in the UK] who supplies to a customer [in the US] and their US competitor is located right next door to this customer in America, they are using us [in UK] to compete, and they really want to co-create. They are willing to do anything and become part of our product; they have even offered to take on customs regulations because their need is so great.' (Cour1)

'Public sector estate managers, healthcare professionals who know how they want to operate in the future have a huge input. We can't possibly be at the front of their technology but many have estates departments who publish guidance on the design of specialist buildings' (Arch1)

The common feature to these examples are firms and customers with a strong desire to work together co-creating and building value in the pre-purchase stage for both parties. However, not all firm contexts or conditions will have customers with

the high level of interest or appropriate skill-set to make the co-creation process mutually beneficial:

> *'People don't sit at home and think 'fantastic I've got to think about my home insurance or fantastic we have to get a new credit card or a loan, people don't think that...it's low interest, it takes a lot of time and is a pain in the neck (Bank1).'*

> *'Our fee scale is, for a private house, 15% of the value of the cost of the development. Whereas on a large scale office development it might be 3%...the view was you always had to work harder with private clients on a one on one basis than you will with corporate clients.' (Arch2)*

Pre-purchase conditions for co-creation in the contexts investigated centre on high-quality interaction and dialogue between firms and knowledgeable, interested customers allowing firms to integrate their skills and resources into the value co-creation process. If customers are unwilling to engage or have lower levels of interest, knowledge and expertise then mutually beneficial value co-creation through collaboration may be more challenging. Closer engagement with customers does suggest a willingness to engage in dialogue but also could represent a risk for firms if customers do not perform effectively.

4.3.2 Purchase/Consumption Stage

This stage provided firms with higher levels of customer contact to interact with customers and benefit from their knowledge and experience of the product or service. There was also evidence here of firms educating customers, enabling them to enhance their own value-in-context. Most of the firms interviewed used forms of co-production in the form of self-service technology (automatic ticket machines, self-check in) and online encounters (online banking, bill payments) but for some firms greater involvement was required. Once again, some firms highlighted problems dealing with disinterested or unskilled clients.

In terms of interaction one hotel manager illustrated how value was co-created through closer engagement with customers during the consumption stage and enhancing the product on the basis of their experiences:

> *'We have a monthly 'meet the team', a general manager's cocktail party where we solicit information from you [the customers] and we have changed a lot as a*

result. All customers are invited, 1st stay or 54th stay. We put sports channels into our rooms based on that, we changed the menus, we changed the beers we offer, and have put ironing boards in [rooms] as a result.' (Hotel1)

Many of the firms identified how the purchase/consumption stage provided opportunities to educate customers, enhancing their ability to achieve greater value-in-context:

'We give a lot of information and advice about saving energy, how to use it wisely and safely...it's in our interest that a customer doesn't spend more with us than they need to. I can make 26 pounds [more] a year out of a customer if they have a pre-payment meter than I do if they are on monthly direct debit. But I would rather have them paying monthly because it's easier and cheaper for us to manage as well.' (Energy1)

'In terms of getting best value we have an ingredients range which gives ideas of what you can do with that product and other ranges that also provide recipes.' (Smarket1)

'Do they know the simple features of a credit card; do they know how to use it? Does the customer know if they pay the minimum it will take longer and cost more to pay the balance? There is a need to make sure customers know what they have bought' (Bank1).

These examples suggest that value co-creation activity can enable customers to be more knowledgeable customers, and benefit from greater value-in-context; firms reduce the hassle factor of dealing with customers lacking knowledge.

Two firms interviewed identified how customers acting as co-producers could generate value for both parties; one courier firm illustrated the problem of tracking parcels:

'We ship out 500 packages a night at least. We have alerts that will kick up depending on what happens but, realistically, we can't monitor 500 packages - but our customers can. If they know something is really important to them they can track it and it lets them contact us and then we can decide what our priority is, so it's a win-win for us. (Cour1)'

Giving customers access to firm systems saves the time and manpower and gives customers the opportunity to interact more closely depending on purchase importance. An architect firm had a similar innovation but highlighted that providing customers with access was no guarantee of engagement:

'We provide client 'hubs' [online] for projects, in a large scale project we can place information in the hub that the client can access without having to phone us up asking for it, the frustration is that customers still phone us up asking for drawing number 27' (Arch2).

As with the pre-purchase stage, several firms highlighted problems of co-creating with customers who had little interest in the service or lacked the skills or knowledge to co-create:

I think the importance of the transaction to the company has gone up dramatically; the importance to the customer is so much less (energy1).

If you had to go down and ask the couriers who would you rather go to: a big pick up we do every day or someone who has never shipped before; they will always go to the big pickup, as they know it is going to be less hassle (Cour2).

'We did, at one stage, do holidays for [non-business clients]. They are stressful things to do because the customer never knows what they want and if something went wrong on their holiday then it reflected badly on our [core] business, and it is more time consuming, much more time consuming. (Travel1)'

Evidence of value co-creation in this stage supports the higher mean score this stage was given across all firms in the ratings (see Table 4-3). Direct contact within the service encounter affords firms the opportunity to engage customers in a wider range of co-creation activity and influence the way that customers derive value-in-use through education. Once again mutually beneficial value co-creation was dependent on the level of interest and knowledge of the customer.

4.3.3 Post-Purchase/Service Stage

Value co-creation during post-purchase encounters focused on the feedback loop, however engagement with customers could support firm activities and interaction with customer communities. Several firms highlighted the importance of engaging with customers post-purchase to build or maintain existing relationships:

'We have a courier of the year competition. The customers go online and rate our couriers over four categories and write comments. The response from that is staggering, you don't realize the importance of that relationship, and it's great for couriers to hear. There is a clearly big difference between a small personal level of interaction and just going in 'can you sign here'' (Cour1).

'They are loyal to the company and, maybe, mother, grandmother the whole family has been down the generations and they want to see it being as good as it always was or how they remember it to be so they just want to make sure it's right' (SMarket1).

These comments were indicative of a change in perspective on the customer role, something identified by some of the interviewees:

'We are going to give you all this [information and service] but we also want to know information back, so it's a two way partnership' (Hotel2).

The customer has a huge part in co-creating because it is such a tailor made product we deal with. Without the customer's feedback we wouldn't be able to create new products or progress - it's a positive impact' (Travel2).

In the case of the public transport provider the post-purchase co-creation role had expanded and customers have become an integral part of the firm's activities, co-creating the firms value propositions by adopting their local station:

'A passenger commented 'wouldn't it be nice if the gardening with which a particular station was once associated could be restored'; I'm pleased to say that passenger and a small band of others are now our team of gardeners at the station.' (PubT1)

This activity benefitted the firm by improving passenger perceptions of the facilities but there are, potentially, significant benefits for the wider community:

'Bearing in mind that the transport [company] will come by from time to time and psychologically they can't help feeling that here's a community. When you, the community, say I want more trains stopping here you may, implicitly be judged by how much care you have shown for the station, I think.' (PubT1)

Hospitality and tourism firms specifically identified how online communities had come to have a greater influence on their customers but the level of firm engagement varied, as one travel agent noted:

'customers can engage with us through Facebook and also we have online travel blogs on our website for customers who are travelling, they create a blog of what they are doing on our website, potential customers can see it and we can monitor it to an extent but wouldn't have any way of knowing how much other customers look at it' (Travel2).

One hotel manager recognized benefits of engaging with an online community: *if you are in 'late rooms' [*online hotel booking site] *the algorithms [*that calculate a hotel's rating*] are improved if you respond to feedback (Hotel2).* However, the other hotel manager had a less favourable view:

> *'Customers definitely engage with them [online communities] and can book via trip advisor, do I respond to the reviews, no. I have done it before but it takes a lot of time which I don't always have and your response is up there ad infinitum there is no escape and it's hard to know how to respond without sounding arrogant or patronizing, I would rather phone a guest' (Hotel1).*

Value co-creation activity appears to extend beyond the immediate service encounter and firms utilize customer enthusiasm and engagement to gain information about staff or firm performance to increase mutual benefit and engage with actual or virtual communities of users to cocreate the value proposition of the firm.

Overall, the data reveals evidence of value co-creation activity within all of the firms contexts explored in the study, but to varying degrees according to the conditions under which the firm operates. When value co-creation involves dialogue and collaboration then results appear mutually beneficial; firms benefit from integrating the resources and knowledge of customers and customer communities into their business activities, customers benefit through improved products and services, this is exemplified below:

> *If you have the time go to these stations, you may see hanging baskets, basket trees, large flower beds all maintained by community members, in one station a passenger runs a coffee shop in the station and she talks about the passengers being less grumpy and more relaxed. They turn up early to have a coffee or to read the newspapers, you see kids from [local school] hanging about in a peaceful manner as well, and the station becomes de-stressed by being a more pleasant place to wait (PubT1).*

However, there was also evidence of conditions under which value co-creation activity could negatively affect firm outcomes. By and large this related to the level of interest that customers were perceived to in the firm but also, importantly, related to the customer's level of knowledge and skill set, as one architect recounted:

> *'I had a job recently where the client couldn't tell me what he wanted and we spent days, weeks batting [ideas] about and the whole relationship suffered as he couldn't tell me what he wanted, he knew what he wanted but couldn't communicate what he wanted so there are two ends of the scale.' (Arch2)*

If the necessary conditions for value co-creation are not present then something more akin to value co-destruction may occur due to customers of firms being unwilling or unable to do so.

4.4 Discussion

This chapter has indicated how value co-creation within the service encounter is played out both in form and scope according to the context of the firm and conditions surrounding the encounter. Both the interrater exercise and interviews provide evidence of how different service firms might cocreate and at which stage in the purchasing cycle.

There was evidence from the interviews that some firms gave access to and made use of customer skills and knowledge to enhance the value created, whether through an architect engaging in co-design or a courier firm allowing customers to co-produce there is support for thinking of firms as deployers of 'operant and operand resources both to co-create discursively legitimated market spaces and provide inputs for value definition within them' (Arnould, 2008, p. 21).

In S-D logic goods have only value potential and firms deliver value propositions, the onus is on the firm to demonstrate how value potential can be translated to meet individual customer needs and enhance value-in-context. The study showed the importance of educating customers within service encounters, suggesting that firms attempt to influence individual customer's co-creation of value. Within the study customer education was delivered both through direct interaction and by post-purchase support such as the architects' facilities management service or the energy supplier offering money saving advice.

Customer education can form part of a socialization process, particularly with new customers (Kwortnik & Thompson, 2009). Eisingerich and Bell (2008) indicate that educating customers strengthens trust in an organization and acts as a differentiator.

Rafaeli, Ziklik and Doucet (2008) propose that customer education is a key dimension of customer orientation behaviour and with co-creation described as a 'genuine customer orientation' (Gummesson, 2008, p. 324), customer education may be a critical component to build trust, enduring relationships and ensure that customers do not perceive increases in commitment as exploitation (Zwick, et al., 2008) . However, there is also evidence that customer education may only be appropriate in longer, more complex service encounters (Rafaeli, et al., 2008) as this gives providers the opportunity to engage with the appropriate behaviours. In encounters of shorter duration education initiatives may be perceived as opportunistic sales ploys (Eisingerich & Bell, 2008).

Other firm conditions are in line with extant literature suggesting that value co-creation is highly dependent on high-quality interactions and dialogue (Ballantyne & Varey, 2006b; Grönroos, 2006; Gummesson, 2004b; Prahalad & Ramaswamy, 2004b) particularly evident in encounters of longer duration such as the architect, travel agent and hotel. The need for dialogue and increased involvement from customers was further evidence of the changing role the customer plays in the marketplace. Whether it is through the input of skills and knowledge, contributing to customer communities or simply providing feedback on their experiences firms recognised the more preeminent role that customers played in the encounter.

To allow participants access to firm information the investment in technology as an enabler for value co-creation (Brown & Bitner, 2006; Day, 2004; Kalaignanam & Varadarajan, 2006; Payne, et al., 2008) was apparent in the courier company allow customers to track parcels, the travel agent creating spaces for customer blogs and the architects client hub. Technology affords firms the opportunity to provide customers with access to the firms system and does, perhaps, give the perception of valuing the customer and more importantly their contribution (Prahalad & Ramaswamy, 2004a, 2004b).

The interviews also highlighted that alongside firm conditions of access and dialogue co-created activity was also dependent on customer knowledge and interest in the process. Within the sample firms which were predominately operating in a B2B environment were more 'comfortable' cocreating with clients and B2C firms

found more knowledgeable, 'regular' clients easier to cocreate with than 'one-off' clients. A lack of customer knowledge was an issue and could, potentially, dissuade firms from investing time in attempting to maximise customer collaborative efforts during face to face encounters emphasising the need for educational initiatives. The importance of customer knowledge and also performance is highlighted within the extant literature (Larsson & Bowen, 1989; Lovelock & Young, 1979; Schau, et al., 2009; Schneider & Bowen, 1995). In S-D logic customers are operant resources, endogenous to value co-creation (Vargo & Lusch, 2008c) and a lack of knowledge, therefore, may make participation challenging (Rust & Thompson, 2006).

Also evident in the sample was a perception that customers had less interest in cocreating with firms offering lower contact or lower importance products. Value co-creation requires customers to be proactive (Payne, et al., 2008) and take more responsibility (Prahalad & Ramaswamy, 2004b) of the process. If customers have less interest in co-creating then they may prefer a more transactional approach, appropriating value passively and firms aim to provide a standardized product at minimal price (Jaworski & Kohli, 2006; Kalaignanam & Varadarajan, 2006; Oliver, 2006) if there is a risk of resource misuse or co-destruction of value (Plé & Cáceres, 2010).

Figure 4-2 attempts to visualise firm and customer conditions that may influence the nature and outcomes of the value co-creation process.

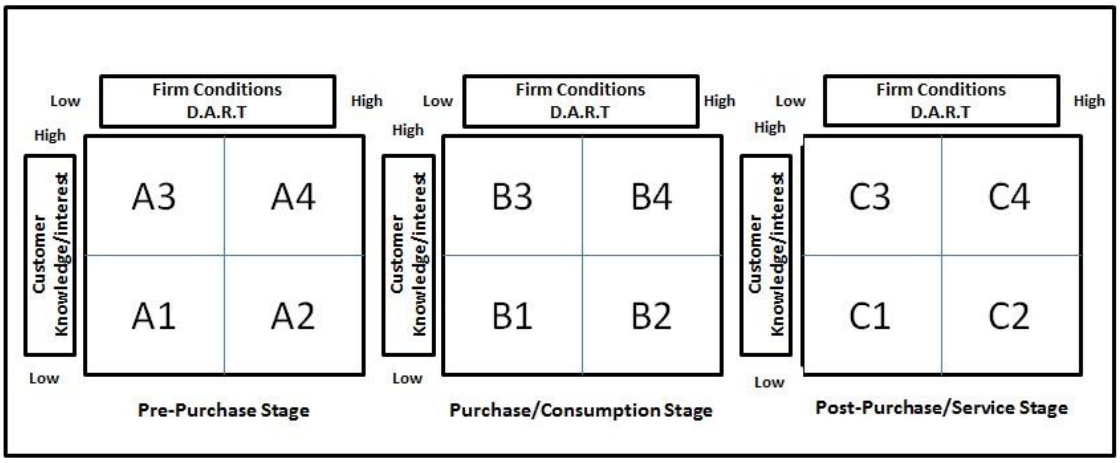

Figure 4-2 Conditions for Mutually Beneficial Co-Creation

This first study suggests that successful value co-creation is contingent upon customer and firm encounter characteristics which moderate the effectiveness and extent of any mutually beneficial outcomes of any collaborative value co-creation strategy. For ease of discussion these moderators are identified as grids for three different encounter stages – pre-purchase, purchase/consumption, and post-purchase/service stage.

Within each stage, four broad approaches to customer-firm value co-creation are differentiated (A1-A4; B1-B4; C1-C4) determined by two dimensions. On the firm side it is proposed that the extent to which a firm can deliver mutually beneficial outcomes from value co-creation activity will be determined by the level of dialogue, access and transparency they can offer and the extent to which customers are willing to share risk (DART principles, Prahalad and Ramaswamy (2004a, 2004b)). This research indicates that these firm conditions must be complemented by knowledgeable customers who are able to engage with interest.

Such a model offers firms an opportunity to assess both their commitment to co-creation but also, their customer's ability and willingness to engage at various stages in the process. All three parts of the model are identical but firms will not necessarily locate themselves within the same quadrant in each stage of the purchasing cycle. For example, this research would indicate that an architect firm might locate itself in A-C4 as they require close, depth dialogue with clients at all stages of the cycle offering access to firm systems with subsequent sharing of risks. Other firms might consider that encounters during the purchase/consumption stage provide the most realistic opportunity to cocreate for example within a hotel stay or grocery store shop.

Firms with willing customers but lack the capabilities or commitment to cocreate extensively in during the purchasing cycle (A-C3) can still create opportunities for mutually beneficial value co-creation by involving customers in co-producing activities and engaging with online communities where appropriate (such as the couriers and hotels in this study). Firms which identify potentially collaborative desires in their customers may also wish to give consideration as to how they can

integrate customers further into their systems and make better use of the skills and knowledge of the customer.

The model is conceptual and provides a heuristic for firms considering how (and when to collaborate more with customers). Clearly there may be circumstances when firms consider themselves or their customers to be in two different quadrants for example in this research some firms found some client groups willing to engage in depth (quadrant 4) whereas others were less willing or lacked the required resources (quadrant 2), firms may find that strategies are needed to engage with both proactive and inactive customers. It maybe that quadrant 2 scenarios might see firms either attempting to increase customer interest through education initiatives or rely on a minority of customers for co-creation activity and tailor the interactions to suit those customers.

This first study has focused on value co-creation within the service encounter and the model illustrates how mutually beneficial value co-creation is dependent on both firm and customer attributes. Understanding where a firm is positioned within the context of this model will allow a more strategic approach towards value co-creation by considering the extent to which the firm wishes to engage with, and give access to, customers. The results contribute to our understanding of value co-creation by indicating why the scope and intensity might vary across firms (Hoyer, et al., 2010) and offering some indication of how practices might transfer across domains (Schau, et al., 2009).

The overall research design (see Figure 3-3, p.88) for this thesis has both sequential exploratory and multi-phase elements and this first study, therefore, should provide both results which can be significant in their own right but also which contribute in some form to the other studies of the thesis. Consideration has been given to the contexts and conditions which might influence approaches to value co-creation within the purchasing cycle. However, results and conceptual model also support further investigation and research using alternative theoretical approaches suggested by some of the findings of this first study will be explored in studies 2 and 3. This approach has already been used to make sense and improve our

understanding of S-D logic by both Gummesson (2006) with Network Theory and Arnould (2006) with Consumer Culture Theory.

Value co-creation is often conceptualised using language which appears universal: 'the customer is always a co-creator' (Lusch & Vargo, 2006c; Vargo & Lusch, 2008b). However the term co-creation is used (collaborative or phenomenological) there must surely be situations where some customers will be willing and others less so. The benefits gained from the process may therefore be received directly through dyadic interaction or indirectly where individual customer efforts provide benefits to other consumers or to wider communities. Within study 1 the community adopt-a-station scheme would be such an example but research into customer communities (McAlexander, et al., 2002; Rowley, et al., 2007; Schau, et al., 2009) suggests that C2C interaction provides benefits to customers which are indirectly received by the firm and other users. Theories of restricted and generalized exchange (Bagozzi, 1975; Ekeh, 1974) could be used to assess both the direct and indirect benefits of value co-creation on other network actors. If companies are aware of an indirect benefit of co-creating then the costs associated with collaborating with a smaller group of customers may be more manageable.

Given the increasingly mutually dependent nature of the firm/customer exchange on the customer evidenced in this research and within the literature, consideration should be given to the effects of co-creating on the customer. Exchanges where mutual dependency is evident places particular importance on trust within exchanges, in B2B settings value co-creation is more organised and often contractual (Sheth, 2011). In B2C settings firm and consumer will place increasing reliance on the level of trust in the relationship. Trust is a key element in marketing relationships (Moorman, Zaltman, & Deshpande, 1992; R. Morgan & Hunt, 1994; Rotter, 1971) and in the case of co-creation both firm and customer must be able to guarantee that neither party will attempt to exploit the other. As such testing the effect of trust on co-created exchange will be the first step in exploring the effects of co-creation on the consumer.

Secondly, and related to the issue of mutual dependency would be the role of equity theory in any co-created exchange. The extant literature supporting co-

creation relies on the potentially elusive ideal of mutual satisfaction (Oliver, 2006) and in reality there must be the potential for either firm or customer to attempt to exploit the exchange. If customers perceive their increased inputs do not match their expected outcomes there could be negative implications for customer-firm relationships (Palmer, Beggs, & Keown-McMullan, 2000; Szmigin & Bourne, 1998; Vogel, Evanschitzky, & Ramaseshan, 2008). Equity theory (Adams, 1963; Walster, Berscheid, & Walster, 1973), therefore, could be used to explore the likely outcomes of inequitable value co-creation.

This chapter has assessed how firms provide opportunities for value co-creation at different stages of the customers purchasing cycle. The objective was exploratory rather than confirmatory but the results provide indications of how firms might engage with value co-creation within their service encounters. The study suggests that firms prepared to engage in depth dialogue and provide environments where customer knowledge and skill can be effectively integrated into the activities of the firm have the potential to achieve mutually beneficial co-created outcomes. However, successful strategies are dependent on the customer's skill set (and level of interest) and assessing these then becomes a crucial stage in the process and determinant of how successfully value might be co-created.

4.5 Limitations

As with all studies, this one has limitations which suggest further research areas. The research presented is exploratory and does not empirically test the impacts of value co-creation on firm performance beyond the results presented. Given that this research was directed at the service encounter there are clearly other dimensions of value co-creation that need to be explored (for example within the supply chain), also, given the focus on firm approaches to any discussion on customers was restricted to firm perspectives and on that basis the lack of evidence from the customer perspective is a limitation. Future studies might adopt an approach similar to Tuli et al (2007) to look at firm and customer perspectives of value co-creation in conjunction. Without the existence of a reliable scale to measure value co-creation levels the interrater exercise introduced here is somewhat subjective but provided an

effective starting point for the remainder of the research. The production of a valid, reliable measurement instrument will surely benefit research into value co-creation and other concepts relating to S-D Logic in the long term.

This chapter has used an exploratory approach to illustrate some of the factors that determine when collaborative co-creation might be more or less appropriate. The following chapter tests the effects of this kind of co-creation on consumers under conditions of high and low trust and equity/inequity using an experimental approach.

Chapter 5. Study 2: Consumer Effects of Co-Creation

This chapter investigates the effect of relational conditions on the co-creating consumer, namely the role of trust and equity. The previous chapter and the literature from chapter 2 indicate a mutually dependent aspect to value co-creation and the importance of trust as a prerequisite for effective co-created exchanges will be explored. If co-created exchanges are to be mutually beneficial then consumers must not perceive they are being exploited, the benefits gained from co-creating with the firm need to be evident and equitable with those of the firm. This chapter will also explore the extent to which contributing more can still result in positive consumer outcomes.

The scenarios for both experiments were influenced by study 1. A hotel scenario was chosen for the trust experiment and a travel agent was selected for the equity experiment. These particular firms were representative of high levels of co-creation within the purchasing cycle (see Table 4-3, p.96) but were also firm types that participants were likely to have had direct experience of.

The chapter commences with a review of literature exploring the role of trust in marketing relationships in particular how firms need to demonstrate investment in relationships as trust building activities. The role of equity (specifically equity theory) will then be discussed. Themes of trust and equity and their effects on co-created exchanges were explored in two experimental studies. Experimental methods are discussed; the chosen factorial design and experimental procedures are introduced. The findings of each study are then introduced in separate sections and then discussed together in the final section of the chapter. The final section explores the related concepts of trust and equity and their potential role in moderating co-created exchanges. The first section will draw on mainstream marketing literature on trust and transaction cost economics.

5.1 The Role of Trust in Value Co-Creation

Trust, a confidence in an exchange partners reliability and integrity (Moorman & Zaltman, 1993; R. Morgan & Hunt, 1994; Rotter, 1967), is accepted as a powerful relationship marketing tool (Berry, 1995; Geyskens, Steenkamp, & Kumar, 1998), essential when differentiating successful, productive relationships apart from those that are unproductive or unsuccessful (Andaleeb, 1996; Doney & Cannon, 1997; R. Morgan & Hunt, 1994, p. 22). Given the mutually dependent nature of co-creation the need for trust could be crucial and the benefits of successful value co-creation could be doubtful if the intentions of exchange partners in a relationship are in doubt (Berry, 1995).

Service exchanges are often characterized by information asymmetry (Gallouj, 1997; Mishra, Heide, & Cort, 1998; Singh & Sirdeshmukh, 2000) resulting in an increased level of perceived risk than in goods exchanges (Gallouj, 1997) due to the higher number of 'experienced' attributes present in services (Nelson, 1970). Information asymmetry is less about the objects of exchange rather than the character of partners involved in the exchange. Information asymmetry presents consumers with particular problems known as adverse selection and moral hazard problems (Mishra, et al., 1998; Singh & Sirdeshmukh, 2000) that involve uncertainty about supplier characteristics and the risk of firms cheating on quality. The potential for opportunistic behaviour implies that exchange partner's are motivated by self-interest and are likely to exploit the situation, if they can.

In a S-D Logic world both partners in the exchange are fundamental to the success of co-creation and exchanges are essentially mutually dependent (Casciaro & Piskorski, 2005) with consumers acting as operant resources and co-creating value in their purchases and in partnership with the firm (Payne, et al., 2008; Vargo & Lusch, 2008b). Effective value co-creation relies on dialogue (Ballantyne & Varey, 2006b; Jaworski & Kohli, 2006; Prahalad & Ramaswamy, 2004a, 2004b) the ethical underpinnings of which are built on trust. Without receiving the trust of another, and being trustworthy, dialogue comes to an end (Varey & Ballantyne, 2005). Mutual dependent outcomes in value co-creation are a worthy goal, but described by Oliver (2006, p. 125) as 'idyllic' and 'unlikely'. In a co-creation context there is potential

for a reverse risk of customers not performing their role in the process suggesting a need for mutual trust, particularly relevant in situations of greater interdependence (Singh & Sirdeshmukh, 2000, p. 154; Sitkin & Roth, 1993), as well as dependency.

Transaction cost economics (TCE) (Williamson, 1981) proposes that if partners in an exchange understand the level of asset specificity in a transaction, its frequency, and the degree of uncertainty surrounding it, they can predict the governance structure that needs to be adopted (Chiles & McMackin, 1996). TCE suggests that transaction costs increase as transactors make greater asset-specific requirements. This is due to the greater need for more complex governance structures (i.e. more complex contracts) to reduce or remove potentially costly bargaining over outcomes (Dyer, 1997, p. 535).

TCE assumes that the probability of opportunism will increase as other parties increase investments in specific assets. The party making the investment is, therefore, at risk of being exploited by the other party as a direct consequence of opportunistic behaviour. Contracts laden with safe-guards, surrogates for trust, protect parties from the opportunistic behaviour of the other but are costly to negotiate, draft and monitor (Chiles & McMackin, 1996). In TCE firms also make investments in fixed assets which are sunk but highly visible. In co-creation contexts agency mechanisms might not be sufficient. The development of trust between agents and principles may be needed to promote exchanges and yield benefits for both partners (Chiles & McMackin, 1996; Singh & Sirdeshmukh, 2000). Contractual relations which are infused with trust attenuate the risk of opportunism and can reduce the costs associated with governance mechanisms (Chiles & McMackin, 1996, p. 88); the potential for incomplete contracts could also be representative of opportunistic behaviour. Trust, therefore, plays an important role giving partners the opportunity to reduce transaction costs. Trustworthiness within the relationship can also increase the likelihood that partners will invest in relational activity (Dyer, 1997, p. 550), and accept higher levels of dependency.

5.1.1 Design and Hypotheses for Trust Experiment

The aim of the first experiment therefore is to show how value co-creation can have different outcomes under conditions of high and low trust. The model, inspired

as outlined by S-D Logic as well as TCE, shows the proposed relationships that will be investigated in the study (see Figure 5-1).

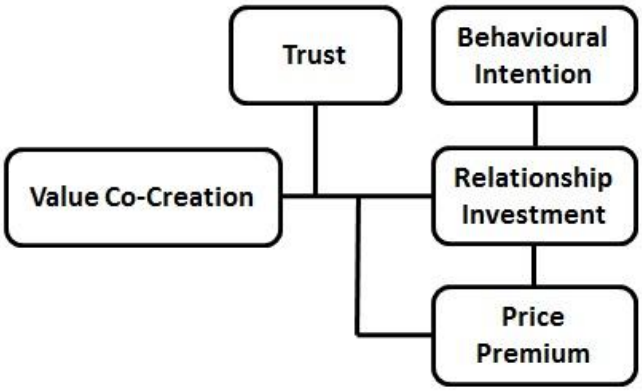

Figure 5-1 Model for Trust Experiment

Firstly, it is hypothesized that trust and value co-creation could interact on customer willingness to pay a price premium as TCE indicates that consumers will pay more if they perceive higher value of the outcome of the exchange:

H1: The relationship between value co-creation activity and willingness to pay a price premium will be positive under conditions of high trust in the organization.

Secondly, it is proposed that value co-creation activity that is infused with trust will have benefits on perceptions of relational investments made by the firm. Essentially customers are more likely to believe that firms see them as co-creating partners if they have confidence in the firm's motives for co-creating. High levels of trust let consumers have confidence that specific investments made by the firm are truly intended to turn value co-creation into a win-win situation for both exchange partners; TCE suggests that if firms are more willing to make specific investments, they accept higher levels of dependence from the co-creation partner - the consumer. Such behaviour can be seen as signalling of benevolence and honesty by the firm:

H2: The relationship between value co-creation activity and perceptions of relationship investment will be positive under conditions of high trust in the organization.

Lastly it is proposed that the effect of value co-creation on positive outcomes such as price premium and behavioural intention is mediated by a consumer's perception of relationship investments made by the firm. While S-D Logic suggests that co-creation does not necessarily and directly impact positive outcomes, TCE states that

risky activities such as value co-creation will only increase behavioural intention when the relationship partners are willing to accept dependence and if they believe in the exchange partner's honesty and benevolence. If therefore firms signal their willingness to do so by making specific investments, consumers might use this signal as motivation to actually interact in value co-creation. Hence, positive perception of relationship investments by the firm should be a crucial mediator between value co-creation and positive intentions, it is due to this mediating role of relationship investment that no hypothesis is presented for a direct relationship between value co-creation, trust and behavioural intention:

H3: The relationship between value co-creation activity and a) price premium and b) behavioural intention will be mediated by relationship investments of the firm.

The next section considers the potential role of equity and inequity in co-created encounters.

5.2 Value Co-Creation and Equity Theory

Equity theory (Adams, 1963) has been widely used within marketing contexts (Fisk & Young, 1985; Homburg , Koschate, & Hoyer, 2005; Lapidus & Pinkerton, 1995; Oliver & Swan, 1989a; Oliver Swan, 1989b; Palmer, et al., 2000; Szmigin & Bourne, 1998; Tse & Wilton, 1988) and explores perceptions of fairness or equity in social exchanges based on the implicit relationship between an individual's costs/investments and anticipated rewards. Adams (1963) suggests that inequity is a possible result of any exchange process and in marketing contexts customers may only continue in a relationship if they perceive equity therein (Oliver & Swan, 1989a; Szmigin & Bourne, 1998).

An individual's equitable state is based on a comparison of relative inputs and outcomes of the exchange process. Inputs are defined as an individual's contribution to an exchange, which entitle them to rewards (outcomes). Outcomes relate to the positive or negative consequences incurred by a participant as a result of their relationship with another (Adams, 1963; Walster, et al., 1973). The perception of whether or not any combination of inputs and outcomes is equitable is largely subjective. If an individual perceives an attribute to be an input then it is perceived as

such and is considered relevant in the exchange, the same is true of outcomes (Adams, 1963; Walster, et al., 1973). A person is then likely to compare his or her inputs/outcomes with those of a referent other (Lapidus & Pinkerton, 1995). Equity exists when an individual and referent others perception are analogous, in other words when both perceive they receive a fair return for the efforts or resources that they put into the exchange (Glass & Wood, 1996). Inequity exists when an individual's perceived inputs and outcomes 'stand psychologically in an obverse relation to what he perceives are the inputs and/or outcomes of other' (Adams, 1963, p. 424).

For this experiment an individual's perceptions of equity will relate to their involvement in a co-created exchange. As previously discussed some co-created exchanges require increased levels of involvement and participation from customers (through co-design, co-innovation etc.) suggesting increased inputs to an exchange.

Given that co-created encounters rely on proactive participants (Payne, et al., 2008; Prahalad & Ramaswamy, 2004b) there is potential of co-destruction (Plé & Cáceres, 2010) if customers do not possess the appropriate skill level to co-create (Rust & Thompson, 2006). In equity terms, customers' inputs may not be adequate but they may perceive them to be so. In such a situation, reduced outcomes would result in feelings of inequity. Prahalad and Ramaswamy (2004b, p. 14) observe that 'consumers…must take some responsibility for the risks they consciously accept' by engaging in co-created exchanges, if consumers are unwilling to accept risk (or are naturally risk averse) then reduced outcomes may result in feelings of inequity.

Value co-creation is dependent on extensive dialogue, access, shared risk and transparency (Prahalad & Ramaswamy, 2004a, 2004b). Translating these terms into an equity framework would suggest that firms should communicate to consumers the nature of firm inputs (and expected consumer inputs) and the effect on outcomes for both parties in order to gain support from consumers and reduce information asymmetry (Akerlof, 1970). Within a co-created encounter it is easy to see how a consumer might perceive his inputs to the exchange to be higher than those of the service firm and subsequent feelings of inequity may then have negative outcomes for the relationship. As a result firms may look to 'educate' consumers within the

exchange. In study 1 education initiatives appeared to play a role during the consumption phase and were designed to ensure that consumers were able to derive appropriate value from goods and services. Education may be critical in building trust and enduring relationships, as without it consumers may view co-creation initiatives as exploitative and perceive outcomes as inequitable. If firms wish to engage consumers in collaborative co-creation and ensure willingness to share risk and increase consumer inputs then educating the consumer as part of a wider co-creation dialogue may become increasingly important to reduce the potential negative effects of inequity as consumers may self-attribute service failure as opposed to attributing it to the firm. The following section presents the proposed design and hypotheses for experiment 2.

5.2.1 Design and Hypothesis for Equity Experiment

Experiment Design

The second experiment aims to explore the effect of perceptions of equity/inequity on co-created exchanges. The relationships that will be investigated in the study are posited in a model (see Figure 5-2).

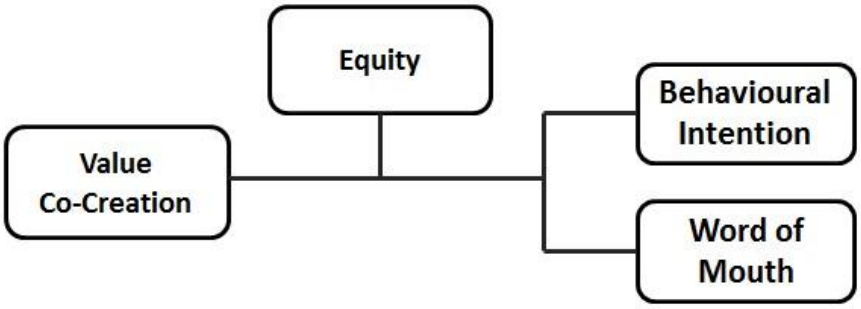

Figure 5-2 Model for Equity Experiment

Several authors note the lack of any universally accepted formula for equity (R. Harris, 1983; Harris & Joyce, 1980; Kollock, Blumstein, & Schwartz, 1994; Walster, Walster, & Berscheid, 1978). If actors in a particular exchange:

> 'Calculate inputs and outcomes differently – and it is likely that they will – it is inevitable that participants will differ in their perceptions of whether or not a given relationship is equitable' (Walster, et al., 1973, p. 153).

Oliver and Swan (1989a) propose one approach to measuring equity where specific interpretations of equity are used to intervene between input/outcome combinations and satisfaction. This responds to the equity measurement problem outlined by Walster et al (1978) above and suggests that individuals perceive specific meaning in input/output combinations which 'cannot be construed as satisfaction, but which affect satisfaction' (Oliver & Swan, 1989a, p. 24). Oliver and Swan (1989a) use this approach to address diverse interpretations of the meaning of equity/inequity and suggest that it can serve as a heuristic. The intervening variables are notions of fairness and preference and are outlined below.

Fairness

Fairness is suggested as synonymous with equity 'in that it explicitly implies a form of distributive justice whereby individuals get 'what is right' or 'what they deserve' (Oliver & Swan, 1989a, p. 25). Fairness assumes that parties in an exchange process want to maximize their outcomes whilst minimizing inputs. Oliver and Swan (1989a) revealed that fairness was a positive function of the seller's inputs and the buyer's outcomes whereas seller outcomes and buyer inputs did not directly relate to fairness (Oliver & Swan, 1989a, p. 30). In a co-created transaction consumer inputs may increase significantly and negative outcomes accompanied with negative perceptions of firm inputs therefore may have a larger negative effect as consumers perceive the outcome to be unfair.

Preference

Preference is more closely associated with inequity and is based on Adams (1963, 1965) notion of egoism and ego-centric hypothesis which suggests that one actor in an exchange would feel less distress if they feel that any inequity is in their favour (Oliver & Swan, 1989). Preference is therefore any combination of outcomes that benefits one party over another, in other words a situation of 'advantageous inequity' (Oliver & Swan, 1989a; Walster, et al., 1973). If an individual perceives that outcomes can be maximised by acting equitably they will do so, likewise if they perceive that outcomes can be maximised by behaving inequitably they will also do so. Oliver and Swan (1989, p. 25) posit preference as a 'positive function of buyers' outcomes and a negative function of seller's outcomes'. In the case of a co-created

exchange it may be that inequitable outcomes may be perceived by a consumer as being in the firm's favour (once again related to the perceptions of increased input of the consumer against the perceived input/outcome of the firm). In this experiment fairness and preference are used as co-variables in a similar same way as Oliver and Swan (1989a) as it is anticipated that consumer perceptions of fairness and preference would affect any attitudinal outcomes.

Determining Consumer Inputs and Outcomes

In a co-created exchange, consumer inputs might include variables such as monetary expenditure, time, and effort made in the transaction. Consumer outcomes might include the performance of the product or perceived retailer inputs (Lapidus & Pinkerton, 1995). If individuals perceive that equity principles are violated then Goodwin and Ross (1993) suggest individuals will experience feelings of anger (a kind of dissatisfaction). Both positive and negative inequity states can motivate individuals to attempt to change parameters to restore equity (Homburg , et al., 2005). Likely strategies to re-establish equity might be by reducing their inputs into the relationship, altering their perceptions of the outcomes from the relationship, attempt to artificially increase their outcomes or simply leaving the relationship (switching) (Lapidus & Pinkerton, 1995; Szmigin & Bourne, 1998; Walster, et al., 1973). The greater the feelings of inequity, the greater the distress felt by individuals and the greater their efforts will be to restore equity to the relationship (Glass & Wood, 1996; Walster, et al., 1973). Firm outcomes of equitable/inequitable situations might therefore include effects on satisfaction, commissions, repatronage, and positive word of mouth referrals (Lapidus & Pinkerton, 1995). Feelings of equity are closely associated with effects on behavioural intentions (Oliver & Swan, 1989a).

This experiment aims to explore a potential interaction between value co-creation and equity. It is anticipated that higher levels of co-creation associated with greater collaboration could interact with equity and reduce the negative effects of inequitable outcomes as consumers perceive a sharing of risk in the transaction and self-apportion some of the blame for a negative outcome:

H4 High levels of value co-creation will reduce negative effects of inequity for a) word of mouth and b) behavioural intention.

As indicated at the start of the chapter the effects of both trust and equity (alongside the broader effect of co-creating within the exchange will be tested using experimental methods. The following section outlines some of the key issues relating to an experimental design, the chosen method for the experiment and issues relating to sampling, validity, bias and procedure.

5.3 Experimental Research

Experimentation with the natural world and mankind's surroundings has a long history (Shadish, Cook, & Campbell, 2006). Experiments see relevant variables extracted from complex natural situations and reproduced under laboratory conditions where aspects of the experiment are manipulated to determine the effect of variables on each other (Orne, 1962, p. 776). The rules of experimentation are essentially concerned with 'the relationship between subjects and the experimental treatments they receive' (Honeck, Kibler, & Sugar, 1983, p. 2). In the social science domain there are major differences in that the main subject of the experiment is not an inanimate organism but a thinking, conscious subject, therefore assuming a passive subject is more difficult to justify (Orne, 1962).

Experimental research is based on cause and effect relationships (Shadish, Cook, & Campbell, 2002; Solso, Johnson, & Beal, 1998). The effect would be based on a measurement of a dependent variable after the systematic manipulation of one or more independent variables (also called manipulations or factors). If differences are observed in the dependent under different conditions of the independent the investigator could conclude that the independent variable was responsible (Perdue & Summers, 1986).

This desire to establish cause and effects requires the research to have a certain degree of control over the experiment. Classical experimental design requires a random assignment of individuals to either an experimental, or control, group (Creswell, 2009; Easterby-Smith, et al., 2008). Conditions for the experimental group are then manipulated by the researcher who can then assess the effects in comparison with the control group who receive no unusual conditions (Easterby-Smith, et al., 2008).

In scientific or medical experiments (such as drug testing) the control group would typically receive a placebo and the experimental group a new drug to test, differences in subjects can then be measured accordingly. In marketing experiments, subjects are frequently concerned with unobservable, higher order variables (perceptions, attitudes etc.). These variables cannot be manipulated directly (like drugs in medical experiments) but have to be manipulated indirectly by changing aspects of the subject's surroundings (Perdue & Summers, 1986). The modern experimenter is then faced with two interrelated tasks; creating an appropriate experimental design for the treatments and selecting a proper analysis of variance for the design. Experimental skills are related to knowing 'how to relate subject, treatment and other experimental factors such as to get a clear picture of the effect of treatments' (Honeck, et al., 1983, p. 2). Also included may be nuisance variables (otherwise known as pseudo factors or co-variables) which might not be seen as important initially but could improve the effect or account for variation in the experiment and allow the experimenter to stay in control.

In experimental research it is important to recognise that it is control of the situation that represents the key difference from non-experimental methods (Venkatesan, 1967). The experimenter, therefore, must have full control of all the variables, both those under investigation and those not under investigation. In this way 'responses obtained result from the manipulation of the experimental variable(s); any unintended or unexplained variation in the behaviour of the subjects is regarded as an error' (Venkatesan, 1967, p. 142). Designing the experiment is a crucial stage in the research process (Honeck, et al., 1983; Shadish, et al., 2002) and the following section outlines the approach taken within this research.

5.3.1 Design of Experiments

In management research either true or quasi-experiments are conducted (Ryals & Wilson, 2005). True experiments (where research subjects are randomly exposed to treatments in 'laboratory like' conditions) offer the researcher conditions where internal validity is high and theory can be reliably tested (Honeck, et al., 1983; Keppel, 1991) whereas a quasi-experiment undertaken in the field can provide an environment which has higher external validity but where a researcher would

struggle to guarantee that they were actually measuring what they claimed (Easterby-Smith, et al., 2008). For the purpose of this thesis a true experiment was deemed to be the most appropriate as within this experiment, subjects perform tasks within a carefully controlled physical environment reducing the potential for extraneous variables – factors other than the independent variables being studied – to adversely affect the dependent variable. This fit well with the aim of ascertaining any effects of value co-creation on consumer behaviour and being able to argue that this was what was actually being measured. Given the conceptual recency of the concept and the potential for dubiety this appeared the most prudent decision. Amongst many variations in true experimental types and procedures four main forms emerge and these are summarised in Table 5-1.

5.3.2 Types of True Experiments

Type of Design	Description	Benefits	Drawbacks
Completely Randomized	Subjects are randomly assigned to different treatments. Differences in behaviour observed are based on differences between independent groups of subjects – also known as a *between subject design*	• Simple to understand • Easy to design and analyse • Relatively free from restrictive statistical assumptions	• Large number of subjects needed • Relative lack of sensitivity
Within Subjects (Longitudinal)	Also known as a repeated measures design, each subject is exposed to all treatments over time. Effects are represented by difference within the group in the experiment	• Fewer subjects • More sensitive • Tests effects over time and after multiple treatments	• Restrictive assumptions • Subjects can change mid experiment • Attrition
Factorial	Where more than one independent variable is manipulated in the same experiment. Information can be obtained about each variable separately but also combined effects	• Allow combination testing • Interactions can be tested	• Need larger samples • More difficult to implement
Crossover	Subjects receive both treatments after receiving post-tests	• Provides a counter balance	• Only really suitable for short term, medical research

Table 5-1 Types of Random Assignment Experiments (Keppel, 1991;Shadish et al 2002)

A factorial design was deemed to be the most appropriate for the experiments given the aim of both investigating the effect on consumer of value co-creation under the influence of various moderating factors.

Factorial designs use two or more independent variables (known as factors) with at least two levels per factor. Therefore Factor *A* has 2 levels as does Factor *B.* When 2-level factors are combined four groups are created and these can be represented using experimental notation where *R* = randomization $X_{(plus\ subscript)}$ = Treatment and *O* = Observation (see Equation 5-1). These combinations of factors are often referred to as 2 x 2 designs.

$$R\ X_{A1B1}\ O$$

$$R\ X_{A1B2}\ O$$

$$R\ X_{A2B1}\ O$$

$$R\ X_{A2B2}\ O$$

Equation 5-1

The benefits of a factorial approach can be that fewer actual subjects are needed as each subject covers two variables (however final subject numbers are also related to statistical power) (Shadish, et al., 2002). Factorial designs also allow for the testing of a combination of factors, i.e. To see how different levels of factor A perform under different conditions of factor B, this approach also allows the researcher to investigate potential interaction effects, these occur when 'treatment effects are not constant but vary over levels of other factors' (Shadish, et al., 2002, p. 264). Interaction effects are more difficult to detect and may require larger sample sizes (Hair, et al. (2010) recommend no fewer than 30 per cell). Disadvantages of factorial designs centre on the practical problems within medical settings (eligibility issues) and are therefore more relevant to a social science situation.

5.3.3 Sampling

Because human subjects vary across a large range of behavioural traits they are controlled by randomly assigning subjects to treatments. Random assignment eliminates the possibility of systematic differences amongst the participants that

could in some way affect the outcome (age, gender etc.), so subsequent differences are only attributable to the treatment given (Keppel, 1991).

Experimental subjects place themselves under the complete control of the research. Once agreement to take part has been given subjects can essentially perform a wide range of actions 'on request without inquiring as to their purpose' (Orne, 1962, p. 777). Motivation, therefore, can be pluralistic from a high regard for science, experimentation and the furthering of knowledge to other more mundane motivations such as the achievement of course credit, money (Orne, 1962, p. 778). Given the unlikely presence of the former some form of payment may therefore be required to tempt subjects to participate. Researchers conducting experiments should also attempt to minimise any bias that could adversely affect any results, the following section outlines the role of bias in experimental studies.

5.3.4 Bias

Experimental methods can be significantly influenced by experimenter bias, and the causes of this are discussed by Venkatesan (1967) who observes that a typical experiment has a number of common features:

- It is invitational: most participating subjects are volunteers;
- The nature of the invitational terms are unspecified;
- Status relationship exists between the experimenter (E) and the subject (S);
- It is temporally and spatially set apart from daily life;
- The distribution of information is one-sided (and in favour of the researcher.

In situations such as these (where information is asymmetric in favour of the researcher) Riecken (1962) argues that the subject attempts to form a definition of the experimental situation. Researcher actions throughout the course of the experiment are significant and will be interpreted by the subject(s). Orne (1962) proposes that subject behaviour is determined by influence from two sets of variables: 1) experimental variables, and 2) the perceived demand characteristics of the experimental situation. The behaviour of the subject, as an active participant in the process, has to be viewed in the context of the total setting of the experiment. Venkatesan (1967, p. 143) observes that 'in such a situation, the experimenter cannot

be regarded as a necessary but harmless element. His influence, his effect, and his bias must be studied systematically as partial determinants of research results'. Venkatesan outlines the main sources of experimenter bias as follows: experimenter expectation; early data returns; experimenter modelling and experimenter attributes. These are outlined in Table 5-2:

Source	Description
Experimenter expectations	The experimenter's expectancy or hypothesis can influence the data from the experiment.
Early data returns	Evidence suggests that if early returns are overly positive or negative this can influence subsequent.
Experimenter modelling	The likelihood of an experimenters own performance of a task influencing the results of subjects.
Experimenter attributes	Other attributes of the experimenter which could, potentially bias the results. This could include status, age, sex etc.

Table 5-2 Sources of experimenter bias

As a result of this potential for bias it is necessary for experimenters to have an awareness of the likelihood of the occurrence of bias in their experiments and be prepared to report the potential for bias in the methodology (Venkatesan, 1967). In particular it is necessary to consider and report how instructions are given to subjects, the extent to which procedures were standardized across experiments and whether experimenters were allowed to improvise at all (Venkatesan, 1967). Orne (1962) recommends that inquiries are conducted by an experimenter not acquainted with the subjects in order to minimise the effects of experimenter bias. In this study bias is unlikely but discussed within the data collection section.

Experiments are a popular choice of method in psychology, business and other social science as there is a ready supply of subjects within the student population. They are more challenging to conduct within real organisations or where a captive sample is not available (Easterby-Smith, et al., 2008). It is for this reason that issues of validity within experimental research are the subject of much debate and this is considered in the next section.

5.3.5 Experiment Validity

In experimental research, identifying cause and effect can be challenging. In particular isolating particular independent variables and then accounting for which variable has which effect (Quinlan, 2011) may result in results difficult to verify. For the researcher attempting experimental research a rigorous approach to the experimental design is required in order that both reproducibility and validity are achieved. Validity is particularly important but some debate around internal and external validity with regards to experiments is worthy of reproduction to ensure that some balance is maintained and the right decisions made.

Internal Validity

Internal validity is particularly important within the cause and effect context of the experiment. The power of the experiment comes specifically from being able to isolate the variables you wish to test. Experimental methods, therefore, should be high in internal validity in other words 'the extent to which what is identified as the 'cause' actually produces what have been interpreted as the 'effects' (Ryals & Wilson, 2005, p. 350). Experimental designs encourage clarity about the contexts and manipulations in question, alternative explanations should be eliminated because subjects are assigned to groups randomly. Random assignment ensures that 'experimental and control groups are identical; in all respects, expect for the focal variable' (Easterby-Smith, et al., 2008, p. 86). This is an essential component of an experiment, some would argue the main concern, Winer (1999, p. 349) argues that external validity 'is not of much concern in experimental work if the researcher cannot adequately show that the results found from an experiment are truly due to the manipulation(s)'.

However, experiments high in internal validity suffer from 'weaknesses in ecological [or external] validity – the extent to which results in the research setting can be generalised to other settings (e.g. the retail store or workplace)' (Ryals & Wilson, 2005, p. 350). This will be discussed in the next section.

External Validity

The issue of external validity in experiments has provoked considerable comment (Berkowitz & Donnerstein, 1982; Bracht & Glass, 1968; Lynch, 1982; Winer, 1999). Winer (1999) observes that there has been a long running debate between advocates of internal and external validity. Supporters of external validity oppose the use of students as subjects as they are not 'real' in the sense that generalisation is very difficult. Researchers supporting internal validity will rejoinder that it is theory building that is of interest and not generalizability. The convenience of the student sample introduced above is criticised by Ferber (1977) who argues that firstly, students may not actually be consumers of the product in question and, secondly, a convenience sample is not a randomly drawn, probability sample. The first issue needs to be identified within any experimental study using such a sample. The second issue has implications for experimental results as if an experiment uses only student subjects from one geographic area as the results may be completely different in a different area or with a different age profile of subjects (Winer, 1999), once again this should be identified within the study.

Generalizing results of research to other populations and settings is of considerable importance and arguably it is incumbent on researchers to be concerned about the generalizability of results into other contexts (Winer, 1999). Lynch (1982) proposes three generally accepted principles: firstly, statistical generalizability or the extent to which results from a particular study can be generalised to a larger population; secondly, robustness or the extent to which a relationship identified in a particular experiment could be replicated with alternative subjects, settings and at alternative times; finally, realism or the extent to which the study in question was realistic and, therefore, able to be generalized to a wider, natural environment. For this issue, statistical generalizability will be addressed within the data collection/analysis part of this chapter, the report of the data collection addresses the robustness issue and realism will be discussed in reference to the manipulations but is also measured within the survey. Winer (1999) suggests that studies which have an internal validity focus should have a mandatory section at the end of each article indicating what kind of studies are necessary to establish external validity, this will be considered within the concluding chapter of the thesis.

Essentially researchers must decide the extent to which their experiment is aimed at findings that can be directly generalized to a real-world situation (effects application) or that can be generalized through theory-based interventions (theory application) (Calder, Phillips, & Tybout, 1981). Key differences between the two approaches are identified in Table 5-3. In particular EA studies should show some concern for external validity within the research whilst TA should not be concerned by external validity (Calder, et al., 1981; Winer, 1999).

	Effects application (ea)	**Theory application (ta)**
Subjects	Must represent the real world situation in question	Can use any respondent population which should be as homogenous as possible
Variables	Need to correlate as closely as possible to the real world	Must correspond to the needs of the theory
Research setting	Must correspond to the contexts where generalizability is desired	Can be artificial as the goal is to create an environment that does not impact on internal validity
Experimental design	Any design appropriate for the real-world	True experimental designs needed

Table 5-3 Approaches to experimental studies (Calder, et al., 1981; Winer, 1999)

The experiments were concerned with the effect of co-creating on the consumer; and the role of trust and equity in co-created exchanges but had the added problematic dimension of value co-creation's unexplored nature (Ostrom, et al., 2010; Schau, et al., 2009). Therefore the experiment must ensure internal validity in order to ensure that it is value co-creation being measured and not some related concept. The aim here is to test a theory (or concept), once this is achieved recommendations for further experimental study with greater external validity could be attempted.

5.3.6 Pre-test and Manipulation Check

Traditional experiments (particularly in medical contexts) manipulate variables by using a control and experimental group. The control group is given a placebo and the experimental group the new drug (Honeck, et al., 1983). Given the potential for problems arising from the manipulation of psychological and sociological variables (i.e. that variation between subjects cannot be guaranteed to be on account of the

independent variable alone it is usually necessary to perform manipulation checks on independent variables (Perdue & Summers, 1986). Manipulation checks are needed prior to conducting any within or between group analysis amongst independent, confounding and dependent variables (Perdue & Summers, 1986). Manipulation checks allow the researcher to demonstrate that '(1) the treatment manipulations are related to 'direct' measures of the latent variables they were designed to alter and (2) the manipulations did not produce changes in measures of related but different constructs' (Perdue & Summers, 1986, p. 318).

Manipulation checks are of most value during the pilot testing phase of an experiment at which point problems could still be resolved prior to the main experiment being conducted. The cost involved with running an additional pre-test is likely to be considerably less than having to conduct an entire experiment again (Perdue & Summers, 1986). Without a successful pre-test manipulation of independent variables unexpected experimental findings may force researchers to seek alternative explanations *post hoc* and ultimately provide little solid evidence to back up their hypotheses (Perdue & Summers, 1986, p. 325). Major experiments, therefore, should only be run after pre-test indicate successful manipulations.

Aligned to checking the manipulations of independent variables is the notion of construct validity within an experiment. For example, if an independent variable is confounded (i.e. meant to represent one independent variable but could be interpreted in terms of another but at the same level of reduction) then any causal explanation would be invalidated. Manipulation checks is one way of ensuring construct validity but Purdue and Summers also (1986, p. 324) recommend the use of multiple dependent variables to cross check results. Once a successful check has been made of any experimental manipulations researchers can proceed with data collection which, once again, requires a particular approach to reduce any bias in the results, this is discussed in the following section.

5.3.7 Experimental Procedures (data collection)

Venkatesan (1967, p. 145) suggests that 'the person who has formulated the hypothesis...should not train other experimenters or contact subjects'. This presents

experimental researchers with a challenge although the nature of the scenario based experiments here meant that only minimal contact would be required with subjects.

Researchers should also be aware of the response that experimental subjects can have to the experiment itself. Orne (1962, p. 780) describes experimental subjects as displaying 'problem solving behaviour; that is, at some level he sees it as his task to ascertain the true purpose of the experiment and respond in the manner which will support the hypotheses being tested'. On that basis care should be taken around any discussion of the purpose of an experiment. It should be effective but not obvious. A purpose that is overly unclear or ambiguous may result in subjects forming hypotheses leading to unclear results. In the opposite case the purpose may be so blatant that subjects try their hardest to be 'fair' often skewing results in another direction (Orne, 1962). Both Orne (1962) and Perdue and Summers (1986) suggest interviewing participants post-exposure to the manipulation. For the initial experiment in this thesis the first two pilot tests were conducted within classroom settings over a period of several weeks. The constructs within the experiment and the experimental surveys were discussed to refine the instrument.

The ordering of measurement for both manipulation checks and dependent variables in the final survey is important to consider. Perdue and Summers (1986) outline conflicting perspectives on this issue. Firstly, conducting a manipulation check prior to measuring the dependent variable has the potential to introduce demand characteristics and impacting on the perception of the dependent variable. The alternate perspective is also problematic as the effects of the manipulation may have dissipated if measured after the dependent variable or that the subjects' own response to the dependent measures would bias their reactions to the subsequent manipulation and confounding checks (Perdue & Summers, 1986). In this research the dependent variables were measured prior to the manipulation to avoid biasing the response to the dependent variable and none of the surveys were lengthy with no more than 3 or 4 dependents preceding the manipulation check. The next section of the chapter introduces the two experimental studies, the experimental procedures and findings.

5.4 Experiment 1 – Value Co-Creation and Trust

This section outlines the procedures for developing appropriate manipulations of value co-creation, trust and the associated pre-tests. The confounding and dependent variables are also introduced; finally, the findings of the experiment are discussed.

5.4.1 Factor Development and Pre-tests

At the time this research was conducted no pre-tested scale for value co-creation existed. Given the pluralistic view of value co-creation adopted in chapter 2, a formative approach was adopted using a range of the 'interactive' forms of value co-creation as its basis. To refine the items value co-creation was introduced within a lecture for third year hotel management undergraduate students. As part of a class exercise at the end of the class the students were asked to write 3 examples of co-creation which might be present in a hotel setting (chosen as one of the industry sectors from study 1). From the wide range of activities and situations that the students proposed six common indicators were identified representative of particular aspects of co-creation activity and which had the potential to be present within the scenario were selected. The indicators are shown in Table 5-4 and a sample of the literature where these attributes are discussed.

Involvement	(Gray, et al., 2007; Gummesson, 2004b; Jaworski & Kohli, 2006; Kalaignanam & Varadarajan, 2006; Payne, et al., 2008; Prahalad, 2004; Rust & Thompson, 2006; Zwick, et al., 2008)
Dialogue	(Auh, et al., 2007; Ballantyne & Varey, 2006a; Ballantyne & Varey, 2006b; Grönroos, 2006; Gummesson, 2004b; Prahalad & Ramaswamy, 2004b; Schau, et al., 2009; Wikström, 1996)
Customization	(Brown & Bitner, 2006; G. Day, 2004; Kalaignanam & Varadarajan, 2006; Rust & Thompson, 2006; Vargo & Lusch, 2004a)
Co-production	(Auh, et al., 2007; Bendapudi & Leone, 2003; Gibbert, et al., 2002; Kalaignanam & Varadarajan, 2006; Payne, et al., 2008; Prahalad, 2004; Vargo & Lusch, 2004a)
Relationship management	(Gray, et al., 2007; Jaworski & Kohli, 2006; Prahalad & Ramaswamy, 2004a; Vargo & Lusch, 2004a; Wikström, 1996)
Customer Education	(McColl-Kennedy, et al., 2009; Payne, et al., 2008; Vargo & Lusch, 2008b)

Table 5-4 Value Co-Creation Indicators

The indicators were then written up into a set of three scenarios which represented three levels of co-creation within the service encounter and subjected to a pre-test (final scenarios are displayed in Table 5-5 on page 143). Three pre-tests were then conducted, two on the value co-creation manipulation and one for the trust manipulation.

Pre-test 1

The first pre-test was conducted on 41 undergraduate students. Students were each given one of three versions of a survey that included a short scenario based on a hotel booking and visit. These scenarios represented high, medium, and low levels of co-creation activity. After the scenario the students were given a short descriptive definition of value co-creation and were then asked to rate the level of the six indicator variables (10 point scales anchored with, for example 1 = low involvement and 10 = high involvement). The results for each of the three scenarios were then scaled and compared using ANOVA. There was a significant difference between low value co-creation and both medium and high ($p<.05$) but no significant difference between medium and high ($p>.05$) (M_{low} = 4.40, n = 14, M_{medium} = 6.07, n = 14, M_{high} = 6.74, n = 13; $F(2,37) = 16.90$, $p<.01$). On that basis it was decided to amend the high co-creation scenario in particular and to run a second pre-test on the value co-creation factor.

Pre-test 2

The second pre-test was conducted on a different group of 41 hospitality management undergraduate students who were studying a course in service operations and hospitality management. These were the same students who had contributed to the co-creation indicator variables (note that no indication was given that the indicators were being used for any purpose other than a class exercise). Given that the students had been exposed to the value co-creation concept in a previous class another question was added to the survey which asked the students, on the basis of the previous weeks discussion and any subsequent background reading, to rate the overall level of value co-creation in the scenario using a 10 point scale (1=low value co-creation and 10=high value co-creation). Once again the results of the 6 indicators were scaled and the means were compared using ANOVA. In this

pre-test there was a significant difference between all three means (M_{low} = 3.21, n = 14, M_{medium} = 5.33, n = 14, M_{high} = 7.29, n = 13; $F(2,38) = 35.26$; p<.01).

To further test the robustness of the pre-test as a suitable measure for value co-creation a factor analysis was conducted on the six indicator variables. The results indicate a one factor solution (75% of variance extracted).To test the extent to which these indicators represent the value co-creation construct a multiple regression analysis was conducted using the overall value co-creation score given as the dependent variable and the six indicator variables as the independents. The results show that the indicators account for a large proportion of the global score (*adjusted* R^2 = 0.69, p<.01), and the formative value co-creation measure was taken as an accurate representation of the construct.

Pre-test 3

The third pre-test relating to the trust factor was also conducted on a group of 40 3rd year business students. Students were given a short scenario representing high or low trust in a hotel company and trust was then measured using three items on 7-point scales developed by Tax et al (1998) and modified by Crosby et al (1990). An average of the items ('I trust this brand', 'I rely on this brand', 'this is an honest brand', 'this brand is safe', 1 = totally disagree, 7 = totally agree, α = .98) represented the trust index. A comparison of the mean values in the trust pre-test revealed a significant difference (M_{low} = 1.52, n = 20, M_{high} = 5.83, n = 20; p<.05).

Level of Co-Creation	Scenario
Low	You are going to stay at a 'City Hotel' and you book online. At check in you are allocated a standard room. The hotel has a restaurant and bar. Throughout your stay you sense that the hotel employees, whilst professional, are not particularly interested in engaging with you as a customer The room contains basic information about the hotel facilities. Employees at the hotel are efficient but focussed on their jobs. There are no self-check-out facilities in the hotel. The hotel does not advertise a loyalty programme; feedback forms are not available when you check out.
Medium	You are going to stay at a 'City Hotel' and you call the hotel and make a reservation. At check in you are allocated a standard room. The hotel has 2 restaurants to choose from. The receptionist gives you information about hotel facilities and the room contains a brochure of hotel facilities and information about the hotels restaurants and bar. Employees at the hotel are willing to help and appear to be open to suggestions. You are able to check-out in your room to allow early departure. The hotel does not appear to have a loyalty programme but you are asked to complete a feedback form on departure.
High	You are going to stay at a 'City Hotel' and you call the hotel to make a reservation. The hotel calls you 2 days prior to confirm booking and check details. At check in you are given a choice of room types. The receptionist gives you information about hotel facilities and you are shown how to use the room's interactive features including a pillow menu. The hotel has a range of restaurants and bars to choose from. Employees at the hotel are very approachable and chatty and you have the impression that they are interested in finding out your opinion on aspects of your stay. You are able to check-out in your room to allow early departure and the hotel also provides a self-service breakfast for early guests. There are leaflets about the hotels loyalty programme in reception which you are encouraged to complete along with a feedback form. The hotel sends an email 1 week after your stay thanking you for your visit and asking for any further comments.
Level of Trust	**Scenario**
Low	You have never stayed at this hotel before. You emailed the hotel requesting a brochure but they did not respond. The hotels website does not provide much information about the hotel or its policies. Through personal contacts you have heard that the employees in the hotel are not particularly well trained and the perception of the company is that they seem to be more interested in making profit than satisfying customers.
High	You have stayed with this company on several occasions in the past. The hotel sends you regular communication about its products and services. The company offers a 'sleep well' guarantee and will refund your bill in the result of any problems. In the past you have always had positive contact with the employees of the hotel and your perception of the company is that they always have the customer's interests at heart.

Table 5-5 Scenario's for Trust Experiment

Confounding and Dependent Variables

For the remainder of the survey respondents were asked initially to respond to two control variables based on a risk averseness scale (Donthu & Gilliland, 1996) (α = .90[3]) and an enduring involvement to the product class in question scale (De Wulf, Odekerken-Shröder, & Iacobucci, 2001) (α = .72) the aim being to determine the extent to which a respondents perception of risk might contribute to their reaction to the trust variable and also if a higher level of enduring involvement might affect their co-creation outcomes. Participants were then required to read a short scenario which contained the value co-creation and trust manipulations and then complete a shot survey which measured in turn: behavioural intention (Kim & Biocca, 1997; Putrevu & Lord, 1994) (α = .93); relationship investment (De Wulf, et al., 2001) (α = .92); a willingness to pay a price premium scale was adapted from Chaudri and Holbrook (2001) (α = .84) (details of all scales used are reported in Table 5-6). Final questions were manipulation checks for value co-creation (using the six indicators and trust and respondents were also asked for age, gender and to rate the realism of the survey.

[3] α = Cronbach Alpha scores for the final experiment are included here; Hair et al (2010) suggest that α > 0.7 indicates a reliable scale

Dependent Variable	Anchors	Questions
Relationship Investment **(De Wulf, et al., 2001)**	Disagree – Agree	'This hotel makes efforts to increase customers' loyalty'. 'This hotel makes various efforts to improve its ties with customers'. 'This hotel really cares about keeping its customers'.
Behavioural intention **(T. Kim & Biocca, 1997; Putrevu & Lord, 1994)**	Disagree – Agree[1] Absolutely Not – Absolutely[2]	'It is very likely that I will book this hotel'.[1] 'I will book this hotel the next time I need a (product)'.[1] 'I will definitely try this hotel'[1] 'Suppose a friend called you last night to get your advice in his/her search for a (product). Would you recommend him/her to buy a (product) from (Brand)'[2]
Price Premium **(Chaudhuri & Holbrook, 2001)**	Disagree – Agree	'I would be willing to pay a higher price at this hotel over other similar hotels'. 'I prefer to stay at this hotel, even if another hotel advertises a lower price'.
Confounding Variables	**Anchors**	**Questions**
Enduring involvement towards product class **(De Wulf, et al., 2001)**	Disagree – Agree	'Generally, I am someone who finds it important what hotel I book'. 'Generally, I am someone who is interested in the kind of hotel I book'. 'Generally, I am someone for whom it means a lot what hotel I book'.
Risk averseness **(Donthu & Gilliland, 1996)**	Disagree – Agree	'I would rather be safe than sorry'. 'I want to be sure before I purchase anything'. 'I avoid risky things'.

Table 5-6 Dependent Variables and Scales for Trust Experiment

5.4.2 Participants and Procedures

A 3 x 2 between subjects factorial design experiment was conducted using 3 levels of value co-creation (high, medium, low) and two levels of trust (high, low) resulting in 6 scenarios. The main study was conducted with 180 undergraduates, their average age was 20.06 (SD = 2.74) and 71.47% were female. The students were asked to participate voluntarily to the study and were given a reward for completing the survey. The six survey types had been randomized and distributed to the students who were asked to read the scenario and to answer the questions carefully. The survey was carried out on undergraduate marketing students. Incomplete surveys were removed and random surveys from each scenario were removed to create equal

group sizes as recommended by Hair et al (2010). The following section introduces the findings for the first experiment.

5.4.3 Data Analysis Experiment 1 - Trust

Manipulation Check

The value co-creation indicators revealed a significant difference between means of the three scenarios (M_{low} = 3.25, n = 60, M_{medium} = 4.75, n = 60, M_{high} = 6.47, n = 60; F(2,177) = 76.64; p<.01). The trust manipulation was also tested revealing a significant mean difference as well (M_{low} = 3.00, n = 90, M_{high} = 4.70, n = 90; p<.01). Participants were asked to rate the level of realism in the scenario on a 10 point scale (1 = totally unrealistic, 10 = totally realistic) and this indicated that participants, on the whole, found the scenario convincing (M = 6.36; SD = 2.13; p = <.01).

Part 1 – Main and Interaction Effects

To investigate the predicted interactions between value co-creation and trust a Multiple Analysis of Covariance (MANCOVA) was conducted with price premium, relationship investment, and behavioural intention as dependent variables. The results reveal significant main effects for value co-creation (Wilk's lambda = .36, F(6,342) = 36.98, p<.01) and trust (Wilk's lambda = .42, F(3,170) = 77.19, p<.01), and a significant interaction effect between the factors (Wilk's lambda = .92, F(6,340) = 2.29, p<.05). The interaction was marginally significant for price premium (p<.06), significant for relationship investment (p<.05), and non-significant for behavioural intention (p>.1). There was no significant effect for either co-variable (p > 0.1). The cell means for the significant interaction effects are displayed in Table 5-7:

	Low Trust			High Trust		
	Low VCC	Med VCC	High VCC	Low VCC	Med VCC	High VCC
Price Premium	1.63 [a] (.96)	1.96 [b] (.76)	2.63 [c] (1.04)	2.41 [d] (.82)	3.63 [e] (1.31)	4.13 [f] (1.46)
Relationship Inv.	1.37 [a] (.62)	2.44 [b] (1.12)	4.30 [c] (1.51)	2.67 [d] (1.2)	4.78 [e] (1.17)	6.21 [f] (.64)
Multiple Comparisons (Scheffé):						
Price Premium	a-b: p=.924	a-c: p=.031	b-c: p=.352	d-e: p=.003	d-f: p=.000	e-f: p=.678
Relationship Inv.	a-b: p=.017	a-c: p=.000	b-c: p=.000	d-e: p=.000	d-f: p=.000	e-f: p=.000

Table 5-7 Cell Means of the Dependent Variables (Exp. 1)

The cell mean comparison was conducted using the Scheffé post hoc tests. Under conditions of low trust it was anticipated that willingness to pay a price premium and perceptions of relationship investment would be significantly lower than under conditions of high trust. There is some evidence, however that even when trust is lacking higher levels of value co-creation can motivate consumers to spend more in the purchase (M_a = 1.63, M_c = 2.63, F(1,58) = 19.86, p = .01) and consumers perceive greater relational investment with higher levels of value co-creation (M_a = 1.37, M_b = 2.44, F(1,58) = 9.31, p<.01; M_b = 2.44, M_c = 4.30, F(1,58) = 3.62, p<.01). Under conditions of high trust it was expected that consumers would have a much more positive response to value co-creation and this was evident in consumer willingness to pay a price premium (M_a = 2.41, M_c = 4.13, F(1,58) = 10.04, p<.01) and perceived relationship investment (M_a = 2.67, M_c = 6.21, F(1,58) = 7.67, p<.01). These results suggest that trust does moderate the effect of value co-creation on consumer willingness to pay a price premium and the consumer perception of relationship investment and hypotheses 1 and 2 are therefore confirmed.

Part 2 – Mediating Effects

As suggested by TCE and S-D Logic, a mediating effect of relationship investment between value co-creation and willingness to pay a price premium as well as behavioural intention was anticipated. In order to test whether relationship investment acted as a mediator a median split procedure (Berger, Cunningham, &

Kozinets, 1999; Grohmann, Spangenberg, & Sprott, 2007; Im, Lee, Taylor, & D'Orazio, 2008; Kim & Kramer, 2006) was performed on the relationship investment construct and a second 2 x 2 factorial experiment was run manipulating two levels of trust and two levels of relationship investment and including the two co-variables. The results reveal significant main effects for Relationship investment (Wilk's lambda = .74, $F(2,173) = 30.26$, $p<.01$) and trust (Wilk's lambda = .72, $F(2,173) = 32.55$, $p<.01$) but a non-significant interaction effect between the factors ($p>.1$). A comparison of means for price premium only revealed a significant difference under conditions of high relationship investment ($M_{low} = 2.87$, $n = 27$; $M_{high} = 3.80$, $n = 65$; $F(1,90) = 3.36$, $p<.01$) indicating that higher relationship investment does have some effect on consumer willingness to pay a price premium and, given the marginally significant interaction effect on price premium reported in study 1 this suggests that relationship investment partially mediates the relationship between value co-creation and price premium and provides some support for hypotheses 3 part a.

A comparison of means for behavioural intention reveals a significant difference under both conditions of high relationship investment ($M_{low} = 3.94$, $n = 27$; $M_{high} = 5.62$, $n = 65$; $F(1,90) = 3.71$, $p<.01$) and low relationship investment ($M_{low} = 2.87$, $n = 63$; $M_{high} = 4.39$, $n = 25$; $F(1,90) = 7.39$, $p<.01$) providing evidence that relationship investment does fully mediate the relationship between value co-creation and behavioural intention and supporting hypotheses 3 part b. The next section introduces experiment 2 where co-creation is tested alongside the effects of inequity.

5.5 Experiment 2 – Value Co-Creation and Equity

In order to assess the effects of equity within co-created exchanges a 2 x 2 factorial, between subjects, experiment was conducted using value co-creation (high value co-creation, low co-creation) representing consumer inputs as the first factor. The second factor related to equity which are represented as perceived firm inputs (high perceived inputs, low perceived inputs) (Lapidus & Pinkerton, 1995).

5.5.1 Factor Development and Pre-tests

The experiment would be conducted on student participants and the context of booking a gap year holiday with a travel agent was selected as a setting that participants were likely to have some familiarity with and travel agent had scored higher in the rating exercise in study 1. For this experiment an online survey approach to collect the data allowing a larger number of participants to be targeted and maximize the chance of obtaining an appropriate sample size. Web-based surveys have a number of presentational and interactive advantages over traditional paper based versions (De Vaus, 2002; Easterby-Smith, et al., 2008) along with the potential for more accurate and representative responses avoiding social desirability bias (De Vaus, 2002). There are issues with low response rates identified but this are minimized in contexts where a particular group can be targeted (as is the case with these experiments) (De Vaus, 2002). The faculty had access to the online survey tool 'Qualtrics' which has the capability to randomize experimental scenario's as part of a survey and researchers can also use email databases to target particular groups and send reminders.

Using the data from the two travel agent interviews scenarios were then written up which represented high and low levels of co-creation within the service encounter, equitable and inequitable outcomes and also the consumer education element. The value co-creation and equity factors were subjected to pre-tests (final scenarios are displayed in Table 5-8 on page 151).

Pre-test 1

The first pre-test was conducted on 47 undergraduate students studying business. Students randomly received one of two scenarios representing high and low levels of co-creation in the encounter with the travel agent (pre-test scenarios are displayed in appendix 5). After the scenario the students were given a short descriptive definition of value co-creation:

> **This survey is about 'Value Co-Creation' a situation where value is created jointly and reciprocally by a firm, its customers and other network actors, where the resultant value-in-use is greater than that of its component parts. Value co-creation may involve co-production, co-design or co-innovation and occurs in direct interaction between a firm, its customers and suppliers through collaboration and dialogue.**

Respondents were then asked to rate the level of co-creation using a 7 point Likert scale. An independent *t* test showed a significant difference between low and high value co-creation (p<.05) but only a relatively small difference between the mean scores (M_{low} = 4.09, n = 22, M_{high} = 5.20, n = 25; t(1,45) = 2.62, p=.012). On that basis it was decided to amend the low co-creation scenario and the definition and to run a second pre-test.

Pre-test 2

The second pre-test was conducted with 36 participants who randomly received one of two scenarios representing high and low levels of co-creation in the travel agent encounter. The revised definition of co-creation was as follows:

> **This survey is about 'Value Co-Creation' a situation where value is created jointly and reciprocally by a firm and its customers.**
> **Value co-creation can involve:**
> - **Co-production of the core offering**
> - **Co-design or co-innovation of products and services**
> - **Customization of the final product or service**
>
> **Value co-creation occurs in direct interaction between a firm, its customers and suppliers through collaboration and dialogue.**

An independent *t* test on this data gave a significant different between the two levels of co-creation and the mean difference was much greater than in the first pre-test (M_{high} 5.67, n = 18; M_{low} 3.5, n = 18; (t (1,34)= -5.134, p < .000). This manipulation of co-creation (and definition) was therefore adopted for the main experiment.

Pre-test 3

The third pre-test relating to the equity manipulation and was conducted on a group of 40 students. Students were given a short scenario representing an equitable or inequitable outcome from the travel agent scenario and perceived equity was then measured using a four items on 7-point, semantic differential scale from Lapidus and Pinkerton (1995). Participants were asked 'How would you perceive the outcomes of this scenario' ('Unfair – Fair', 'Bad – Good', 'Dissatisfied – Satisfied', 'Loser – Winner' , α = .972) A comparison of the mean values in the pre-test revealed a significant difference and therefore a sound manipulation ($M_{\text{equitable}}$ = 6.30, $M_{\text{inequitable}}$ = 2.50, t(1,29) = 11.468, p <.000). The final scenarios were created and these are displayed in Table 5-8:

High Value Co-Creation	**You are planning to go on a 'gap year' vacation. You decide to book through the 'Student Travel Company' who advertises gap year packages.** **You visit the store and discuss your gap year with one their advisors. They ask you a lot of questions about what kind of holiday you are looking for and what activities you might enjoy. You also discuss budget and flight options and you subsequently emailed some customised packages to consider. You select your favourite package and are able to make some alterations with your advisor.** **Whilst on your gap year trip you agree to post a weekly entry on the 'Student Travel Company' web community in return for a travel voucher.** **The firm emails you a '*how to get the most of your gap year vacation*' leaflet it gives you lots of information about inoculations, personal safety and information about checking flights for changes. The firm also give you information about how to contact the company if you have any problems while on vacation.**
Low Value Co-Creation	You are planning to go on a 'gap year' vacation. You decide to book through the 'Student Travel Company' who advertises gap year packages. You scan the company's webpage and notice that they have several standardised packages to support gap year travel, one of these fits your budget and you visit the store and book the vacation. The firm emails you a '*how to get the most of your gap year vacation*' leaflet it gives you lots of information about inoculations, personal safety and information about checking flights for changes. The firm also give you information about how to contact the company if you have any problems while on vacation.
Equitable Outcome	Your trip is really successful, all your flight connections work and the accommodation you booked is really nice.
Inequitable Outcome	You have a lot of problems on your trip, you miss a couple of flight connections due to schedule changes and some of the accommodation is not up to the standard you expected.

Table 5-8 Scenarios for Equity Experiment

Intervening, Confounding and Dependent Variables

The survey respondents were initially asked to respond to one control variable based on a willingness to participate scale (Auh, et al., 2007; Bettencourt, 1997) (α = .70) with the aim of discovering if an individual's predisposition to participation could influence the results. Participants were then required to read a scenario which contained the value co-creation and equity manipulations and then complete a survey which measured in turn: fairness (Oliver & Swan, 1989a) (α = .91); preference (Oliver & Swan, 1989a) (α = .86); behavioural intention (Cronin, Brady, & Hult, 2000) (α = .96) and word of mouth (Zeithaml, Berry, & Parasuraman, 1996) (α = .96)

(details of all scales used are reported in Table 5-9). Final questions were manipulation checks for value co-creation and equity and respondents were also asked for age, gender and to rate the realism of the survey.

Intervening Variable	**Anchors**	**Questions**
Fairness **(Oliver & Swan, 1989a)**	Strongly Disagree – Strongly Agree	I was treated fairly by the organisation. I did not get treated right by the organisation.* The total package I received from the organization was fair.
Preference Measure **(Oliver & Swan, 1989a)**	Strongly Disagree – Strongly Agree	I think the firm got more out of the deal than I did.* I think I got more out of the deal than the firm
	Semantic Differential Scale with 1 = I came out ahead; 4 = We both benefitted equally and 7 = The firm came out ahead	
Dependent Variable	**Anchors**	**Questions**
Behavioural Intention **(Cronin, et al., 2000)**	Very low – Very high$_1$ Strongly Disagree – Strongly Agree$_2$	'The probability that I will use this travel agent again is'$_1$ The likelihood that I will recommend this travel agent to a friend is'$_1$ 'If I had to do it over again, I will choose this travel agent'$_2$
Word of Mouth **(Zeithaml, et al., 1996)**	Totally disagree – Totally agree	'I will say positive things about this firm to other people'. 'I will recommend this firm to someone seeking advice'. 'I will encourage friends and relatives to purchase a holiday from this firm'.
Confounding Variables	**Anchors**	**Questions**
Participative cooperation **(Auh, et al., 2007; Bettencourt, 1997)**	Strongly Disagree – Strongly Agree	'I like to work cooperatively with a firm' 'I do things to make a firms job easier' 'I prepare questions before going to an appointment with a service provider' 'I openly discuss my needs with a service provider to help them deliver the best possible outcome'

Table 5-9 Intervening, Confounding & Dependent Variables for Equity Experiment
* = negatively worded variable

5.5.2 Participants and Procedures

The main study was completed by 132 undergraduates, their average age was 20.35 (SD = 1.99) and 68.2% were female. Through Qualtrics, students were emailed and asked to participate voluntarily to the study and were informed of a prize draw element related to the completion of the survey. The eight scenarios were randomized within the programme and students were asked to read the scenario and to answer the questions carefully. Two reminder emails were sent after one and two weeks. After the survey was closed incomplete surveys and random surveys were removed to create equal group sizes as recommended by Hair et al (2010). The following section introduces the findings for the first experiment.

5.5.3 Data Analysis Experiment 2 - Equity

Manipulation Check

The value co-creation measure revealed a significant difference between means of the two levels of the manipulation (M_{low} = 3.90, n = 66, M_{high} = 4.60, n = 66; t (1,262) = -3.952, p<.000). The equity manipulation was also tested revealing a significant mean difference as well (M_{equity} = 5.49, n = 66, $M_{inequity}$= 3.21, n = 66; t (1,262) -16.08, p<.000). Participants also rated the level of realism in the scenario on a 10 point scale (1 = totally unrealistic, 10 = totally realistic) and this indicated that participants, on the whole, found the scenario convincing (M = 6.64; SD = 1.98).

Main and Interaction Effects

To investigate the predicted interactions between value co-creation and equity a MANCOVA was conducted in SPSS with behavioural intention and word of mouth as dependent variables and fairness, preference and participative cooperation as co-variables. The results reveal a marginally significant interaction effect between the factors a highly significant main effect for equity and a marginally significant main effect for value co-creation (see Table 5-10 for MANOVA statistics). As anticipated there was a significant main effect for both fairness and preference but no effect for the participation co-variable. The interaction was marginally significant for word of mouth (p<.07) and significant for behavioural intention (p<.05).

Construct	Effect	Wilk's Lambda	*F* Value (df 2,123)
Value Co-Creation*Equity	Interaction	.963	2.351*
Value Co-Creation	Main	.961	2.509*
Equity	Main	.898	7.021***
Fairness (co-variable)	Main	.644	34.018***
Preference (co-variable)	Main	.787	16.665***
Participation (co-variable)	Main	.999	0.049_{NS}

Table 5-10 MANOVA Results for Equity Experiment *= <0.1, ** = <0.05, * = <0.01**

The interaction plot for each of the dependent variables is displayed in Figure 5-3 and appears to show the positive effect of higher levels of value co-creation under conditions of inequity and high value co-creation.

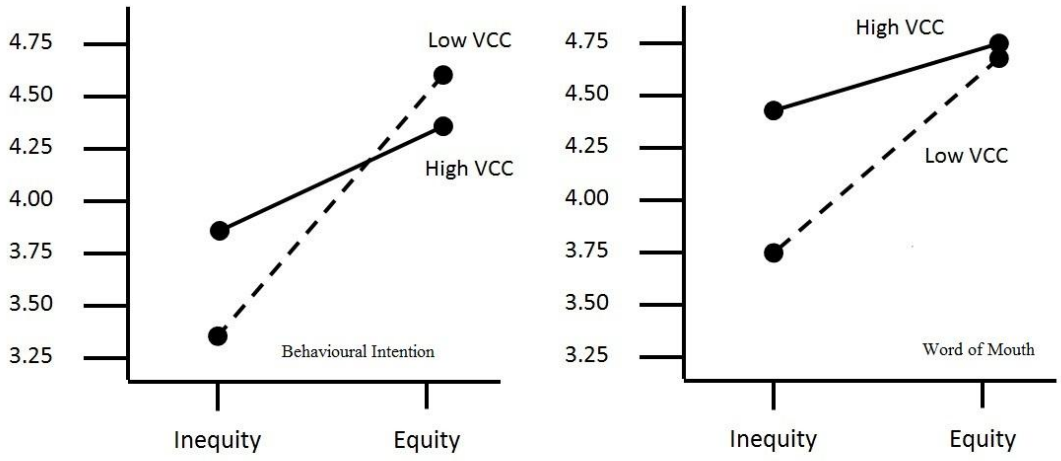

Figure 5-3 Interaction effects for Dependent Variables

A pairwise comparison of means was conducted and the results are displayed in Table 2-1. The results show that equity had a significant effect on both dependent variables with significant higher scores given for equitable of inequitable scenarios. Value co-creation under conditions of inequity was the subject of hypothesis 4. For the behavioural intention dependent there is no significant difference between low and high value co-creation under inequitable conditions (M_a = 3.414, M_b = 3.801, F(1,62) = 1.605, p = .210) and H4b is rejected. For the word of mouth dependent there was a significant difference between the means (M_a = 3.761, M_b = 4.321,

$F(1,62) = 3.535$, $p = .055$) confirming H4a and suggesting that higher levels of value co-creation in the encounter can reduce the effect of inequity for some outcome variables. The final section of the chapter will discuss the results for both experiments.

	Inequity		**Equity**	
	Low VCC	High VCC	Low VCC	High VCC
Behavioural Int.	3.414[a] (.16)	3.801[b] (.17)	4.540[c] (.16)	4.326[d] (.17)
Word of Mouth	3.761[a] (.16)	4.321[b] (.17)	4.627[c] (.16)	4.644[d] (.17)

Pairwise Comparison:

Behavioural Int	a-b: p=.210	a-c: p=.000	a-d: p=.001	b-c: p=.036	b-d: p=.449	c-d: p=.116
Word of Mouth	a-b: p=.055	a-c: p=.003	a-d: p=.005	b-c: p=.303	b-d: p=.390	c-d: p=.982

Table 5-11 Pairwise Mean Comparison (Exp. 2)

5.6 Discussion

5.6.1 Value Co-Creation and Trust

The first factorial experiment explored the relationship between value co-creation and trust. The results show how value co-creation interactions with trust impacting both relationship investment and willingness to pay a price premium. Tests on the differences between the mean values indicate that as value co-creation levels increase so do perceptions of relationship investment and willingness to pay a price premium, the effect is strongest under conditions of high trust. The second part of the experiment showed how relationship investment fully mediated the relationship between value co-creation, trust and behavioural intention and partially mediated the relationship between the independent variables and willingness to pay a price premium.

The data from experiment 1 indicates that trust in co-created exchanges has a significant effect on outcome variables. However, the results also showed that even under conditions of low trust increasing levels of co-creation in the encounter resulted in willingness to pay a price premium increasing but also the perception of

the relationship investment made by the firm. The results suggest that the combination of trust and value co-creation is somehow incremental with increasing levels of both leading to cumulatively positive outcomes.

Value co-creation implies a mutually dependent relationship between firm and consumer and both firm and consumer are at risk of opportunistic behaviour if the relationship lacks strength and trust. This has implications for the ways that firms interact with consumers but also the conditions under which the interaction takes place. Consumers need to be reassured that increasing levels of co-creation are mutually beneficial and not simply increasing the outcomes for the firm, this requires trust building activities and relationship investment in order to have a positive impact on future behaviour. This effect was observed even under low trust conditions (albeit with lower mean values), this might suggest some inherently positive association between co-creation and how the consumer perceives a relationship with a firm and suggests an importance of perceived relationship investment in a co-created exchange.

The relationship investment construct mediated the relationship between value co-creation, trust and behavioural intention and partially mediating the relationship with willingness to pay a price premium. In a co-created exchange consumers need to perceive that a firm is committed to the exchange (through specific investments) and is prepared to enable the consumer with opportunities for collaboration in the value creation process. In this experiment relationship investment was reciprocated with behavioural intention and a willingness to pay more and therefore represents a contribution to the value co-creation literature. Undoubtedly the increased commitment and input demanded from value co-creation implies mutual dependency and firms must ensure that increased collaboration is rewarded and consumers do not perceive that they are being exploited.

These outcomes support authors such as Jaworski (2006) who observes the importance of trust within co-created exchanges and the essential role of trust in successful marketing relationships (Andaleeb, 1996; Doney & Cannon, 1997; Morgan & Hunt, 1994).

S-D Logic is based around the fundamental importance of both parties to the exchange process, consumers are resources of the firm and firms and consumers act in partnership to create value (Payne, et al., 2008; Vargo & Lusch, 2008b). In a mutually dependent context the importance of transaction specific investments creates a scenario whereby consumers do not suspect a firm might cheat on quality but instead one that promotes exchanges, yielding benefits for both partners (Chiles & McMackin, 1996; Singh & Sirdeshmukh, 2000). Mutually satisfying outcomes in value co-creation are described by Oliver (2006, p. 125) as 'idyllic' and 'unlikely' and this experiment does not consider the reverse risk of consumers not performing their role within the co-created exchange (Singh & Sirdeshmukh, 2000, p. 154; Sitkin & Roth, 1993) something future research may wish to consider.

5.6.2 Value Co-Creation and Equity

The second experiment tested the relationship between value co-creation and equity in particular the extent to which collaboration with consumers could reduce the potentially negative impact of inequity. The experiment revealed a marginally significant interaction effect between the factors and confirms that under conditions of inequity and high value co-creation negative word of mouth effects were reduced under conditions of high value co-creation.

The experiment reveals that increasing value co-creation can offset the effect of inequity which represents an important outcome for the thesis. Engaging consumers in value co-creation through increased collaboration requires certain investments on the part of the firm through transaction specific investments (discussed in the preceding section) or through initiatives designed to educate the consumer about the process and benefits of collaboration. Circumstances where a consumer perceives an outcome to be inequitable are inevitable in most or all exchanges due to the subjective nature of equity judgements (Adams, 1963; Walster, et al., 1973). On that basis firms might consider they are taking a risk by asking consumers to increase their inputs as perceived inequitable outcomes could have a negative outcome. This research suggests that the opposite is in fact the case as increasing consumer activity reduced the negative effects of inequity. This result could be attributed in two ways: firstly consumers, by taking a more active role in the exchange may actual self-

attribute some of the blame attached to the inequitable outcome (particularly if the firm has provided 'education') in some sense perceiving that they have in some way failed the firm; secondly, co-creation is closely associated with greater relational focus and (as the first experiment illustrates) increased levels of trust and it may be therefore that consumers perceive a stronger relationship which in turn might reduce the impact of an inequitable outcome.

Extant literature suggests that if consumers perceive their inputs do not match their expected outcomes there could be negative implications for consumer-firm relationships (Palmer, et al., 2000; Szmigin & Bourne, 1998; Vogel, et al., 2008). Given the mutual dependency at the heart of the co-created exchange and increased involvement it would not be difficult to see how a consumer might perceive his inputs to the exchange were higher than those the firm and that feelings of inequity might have negative outcomes for the relationship (Oliver & Swan, 1989a; Szmigin & Bourne, 1998). This research offers a counterpoint to existing perspectives on equity by suggesting that closer collaboration with consumers could reduce negative impacts closely associated with inequitable outcomes.

The experiments suggests as part of any co-creation strategy firms should ensuring that they educate existing and, particularly, new consumers to ensure effective collaboration. This will assist by reducing any potential uncertainty consumers may have regarding their involvement in value co-creation (Bowen & Jones, 1986; Eisingerich & Bell, 2008). If value co-creation is dependent on extensive dialogue, access, shared risk and transparency (Prahalad & Ramaswamy, 2004a, 2004b) then firms should communicate to consumers the nature of firm inputs (and expected consumer inputs) and the effect on outcomes for both parties in order to gain support from consumers and reduce information asymmetry this kind of 'education' may serve to bring consumers closer to the firm and reduce inequity.

5.6.3 Limitations

This chapter has identified positive outcomes on consumer behaviour resulting from the interaction between value co-creation, trust and relationship investments. With hindsight a scale measuring consumer willingness to enter a relationship with the firm could have provided further evidence of the mutually dependent nature of

value co-creation. Given the overall sample size the cell sizes in the mediated part of experiment 1 were rather small, a larger sample size would have allowed for an even stronger test of the mediating effect. The measurements used in this chapter to measure co-creation are new and would benefit from further testing in other contexts.

The experimental approach in this chapter was influenced by the need for internal validity within the experiments due to the untested nature of the value co-creation concept. Future studies may wish to adopt quasi-experimental approaches where consumers are actually feeling, and experiencing the value co-creation. This would undoubtedly require a longitudinal approach but would be appropriate for future PhD study.

This chapter has explored the effect of value co-creation on consumer behaviour under various conditions. These effects take place within largely dyadic interactions between firm and consumer; the following chapter will explore the potential for indirect effects resulting from collaborative co-creation.

Chapter 6. Study 3: The Indirect effects of co-creation

6.1 Introduction and Theoretical Approach

The previous chapter focussed on the effects of value co-creation activity on the consumer within a dyadic exchange environment. This chapter explores how value co-creation between a firm and its customers can affect both parties in the dyad but also indirectly affect other customers. This chapter uses generalized exchange theory alongside value co-creation as its theoretical base and moves the discussion of value co-creation beyond dyadic effects to a much wider field where co-created activity or value propositions can have wider impacts.

The chapter commences by introducing the research context/case which is the 'Adopt A Station' scheme, a form of community engagement administered by First ScotRail, the principle operator of the rail network in Scotland, and the section outlines the rationale for the choice and the background to the study. The initial data collection phase of the chapter is an embedded case study of the scheme, the aim being to investigate how value is co-created and gain understanding of the benefits for both the community and firm. The case study approach is introduced and the results of the case are discussed in this section. The case indicates that the outputs of the scheme have the potential to indirectly benefit other consumers and generalized exchange theory is adopted as a theoretical framework for these effects and the quantitative element of the mixed methods design. To explore the effects of station level co-creation on other rail passengers a four stage loyalty model is adopted and introduced. Whilst the original aim of the thesis did not specifically relate to effects on loyalty the model allows exploration of the level of loyalty at which value co-creation might have an effect and a set of hypotheses are presented to that effect. The quantitative study uses hierarchical linear modelling (HLM) to explore how station level attributes might impact on customer loyalty and the methodological approach and associated techniques are discussed. Data is collected at two levels: level 1 is a passenger survey and the sample, survey instrument and pilot test are discussed. Data was collected from 1381 passengers at 60 stations and the results are tested for

reliability and validity; the level 2 data uses a combination of a rating exercise at each station alongside objective data gathered from ScotRail, level 1 data aggregated at station level and other sources. Using HLM6 software the effects of level 2 variables on the level 1 data are tested and the results discussed in the context of generalized exchange and value co-creation. The final section of the chapter discusses the main contribution of the study.

6.1.1 Research Context

Research for study 1 in chapter 4 included a meeting with the external relations manager for First ScotRail (FS) (participant JY) a company that holds the franchise for the Scottish rail network. During the interview the company contact introduced a concept known as 'Adopt-A-Station'. A subsequent meeting with the same individual outlined a scheme where FS invites community groups (CG) to 'adopt' railway stations. The scheme allows communities to utilize unused space within their local station free of charge in order to provide services or facility improvements to benefit the wider community. The scheme was introduced in 2005 and to date over 110 stations (from a total of 343) have been adopted with schemes including gardening, charity bookshops, cafes and community meeting spaces. The scheme represents a value co-creation exchange where FS and the CG engage in dialogue and the CG are given access to the firm's facilities making this context fit well with the conceptual model introduced in chapter 4 where firm are willing to engage and customers are motivated to participate. Empirical studies exploring co-creation have to date focussed largely on competitive markets where customers are involved in brand communities (Schau, et al., 2009) or in co-innovation such as new product development (Hoyer, et al., 2010). First ScotRail operate in an environment where competition is limited (apart from cross border services all trains, and the majority of stations, are operated by ScotRail). Baron and Warnaby (2011) outlined in their study on the British Library how only a minority of passionate and resourceful customers engaged in co-creation activity, the 'Adopt A Station' scheme provides an opportunity to empirically test the extent to which co-creating with a small group of passionate individuals can positively impact on a wider group of customers who potentially have little interest in co-creating with the firm beyond that needed to

enable their day to day travel. Agreement was obtained from ScotRail to conduct the research and they agreed to support the study by funding travel and granting permission for researchers to collect data at stations. The case study commenced with a series of site visits alongside interviews with ScotRail personnel and other key informants, the case study methodology is introduced in the following section.

6.2 Qualitative Phase – Case Study Research

A case study is defined by Creswell (2003, p. 15) as a method where a researcher explores 'in depth' a programme, activity or process; cases are 'bounded by activity' and researchers collect information using a variety of procedures. Case studies are beneficial when exploring the how and why in research important for establishing the nature of the concept in question, why it occurs and how it might benefit the various actors (Yin, 2003). While case study can be criticised for a perceived lack of rigour this is not unique to case study research and the work of Yin (2003) provides a systematic approach to conducting case study research to ensure a rigorous procedure.

Case studies are also perceived as less 'generalizable' than other more traditional research methods. Considering that this element of the research was designed to inform rather than stand alone, this is less of an issue although it is still important that, given the opportunity to compare four stations, elements of the case-study should mirror each other as closely as possible giving validity to the data. The approach chosen was an embedded case study where a single case (ScotRail) contains more than one sub-unit of analysis (stations and adoptions). The embedded case study approach is seen as appropriate for studies where the goal is to describe the features, context and process of a phenomenon and seemed apposite for this research.

6.2.1 Selection of Methods

Yin (2003) outlines six principles sources of evidence associated with a case study strategy; these are displayed in Table 6-1 below with corresponding advantages and disadvantages:

Source of evidence	Strengths	Weaknesses
Documentation	Stable – can be reviewed repeatedly Unobtrusive – not created as a result of the case study Exact – contains exact names, references, and details of an event Broad coverage – long span of time, many events, and many settings	Retrievability – can be low Biased selectivity – if collection is incomplete Reporting bias – reflects (unknown) bias if author Access – may be deliberately blocked
Archival Records	[same as above for documentation] Precise and quantitative	[same as above for documentation] Accessibility due to privacy reasons
Interviews	Targeted – focuses directly on the case study topic Insightful – provides perceived causal inferences	Bias due to poorly constructed questions Response bias Inaccuracies due to poor recall Reflexivity – interviewee gives what interviewer wants to hear
Direct Observations	Reality – covers events in real time Contextual – covers context of event	Time-consuming Selectivity – unless broad coverage Reflexivity – event may proceed differently because it is being observed Cost – hours needed by human observers
Participant Observations	[same as above for direct observations] Insightful into interpersonal behaviour and motives	[same as above for direct observations] Bias due to investigator's manipulation of events
Physical Artefacts	Insightful into cultural features Insightful into technical operations	Selectivity availability

Table 6-1 Sources of Evidence in Case Studies, Strengths and Weaknesses (Yin, 2003, p. 86)

Yin (2003) suggests that multiple sources of evidence strengthen case study evidence and allow for some triangulation of material. For this element of the SED the principle source of evidence was interviews but documentary evidence was also gathered. Finally, in order to allow discussion of the phenomenon in its natural settings interviews were undertaken at the stations themselves allowing participants to discuss issues in familiar surroundings and affording an opportunity for direct observation.

6.2.2 Determining Validity of Case Study Research

For research to stand up to external scrutiny it should be assessed on the basis of validity, reliability and generalizability (Easterby-Smith, et al., 2004, 2008). Interpretation of these terms varies according to the research philosophy employed. In the case of constructionist research the meaning of the terms is outlined in Table 6-2

Construct	Interpretivist Research
Validity	Does the study clearly gain access to the experiences of those in the research setting?
Reliability	Is there transparency in how sense was made from the raw data?
Generalizability	Do the concepts and constructs derived from the study have any relevance to other settings?

Table 6-2 Establishing Validity in Constructivist Research (Easterby-Smith *et al*, 2004, p.53)

Although constructivists are reluctant to apply notions of validity to constructivist research (lest it imply some kind of positivistic reality (Easterby-Smith, et al., 2004)) it is still important that research can withstand scrutiny of fellow academics and researchers must therefore be prepared to discuss

> how access was gained to the research organisation, what processes were used to select informants, how the data was recorded and what processes were used to summarise or collate it, how the data became transformed into tentative ideas and explanations and so on (Easterby-Smith, et al., 2004 p. 54).

Analysing validity in case studies requires researchers to use a series of logical tests to judge the quality of any research design (Yin, 2003, pp. 33-35). The four tests are used widely in empirical social research and relevant to case study strategies (Yin, 2003). The four tests can be presented in conjunction with tactics to be used in case study research to ensure validity. Table 6-3 outlines the methods recommended by Yin and how these were operationalized within the research in question.

Test	Case Study Tactic	Phase of Research	Approach
Construct Validity	Use multiple source of evidence	Data collection	Multiple sources of evidence are used to avoid any accusations that the case study researcher has failed to develop a sufficiently 'operational' set of measures (Yin, 2003, p. 35) and that subjective judgements are used to collect the data.
	Establish Chain of Evidence	Data collection	Interview questions were created with related to the main research objective but also other aspects of Value Co-Creation
	Have key informants review draft case study report or interview transcripts	Composition	Interviewees were offered a copy of the interview transcript. Research findings were discussed with key informant (JY) at various points in the data collection process.
Internal Validity	Pattern-matching Explanation building Address rival explanation Logic models	Data analysis	No cause for concern as causal relationships are not being observed or predicted in the case study element (Yin, 2003).
External Validity	Use theory in single case studies Use replication logic in multiple case studies	Research design	In the case of the research in question multiple case studies are undertaken to provide some kind of *replication logic* to any theory generation that may occur.
Reliability	Use case study protocol Develop case study database	Data collection	To ensure reliability the assumption is that each case-study should be replicable. The procedures for data collection are outlined elsewhere in this chapter.

Table 6-3 Case study tactics for Four Design Tests (Yin, 2003, p. 34)

The research consists of site visits at adopted stations with interviews, informal meetings with over 30 adopters at ScotRail events, attendance at meetings between FS and CG's alongside, interviews with stakeholders from the rail operating firm, local government and other public bodies (see Table 1).

Participant	Role in 'Adopt a station'	Interviewees (identifier)
First ScotRail (FS)	The current franchise holder, a private sector transport firm that operates the rail network	External Relations Manager (JY) ***main contact for research*** Station Manager (FD)
Case Study Stations	Wemyss Bay	Adopters (NC, PM, PM2)
	Uddingston	Adopters (IW, PW, MD)
	North Berwick	Adopters (SS)
	Pitlochry	Adopters (NM, PM)
Passenger Focus	Public Watchdog concerned with rail passengers	Advisor (JK)
Local community	Local councils who own land around stations and some station buildings.	Councillor (AW)
The Railway Heritage Trust	Charitable organisation that is concerned with preservation of historical infrastructure	Chief executive (AS)

Table 6-4 Cases and Interviewees for the study

6.2.3 Sample

A purposeful sampling approach was used in the selection of stations to visit. In conjunction with JY a sub-set of four were identified which included well established projects, stations where multiple adopter groups were involved and stations where adopters had been able to make significant changes to the station as a result of involvement in the adoption scheme.

6.2.4 Data Collection & Analysis

Site visits were chosen as actors would be able to discuss the projects *in-situ* and enabled interviews to take place in surroundings where participants would be more comfortable. Data was collected over a 2 month period in spring 2010. Prior to each visit contact was made with the adopter (facilitated by FS) and convenient times arranged. Travel costs were covered by FS. At each station the adopter met the researcher from the train and gave a tour of the facilities used by the adopters or activities that they engaged in. Interviews followed on either within the station facilities or in an alternative location (café, on a train). The natural setting and informal approach meant that in some cases multiple actors were interviewed (either planned or unplanned) as other adopters and rail staff arrived. Other interviews were conducted with actors not directly involved with the scheme to provide an alternative perspective. Interviews ranged from 30 to 70 minutes and the average interview length was 45 minutes.

The interview was semi-structured but with only a few guideline questions to allow the interviewees to discuss the projects without influence from the interviewer (Gillham, 2005). The few questions centred on: the 'story' of the adoption, the motivations behind it, the relationship between the adopters and First ScotRail and the impact on the community. Documentary evidence was provided on one or two cases by adopters but principally by the FS contact or collected by the researcher. A total of 14 interviews were undertaken and digital files and notes were subsequently coded, transcribed and analysed using QSR NVivo 8. Using the same method of template analysis (King, 2004) from chapter 4 a number of key themes emerged from the data which could be used in the write up. Before the findings are presented a short description of each case is provided to set the findings in context.

6.2.5 Case Study Findings

This section commences with a short description of each of the four adopter projects, this serves to introduce the actors that are involved in the scheme and the nature of the value co-created.

The section continues by introducing the four main themes relating to value co-creation which emerged from the case which were:

- The level of interaction and dialogue between firm and community;
- The level of access provided by the firm which empowers the community in their activities;
- The sense of ownership that the community have of the station;
- The benefits received by the firm, community and wider consumers are considered.

The section concludes by summarising the case and outlining how the case results inform the second, quantitative phase, of the study. Research participants will be identified through their initials (identified in Table 6-4 on page 166) within case descriptions and quotes.

Case 1 - Uddingston

Uddingston (see Figure 6-1) is a commuter town around 10 miles south east of Glasgow. The station is on the main Glasgow to London route along with busy commuter routes between Glasgow and Edinburgh. The adoption principally involves 'Uddingston Pride' a group of around 20 volunteers who undertake gardening and other environmental improvement activity around the town. Gardeners IW and PW were very committed to their work at the station and elsewhere in the town. The station also has the addition of a coffee shop which was operated by a former local councillor (MD) who was '*sick of not being able to get a coffee at her local station'* and with encouragement from FS opened a coffee shop under peppercorn rent terms to enable the business start-up.

Figure 6-1 Gardening at Uddingston Station

Case 2 - Weymss Bay

Weymss Bay is a small community on the West Coast of Scotland about 1 hours train journey from Glasgow. Although the village itself is very small the railway station plays an important role as a link between the mainland and the Island of Bute with the train connecting directly to the ferry service. The station, built in 1903 is an architecturally significant structure of wrought iron and glass with dramatic curves from the train platforms down to the ferry terminal allowing passengers to transfer from one service to the other offering protection from the unpredictable Scottish weather. The adopters are the 'Friends of Weymss Bay Station' of which the main interviewee (NC) appeared to be the driving force. The friends started in 2007 at the behest of FS who encouraged and facilitated the involvement. Since its conception the friends group has attracted over 200 subscribers from across the world to donate money all of which is used to support their activities. The friends have taken over a former waiting room and station master's office which have been converted to a bookshop and gallery space and are also involved in gardening at the station where flowers are a strong feature.

The adopters had published a book and produced other promotional material where architecture and station history appeared to be a key factor providing a focus for the friend's energies. Given the size of the station compared with the rest of the village the station played the role of a community hub with a café and bar alongside

the bookshop and gallery. Recent developments include taking over a part of the station (including a parking space) where a community garden has been created with the purpose of providing residents with no garden the opportunity to be involved. The friends have been credited with successfully lobbying various stakeholders to upgrade the exterior of the station (see Figure 6-2) with plans for the interior in the next few years.

Figure 6-2 Refurbished Exterior at Wemyss Bay

Case 3 – Pitlochry

Pitlochry is a popular tourist town in the central highlands, a two hour train journey from Glasgow. The station is small with Victorian style stone buildings on either side of the platform. The bookshop is located in the southbound platform building next to the ticket office in rooms that used to be occupied by a cafeteria and newsagent (see Figure 6-3). The station is adopted by two groups, the Pitlochry Station Bookshop who raise money for charity and 'Pitlochry in Bloom' an organisation similar to 'Uddingston Pride' The bookshop has become something of a local tourist attraction and has raised over £20,000 for various charities in the five years it has been operating.

Figure 6-3 Bookshop at Pitlochry

Case 4 - North Berwick

North Berwick is a small seaside town on the east coast of Scotland 30 minutes from Edinburgh. The station is at the end of the line and well used by commuters and tourists. It is a small station with the only facilities being a small waiting room. The station is adopted by 'North Berwick in Bloom' who also work in areas of the town. The adopters undertake a large amount of horticultural activity with a large quantity of tubs, bulbs and displays customising the appearance of the station (see Figure 6-4). The adopters take an active role in the day to day operation of the station and have successfully lobbied the company over litter and seagull problems. A need has been identified for more services at the station but the infrastructure is not available at present. North Berwick has been the recipient of many awards for its appearance including an award from 'Britain in Bloom'.

Figure 6-4 Customising the Station at North Berwick

The following section reports the interview findings, these centre on the importance of interaction and dialogue between FS and the CG; also relevant is the level of access given to CG and the way in which they are empowered to customise the station; CG's appear to take a sense of ownership from their involvement and this enables further benefits to be realised by the various actors.

Interaction and Dialogue

The success of adopt a station was dependent on interaction and dialogue between FS and the AG. Frequent communication between adopters and ScotRail's external relations manager (JY) allowed a high level of trust and mutual benefits to emerge, *'It is a very good symbiotic relationship'* (NM). The benefits of the relationship enabled the swift resolution of issues and provided adopters with a fixed point of contact: '*If I have a problem, I get in touch with (JY) and the problem is solved - that's a good relationship'* (SS). A willingness to engage in dialogue allows FS to recruit other communities into the scheme. For example, two groups of customers were concerned that particular timetabling changes had resulted in certain trains not stopping at their local station, ScotRail recognised that:

'We had to develop unusually close relationships with those communities because we were in the firing line of email traffic between them and Transport Scotland. We turned that to our advantage by saying to them that, these stations of which they were so proud about and so concerned about, would they like to make them better places - both of them have risen to that challenge' (JY).

Access and Empowerment

As a direct result of relationships built through interaction and dialogue FS were able to ensure that adopters had appropriate access to the network and give the community a degree of empowerment. The provision of access to station facilities (from allowing the occupation of rooms to the adaptation of existing infrastructure) resulted in company management recognising the potential benefits of community involvement and the provision of greater access to the network:

'Sometimes a member of the public saying 'can I use that' has concentrated our minds...do we really need all these rooms?' (JY)

'*ScotRail are always keen to hear new ideas for rejuvenating station buildings*' (JK).

The enthusiasm for engagement with the community is accompanied by a desire to facilitate involvement without putting up barriers that might discourage adopters. Whilst all adopters undertake a certain level of basic safety training and are required to liaise with station staff adopters recognised that it was '*just a good common sense approach, if there was too much bureaucracy people wouldn't do it*' (SS). To further support community projects the Station Communities Regeneration Fund (SCRF) has been set up which allows community groups to apply for funds to support the redevelopment of station areas for small business and community use, ScotRail identified that provision of funds was not necessary but:

'Everybody judges Adoption as a heart-warming, not a heart-rending, experience... and the proof of that is the [SCRF] scheme' (JY)

Adopters benefitted from the empowerment given by the rail operator and are enabled to solve particular problems with company support:

'Last year we had great problems with litter bins, seagulls were going in and spreading the contents, so we contacted ScotRail and arranged to have new bins which are seagull proof and working very well'. (SS)

At another station two community members sold 2nd hand books '*from a cardboard box in the corner'* (NM) and after ScotRail involvement took over two vacant rooms in the station.

Ownership

The level of access and empowerment given to the adopters by FS was reciprocated by a sense of ownership from the adopters. One community group who opened a charity bookshop explained:

> *'The deal, which is a fair one, is that we can use the space but we had to decorate it, we had to clean it out, that's fair enough...we don't pay rent and that is a wonderful addition' (NM).*

Taking ownership of the project was recognised by one adopter as being '*at the heart of everything*' (SS). An approach by a ScotRail representative to one station made one potential adopter realise that '*this is my environment and I am sick of it looking like this'* (NC). Feelings of ownership were recognised and fostered by the rail company who identified local communities as being the one constant feature of a periodically changing ownership and management landscape:

> *'Ten years ago this would have been a RailTrack station, funded by the 'strategic rail authority', with services operated by National Express ScotRail. Now, all those bodies have gone, replaced by Network rail, Transport Scotland and First ScotRail. Chances are in 10 years' time it will be another set of bodies, the only question then is whose is it? By having community involvement we are making it clear that it [belongs to] the good people who buy the tickets and pay taxes to keep it going....that is the most important message I think' (JY).*

The custodian role of adoption was also recognised by adopters, '*It's the history [of the station] we are trying to preserve'* (NC). Motivations for other adopters varied but reflected a growing sense of engagement:

> *'It's very post-industrial; these are communities seeking identity in a world where it is no longer generated by the local factory if you like...also people are living longer, and looking for activities to keep them going' (JY).*

Firm, Community and Wider Benefits of Adoption

For ScotRail adoption represents an opportunity to improve public perceptions of the firm:

> *'At times when there is nothing else happening, no positive stories because cycles of investment have run their course and so on, this is a kind of state of steady advance not related to recessions or electoral cycles or anything, as the word spreads the more people wish to get involved with adoption' (JY).*

One adopter acknowledged the strength of support from ScotRail but was astute in recognising that they were '*doing ScotRail quite a lot of favours as well*' (NC). For FS, the work of the communities within the stations appeared motivate ScotRail staff to improve station appearance: '*The two chaps [ScotRail staff] at the station are first class; they keep the station spotless*' (IW). Some station staff members take a leading role in the adopter groups with one stating that 'it's my working environment so it is in my interest to work in a happier setting' (FD). For the community improved environments and facilities was recognised and commented on by the community:

> *'We get a great deal of compliments on how it looks, we get complaints if things drop off like the litter bins but mostly we get the compliments' (SS)*

> *'Lots of people that stop me when I am watering or doing the garden, passengers who really appreciate what the station looks like' (IW)*

> *'Passengers are less grumpy, more relaxed, they turn up early to have a coffee or to read the newspapers, you see kids from [local school] hanging about in a peaceful manner as well, the station becomes de-stressed by having a more pleasant place to wait' (JY).*

One interviewee identified how improved station environments could result in significant benefits for passengers on the network and the rail operator:

> *'An environment which looks uncared for, looks like nobody owns it and if nobody owns it then it tends to attract trouble ... stations are notorious for people loitering about...so anything that makes a station look cared for does a lot to calm the background. We know there are something like 15% more journeys that rail passengers would make if they felt more confident about fear of crime and the more stations and trains look cared the more you will attract people on to the system, confident that this is a safe place to travel from' (JK).*

The benefits of an improved environment were likened to the notion of 'broken windows' the theory that if an environment is respected and cared for then anti-social behaviour and crime is reduced:

> *'Some people say 'oh I wouldn't do gardening, there's bound to be vandalism - well there is no vandalism - this is a public space which is your space and you have the decency and kindness to take care of it' (JY).*

ScotRail also noted further benefits related to reduced fines associated with the franchise arrangement:

> *'In Scotland we have the service quality incentive regime (SQUIR) and everything is inspected at least once every twenty eight days. Last year we were fined £780,000, the year before £950,000 so in terms of things which are purely within our gift to control, SQUIR is probably the biggest one. A SQUIR inspector coming along to a station that's functional and unkempt will mark it down. If he or she comes along and the sun is shining and everyone's happy and there's some flowers or the buildings are in use, they might think hey this is not a bad place, I'll move on'*

Adopters also liaised with other stakeholders to drive through their own agenda for the station by targeting other network actors, securing and integrating the resources they provide:

> *'The inside of the station is in a dreadful state...that's one of the reasons why we got together in the first place... Network Rail redecorated the front of the building (bits of which were just falling off), which was an embarrassment (very sad)... they gave us a new ceiling... repainted and re-floored us, we are in a much better state than we were' (NC).*

> *'Passenger Focus said we were credited with encouraging Network Rail to do the renovations...the Railway heritage trust and network rail agreed funding for the front and the renovations inside are pencilled in for 2012' (NC).*

One local councillor proposed that Adopted Railway stations better '*reflect the communities where they are located*' (AW), a role recognised by adopters:

> *'The station is one of the main, entrances to the town; we enter competitions like beautiful Scotland, Britain in bloom and one of the areas where one is marked is the entrance ... but we also look at it from a much wider point of view which is tourism, a welcome to North Berwick' (SS).*

Alongside ownership the support of the community was essential in facilitating the adoption. This included local business support such as providing plants for gardening or technical assistance such as the setting up of web sites for adopter groups. Other groups identified connections with local government as being important, one adopter felt '*fortunate to have three councillors who come to our meetings who are very supportive of us*' (IW). More direct support was obtained by one group by setting up the 'Friends of Wemyss Bay Station:

> *'We had a public awareness day, we had about 100 people sign up to become friends and that gave us some money (£6000)...it really was surprising, a lot of local support' (NC).*

A city councillor with a former role in a large passenger transport organisation explained how by allowing a small community business use of buildings for peppercorn rent terms these buildings became '*protected by occupation*' (AW).

In summary, adopt a station appears to have clear benefits for the firm, the adopters and the wider community. The involvement of community members within the station whether through gardening or by occupying vacant buildings has a range of benefits. Of most significant interest to study 3 is the potential for the adoption activity to have result in indirect benefits for wider community of rail customers and not just the station adopters. On the basis of the evidence from the case study benefits could be derived from the improved station environment (which is linked to perceptions) of safety, general reductions of stress (associated with surroundings and facilities). The involvement of the community by association could result in improved perceptions of the firm from passengers and influence future usage levels.

Through the scheme, the station and its environment becomes a co-created facility with the resulting benefits strongly related to the involvement of the community and the passion of the adopters but also as a result of the successful relationship between FS and the AG. Key to this thesis was the potential for this co-created activity to result in indirect benefits to the wider customer base. This kind of indirect benefit can be related to the theory of generalised exchange (Bagozzi, 1975; Ekeh, 1974) where benefits from an exchange between two actors (A and B) are received indirectly through another actor (C). The next section will discuss the theory in more

detail and introduce a framework within which the indirect effects of value co-creation might be measured.

6.3 Generalised Exchange Theory

Exchange is traditionally viewed dyadically through restricted exchange (Bagozzi, 1974, 1975; Ekeh, 1974; Homans, 1958; Marshall, 1998), essentially a two-way, reciprocal, relationship which can be represented diagrammatically as A↔B, 'where '↔' signifies 'gives to and receives from' and A and B represent social actors such as consumers, retailers, salesmen, organizations, or collectives' (Ekeh, 1974, p. 50). Within the marketing literature most references to exchange are concerned with its restricted form, in other words, to dyadic exchanges between firm and consumer or firm and supplier (Bagozzi, 1975).

Generalized exchange provides an alternative interpretation of social exchange theory (Ekeh, 1974) and involves 'a chain of indirect, univocal, reciprocal transfers among at least three actors' (Marshall, 1998, p. 274). In this form of exchange Actor A provides value to actor B who provides value to actor C who provides value to actor A. Given three actors, the exchange may be represented as A→B→C→A. Where → 'gives to'. In generalized exchange, social actors form a system in which each actor gives to another but receives from someone other than to whom he gave.

Both Bagozzi (1975) and Ekeh (1974) identify similarities between generalized and restricted exchange, in particular with regards to the expectation of reciprocity but also contrasts with regard to the number of actors involved and the indirect nature of the relationships. Marshall (1998) observes that a motivation for exchange may be indirect self-interest suggesting a deliberate approach to creating or manipulating a generalised exchange structure.

Reference to generalized exchange may be important when the parties involved in the exchange are not necessarily direct recipient of the goods or services (Marshall, 1998, p. 275). Marshall identifies that benefits in these situations may be based around 'enhancements to the 'common good', improvements to overall 'quality of life' in the community, civic duty, altruism, personal pride, or community belonging' (Marshall, 1998, p. 275), this therefore has particular relevance for the case above

where adoption groups may not necessarily be direct recipients of rail services. However, both Ekeh (1974) and Bagozzi (1975) identify overlap between generalized and restricted forms of exchange and so recipients may operate in an exchange situation which shares both restricted and generalized elements and may be predominately influenced by 'experiences with the organization and the direct utilitarian benefits it provides' (Marshall, 1998, p. 275). Bagozzi (1975) uses the example of a social welfare system, often one segment of a public policy or not-for-profit target market is involved primarily in a generalized exchange situation because of its structural relationship to the exchange partner, whereas another segment is involved primarily in restricted exchange.

Generalized exchange has been used to explore how social solidarity is built through a marriage exchange within tribal structures (Bearman, 1997) and the development of fairness-expectation in relationships (Takahashi, 2000). Within marketing contexts Marshall (1998) used generalized exchange to study indirect support for a private school from parents whose children did not attend the school. More recently Evanschitzky, Groening, Mittal and Wunderlich (2011, p. 136) explored GET in a franchise context and identified how service managers could 'strongly impact the satisfaction and behaviour of a client base without direct interaction'.

In the context of Adopt A Station the system could be represented as follows: ScotRail (Actor A) gives the local community (Actor[s] B) access to facilities and cash for gardening, in turn B gives the passengers (Actors C) a nicer station who offer loyalty back to A. In order to test the effect of co-creation on other rail customers two principal measurements are required. Firstly the passengers will need to be measured and each station would also need to be independently rated for co-creation activity to explore the potential for indirect effects. The passenger measures are discussed in the next section and are based on a four stage loyalty model.

6.3.1 Derivation of Hypotheses

This section introduces the hypotheses which will be tested by the quantitative phase of the study. Firstly the effect of value co-creation on customers will be measured using a loyalty model. The chosen model for the study is the four stage

loyalty model (Oliver, 1997, 1999). This model was deemed to be the most appropriate as it would allow testing of co-creation effects at each of the loyalty stages which would not be possible through a single loyalty construct. Exploring the effect at each stage allows consideration of how effective increased collaboration with a small group of consumers can be on a wider customer base. Hypotheses relating to passenger loyalty are presented but it is also recognised that other variables could also affect passenger loyalty at the station level beyond value co-creation activity. These are subsequently introduced and hypotheses presented.

Value co-creation and Loyalty

The potential for value co-creation activity to affect loyalty has been highlighted by several authors. Jaworski and Kohli highlight the deeper binds that can be gained with organisations because the offering is co-developed (Jaworski & Kohli, 2006) and Auh et al (2007, p. 360) suggest that for the benefits of co-creation to outweigh the costs it should have a 'meaningful impact on customers' loyalty'. Potential cognitive and affective benefits of increased customer participation are also discussed in the service literature (Dong, et al., 2008; Meuter, et al., 2005; Schneider & Bowen, 1995). However, these benefits are all largely associated with a dyadic service interaction between firm and consumer and non-participating customers are rarely considered. However, given the potential for negative outcomes for co-creation (Gray, et al., 2007; Kalaignanam & Varadarajan, 2006; Prahalad & Ramaswamy, 2004a; Zwick, et al., 2008) discussed in chapter 2 and the likelihood that not all customers will wish to be directly involved (Oliver, 2006; Rust & Thompson, 2006); the indirect effects of higher levels of co-creation on other customers should be considered. The costs involved with co-creating with customers (Auh, et al., 2007; Dabholkar & Bagozzi, 2002; Meuter, et al., 2005) should be extended to consider the potential indirect effects on other customers. Extensive co-creation activity with a small group of 'committed' users may be costly and time consuming; but if positive indirect effects on a wider group are realised then investment becomes more viable.

The model, first introduced by Oliver (1997) gives stages of loyalty towards a company which realise increasing benefits, appropriate for this research as the extent of any indirect effects can be assessed.

Loyalty model

Oliver's four stage model of loyalty represents an evolution of the construct from other key works (Dick & Basu, 1994; Jacoby & Chestnut, 1978; Jacoby & Kyner, 1973) and offers a holistic definition of loyalty:

> 'Customer loyalty is a deeply held commitment to rebuy or repatronize a preferred product or service consistently in the future, *despite* situational influences and marketing efforts having the potential to cause switching behaviour' (Oliver, 1997, p. 392).

Customers in Oliver's four-stage model (see Figure 6-5) can become loyal at each stage, i.e. in a cognitive sense, then an affective sense, then in a conative manner and, finally, through purchase behaviour (action). The model was adopted for the study as it justifies the assessment of a range of indirect outcomes in the HLM model.

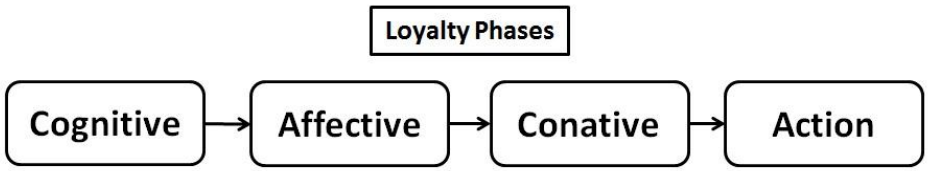

Figure 6-5 The Four Stage Loyalty Model

Cognitive Loyalty

A customer's cognitive loyalty provides something of a base line from which other feelings of loyalty may develop. Essentially, cognitive loyalty relates to the information base available to a customer which suggests one brand over another (Oliver, 1997). Oliver (1997, 1999) notes that this form of loyalty is shallow and satisfaction, in the case of routine purchases, may not even be processed. Cognitive loyalty can be based 'on prior or vicarious knowledge or on recent experience based information' (Oliver, 1999, p. 35) and, if satisfaction is processed, it becomes part of an overall experience and becomes more affective in nature.

The level 1 survey will be distributed to commuter passengers (this will be discussed in more detail in section 6.4.1) and therefore cognitive measures had to relate to aspects of the daily commute which could affect cognitive loyalty. The role of stress, enjoyment and safety are well documented in studies relating to commuting and travel in general (Carr & Spring, 1993; Cozens, Neale, Hillier, & Whitaker, 2004; Cozens, Neale, Whitaker, & Hillier, 2003; Evans, Wener, & Phillips, 2002; Kluger, 1998; Novaco, Kliewer, & Broquet, 1991; Novaco, Stokols, & Milanesi, 1990; Shannon et al., 2006; Stafford, 2003). The stressful nature of commuting is well documented with its effects impacting on commuter's health, job satisfaction and home life (Novaco, et al., 1991; Novaco, et al., 1990). Evans et al (2002, p. 526) used measures exploring the unpredictable nature of commuting and discovered that perceived stress was higher among those who perceive their commute as more unpredictable. Kluger (1998) measured both positive and negative effects of commuting using measures for cognitive strain and found that various factors (e.g. length of time, variability) affected commuter stress. Enjoyment is also a factor that impacts on commuters, Kluger (1998, p. 160) as in some circumstances commuting was an 'opportunity for quiet time...which they very much enjoyed'. The third cognitive measure relates to levels of personal safety. Passenger safety is an important variable in rail travel with several studies highlighting the relationship between safety and use of the rail network (Carr & Spring, 1993; Cozens, et al., 2004; Cozens, et al., 2003). This was also referred to by one participant in the case study. These three constructs will form the cognitive measures for the level 1 survey and lead to the following hypotheses:

H1 Commuter stress will have a positive effect on affective loyalty
H2 Commuter Enjoyment will have a positive effect on affective loyalty
H3 Passenger Safety Perceptions will have a positive effect on affective loyalty

Affective Loyalty

Oliver (1997, p. 36) observes how affective loyalty is based on expectations in early purchase periods and as a function of disconfirmation plus prior attitude, plus satisfaction in subsequent periods. Although loyalty at this stage is described as

being more ‘encoded in the customer’s mind’ affective loyalty is no guarantee of true loyalty. In fact research suggests that large percentages of customers defect despite satisfaction with a brand (Reichheld & Sasser Jr, 1990). On that basis, loyalty commensurate with a deeper level of commitment is required. In the passenger survey affective loyalty is calculated using a service dimension satisfaction scale (named as station satisfaction), this gives the following hypotheses:

H4 Affective loyalty will have a positive effect on conative loyalty

Conative Loyalty

The conative or behavioural intention stage is influenced by repeated episodes of positive affect towards the brand (Oliver, 1999) and suggests a brand specific commitment to repurchase. Conative loyalty relates strongly to motivation and commitment to rebuy. However, Oliver (1997, p. 393) notes that ‘this ‘desire’ to repurchase or be loyal is just that – anticipated but unrealized action’. This then identifies a failing of cognitive-affective-conative models which do not include an action element; this however is included in Oliver’s model. The survey uses a word of mouth scale to measure conative loyalty in line with other studies (Carroll & Ahuvia, 2006; Sivadas & Baker-Prewitt, 2000) and this generates the following hypotheses:

H5 Conative loyalty will have a positive effect on action loyalty

Action Loyalty

The mechanism by which intentions are converted into actions is known as action control (Kuhl & Beckmann, 1985) and signifies the conversion of intention to a ‘readiness to act’ (Oliver, 1999, p. 36) which also includes a willingness to overcome obstacles which may prevent action. Action loyalty is a result of both of these steps and represents the final phase in the loyalty model. Scales used to measure the four phases are outlined in the survey development section. When these four loyalty stages are considered in conjunction with generalized exchange theory the following set of hypotheses can be presented which relate to the potential indirect effects of station level co-creation on each loyalty stage:

$H6_a$ Value co-creation at station level will indirectly affect passenger affective loyalty

$H6_b$ Value co-creation at station level will indirectly affect passenger conative loyalty

$H6_c$ Value co-creation at station level will indirectly affect passenger action loyalty

Given the importance of explaining as much variation within any model as possible (Hox, 1995; Raudenbush & Bryk, 2002) other explanatory variables that might affect passengers are also considered beginning with the concept of inertia in the following section.

Inertia

Inertia refers to the customers' reluctance to switch away from the brand purchase on the previous purchase occasion, all other things being equal (Corstjens & Lal, 2000). In essence a customer's 'former behaviour can explain his or her actual behaviour' (Vogel, et al., 2008, p. 101) and purchase preferences will be based on prior purchase decisions 'even though they might perceive other retailers as providing the same benefits'.

When services are consumed over time in 'multiple consumption episodes' (also known as consumption systems (Mittal, Kumar, & Tsiros, 1999), perceptions, attitudes and intentions in one period will become anchors for the same constructs in all subsequent periods (Johnson, Herrmann, & Huber, 2006). Evaluations of 'value, brand equity, affective commitment, and loyalty intentions are not constructed anew each period…they are updated versions of prior evaluations' (Johnson, et al., 2006, p. 124). This stabilisation of attitudes is influenced in part by learning as by engaging with a particular product or service repeatedly customers become 'more efficient users of it, and that efficiency directly may affect the level of satisfaction they experience. Moreover, with increased efficiency, these customers may be reluctant to switch to other brands' (Mittal, et al., 1999, p. 100).

This phenomenon is explained by Corstjens and Lal (2000) as the inertia effect: a psychological commitment to prior choices and an underlying desire to minimize the cost of thinking (Shugan, 1980). Murthi and Srinivasan (1999, p. 229) provide

empirical evidence that customers engage in a more limited evaluation on some purchase occasions described as 'habitual evaluation' or a state where decisions are not based on marketing inputs. Inertia is rational because 'it helps consumers achieve satisfactory outcomes by simplifying the decision-making process and saving the costs of making decisions [taking] place automatically and without conscious thought' (Vogel, et al., 2008, p. 101). The potential strength of inertia is outlined in a study by Beatty and Smith (1987) who identified 40-60% of customers buying from the same retailer because of habitual behaviour.

ScotRail operates within a near monopolistic position within Scotland as only cross border services (i.e. those that travel to England) are operated by other companies. As a result there is no choice within the suburban rail network. Clearly other travel options are available (bus, car) but given the habitual nature of commuting (Fujii & Gärling, 2003; Gärling & Axhausen, 2003; Gärling, Fujii, & Boe, 2001) it is perceived that prior loyalty intentions (or the inertia effect) will also exhibit a strong effect on regular commuters. This leads to the following hypotheses:

$H7_a$ Prior affective loyalty will positively affect current affective loyalty
$H7_b$ Prior conative loyalty will positively affect current conative loyalty
$H7_c$ Prior action loyalty will positively affect current action loyalty

The effect of inertia is largely measurable at the passenger level but there will be other aspects of a passenger's daily travel which could also affect loyalty. These also need to be accounted for in any model in order that effects can be contextualised. Firstly, stations will differ in terms of the facilities that they offer (car parking, waiting rooms, toilets etc.) and these lead to the following set of hypotheses:

$H8_a$ Station facilities will positively affect affective loyalty
$H8_b$ Station facilities will positively affect conative loyalty
$H8_c$ Station facilities will positively affect action loyalty

Variables relating directly to each passengers journey (ticket price, journey time) may also impact on loyalty but in a negative way (increasing prices one would assume would have an increasingly negative effect), this suggests the following hypotheses[4]:

$H9_a$ Journey variables will negatively impact on passenger affective loyalty

$H9_b$ Journey variables will negatively impact on passenger conative loyalty

$H9_c$ Journey variables will negatively impact on passenger action loyalty

Finally after discussion with ScotRail's 'adoption' team it was decided that a socio-economic contrast might be evident as there may be something of an urban/rural affect and adoptions appeared to flourish in more rural/affluent areas. The final set of hypotheses is as follows[5]:

$H10_a$ Socioeconomic variables will positively impact on passenger affective loyalty

$H10_b$ Socioeconomic variables will positively impact on passenger conative loyalty

$H10_c$ Socioeconomic variables will positively impact on passenger action loyalty

The nature of the research context gives two levels at which data needs to be collected and analysed, firstly passengers need to be surveyed for the different loyalty stages and, secondly stations need to be measured both for co-creation activity and the other constructs. The multiple levels and the fact that passenger data will be nested at the station level suggesting that a multi-level measurement is required. Hierarchical Linear Modelling (HLM) allows researchers to explore the effect of higher order variables on individuals that reside within nested data structures. The following section outlines HLM, and introduces the multi-level model that will be adopted within here.

[4] Journey measures are based on distance from station, travel time to station, average journey time and average peak ticket fare. These items are also aggregated and discussed in section 6.4.7.

[5] Socio-economic measures were based on income deprivation, home ownership, average house price, council tax banding and levels of social rental. These items are also aggregated and discussed in section 6.4.7.

6.4 Quantitative Phase - Multi-Level Study

This section of the chapter commences with a discussion of Hierarchical Linear Modelling (HLM) which is the methodological approach for the quantitative element of the study. The first section (6.4.1) outlines the main principles behind HLM and discusses how the need for a multi-level study is ascertained. This particular study uses a two level model: level 1 is a passenger survey and the development, testing, collection and analysis are introduced in sections 6.4.2 – 6.4.4; level 2 data consists of station ratings and the collection of other objective data and the collection and analysis of this data is outlined in section 6.4.5 – 6.4.7.

6.4.1 Hierarchical Linear Modelling

HLM provides a means whereby the often naturally occurring phenomena of nested data samples can be measured. In social science, data is often nested in the sense that there are variables describing individuals but individuals belong to higher order groups which can also be described by their own unique variables (Raudenbush & Bryk, 2002). HLM has its origins in education where students can be measured in classes, classes in schools and so on (Hox, 1995; Raudenbush & Bryk, 2002). From a hierarchical perspective variables could measure students and other variables could measure classes, variables describing students could also be aggregated at class level. Class variables could also describe the teacher or even the classroom. Beyond the class, levels emerge naturally, schools in towns, towns in districts and so on (Raudenbush & Bryk, 2002). With its focus on nested data HLM allows researchers to test hypotheses about relationships which occur within and across levels and also assess variation at each level (Homburg, Wieseke, & Kuehnl, 2010; Raudenbush & Bryk, 2002; Wieseke, Lee, Broderick, Dawson, & Van Dick, 2008). From a substantive perspective ‘the hierarchical linear model is more homologous with the basic phenomena under study than much behavioural and social research’ (Raudenbush & Bryk, 2002, p. 5) as data is often nested and, as a result, has implications if measured incorrectly.

HLM aims to provide an alternative way of measuring hierarchical data beyond approaches which have been somewhat discredited (Raudenbush & Bryk, 2002).

Existing techniques such as disaggregation are problematic when class level measures are assigned to an individual. The core problem being that when we are aware that students come from a particular class then we cannot assume independence of observations. The other alternative would be to aggregate student variables and measure at the higher (class) level. The problem with aggregation is that a lot of variation will be within-group and by aggregating we lose data and, potentially, waste valuable information (Hox, 1995; Raudenbush & Bryk, 2002). Another problem with analysing at a solely individual (or group) level is conceptual and relates to potential errors made by making assumptions about data measured at one level but which relates to another. Also, completely 'erroneous conclusions may be drawn if grouped data, drawn from heterogeneous populations, are collapsed and analysed as if they came from a single homogeneous population' (Hox, 1995, p. 5)

By analysing nested data, HLM presents a deviation from traditional linear models. Although assumptions around linearity and normality are still relevant the way HLM deals with the concept of homoscedasticity (constant variation of error terms) and independence is adapted. Essentially HLM works on the principle that individuals in the same group will be closer than individuals in different groups. Therefore individuals in different groups are independent but within groups will share values on many variables (Raudenbush & Bryk, 2002). Other variables will not be observed and 'vanish into the error term of the linear model, causing correlation between disturbances' (Raudenbush & Bryk, 2002, p. xx). This idea is formalized in HLM using variance component models:

> Individual components are all independent; group components are independent between groups but perfectly correlated within groups. Some groups might be more homogeneous than other groups, which mean that the variance of the group components can differ' (Raudenbush & Bryk, 2002, p. xx)

This notion is formalized by conceptualising each group as having its own regression model with an intercept and slope. Each group intercept and slope is therefore assumed to be part of a population of intercepts and slopes and therefore defines random coefficient regression models. If this is assumed for only intercepts then the variance component situation is realised, if slopes also vary then the model is more complex where covariance of disturbances depend on values of individual level predicators (Hox, 1995). A full multilevel model assumes a hierarchical data set

where one dependent variable is measured at the lower level (level 1) and explanatory variables exist at all levels. The model can, therefore, be viewed as a 'hierarchical system of regression equation' (Hox, 1995, p. 10).

For this research data will be collected at *j* stations, with data from a number of different passengers N_j at each station. On the passenger level for example we have a dependent variable Y and an explanatory variable X. At the station level we would also have an explanatory variable Z. Therefore for each station we can set up an individual regression equation to attempt to predict variable Y with the explanatory variable X (Hox, 1995):

$$Y = \beta_{0j} + X_{ij} + e_{ij}$$

6-1

As per standard regression models β_{0j} is the intercept, $X_{ij}$is the regression coefficient (slope) and e_{ij} is the error term. Subscript j is for the station (j = 1..j) and the subscript i relates to the individual passengers (i = 1..N_j) (Hox, 1995). The difference occurs where it is assumed that each station will be characterized by a different intercept β_{0j} and a different slope β_{ij}. Random errors e_{ij} are assumed to have the same characteristics of standard linear regression models (mean of zero and variance σ_j^2). Essentially HLM assumes a variation in intercepts and slopes across each station and these are referred to as *random* coefficients (Hox, 1995). The aim of HLM is to attempt to explain the variation in intercepts and/or slopes using higher order measures (i.e. measures at station level). Hox (1995, p. 11) explains that 'in most cases we will not be able to explain all this variation, and as a result after introducing the higher level variables there will be some random variation left unexplained'.

Across all stations we would assume that regression coefficients β_j are distributed with mean and variance and the next stage of the HLM process is to attempt to predict any variation of the coefficients using explanatory variables at the higher (station) level:

$$\beta_{0j} = \gamma_{00} + \gamma_{01} Z_j + u_{0j} \ (intercept)$$

6-2

And

$$\beta_{1j} = \gamma_{10} + \gamma_{11} Z_j + u_{1j} \, (slope)$$

6-3

Equation 6-2 states that the general performance of each station (intercept β_{0j}) on the dependent variable Y can be predicted by higher level variable Z. Equation 6-3 suggests a more complicated model where the relationship between level 1 predictor X and Y is dependent on the level 2 variable Z. The terms u_{0j} and u_{1j} in equations 6-2 and 6-3 refer to residual error at the higher level (Hox, 1995). Finally, a model with one level 1 variable and 1 level 2 explanatory variable can be written as one single equation by substituting equations 6-2 and 6-3 into 6-1 (Hox, 1995).:

$$Y_{ij} = \gamma_{00} + \gamma_{10} X_{ij} + \gamma_{01} Z_j + \gamma_{11} Z_j X_{ij} + u_{1j} X_{ij} + u_{0j} + e_{ij}$$

6-4

The first part of equation 6-4 $\gamma_{00} + \gamma_{10} X_{ij} + \gamma_{01} Z_j + \gamma_{11} Z_j X_{ij}$ contains all the fixed coefficients (known as the deterministic part, (Hox, 1995)), the segment $u_{1j} X_{ij} + u_{0j} + e_{ij}$contains all the error terms (known as the stochastic part (Hox, 1995). $Z_j X_{ij}$is an interaction term and represents the varying slope of the lower independent variable X_{ij} with higher level independent variable Z_j.

Determining Appropriateness of HLM approach

Prior to commencing an HLM approach it is necessary to first assess the level of variation between groups using an intra-class correlation measure (Evanschitzky & Woisetschläger, 2007; Hox, 1995; Raudenbush & Bryk, 2002). If variation is not substantial then data could be aggregated without losing much information (Evanschitzky & Woisetschläger, 2007). The ICC equation is as follows:

$$\rho = \sigma_{00} / (\sigma_{00} + \sigma^2)$$

6-5

Where ρ is a 'population estimate of the variance explained by the grouping structure' (Hox, 1995, pp. 14-15). Equation 6-5 shows that ρ is equal to the estimated proportion of group variance compared to the total variance (Hox, 1995; Raudenbush & Bryk, 2002). A second measure to assess the extent to which the model deviates from normal notions of independence is to use a design effect (DEFF) (Muthen &

Satorra, 1995) which is the 'ratio of the actual variance, under the sampling method actually used, to the variance computed under the assumption of simple random sampling' (Shackman, 2001, p. 1). In single level studies a small design effect would indicate better reliability of the sample estimate. A DEFF >2 (Muthen & Satorra, 1995) suggests a multi-level approach is warranted. DEFF is measured using the following equation:

$DEFF = 1 + \delta\,(n - 1)$, where

6-6

$DEFF$ = design effect

δ = the intra class correlation, and

n = average class size

For study 3 the multi-level model is shown in Figure 6-6 Multi-Level Model and indicates the constructs to be measured at both level 1 and level 2. The following section will discuss both parts of the model in more detail.

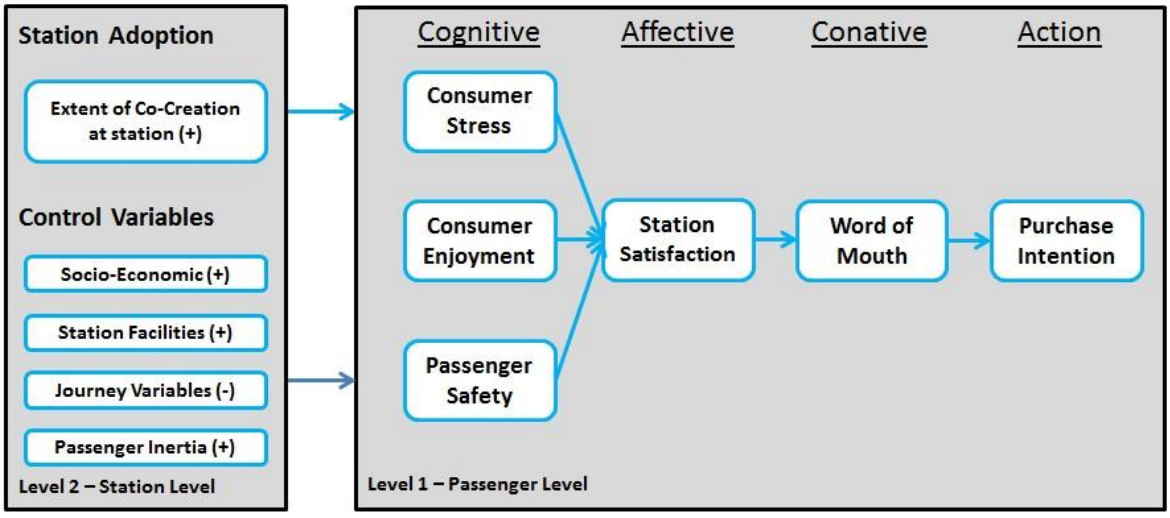

Figure 6-6 Multi-Level Model

6.4.2 Level 1 –Survey Development and Testing

Sample

For an effective assessment of any indirect impact of station adoption on passenger loyalty (level 1) it was necessary to select a sample of stations (level 2) that represented both adopted and non-adopted stations. A purposive sampling

approach was used to ensure a sufficient sample of both adopted and non-adopted stations. To satisfy the needs of the HLM study the sample size at the macro (higher) level should be >50 (Maas & Hox, 2005; Wieseke, et al., 2008) and to ensure enough stations could be surveyed during the data collection the suburban rail network around the south and west of Glasgow Central station was selected (see Figure 6-7 Rail Network Map[6]). This network had the advantage that all rail services terminated at Glasgow Central upper level and services were frequent allowing the researcher to concentrate on particular routes and measure stations at different times. A total of 88 stations were identified on 11 different routes which had 23 adopted stations.

Figure 6-7 Rail Network Map

[6] The map has been adapted so only stations appearing in the final study are shown.

For the level 1 element of the HLM study it was decided to target commuting rail travellers. This had several perceived advantages: firstly, commuters were more likely to travel 3 or more days a week and would typically do so from the same station; secondly, commuters would all travel to work within a roughly defined period of 7am to 9am so the researcher could target a large number of passengers; finally, commuters represented a homogeneous sample from which to draw conclusions and, for the rail firm, a significant proportion of their income. For HLM studies the number of cases at level 1 is less important than those at level 2. Maas and Hox (2005) report a study where little or no difference is reported when individuals at level 1 are 10, 30 or 50 and the number of cases at the higher level has a much more significant effect and on that basis priority would be given to the number of stations surveyed rather than the number of passengers surveyed per station.

Survey Development

A survey was developed which (see appendix 6) consisting of 44 items and measuring the respondents travel behaviour, commuter stress and enjoyment, personal safety, satisfaction with departure station, repurchase intention, word of mouth, attitudinal loyalty, knowledge of adoption status and socio-economic questions. Survey items using pre-existing scales are displayed in Table 6-5.

Given that the survey was being distributed on ScotRail premises and with their permission they had significant influence on the final survey. In particular in the original survey a series of questions were included which were designed to explore switching intention and inertia of passengers and their attitudes towards alternative methods of commuting. ScotRail asked for these questions to be removed as they were unhappy about passengers being asked to consider alternative forms of transport. To address this problem, ensuring that some measure which could relate to inertia was included, an attitudinal loyalty scale (Evanschitzky, Iyer, Plassmann, Niessing, & Meffert, 2006; Narayandas, 1997) was included as a proxy measure for inertia.

The other changes made related to some of the scale items within the survey which were negatively worded. Once again ScotRail were unhappy about using

negative questions and as a result these questions were reworded as positive. This has the potential for problems as circumstances where all measures are worded in the same direction may result in acquiescence (Chapman & Campbell, 1959; Cronbach, 1946; Lentz, 1938) and overly positive results or 'yea saying' (Falthzik & Jolson, 1974, p. 102). However empirical evidence of the benefits of negative wording is ambiguous (Schriesheim & Hill, 1981, p. 1101) and may in some circumstances 'impair response accuracy'. On that basis it was not seen as a significant problem to adapt the survey for positive wording throughout. The survey dependent variables are summarised in Table 6-5:

Dependent Variable	**Anchors**	**Questions**
Commuter Stress (Evans, et al., 2002; Kluger, 1998)	Totally disagree – totally agree	*'I can usually predict when I will arrive at work'* *'My commute to work is consistent on a day by day basis'* *'overall commuting is not stressful for me'* *'commuting to work doesn't take much effort'* '*in general I feel positive about my daily commute'* *'I value the time spent on my commute'*
Commuter Enjoyment (Kluger, 1998, p. 160)	Totally disagree – totally agree	My commute gives me: *'time to think', 'time to relax', 'valuable private time'* My commute affects my productivity on the job in the following ways: ***'****it gives me energy', 'it wakes me up' and 'it reduces my stress level'.*
Personal Safety (Passenger-Focus, 2009)	Very poor - Very good	*'indicate your overall feeling of safety when travelling with ScotRail'* *'your personal security whilst using your departure station'* *'your personal security whilst on board the train'.*
Station Satisfaction (Chezy & Simonson, 2001)	Not at all satisfied – Vey Satisfied	'*employee courtesy'* *'station cleanliness'* *'employee willingness to help'* *'station attractiveness'* *'station facilities'* *'station waiting areas'* *'station environment'* *'car parking'*
Word of Mouth (Zeithaml, et al., 1996)	Totally disagree – totally agree	*'I would say positive things about First ScotRail to other people'* *'I would recommend First ScotRail to someone seeking advice'* *'I would encourage friends and relatives to travel with First ScotRail.'*
Purchase Intention (Evanschitzky & Wunderlich, 2006; Zeithaml, et al., 1996)	Totally disagree – totally agree	'*I will continue to commute with First ScotRail in the foreseeable future'* '*I will consider using First ScotRail for my other travel requirements (e.g. Leisure Travel)'*
Attitudinal Loyalty (Evanschitzky, et al., 2006; Narayandas, 1997)	Totally disagree – totally agree	*'I would recommend First ScotRail in the future'* *'I will prefer First ScotRail as opposed to other transport providers in the future')*

Table 6-5 Constructs and Scales for Passenger Survey

Section A of the survey measured passenger travel behaviour. The first two questions had yes/no options. Question 1 established if a passenger normally left from the same station and question 2 establishing if the passenger completed their journey at Glasgow Central Station. This question was included to ensure a stable sample for analysis i.e. if passengers departed at different stations then it could affect the results. Questions 3 and 4 established frequency of travel, question 3 asked 'how many days a week do you normally make this journey with 5 options (1 = 1 or less – 5 = 5 or more) question 4 related to the type of ticket purchased (e.g. daily return, zone card or season ticket). Question 5 and 6 related to membership of First ScotRail's loyalty programme and the method used to purchase the most recent ticket.

Section B established how far a respondent lived from the station (which may influence community attitudes). Question 7 asked passengers how far they lived from the station (open question), question 8 asked how long it took to travel to the station (open question) and question 9 asked 'how do you normally travel to the station' with various options (e.g. walk, bike, car).

Section C related to passengers feelings about their daily commute and provides the cognitive measures for the level 1 model. The first set of six items related to commuter stress and were adapted from two studies addressing issues relating to the daily commute (Evans, et al., 2002; Kluger, 1998). Evans at al (2002, p. 526) used measures exploring the unpredictable nature of commuting and discovered that perceived stress was higher among those who perceive their commute as more unpredictable. Four items from this scale were included as cognitive measures. Two measures from the cognitive strain scale (Kluger, 1998) were added to the first four to create a 6 item 'commuter stress' measure.

The second set of six items was a commuter enjoyment scale which was viewed as an important dimension in previous research (Kluger, 1998). The third cognitive measure related to passenger feelings regarding levels of personal safety, an important variable in rail travel with several studies highlighting the relationship between safety and use of the rail network (Carr & Spring, 1993; Cozens, et al., 2004; Cozens, et al., 2003). The scale was adapted from one used by Passenger

Focus (independent watchdog) in their nationwide passenger satisfaction survey (Passenger-Focus, 2009) to measure feelings of safety on the rail network. These three measures (stress, enjoyment, safety) constituted the cognitive element of the passenger survey.

Section D started with a measure for affective loyalty using a scale from Chezy and Simonson's (2001) 9 item service dimension satisfaction with scale items adapted for relevance in the rail travel context.

In line with other studies (Carroll & Ahuvia, 2006; Sivadas & Baker-Prewitt, 2000) conative loyalty was measured used a word of mouth intention scale and action loyalty was measured using a purchase intention scale (Evanschitzky & Wunderlich, 2006; Zeithaml, et al., 1996). Although this is not measuring actual purchasing behaviour, Oliver (1997) suggests that use of 'I will' indicates intention. Extant literature (Chandon, Morwitz, & Reinartz, 2005; Sheeran, 2002) highlight the potential issues associated with predicting behaviour through intention although some relationship does exist between the constructs. Section E measured gender, age and combined household income.

Finally it was decided to offer incentives for the survey to encourage people to respond. 4 iPod MP3 players were purchased for the raffle and respondents were informed at the start of the survey that only fully completed surveys would be included in any raffle.

Survey Testing

Surveys were tested by 6 individuals in the researchers department, most of whom travelled to work by train. Participants were asked to complete the survey and then responses were discussed with the respondents who were able to identify problems with wording and presentation. As a result changes were made to the wording of some variables and how they were presented particularly in the inclusion of added descriptors for some questions e.g. *'I will consider First ScotRail for other travel requirements (e.g. Leisure)'.* A further pilot test is discussed in the next section.

6.4.3 Level 1 - Data Collection

A researcher was appointed through the University of Strathclyde's 'interns@strathclyde' scheme to conduct the passenger survey. This had several benefits for the data collection process: firstly, it allowed surveys to be distributed independently; secondly, given time constraints faced by the candidate it meant that the lengthy process of distribution, collection and data input was removed. The researcher was briefed on their role and ethical approval for data collection was granted by the department. The rail company provided the researcher with a letter of approval and 'staff' travel pass for the data collection period. The researcher reported to station staff when visiting each station prior to collecting data. Data was collected over an 8 week period between 28th June and 13th August 2010. This had advantages for the data collection process in that the rail network would be less crowded so it was perceived that passengers might more congenial. During final discussions with First ScotRail it was agreed that due to safety concerns the researcher would not be able to collect data on the trains themselves. All surveys had to be collected on the platform.

Pilot Test

A pilot test was conducted at two stations on a different rail route (terminating at a different station in Glasgow). Two stations (Milngavie and Bearsden) were selected which were approximately adjacent on the network. Of these stations one was adopted. Data was collected over a one day period with each station visited twice. A total of 35 surveys were collected by the researcher (16 from Milngavie and 19 from Bearsden).

The first issue that was identified by the researcher was that although some passengers were able to complete the survey on the platform many passengers would arrive with only a few minutes to spare and therefore collecting data on the platform could be problematic for sample size. It was therefore decided to adopt a two pronged approach to collecting data. Some surveys would be distributed and collected from passengers at the station whilst the researcher would also have reply-paid envelopes and pens available for passengers who were unable to complete on

the platform. These passengers were asked to complete the survey on the train and post the survey in a convenient post box in Glasgow Central Station.

The pilot test results were firstly checked for missing values. Apart from one respondent who left a large part of the survey blank respondents did not seem to have any particular problems with completing the survey. The descriptive statistics of each variable was checked to see if there was enough variation in response. For each construct Cronbach's Alpha was calculated to check item reliability.

As a result of the pilot test some changes were made to the final survey; the addition of a question outlining what station adoption was and if the respondent was aware if their departure station was adopted or not (yes or no) and, if yes how would they rate the community involvement in the station (1 = very low, 7 = very high). It was thought that this variable would provide useful data to ScotRail about awareness but would also allow another level of measurement if needed.

Main Survey

The main period of data collection followed a similar daily pattern. A meeting was held with the researcher on a daily basis to discuss the following day's data collection. At this meeting the route would be discussed using ScotRail timetables; stations would be selected and linking trains identified. The researcher would then code surveys for each station and prepare envelopes and pens. At each station the researcher checked in with station staff and distributed surveys to passengers on the platform and for completion on the train. There were no serious issues during the data collection period but mobile phone contact with the researcher was maintained. The researcher was also briefed on the requirements of the data set and, therefore, was able to use initiative about changing the route on a particular day. Once the collection period had finished the researcher would input survey data (the first 50 were inputted in conjunction with the author to ensure accuracy) and collect any postal surveys. A detailed data collection spread sheet was maintained (see appendix 7) which outlined the dates that each visit took place on and, importantly, which trains passengers had been given surveys on. That way any return visit could target a different train and, hopefully different respondents. As the data collection period progressed stations where responses had been low were revisited at different times.

The final number of surveys distributed was 2098 at 60 stations: 703 were completed and collected at the stations and 682 were received as postal surveys giving a total number of 1385 and a response rate of 67%. Two stations with only 2 responses each were removed given a final 1381 at 58 stations.

Sample

Of the total number of 1381 passengers across 58 stations (average of 23.8 from each station) who responded to the survey, 51.7% were male and 47.1% female. The average age of the sample was 38.7% and the age distribution was as follows: 5.7% were <20; 22.5% were 20-29; 28.1% were 30-39; 22.6% were 40-49; 17.2% were 50-59 and 3.9% were 60+. The average distance respondents lived from their chosen station was 2.32 miles (SD = 4.78) and the average journey time to the station was 9.62 minutes (SD = 8.6). Importantly, 94.5% of respondents usually started their journey from the same station and 83.4% completed the journey at Glasgow Central. Travel frequency indicated that 78.7% of the sample travelled on the same route 4 or 5 days a week indicating a stable, homogenous sample.

6.4.4 Level 1 - Data Analysis

The survey data was inputted into SPSS 18.0 throughout the data collection process (as discussed above). To prepare the data for HLM testing a two stage process was undertaken to both clean up the data and test for reliability and validity. The first stage involved a missing value analysis and imputation; subsequently a confirmatory factor analysis was undertaken on all level 1 loyalty model constructs.

Missing Value Analysis

Less than optimum strategies for dealing with missing values can produced biased estimates, distorted statistical power, and invalid conclusions (Acock, 2005; Hair, et al., 2010). Missing values can generally be categorised in four ways (see Table 6-6) and the method of addressing them is determined by the nature of the missing data. SPSS suggests that if less than 5% of cases have missing value present then a listwise deletion (i.e. where each case with a missing value is deleted from the final analysis) is generally considered safe (SPSS, 2007). However initial assessment of the total data set showed that while only 4.4% of total values are missing, 42.9% of all cases

had missing values, this suggests that a listwise deletion would lose much of the information within the dataset.

Type of Missing Value	Description
Missing by Definition of the Subpopulation	Where individuals in a definable socio-economic group (e.g. students) do not answer a particular group of questions as they are not relevant to the group. These values should not be imputed (Acock, 2005).
Missing Completely at Random (MCAR)	Where missing values are randomly distributed across the sample and unrelated to any definable attribute of the data set (Acock, 2005; Hair, et al., 2010).
Missing at Random (MAR)	Where the presence of missing values are dependent on some other variable within the sample, i.e. recording income level may be dependent on education (Hair, et al., 2010; SPSS, 2007)
Non-Ignorable missing values (NI)	Where the relationship between the missing value and some other variable is systematic but not MAR.

Table 6-6 Types of Missing Values

Once the missing data is identified the method of addressing it is considered. Traditional methods for addressing missing data including pairwise or listwise deletion or mean substitution (indirect or group) are becoming less acceptable methods (Acock, 2005; Musil, Warner, Yobas, & Jones, 2002; Olinsky, Chen, & Harlow, 2003). In many studies listwise or pairwise deletion was seen as conservative in that it did not 'make up' data (Acock, 2005) however, the method can result in a significant loss of data but also addresses MV's in a systematic way (dangerous if data is MCAR) and also results in the loss of any non-missing data within a case (Musil, et al., 2002). Deletion of cases also results in reduced statistical power, inflated standard errors and, therefore an increased risk of a type II error. Mean substitution also suffers from problems in that substituting every missing value with the mean figure reduces the variability for the variable concerned and also ignores each subject's scores on other items (Musil, et al., 2002).

Alternatives to deletion or substitution are based around imputation methods. Hair et al (2010) and others (Musil, et al., 2002) recommend using the regression method of imputation for MCAR situations and model-based methods (also known as the EM or expectancy maximisation method) for non-random (MAR) missing data. The

EM approach is a two-stage method (E & M) where the E stage produces estimates of the missing data and the M stage estimates means, standard deviations and correlations of the data if the missing data were replaced, this process is reiterated until any change in estimated values is negligible (Hair, et al., 2010). The regression approach uses regression analysis to predict any missing values of a variable based on relationships with other variables within a data set (Hair, et al., 2010). This method has the benefit of basing any imputation on data already in the set. A predictive equation is calculated based on other observations of non-missing data and replacement values are derived based on observations and relationship with others within the sample.

To assess whether data is missing completely at random (MCAR) or missing at random (MAR) SPSS provides the Little's chi-square statistic as a footnote to an assessment for EM imputation. For this test the null hypothesis is that the data is missing at random. If the *p* value is less than 0.05 then data is not MCAR and the EM method should be used. If the value is non-significant then the regression method can be used (Hair, et al., 2010; SPSS, 2007, p. 10). Both methods should also be backed up by an analysis of the data set, descriptive statistics and patterns of missing values.

Prior to the analysis of each station a general descriptive overview of missing data was undertaken. This identified that three variables of the survey were frequently answered with 'not applicable' within the station satisfaction questions across a number of stations. These questions related to satisfaction with 'Employee Courtesy', 'Employee willingness to help' and 'Car Parking' and on closer analysis related to stations that were either unmanned or did not have a car park or both. As a result these variables were deemed missing by definition of the subpopulation (Acock, 2005) and they were removed from the data set prior to the MVA for each station.

Given the 'nested' nature of the data a MVA was conducted on each station independently. This exercise consisted of a four stage process: firstly, each station's data was removed from the main data set; secondly, a descriptive set of statistics was collected from each station using the MVA function within SPSS, the aim of this was

to observe any patterns of missing values, across the same variable(s) in multiple items or if missing values were consistent between certain sub-groups within the sample (a summary of one station (Hairmyres) are included in appendix 8); the third stage saw any conclusions drawn compared with the results of a Little's MCAR test (summary statistics of this can be found in appendix 9 and the imputation method chosen). The final stage was to impute the values for each station and then recreate the data set using the imputed data. Then the analysis could proceed to a confirmatory factor analysis to assess the viability of the chosen constructs within the model.

Confirmatory Factor Analysis

Assessing the reliability and validity of a set of unobserved variables (or constructs) requires a confirmatory factor analysis (CFA) which is used to confirm whether a measurement model is valid (Hair, et al., 2010). Conducting separate tests to ensure construct and discriminant validity as a suitable confirmatory process were established by Fornell and Larcker (1981). Assessing construct validity requires two tests, firstly to test for the average variance extracted (AVE) by a particular construct. AVE is the mean variance extracted for items loaded on to a construct and indicates convergence (Hair, et al., 2010). AVE is the total of the squared standardized factor loadings (or standardized regression weights in AMOS) divided by the number of items. Established heuristics (Fornell & Larcker, 1981; Hair, et al., 2010) recommend that that this should be ideally no less than .5 indicating adequate convergence and that there is not more error in the items than there is explained by the construct measures. The second construct validity test is construct (also known as composite) reliability (CR) which assesses the internal consistency of a construct. CR is calculated from the squared sum of the factor loadings and the sum of the error variance for a construct. Heuristics suggest that CR should be .7 or higher although .6 and above may be acceptable if other indicators are good (Hair, et al., 2010). Finally the most rigorous test for discriminant validity (the extent to which one construct is distinct from another) is calculated by comparing the AVE values for chosen constructs with the square of the correlation between the same constructs (Hair, et al., 2010) the AVE should be greater than the square of any correlation to achieve discriminant validity.

In order to get the essential squared standardized factor loadings the AMOS programme was used where a model with all constructs for the level 1 model were present. This not a structural equation model as co-variances between all constructs are included in the model in order that CFA calculations can be undertaken. Hair et al (2010) suggest that individual items with a low factor loading scores are candidates for deletion from the model. Although the authors do not provide a heuristic for assessing item reliability (squared standardized factor loading) a score >.4 is suggested by Bagozzi and Yi (1988). Initial analysis of the factor scores suggested the deletion of four items (2 from the customer enjoyment measures leaving four items and 2 of the consumer stress measures also leaving four items). The CFA results are presented in tables Table 6-7 and Table 6-8. All constructs pass heuristics for CR, AVE and discriminant validity apart from purchase intention where failure is marginal but does not meet the CFA criteria. Scale means were created in preparation for the hierarchical linear model. The following section outlines the level 2 measures and how the data was collected and prepared for analysis.

	Consumer Enjoyment	Station Satisfaction	Safety	Word of Mouth	Purchase Intention	Consumer Stress
Consumer Enjoyment	0.00					
Station Satisfaction	0.10	0.00				
Safety	0.21	0.15	0.00			
Word of Mouth	0.31	0.23	0.37	0.00		
Purchase Intention	0.17	0.21	0.35	0.58	0.00	
Consumer Stress	0.48	0.14	0.34	0.45	0.37	0.00
Max shared correlation^2	0.48	0.23	0.37	0.58	**0.58**	0.48
AVE	0.57	0.64	0.72	0.88	**0.50**	0.59
CFA Criteria	**fulfils**	**fulfils**	**fulfils**	**fulfils**	**does not fulfil**	**fulfils**

Table 6-7 Discriminant Validity and CFA criteria for Level 1

CONSTRUCT	ITEM	Factor Loading	Item Reliability >0.4	Construct Reliability >0.6	Average Variance Extracted >0.5	Standard Error
Consumer Stress	In general, I feel positive about my daily commute	0.78	0.61	0.85	0.59	0.39
	I can usually predict when I will arrive at work	0.69	0.47			0.53
	Overall commuting is not stressful for me	0.82	0.66			0.34
	Commuting to work doesn't take much effort	0.77	0.60			0.40
Consumer Enjoyment	My commute gives me time to relax	0.75	0.56	0.84	0.57	0.44
	My commute gives me energy	0.75	0.56			0.44
	My commute wakes me up	0.72	0.52			0.48
	My commute reduces my stress level	0.81	0.66			0.34
Safety	Your overall feeling of safety when travelling with ScotRail	0.86	0.74	0.88	0.72	0.26
	Your personal security whilst using your departure station	0.81	0.66			0.34
	Your personal security whilst on board the train	0.87	0.76			0.24
Station Satisfaction	Station Cleanliness	0.71	0.51	0.90	0.64	0.49
	Station Attractiveness	0.83	0.68			0.32
	Station Facilities	0.80	0.65			0.35
	Station waiting areas	0.81	0.65			0.35
	Station environment	0.85	0.73			0.27
Word of Mouth	I would say positive things about First ScotRail to other people..	0.93	0.87	0.96	0.88	0.13
	I would recommend First ScotRail to someone seeking advice.	0.94	0.88			0.12
	I would encourage friends and relatives to travel with First ScotRail	0.95	0.90			0.10
Purchase Intention	I will continue commuting with First ScotRail in the foreseeable future.	0.67	0.44	0.67	0.50	0.56
	I will consider First ScotRail for other travel requirements (e.g. Leisure)	0.75	0.56			0.44

Table 6-8 Construct Validity for Level 1 Data

6.4.5 Level 2 – Station Rating

Rating Co-Creation at Station Level

The main objective of the multi-level study was to assess the effect of the co-created activity at the stations on the passengers who use the station. On that basis each station needed to be rated on the nature of its co-creation activity. The case study revealed that adoption activity was centred on gardening and the use of vacant facilities, these became the first two items on the rating form (see appendix 10). Next it was obvious that some adopters had been empowered to customize (3rd rating item) the station beyond its normal, corporate appearance (through signage, posters for example). In two of the stations visited it was clear that very strong relationships existed between the adopters and the station staff, this would be enabled by the station being manned and interaction facilitated (4th Item). Some stations had attempted to provide the community with information about the adoption; this was classified as education and delivered through signage, displays (5th item). Each of these items was measured through an objective measure (Yes/No if they were present) and a subjective 7 point Likert scale (e.g. In case there is evidence of gardening, how would you rate this?) Finally the raters were asked to make a subjective judgement on the relationship between the community and ScotRail and the overall level of co-creation at the station.

6.4.6 Level 2 - Data Collection

Station Rating

Six final year undergraduate students were recruited to undertake the first part of the station level analysis. They were paid £150 each for 5 days work and travel and subsistence was also paid for. In order to ensure a consistent rating for each station a briefing exercise was undertaken where all six raters were introduced to both the concept of value co-creation and the adopt a station case. Using a PowerPoint presentation, raters were shown examples of good and bad practice for each variable (using stations other than those in the study) on the rating form. Given the unusual nature of the case (and student's relative unfamiliarity with the value co-creation concept) this briefing was seen as essential. The rating form itself also provided

some guidance on completion. Five travel itineraries were created whereby the students could collect data on different routes avoiding the potential for raters meeting up and biasing results. Students were given letters from ScotRail authorising the data collection and were knew to contact the supervisor in the event of any problems. Once the data collection was completed the ratings were inputted into excel.

One of the objectives of the HLM approach is to attempt to explain as much variation in the model through the chosen higher level constructs (Hox, 1995; Raudenbush & Bryk, 2002). Whilst it was hoped that the adoption activity would account for some variation it was also anticipated that other variables might also have an effect. Hypotheses 6,8,9 relate to effects on passengers that occur at level 2 but are not directly related to the value co-creation activity.

Hypotheses 8 relates to the facilities available at each station. It was decided to account for these facilities using objective measures. The First ScotRail website (ScotRail, 2011) provides information on all stations and measures were included for the following: level of staffing (full time, part time, unmanned), presence of customer information systems, presence of self-service ticket machines, waiting room, toilet facilities and car park facilities. All were coded with 1 = present and 0 = not present except for staffing were 2 = full time, 1 = part time and 0 = unmanned. The data gathered was then summated so each station achieved a facilities score/7.

Hypotheses 9 relates to the passenger journey. More objective data available from the ScotRail website, and through personal contact with staff, was collected for the rolling stock used at each station and measures were also created for peak ticket fare and average journey time. Measures from the level 1 survey were also aggregated and used at level 2, these were: average distance lived from station and average journey time to reach station.

For hypotheses 10 which relates to socioeconomic effects, data was gathered for each station locale using a website called ‘Scottish Neighbourhood Statistics’ (SNS, 2010) which is able to generate a large range of data for an individual postcode which can then be exported into a database. For the study a range of measures were selected to assess whether passenger response to the station and its level of

'adoptedness' were in any way determined by socio-economic variables. The measures used were as follows: % of A-C Council Tax properties (top bandings), % of houses which are socially rented, level of income deprivation, % of home ownership and average house price.

Prior to generating any multilevel analysis the level 2 data was assessed for its reliability and validity or in other cases data was standardised to allow more efficient measurement of constructs.

6.4.7 Level 2 - Data Analysis

Value co-creation measures

Initially the rating scores were entered into excel and tested for interrater agreement. The rationale and equation for this approach has been discussed in chapter 4 (section 4.1) so will not be repeated here. Appendix 11 has a summary of the scores for each station but interrater agreement scores ranged from 0.73 – 1.00 which represents very high levels of agreement between raters (LeBreton & Senter, 2008). Scores of 1 indicate perfect agreement which may seem unusual but unmanned, un-adopted stations were scored at 1 across all measures by all raters so the perfect agreement is explainable. As discussed above each station had six subjective measures and 1 overall value co-creation measure. To test the robustness of these measures a factor analysis was conducted on the six indicator variables. The results indicate a one factor solution (80% of variance extracted).To test the extent to which these indicators represent the value co-creation construct a multiple regression analysis was conducted using the overall value co-creation score as the dependent variable and the six indicator variables as the independents (which also have excellent reliability $\alpha = 0.93$). The results show that the indicators account for a large proportion of the global score (*adjusted* $R^2 = 0.93$, $p<.01$), the overall value co-creation rating was therefore taken as a strong representation of the construct.

Journey Measures

A factor analysis was conducted on four measures used to measure the commuters journey *'average distance from station', 'travel time to station', 'average journey time' and 'peak ticket fare'* (items also have good reliability $\alpha = 0.80$). The measures

were standardised using Z scores (where mean = 0 and standard deviation = 1) and the results again indicated a 1 factor solution (67% of variance extracted) and the four measures were aggregated into the Journey variable construct.

Socio-Economic Measures

Clearly some of the socio-economic measures would correlate strongly with each other and to establish whether or not these could be used as an aggregated scale the measures were once again standardised using Z scores. Using a factor analysis technique the variables relating to income deprivation; home ownership; house price; council tax banding and social rental were found to represent 1 factor which accounted for 85.54% of the variance (items also have excellent reliability $\alpha = 0.95$). These variables were therefore combined as an aggregated socio-economic measure.

Finally the proxy inertia measure (represented by the attitudinal loyalty scale) was also aggregated at the station level. The analysis could then proceed with the creation of three models for each of the links in the loyalty model.

6.5 Findings

The main findings of the quantitative study are introduced in the following section and are introduced using the 4 stage loyalty model as a framework. To create the hierarchical models the HLM6 programme was used, this was created by Bryk and Raudenbush and is indicated as 'the friendliest and most polished' (De Leeuw in Raudenbush & Bryk, 2002; Wieseke, et al., 2008) of all the software available but also the most user friendly (particularly for those unfamiliar with syntax and programming language) as all the calculations are embedded within the programme.

6.5.1 Cognitive/Affective Relationship

The first model assessed the effect of level 2 variables on the cognitive-affective part of the loyalty model. This involved three independent variables (commuter stress [CS], commuter enjoyment [CE], passenger safety [PS]) and the dependent variable of affective loyalty [AL]. As discussed in section 6.4.1, prior to estimating any model parameters it needed to be established that the variance between the 58 stations was substantial enough to warrant a multilevel approach. This involved

measuring both the intra-class correlation (ICC) and design effect (DEFF) of an unrestricted level 1 model. The results of equation 6-5 and 6-6 indicated that a substantial 27.4% of the variation lay between stations and a DEFF score of 7.25 indicated increased variation to be explained at a higher level.

From the variance extracted, most (0.342) was attributable to the variation of the intercepts between stations and only very small variation was observable from the three slopes.

	Variance Component	***P*-value**
Intercept	0.34200	0.000
Slope CS	0.07739	0.146
Slope CE	0.01332	0.083
Slope PS	0.01374	0.173
Level-1 R	0.90376	

Table 6-9 Final Estimation of Variance Components (Cognitive-Affective)

Therefore, the cognitive affective stage was restricted to a random intercept model. In other words only the changes in the intercepts of the regression equations between the stations were modelled and not any change in the slopes between the stations (Evanschitzky & Woisetschläger, 2007; Hox, 1995).

Based on these results the final two-level random intercept HLM can be presented as the following equation:

Level 1 Model

$$AL = \beta_0 + \beta_1 (CS) + \beta_2 (CE) + \beta_2 (PS) + r$$

6-7

Level 2 Model

$$\beta_0 = \gamma_{00} + \gamma_1(CC) + \gamma_2(SF) + \gamma_3(SE) + \gamma_4(IN) + \gamma_5(JN) + u_0$$

6-8

β_i = Level-1 coefficients

AL = Affective Loyalty

CS = Commuter Stress

CE = Commuter Enjoyment

PS = Personal Safety

r = level-1 random effect

γ_i = Level-2 coefficients

CC = Co-Creation Rating

SF = Station Facilities

SE = Socio-Economic effects

IN = Inertia

JN = Journey Effects

u_0 = level-2 random effect

When this two–level model was analysed in HLM6 it results in the following parameter estimates:

Predictor	Standardized Coefficient	t-ratio	*p*-value
Level 1 (dependent variable is AL)			
Commuter Stress (CS)	0.121	3.930	0.000
Commuter Enjoyment (CE)	0.126	3.921	0.000
Passenger Safety (PS)	0.224	7.623	0.000
Level 2 (dependent variable is the intercept β_0)			
Co-Creation Rating (CC)	0.248	3.764	0.001
Station Facilities (SF)	0.162	2.492	0.016
Socio Economic Scale (SE)	0.094	1.993	0.051
Inertia (IN)	0.222	5.131	0.000
Journey Variable (JN)	-0.254	-3.619	0.001

Table 6-10 Estimates for Two Level Model (Cognitive Affective)

The results shown in Table 6-10 indicated that at the passenger level SS is influenced by CS, CE and PS, supporting hypotheses 1-3. More importantly, the level 2 model indicated that the intercept of the regression was significantly (at 0.01 level) influenced by the level of co-creation (CC) at the station level fully supporting

hypotheses 6_a; there were also highly significant effects for the Journey variable (JN) and a significant effect for station facilities (SF) supporting hypotheses 9_a and 8_a; finally a highly significant affect for inertia (IN) supporting hypotheses 7_a. The co-variable (SE) had a marginally significant effect providing limited support for hypotheses 10_a. Based on these results, the overall station satisfaction can be estimated as follows:

$$SS = \beta_0 + 0.121 \text{ X } (CS) + 0.126 \text{ X } (CE) + 0.224 \text{ X } (PS) + r \ (Level\ 1)$$

6-9

$$\beta_0 = 4.478 + 0.248 \text{ X } (CC) + 0.162 \text{ X } (SF) + 0.094 \text{ X } (SE) + 0.222 \text{ X } (IN) - 0.254 \text{ X } (JN) + u_0 \ (Level\ 2\ Intercept)$$

6-10

This final estimation shows that when all five level 2 predictors were included in the model the variance component of the intercept was reduced from 0.342 to 0.134. This suggests that a large part of the variation between the 58 stations (0.342 - 0.134/0.342 = 0.608 or around 61%) was explained by CC, SF, SE, IN and JN. This equated to a reduction of the initial ICC from 27.4% to 10.7% in the final model.

6.5.2 Affective Conative Relationship

The second model assessed the effect of station level variables on the affective conative part of the loyalty model. This involved one independent variable affective loyalty (AL) representing the affective component and the dependent variable of conative loyalty (CL) representing the conative part. Once again the intra-class correlation (ICC) and design effect (DEFF) of an unrestricted level 1 model were calculated. The results of equation 6-5 and 6-6 indicated that only a modest 4% of the variation lay between stations, the DEFF is 1.91 which suggests only a small amount of variation to be explained at level 2. Despite the small effect the HLM model was tested at this level to ascertain if CC would have any effect on the affective conative link.

From the variance extracted, only a small amount (0.05) was attributable to the variation of the intercepts between stations, but there is also a significant but minor slope affect within the model.

	Variance Component	*P*-value
Intercept	0.05207	0.000
Slope SS	0.01937	0.017
Level-1 R	1.23317	

Table 6-11 Final Estimation of Variance Components (Affective Conative)

Therefore, the cognitive affective stage used a random intercept and random slopes model. Changes in the intercepts of the regression equations between the stations were modelled alongside changes in the slopes (Evanschitzky & Woisetschläger, 2007; Hox, 1995).

Based on these results the final two-level random intercept HLM can be presented as the following equation:

Level 1 Model

$$CL = \beta_0 + \beta_1 (AL) + r$$

6-11

Level 2 Model

$$\beta_0 = \gamma_{00} + \gamma_1(CC) + \gamma_2(SF) + \gamma_3(SE) + \gamma_4(IN) + \gamma_5(JN) + u_0 \ (Intercept)$$

6-12

$$\beta_{1j} = \gamma_{10} + \gamma_{11} \ (CC) + \gamma_{12} \ (SF) + \gamma_{13} \ (SE) + \gamma_{11} \ (IN) + \gamma_5(JN) + u_{ij} \ (Slope)$$

6-13

$\boldsymbol{\beta_i}$ = Level-1 coefficients

CL = Conative Loyalty

AL = Affective Loyalty

$\boldsymbol{\gamma_i}$ = Level-2 coefficients

See previous model

When this two–level is analysed in HLM6 it results in the following parameter estimates:

Predictor	Standardized Coefficient	t-ratio	*p*-value
Level 1 (dependent variable is WM)			
Station Satisfaction (SS)	0.52	15.190	0.000
Level 2 (dependent variable is the intercept β_0)			
Co-Creation Rating (CC)	0.011	0.540	ns
Station Facilities (SF)	-0.011	-0.571	ns
Socio Economic Scale (SE)	0.003	0.194	ns
Inertia (IN)	0.291	17.629	0.000
Journey Variable (JN)	0.007	0.372	ns
Level 2 (SS slope effect)	Unstandardized coefficient		
Co-Creation Rating (CC)	0.027	0.804	ns
Station Facilities (SF)	0.003	0.139	ns
Socio Economic Scale (SE)	-0.029	-0.602	ns
Inertia (IN)	-0.059	-0.518	ns
Journey Variable (JN)	-0.090	-2.399	0.020

Table 6-12 Estimates for Two Level Model (Affective Conative)

The results shown in Table 6-12 indicated that at the passenger level CL is strongly influenced by AL, lending support to hypotheses 4 and given the direct effect of co-creation on AL there would be an indirect effect on CL. At the higher level there was no direct effect for cocreation on either intercept or slope so hypotheses 6_b was rejected; station facilities and journey time are non-significant for the intercept and only the journey variable was significant for the slope so hypotheses 9_b is rejected and 8_b was partially confirmed. Inertia has no effect on the slope but a highly significant effect on the intercept confirming hypotheses 7_b. The socio-economic measure had no effect and hypotheses 10_b was rejected. The final model can be presented as follows:

$$CL = \beta_0 + 0.52 \text{ X } (AL) + r$$

6-14

$$\beta_0 = 4.664 + 0.291 \text{ X } (IN) + u_0 \ (Intercept)$$

$$\beta_{1j} = 0.556 - 0.09\ X\ (JN) + u_{1j}\ (slope)$$

6-15

This final estimation shows that the final model with all predictors included reduces the variance component of the model from 0.05 to 0.000 and the intercept is now non-significant (p>.500). In other words all the variation for the affective/conative link I can be explained principally through the inertia effect on the intercept and the journey effect on the slope.

6.5.3 Conative Action Relationship

The final model assessed the effect of station level variables on the conative action part of the loyalty model. This involved one independent variable CL representing the conative component and the dependent variable of action loyalty (AcL) representing the action part. Once again the intra-class correlation (ICC) and design effect (DEFF) of an unrestricted level 1 model were calculated. The results of equation 6-5 indicated that only a modest 2% of the variation lay between stations, the DEFF was 1.55 which suggests a very small amount of variation to be explained at level 2. From the variance extracted only 0.02 was attributable to the variation of the intercepts between stations and 0.01 attributable to variation of slope.

	Variance Component	***P*-value**
Intercept	0.02609	0.000
Slope CL	0.01090	0.020
Level-1 R	0.80839	

Table 6-13 Final Estimation of Variance Components (Conative Action)

These figures suggested little or no variation between stations and given that this construct also failed the discriminant validity test any model would not likely add any more to the results already extracted from the second model. On that basis hypothesis 5 and 6-10_c were rejected.

6.6 Discussion

This section draws together the findings of both qualitative and quantitative phases of the study in the context of literature on value co-creation and generalized exchange theory. Two main themes emerge from the data, firstly the implications of the increased level of engagement for both the firm and the community; secondly,

the indirect benefits that firms may be able to create for other users through increased collaboration with a minority of consumers.

6.6.1 Community Engagement: Implications

The Adopt A Station scheme represents an example of value co-creation between a firm and community groups, who are given access to the resources of the firm, build relationships with stakeholders, culminating in a sense of ownership of their community assets. The scheme is enabled by attributes of both the firm and the local community. From the firm side, the willingness to engage in dialogues with community groups and, of equal important the provision of access to the stations themselves. On the consumer side the willingness to participate and the sense of ownership (fostered by community spirit) enables a successful collaborative relationship. Examples from the data suggest both community and firm led approaches to innovation and change facilitated by strong dialogue. The relationship is symbiotic with both firm and adopters recognising, and co-creating, benefits for the other party.

Community actors working within the scheme are empowered to customize the station outside of standard commercial boundaries according to the needs of the group and the wider community. It is through this empowerment that adopting groups are legitimised and enabled to represent their community to the outside world enabling the achievement of awards and funding for further improvements. The benefits appear to be on-going and self-perpetuating. By avoiding traditional asymmetric relations and granting physical access, the firm allows the community to take ownership of the project. Inevitably this requires trust and a certain degree of shared risk.

Engaging with local communities allows First ScotRail to harness a considerable amount of expertise about the local area but also the passion of community actors to take ownership of their environment and make improvements that offer benefits for a range of users beyond the firm itself. Although adopting groups identified that ScotRail was benefiting from the arrangement (tidier stations, more attractive etc.) the provision of access facilitated wider agenda's in the community for gaining

awards or meeting particular community needs for example and on that basis the benefits were shared.

The extant literature offers some contrasting views that might help to understand the success evident in the scheme. Prahalad and Ramaswamy (2004b) highlight the importance of challenging the traditional, distinct roles of customer and company and consider the impact of a convergence. But the nature of the customer role is unclear with the same authors (Prahalad & Ramaswamy, 2004b, p. 164) recommending that firms 'use customers as a source of competence and put them to work' indeed, one argument might be that adopters are a convenient source of competence, knowledge and labour and the firm are happy to harness this. However, the alternative perspective is the need for firms to 'accommodate consumers' needs for 'recognition, freedom and agency' (Zwick, et al., 2008, p. 185). Firms which are able to provide this accommodation and provide 'dynamic platforms for consumer practice' can both 'free the creativity and know-how of consumers and on the other channel these consumer activities in ways desired by the marketers' (Zwick, et al., 2008, p. 165). The perspectives are not, perhaps, mutually exclusive but the latter offers a more attractive proposition where benefits are mutual and customers are not simply used as 'more or less unskilled workers to further rationalize (Fordist) production processes … but instead allowed to co-create and build ambiences that foster contingency, experimentation, and playfulness' (Zwick, et al., 2008, p. 166).

The notion of corporate engagement in community work is not new, IKEA, for example, benefit by making a positive impact on communities (Edvardsson, Enquist, & Hay, 2006) and Starbucks are also 'proud to be a good neighbour and active contributor in the communities where our partners and consumers live, work and play (Smith, 1992, p. 3). What is different here is that Adopt A Station is not an outreach programme as community groups are invited to use the facilities of the organisation and essentially co-create the value proposition of the firm from within.

These notions also resonate with the work of Prahalad and Ramaswamy (2004b, p. 9) who highlight that dialogue 'implies interactivity, deep engagement, and the ability and willingness to act on both sides. It is difficult to envisage a dialog between two unequal partners…dialog must centre on issues of interest to both'.

However, dialogue is difficult if customers do not have the same level of access and information.

Community benefits are numerous and groups gain value-in-use from participation (Schau, et al., 2009) which allows comparison with definitions of co-creation that seem somehow idyllic but represent the relationships and resources in play:

> cocreation represents a political form of power aimed at generating particular forms of consumer life at once free and controllable, creative and docile … [consumption] that allows for the continuous emergence and exploitation of creative and valuable forms of consumer labour' (Zwick, et al., 2008, p. 163).

While the benefits for the community who are involved in the scheme are clear, the indirect effects on other users are more complex.

6.6.2 Indirect benefits for ScotRail Customers

The aim of study 3 was both to explore the effects of co-creating on firm and consumers but also if there was any indirect effect on other customers. The results of the HLM study show a strong direct effect of co-creation on the cognitive - affective loyalty relationship but also an indirect effect on conative loyalty.

The strong effect on the cognitive affective part of the loyalty model is, to an extent, predictable as improving the service environment should, logically, result in improved affective loyalty. However, these improvements are not simply targeted corporate investments; they emerge from the engagement of the community and the relationship between the firm and the adopters. The HLM model suggests that on the cognitive-affective level the greater the range and quality of activity at the station the greater the impact. During the HLM model testing phase all co-creation measures (when tested individually) showed a significant effect on the dependent. On the basis of this evidence it could be suggested that the impact on affective loyalty is not simply based on cosmetic evidence (such as gardening) but could instead represent some kind of affective attachment to the station and its connection to the community. The greater the community ownership of the station, the greater the sense of attachment from the wider community of users.

It is also important to note that within the first HLM model the Co-Creation rating had the strongest positive effect on station satisfaction amongst the level 2 variables which the rail company had control over and was only slightly less impactful than the journey variable (which had a negative effect). On the basis of this evidence the rail companies' involvement with these communities would appear to be extremely important in maintaining a satisfied customer base.

The effect of co-creation at the station level does not directly impact on conative loyalty although given the positive relationship between the affective and conative measures there is an indirect effect. This is an important finding of the research that collaboration with a small, passionate and proactive customer base can positively affect the conative loyalty of other passengers.

To explore further the lack of any direct effect of co-creation on conative loyalty the survey also included a question about whether or not customers were aware if their station was adopted or not and more than 75% of respondents checked the 'don't know option'. An independent *t*-test was used to test the difference in mean scores for the conative construct between the customers who ticked no and those who checked yes. The results indicate a significant difference in the mean values (M_{yes} = 4.74, M_{no} = 4.41, t = 2.202, p <0.05), suggesting that increasing customer awareness of community involvement in adopt a station might be an important step for the firm in the future to further increase the benefits gained.

The use of generalized exchange theory to assess this case is by and large supported by the research. In conceptual terms the case is appropriate as the community actors are not direct recipients of the goods or services and the benefits are based around enhancements to the common good, quality of life, civic duty and community belonging (Marshall, 1998). There is also overlap with a more restricted form of exchange outlined by Bagozzi as one segment (passengers) are involved in a more restricted exchange scenario but benefit from the adoption and reciprocating back to the firm through affective and conative loyalty..

Baron and Warnaby (2011) note how co-creation is likely to occur with smaller groups of more passionate consumers. This research would concur with their finding but offers an important extension by indicating how co-created exchange with a

minority group of consumers can have wider, measurable benefits. Co-creation may be costly (Auh, et al., 2007; Jaworski & Kohli, 2006) but study 3 suggests that there may be both direct and indirect benefits to be gained from engagement with even small groups of customers. In this case value has been optimised and the co-creation activity 'is likely to result in an aggregate optimal value that is greater than the sum of two (or more) local optima' (Sheth & Uslay, 2007, p. 305).

Both Marshall (1998) and Evanschitzky et al (2011) observe that firms may have self-interest at the heart of generalized exchanges and it could, therefore, be argued that adopters are simply another 'group of people – beyond workers (producers) – to exploit and a new source of surplus value' (Ritzer & Jurgenson, 2010, p. 20) but this would be disingenuous given the extent of dialogue and access given to the community by ScotRail.

The strong inertia effect can be explained both through the lack of competition on the rail network and the propensity for commuters to travel out of habit (Fujii & Gärling, 2003; Gärling & Axhausen, 2003) and this is perhaps not a surprising result. However inertia is an unstable, presumptuous, measure of loyalty (Ranaweera & Neely, 2003) and could also be representative of anchored feelings of loyalty generated in previous consumption phases. Given the link between conative loyalty and commitment (Carroll & Ahuvia, 2006; Sivadas & Baker-Prewitt, 2000) the firm could potentially improve conative loyalty by increasing awareness of the adoption scheme amongst passengers and harnessing any commitment to their community and the work of the adopters.

6.6.3 Conclusion

Through both the case study and HLM approach the positive direct and indirect effects of co-creation have been established within this context. The research makes an important contribution by indicating that co-creation does not have to involve all clients or even relate to the core activity of a firm to have a positive impact on the activities of a firm and its customers.

Some of the discourse around co-creation is critiqued by authors who identify that some customers may not want to co-create (Kalaignanam & Varadarajan, 2006;

Oliver, 2006; Rust & Thompson, 2006). This research offers an important contribution to value co-creation by suggesting the firms need not be concerned about co-creating with a minority or the costs associated as collaborating with a proactive customer base can have beneficial indirect effects on other customers. The research suggests that there is also potential for the benefits to be passed on up the loyalty chain. The results here provide evidence that co-creating (to a greater or lesser extent) maybe a strategic imperative and the future profitability may well directly relate to the way in which a firm can hand over control.

6.6.4 Limitations and Future Research

The survey provides evidence of the indirect effect of value co-creation activity on a wider customer base during a fixed period. A longitudinal study with 2 or more data collection points could provide evidence of the on-going effects but at the stage of the thesis process this was unfortunately not possible.

The changes to the survey which ScotRail requested resulted in a watering down of certain elements of the survey particularly with regard to switching behaviour. Whilst the attitudinal loyalty scale provided an effective surrogate the statistical power of other parts of the survey may have been affected.

Surveying commuters provided a stable, homogenous sample from which to collect data and it provided a more predictable number of passengers in a defined period of time which allowed the researcher to plan collection visits. However, the focus on the commuter resulted in a high effect of inertia on the data. A future study should, perhaps, try and collect data from a wider range of customers.

The following chapter will explore the outcomes of study 3 and those from those preceding and consider the wider implications for our understanding of value co-creation and Service-Dominant Logic through a discussion centring on the three core objectives of the thesis.

Chapter 7 - General Discussion

This chapter presents a synthesis of the previous three empirical studies and discussion in the context of the core research aim and objectives of the thesis. The first section considers the contextual nature of value co-creation. The second section will address the customer role in value co-creation, one of the main themes of the literature review was the way that the role of the customer has changed and this section will consider the likely effects on consumers but also the opportunities therein, the section closes with a conceptual matrix profiling co-creating customers. The third section will discuss how value co-creation affects the firm, including the potential benefits from engagement. The chapter concludes with a discussion of the overarching aim of the thesis and the contribution to knowledge that is offered.

7.1 Value Co-Creation 1 (Contexts and Conditions)

The first section will address the first research objective of the thesis:

Objective 1: *To consider the operating contexts and conditions that influence approaches to value co-creation within the service encounter*.

This objective was introduced given the lack of knowledge about co-creation indicated by many authors (e.g. Ostrom, et al., 2010; Schau, et al., 2009). Essentially, how and when should value be co-created and, what is the effect of other actors on the co-creation process. This section starts by exploring the good or service itself, rules that emerged relating to value co-creation and the contexts in which it is manifested. The nature of the interaction will also be explored and the implications of using the customer as an operant resource discussed.

7.1.1 The nature of the product/service

This section explores the contexts from the thesis within which co-creation was observed, measured and discussed and considers how the fundamental nature of the good/service and the nature of the interaction and also how the role of the customer as an operant resource influences co-creation activity.

Study 1 provided some indication that value co-creation within the service encounter was played out in a variety of ways and to varying degrees according to the operating context of the firm and the conditions surrounding the encounter.

The interrater exercise from the first study provided an early indication within the thesis of the contextual nature of value co-creation (see Table 7-1). The exercise was useful in identifying a potential continuum but has the potential to be misleading. It would perhaps be unwise to suggest in broad terms that an architect co-creates more than a bus company for example, nevertheless there should be little doubt that the demands that each of these firms makes on the customer, the nature (and duration) of the interaction and the final service provided is likely to differ greatly.

Service Firm	Overall Co-Creation Score
Public Transport	1.67
Fast Food Restaurant	1.75
Supermarket	2.08
Electricity Supplier	2.17
Courier Firm	2.75
Bank	3.25
Travel agent	3.58
Architect	4.00
5-Star Hotel	4.33

Table 7-1 Summary co-creation scores from chapter 4

The evidence from study 1 indicated that an architect, for example, was engaged in extensive dialogue with customers over lengthy encounter durations. The co-creation activity required both firm and customer to integrate resources to ensure the successful completion of the project which was likely to be costly and of high importance to a range of stakeholders. Clients were given access to firm's resources and were also involved, in some instances, as co-designers. Relationships were maintained over the longer term either through facilities management or repeat business. It was also evident within study 1 that technology played an important role as a means of sharing information, communicate and, as a tool for receiving feedback but also a means for providing the customer with access to the firm to facilitate deeper involvement.

Other themes were also observed: the importance of longer encounter durations to enable the co-creation process was evident. The architect firm stressed the importance of time to build effective relationships and get to known the client. In the hotel, co-creating was enabled by the length of time customers were *in-situ*.

The importance of the transaction (to both firm and customer) also appears to have a significant effect on how value is co-created. One of the courier firms highlighted how customers were prepared to co-create in order to ensure successful outcomes, similar effects were seen by travel agents and architects. In study 3 the adopt-a-station scheme attracted community groups who were passionate about their local area and this facilitated the relationship with the firm and other stakeholders. Other firms mentioned that if the customer is not as interested in the product or service (bank, electricity supplier) closer collaboration was harder to enable.

The use of technology to facilitate co-creation was highlighted in study 1 with courier firms, architect, hotel, travel agent and the bank manager all using it as an opportunity to increase their involvement in the service. These opportunities were found both within the consumption phase (e.g. courier firm allowing customer tracking of parcels) or post-purchase (e.g. travel agent encouraging customers to write blogs about their experience). Technology provides the platform on which customers can be given the freedom to decide on their own level of involvement but also, in some contexts, to ensure that their experiences were more meaningful as a result.

The importance of dialogue and relationships between parties was a strong theme in study 1 but also emerged as important within the study 3 case study. Dialogue served a number of different purposes for example enabled the travel agent to build a better customized travel package or the architect to gain a deeper understanding of the needs of the client. Key here was the two way nature of dialogue with learning being multi-directional.

Customer involvement throughout the encounter, and the nature of the relationship between the firm and the customer were played out in differing ways across each of the service settings which, to some extent provided a validation of the interrater scores. For some firms the crucial stage may come prior to purchase (in

study 1 the bank, courier and electricity supplier arguably found the pre-purchase stage crucial in getting the service right), for other firms opportunities for co-creation were limited and took place mainly during the purchase or consumption phase. This is not to say that for these firms no co-creation activity takes place in other phases of the purchasing cycle but instead recognised how outside of the firm/customer exchange value could be co-created in other ways (through engagement with online resources or with other customers).

The second and third studies, while focussing more on the effects of co-creation did, however provide some further clues as to the contextual nature of value co-creation. The first experiment (using a hotel setting) showed that certain customer outcomes increased as the level of value co-creation within the encounter increased, in this context customers 'doing more' makes them willing to pay more and have improved perceptions of the firm providing the service. This suggested that within high contact service settings customers have come to tolerate (or perhaps expect) a higher level of collaboration and when a firm is willing to do so it sends out positive signals about the nature of the relationship it has with customers.

Study 3 offered another perspective on the contextual nature of value co-creation. The adopt a station scheme provided a range of unique ways for consumer groups to co-create value with the firm depending on the needs of the community and the nature of the facilities that the firm were able to provide, this highly individualised form of co-creation is somewhat surprising given standardized nature of public transport but does, perhaps, give an indication that despite some common features (identified above) it may not be possible to provide a definitive continuum or co-creation rule book. Instead it may require firms to adopt a more context specific approach.

The strong contextual nature of value co-creation echoes S-D logic with the notion of value being derived phenomenologically (FP10) by the customer as a resource integrator (FP9) (Lusch & Vargo, 2006c; Vargo & Lusch, 2008b). The notion of 'value-in-context' (Chandler & Vargo, 2011; Gummesson, et al., 2010) relates to each customer's unique set of circumstances and how these impact on value creation. The findings of this thesis suggests that the firm 'context' is also worthy of

consideration and that while the fundamental nature of each firms activity will determine to some extent the type of co-creation activity there will also be an element which will be context specific.

The dimensions identified above are also evident within the extant literature on S-D logic and value co-creation and provide further evidence that 'successful' value co-creation is dependent on certain conditions. Encounter duration has been highlighted (Auh, et al., 2007; Jaworski & Kohli, 2006; Prahalad & Ramaswamy, 2004a) with firms needing to have disruption free time and interaction over long periods enabling appropriate opportunities for co-creation. Without this time for intensive dialogue Prahalad and Ramaswamy (2004a, p. 6) suggest that firms may risk reductions in efficiency.

The importance of the transaction and the related good or service (to both firm and customer) is identified in the work of Schau et al (2009) and others (Dholakia, et al., 2009; McAlexander, et al., 2002; Rowley, et al., 2007) when addressing the notion of customer communities. When a particular product or service is important to a customer they are more likely to invest time in it during and after the service encounter.

The findings relating to the importance of interaction and dialogue are in line with many authors (Auh, et al., 2007; Ballantyne & Varey, 2006b; Grönroos, 2006; Gummesson, 2004b; Prahalad & Ramaswamy, 2004b; Schau, et al., 2009; Wikström, 1996) in particular the importance of a two-way interaction but also the willingness, of customers to be an active player within the activities of an organisation through increased involvement (Payne, et al., 2008; Prahalad & Ramaswamy, 2004b; Ramaswamy, 2011; Rowley, et al., 2007). The central role of technology as an enabling factor is identified in several papers (Brown & Bitner, 2006; G. Day, 2004; Kalaignanam & Varadarajan, 2006; Payne, et al., 2008; Prahalad, 2004; Rust & Thompson, 2006) with the emergence of co-creation as the provision of a co-creating platform highlighted by (Ramaswamy, 2011) where a firm creates the means for facilitating value co-creation.

The research also provides evidence of co-creation is likely to take place in differing ways at different stages of the purchasing cycle (Wikström, 1996; Payne et al's,

2008). It should also be noted that interactive experiences maybe overt and deliberate (i.e. within direct interaction) or based on routine, unconscious behaviour (Payne, et al., 2008) and therefore although customers are not in direct interaction they are still co-creating. This was also confirmed in study 1 through education where firms (such as the supermarket) recognised that the purchase/consumption phase was an opportunity to influence the customer's routine or private value creating activities (through recipe and meal suggestions). The findings of study 3, present an opposing view point to authors who suggest that firms offering routine and low involvement purchases might warrant a more transactional approach towards cocreation (Jaworski & Kohli, 2006; Kalaignanam & Varadarajan, 2006; Oliver, 2006). The idea of a transactional approach is anathema to S-D logic with its inherently relational orientation (Vargo & Lusch, 2010) (it is sometimes challenging to discuss issues surrounding S-D logic without drifting into G-D terminology, something Vargo and Lusch (2008, p. 212) identify) however for some firms their interaction with a customer is just that, transactional. It is possible that for some firms customer co-creation schemes aimed at increasing involvement and collaboration may be costly for the firm and outweigh any benefits (Jaworski & Kohli, 2006) but study 3 suggests that even for firms were the offering is standardized and the client base demonstrate considerable inertia towards the product or service there may be opportunities to co-create value with smaller groups of passionate customers.

The thesis contributes therefore by providing evidence of some of the conditions whereby firms and customers may co-create value through interaction and collaboration and the conceptual model in study 1 (see Figure 4-2, p.114) reinforces the importance of both firm attributes (such as DART) but also customer knowledge and interest (Gibbert, et al., 2002; Jaworski & Kohli, 2006; Schau, et al., 2009) in ensuring successful co-created exchanges. The examples of co-creation outlined about provide further evidence of the enhanced role the customer plays in the contemporary exchange and the next section will discuss this further.

7.1.2 The role of the customer

The changing role of the customer requires firms to recognise and adapt operating practices to reflect this change. The research within this thesis suggests that this is

indeed the case with all of the firms within study 1 identifying how, to a greater or lesser extent the customer plays an increasingly more prominent role. Evidence in this would be found within the increasing use of technology which facilitates value co-creation activity and enables a customer to contribute more to the activities of the firm. Firms such as the courier highlighted how technology was used by customers to essentially provide a quality control mechanism for the firm. Through online discussion forums customers could contribute to other customer's experiences and decision making processes (e.g. the travel agent blog).

Firms also identify customer expertise and knowledge and adopt more of a facilitatory or coaching role in the co-created encounter. In study 1 the architect, hotel managers, travel agents, courier and the public transport firm all recognised that the customer, through use or other extant knowledge, were knowledge holding entities that were able to contribute more to the encounter. This moves the emphasis in exchange away from dependency (customer dependent on firm) to mutual dependency where the firm and customer are reliant on each other to ensure effective value creation and knowledge is held in symmetry. Mutual dependency also suggests shared risk, if a firm is reliant on the customer for information and it is, perhaps, no surprise that many of the interviewees identified circumstances where the 'wrong' customers had caused problems within the encounter due to lack of appropriate skills (Architect) or appropriate knowledge about the firm and its services (Hotel/Travel agent). In these cases, some customers were seen as right, and others less so but it is unrealistic to expect firms to pick and choose who their customers are, or could be. Instead firms may have to pay more attention to how customer resources can be increased through the provision of enhanced knowledge and skills (customer education) in order that the customer can either contribute more to the service encounter but also realise more value-in-context. This may be especially true for firms providing products/services which are low importance or lower interest to the consumer base. In study 1 the firm types that highlighted the importance of 'education' initiatives were the electricity supplier, the bank, the supermarket and the courier firm. These firms recognised that in a competitive environment it was important that the customer had the skills to derive more value from their purchase.

Within the extant literature Payne et al (2008) suggest co-creation is dependent on appropriate division of labour through customer enablement. Ritzer (2010) suggest that firms are more likely to 'stand back and to meddle less' with customers. Schau et al (2009, p. 31) encourage firms to develop and encourage a 'broad array of practices … to foster greater customer engagement with the brand'. The notion of mutual dependency is also picked up within the literature. The idea of co-creation being about the provision of service for service is a foundational notion of S-D logic (Vargo & Lusch, 2008b, 2008c, 2011a) and this is achieved through reciprocity within all actors being active participants in exchange (Chandler & Vargo, 2011) and value being placed on the insights of both parties (Jaworski & Kohli, 2006). Mutual dependency is also implied by S-D logic and other authors as, after all if firms are only creators of propositional value (Vargo & Lusch, 2004a, 2008b) then the customer is placed 'squarely within the process of on-going *product* and *service* co-creation, [where] the realization of actual use value is dependent upon consumers' added labour input' (Zwick, et al., 2008, p. 175). The creation of value is therefore fundamentally dependent on both firm and customer whether in direct collaboration or through the mediation of a good.

Co-Creating could be argued as more than simply reducing resource investments and exploitation of the customer (Payne, et al., 2008; Zwick, et al., 2008) as a partial employee (Mills & Morris, 1986). Customers instead are a key partner in the value creation process, a source of knowledge, skill, innovation and passion. It is therefore unsurprising that firms should, perhaps, pay more attention to working with the 'right' customers or attempt to educate customers to be able to contribute more. Lusch and Vargo (2011, pp. 132-133) identify how creating value is now dependent upon choosing appropriate customers. This has important implications for marketing as indeed customers are no longer there to be marketed 'to' (Vargo & Lusch, 2004a) but 'with' and are more or less endogenous to the firm (Merz, et al., 2009; Schau, et al., 2009) suggesting that firms may need to completely rethink their strategies for engaging with a knowledgeable, resource integrating customer base.

The importance of the customer is picked up within S-D logic. Lusch and Vargo (2011, p. 132) discuss how customer centric firms will not only need to focus on firm optimization but also on 'how to support customers in their resource integration and

value cocreation activities'. Normann and Ramirez (1993, p. 69) also highlight how companies need to 'mobilize and train' customers to ensure success.

The flip side of this notion of an emancipated, proactive customer base is that customers will be in a better position to select firms and 'assess the needs of the provider and [assess whether they have] the means to deliver these needs' (Oliver, 2006, p. 121). In other words knowledgeable customers are essential for firms as co-creators of value but may, paradoxically, be more selective in the firms that they wish to engage with putting the onus on the firm and the value that can be created in collaboration.

This section, relating to objective 1, contributes to the body of literature on value co-creation in the sense that it identifies contexts and conditions under which value co-creation activity takes place through collaboration between the firm and consumers in that facilitating factors are identified and the extent to which they affect a firm's ability to effectively co-create. This contribution relates strongly to aspects of S-D logic and other related literature. The next section explores some of the impacts of this collaboration on the consumer.

7.2 Value Co-Creation 2 (Consumer Effects)

This section of the chapter addresses the second research objective which was:

Objective 2: *To investigate the impacts of value co-creation on the consumer.*

This objective builds on some of the themes which were identified in the previous section namely those which relate to the role that the customer plays within co-creation and what impacts there might be on them as a result. One important point of clarity is needed here and that is that in many situations the impact of value co-creation will be negligible as according to Vargo and Lusch (2006a, 2006c, 2008b) customers are (and always have been) co-creators of value, a positive state rather than a normative goal. However, the increased emphasis by many authors (e.g. Frow, et al., 2010; Plé & Cáceres, 2010; Prahalad & Ramaswamy, 2000, 2004c; Ritzer & Jurgenson, 2010; Zwick, et al., 2008) including Vargo and Lusch (2011; 2010) and the focus of this thesis on more collaborative forms of value co-creation suggests that

there is a shift in the way that organisations 'elicit value from customers' (Macdonald, et al., 2011, p. 672). Consideration is needed on how the enhanced role played by customers within service encounters impacts on the consumer, something that has had little or no discussion with reference to S-D logic (Sweeney, 2007) but which could have negative outcomes for consumer welfare (Rust & Thompson, 2006, p. 389). This encompasses the effect of co-creation under conditions that might be deemed to be positive and negative but also what firms might anticipate from customers given these conditions.

The first section will explore how co-creating affects the behaviour of consumers particularly focussing on the results of the experiments. The second section will explore the effects of enabling consumers using the case study results. The final section will consider the notion of the consumer as a resource integrator and the implications of this for both firm and consumer.

7.2.1 Co-Creation and Consumer Behaviour

The experiments in chapter 5 give some indication as to how value co-creation might affect consumer behaviour. The benefits of value co-creation, as perceived by the consumer, are more sharply defined under conditions of high trust which reinforces the importance of trust building activities as an accompaniment to value co-creation. With regard to paying a price premium it would be easy to assume that co-creating might be more associated with some kind of discount (such as those found when booking online or self-serving for example) as consumers are, to an extent, undertaking activities which are in other circumstances undertaken by the firm. The fact that consumers are willing to take on more responsibility and pay more is an important outcome of the research and the explanation may be connected to the parallel results for the relationship investment dependent variable which consumers also scored higher as value co-creation increased. If a firm is prepared to enable the consumer with opportunities for collaboration in the value creation process then it is possible that the consumer would respond to this action in a positive manner (by paying a price premium), perceiving a company interested in them as a consumer and allowing them control and the ability to use their own resources to co-create their experience.

Relationship investment is important as an outcome of co-creation activity but the research also suggested a role of even greater significance as a mediator between value co-creation and behavioural intention. Under high trust conditions consumers who perceive a strong, positive relationship with a firm are more likely to continue to purchase with that firm. This has wider implications for co-creation as impacting on loyalty, and possibly lifetime value but also suggests that co-creation is not without its costs as relationship investment is linked to the notion of transaction specific investments. It is possible that targeted relationship investments also suggest a level playing field where value can be co-created and suggests that proactive customers and firm can collaborate as partners in value creation in a mutually dependent setting. Firms that recognise the role played by consumers would, perhaps, be expected to make transaction investments which would be reflected back by customers in the form of long term relationships, collaboration and a price premium.

The effect of value co-creation in reducing feelings of inequity was the other main contribution from study 2. Much of the extant literature relating to equity theory indicates that increased consumer inputs and perceptions of inequity are associated with negative outcomes (such as reduced future purchases or relationship termination) the experiment within this thesis presents an opposing perspective that consumers may either self-attribute blame for failure in a co-created exchange or that value co-creation builds an enhanced relational state with the consumer which serves to offset negative outcomes. When viewed through an equity lens education of customers could play an important socialization but also a justification role in a co-created exchange. If a firm expects a consumer to act as a collaborator or co-designer then the expectations of increased inputs alongside the benefits (outcomes) of this enhanced role need to be adequately explained to consumers along with the role that the firm will plays within the exchange.

The potential for positive consumer outcomes from value co-creation have been suggested (Day, 2006; Jaworski & Kohli, 2006; Vargo & Lusch, 2008b) and this research suggests that engaging more closely with customers can have positive effects. The effect of trust is confirmed within the literature both with regard to S-D logic and more mainstream marketing papers. Trust within S-D logic is seen as essential as an enabler of the dialogue which is central to successful co-created

exchanges (Ballantyne & Varey, 2006b; Jaworski & Kohli, 2006; Varey & Ballantyne, 2005). Trust would appear to instil confidence with co-creating giving an indication of an exchange partners reliability and integrity (Moorman & Zaltman, 1993; Rotter, 1967) and, given its importance within a relational context (Berry, 1995; Geyskens, et al., 1998), is likely to be a key ingredient in any co-created exchange.

The role of education in collaborative exchanges has been identified in the context of co-production (Wikström, 1996) but also more recently with regard to S-D Logic (McColl-Kennedy, et al., 2009) and consumer orientation (Rafaeli, et al., 2008). Eisingerich and Bell (2008) indicate that educating customers can strengthen trust in an organization and socialize customers into the activities of the firm (Kwortnik & Thompson, 2009). Study 2 suggests that educating customers as part of the process of value co-creation can have the dual effect of reducing the potentially negative outcomes of inequity and ensuring that both firm and customer get the best value from the exchange.

The literature review highlights scepticism around the notion of customer effort in the co-created exchange and whether this might, be perceived as a chore (Rust & Thompson, 2006). Doubt was also evident about the extent of customer resources and if all the high level of involvement suggest by co-creation was possible in all exchanges (Gray, et al., 2007; Kalaignanam & Varadarajan, 2006). The evidence here presents an alternative perspective as higher levels of co-creation were associated with higher outcomes. Rust and Thompson (2006, p. 388) suggested that:

> 'Customers cannot always accurately predict what they want and, therefore, may not be able to contribute to the value co-creation process; control, that firms perceive as being of benefit to the customer, may be perceived as a loss of control with customers feeling 'overwhelmed by information and choice'

It is possible, perhaps, that this statement doesn't take enough consideration of the way that the customer's role has changed. Co-creating with firms is becoming less normative and customers co-create to a greater or lesser extent in exchanges as varied as the purchase of insurance, staying in a hotel, selecting furniture or buying a house. While it is unlikely that customers will attach the same level of importance to all these purchases they are nonetheless co-creating. Perhaps as Prahalad and

Ramaswamy (2004b, p. 14) observe consumers are indeed recognizing that 'co-creation is a two-way street' and are willing to take on more risk for the benefits that might arise from greater co-creation.

The link between behavioural intention, willingness to pay a price premium and value co-creation is an important one. TCE would suggest that firms engaging in value co-creation activity will require greater investment in asset specificity and, as a result will have increased transaction costs (Dyer, 1997). On that basis customers who are willing to pay a price premium and repurchase the same product over time are essential for continued firm success and the ability to amortize any transaction specific investments. Given the asymmetrical nature of many service relationships (Gallouj, 1997; Mishra, et al., 1998; Singh & Sirdeshmukh, 2000) the potential for opportunistic behaviour by one partner in the exchange may increase, something assumed by TCE (Chiles & McMackin, 1996). Given the potential for exploitation (or perceived exploitation) the role of trust takes on more importance and is essential for positive collaboration yielding benefits for both partners (Chiles & McMackin, 1996; Singh & Sirdeshmukh, 2000). The building up of trust is related to increases in relational activity (Dyer, 1997, p. 550) and this underpins the results of the first experiment. If trust cannot be guaranteed from the firm side then it is likely that the co-created exchange would, by necessity, become more complex with contracts and safe-guards becoming more important (Chiles & McMackin, 1996). This is an important outcome as trust is far from guaranteed within many service encounters.

This section contributes to our understanding of co-creation by indicating how co-creating and collaborating with firms in direct exchange can affect consumer behaviour and the importance of certain dimensions (trust) within the relationship. The next section considers the extent to which value co-creation can liberate consumers and provide other positive impacts.

7.2.2 Co-Creation and Consumer Liberation

The case study element of study 3 highlighted how the engagement of geographical communities within the physical service setting might have a positive effect on other service users. This was confirmed by the multi-level study. The case also highlighted benefits for consumers from engaging more closely with a firm

through co-creation. While it is widely accepted that case study research cannot be generalized the results do contribute to the literature and could stimulate future research. Three key themes emerged from the case study relating to positive outcomes of co-creation for the community groups, these were: ownership, empowerment and legitimacy.

The idea of ownership was identified by ScotRail who recognized that local communities were a constant feature in an uncertain operational landscape. There are two ways of viewing this notion of ownership. Firstly, a cynical view would be that the firm recognise a willing group of individuals who can make improvements to the physical setting and act as custodians of the firm's assets without giving any legal rights. However, the community would appear to view this from a different perspective, as being enabled to make a difference to their environment and by assuming ownership feel confident of making changes and improvements to the station. In essence, community groups are empowered by the rail firm to make changes both small and large to their station. These, might be insignificant to the firm such as the adopter sourcing 'seagull proof' litter bins and have a small cost attached or require larger infrastructural changes such as reconfiguring a car park to build an allotment style garden in part of the station. The common feature here is that it is the consumer who is making (or suggesting) the changes within an empowerment framework. Finally, the scheme provides community groups with the opportunity to gain legitimacy through involvement with the scheme with groups taking on a formalised status as 'friends' groups or through the creation of charitable organisations. This legitimacy offers further opportunity to gain support from other network actors and in some cases secure funding from other external bodies.

Despite the case bound nature of these outcomes the themes of ownership, empowerment and legitimacy could easily translate into other contexts. Claycomb (2001) observes that consumers need to more than merely show up and the necessity for a proactive approach is observed by Prahalad and Ramaswamy (2003, 2004a, 2004b). This research suggests that empowered consumers who feel some sense of ownership and legitimacy may contribute much more to the exchange. This has some similarities to the notion of customer communities (Dholakia, et al., 2009; McAlexander, et al., 2002; Rowley, et al., 2007; Schau, et al., 2009) where

consumers actively contribute to the value creation of other consumers in a virtual sense.

It is suggested by Jaworski (2006) that co-creation activity could help to bond a customer more closely to an organization and this does seem to be confirmed by the 'adopt a station' case study. This bonding appears to be closely related to the notion of the customer as an active player in the exchange process. The increased sense of accomplishment, enjoyment and self-efficacy from co-creating is evident in the literature (Dong, et al., 2008; Meuter, et al., 2005; Schneider & Bowen, 1995) which also suggests customers may gain both cognitive and affective benefits

The case study indicates that there is some kind of emancipatory outcome of co-creation when customers are treated as knowledgeable entities (Gibbert, et al., 2002) and firms relinquish control (Jaworski & Kohli, 2006) in order to give customers the ability to ensure that outputs meet their own unique needs and gain more control over the experience (Auh, et al., 2007; Grönroos, 2006, p. 303; Lusch, et al., 2007). Essentially co-creation through collaboration and dialogue where customers are empowered and given a sense of ownership and legitimacy shows the benefits of 'doing more' (Auh, et al., 2007) and improving the predictability and quality of the exchange (Evans, et al., 2008).

The ability to liberate customers through co-creation will be context dependent and, as chapter 6 observes, in this case takes place within a context of limited competition. Other contexts may have less success if firms and customers lack the desire, opportunity or attributes necessary for successful co-creation (Ostrom, et al., 2010, p. 21; Rust & Thompson, 2006; Woodruff & Flint, 2006) or if firms have concerns about increased resource costs. The case does serve to highlight the resource integration role that customers are assumed to play (Arnould, 2008; Gummesson & Mele, 2010a; Lusch & Vargo, 2006b; Vargo & Lusch, 2008b). The next section will consider how this thesis can contribute to our understanding of resource integration role.

7.2.3 Resource Integration

The notion of an empowered consumer taking ownership of the co-creation activity they are involved with resonates strongly with FP9 of S-D logic (Vargo & Lusch, 2008b). The case study provides evidence of this integration role and how emancipating customers from a purely consumption role could open up potentially rewarding opportunities for firms. The community groups engaged in the adopt a station scheme show evidence of the range of resources that Arnould (2006, 2008) and others (Arnould, et al., 2006) highlight can be integrated within the firms activities, Table 7-2 identifies some of the wide range of resources that were brought into play by adopters to create value unique to their context through the process of integrating their own resources (Arnould, et al., 2006; Baron & Warnaby, 2011) and those of their own networks (Vargo & Lusch, 2011a):

Type of Resource	Example from Case Study
Physical	Gardening, passion for local community, renovation activity, time, development of facilities
Social	Mobilisation of actors, networking, promotional/fundraising role
Cultural	Knowledge of local history, heritage role

Table 7-2 Resource Integration within Adopt A Station Case

One interpretation of this resource integration activity is that enabling customers, giving them access to the firm, sharing the risks and engaging in dialogue offers the kind of mutual benefits that value co-creation appears to promise (Oliver, 2006; Ramaswamy, 2011).

The notion of customer as resource integrators is an important component of S-D logic, Lusch et al (2007, p. 6) stress how a customer is a 'resource that is capable of acting on other resources, a collaborative partner who co-creates value with the firm'. Baron and Warnaby (2011) note how an individual's operant resources and their unique configuration will influence how resources are employed. Within the Adopt A Station case adopters gained a range of benefits from involvement and brought a range of resources into play according to the needs of the station and community (Arnould, et al., 2006). ScotRail also played a key role in establishing the

needs of the community group and ensuring that they were able to meet the needs of the community (and firm) acting more as facilitators of value creation (Ritzer & Jurgenson, 2010) focussing on the support of customers in their own resource integration activities (Lusch & Webster, 2011).

Despite the importance of the resource integration role it should be noted that the citizens involved with the adopt-a-station scheme represent a minority of customers with the rail company. The idea of co-creation and its accompanying resource integration requirements being associated with the few rather than the many is identified by Baron and Warnaby (2011) one of very few papers that address this issue. In their study of a user support forum for the British Library, Baron and Warnaby (2011, p. 217) note that their sample was clearly 'not a random sample of users…and the data, by its nature, contains the more passionate and loyal BL users'. The participants that these authors were analysing were, therefore, those of users who possessed increased levels of physical and cultural resources 'than those of many other users' (Baron & Warnaby, 2011, p. 217) suggesting two views of co-creation: firstly, co-creation can offer mutual benefits for both firm and customer; secondly, despite the all-encompassing rhetoric within S-D logic and other associated papers co-creation in some contexts may only ever be associated with a minority of users. However, as the next section will explore, this minority may either directly or indirectly provide benefits to other users who prefer to engage with the firm in a more transactional way. This section concludes by presenting a co-creation consumer impact matrix (see Figure 7-1).

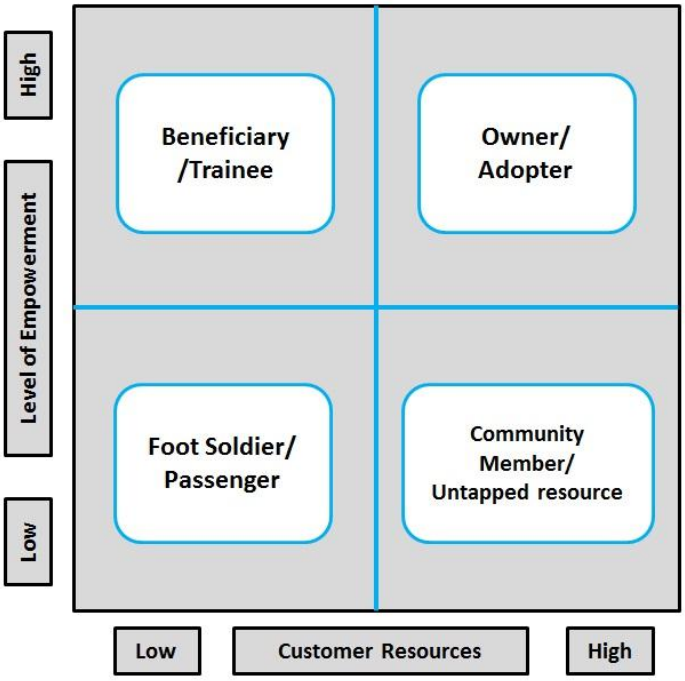

Figure 7-1 Co-creation consumer impact matrix

Using outcomes and contributions identified within this thesis and the extant literature two important dimensions emerge. The first dimension has been termed empowerment. This relates the theme identified above of firms emancipating consumers and enabling them to be more involved within the service encounter. The second dimension relates to the level of resources that the consumer (or groups of consumers) possess. When these two dimensions are presented in the form of a matrix four types of consumers, or perhaps for possibilities for firms, emerge. The upper right quadrant contains the **owner/adopter** category; this represents the 'idealised' notion of co-creation where firms and consumers work together for mutual satisfaction and benefit. Consumers are proactive, have high levels of empowerment and are prepared to take ownership of their role(s) and increase their levels of engagement and commitment. It is possible that this group may be in the minority but this should not, necessarily, dissuade firms from empowering users as the evidence from the literature (and this thesis) is that minority involvement can both have a positive direct and indirect effect. The key for firms with consumers in

this quadrant is the continuance of the trust and relational building activities to ensure that consumers still feel valued.

The upper left quadrant contains the **beneficiary/trainee** category here firms have the willingness to enable consumers and are prepared to offer access and engage in two way dialogue but consumers are in some ways unwilling or unable to share the risk or get involved. There are two perspectives on this quadrant, firstly that a firm might need to explore initiatives that can support a consumer in their co-creating activities (education initiatives) hence the **trainee** term. Despite the strong evidence of the changing role of the consumer it may be that the opportunities and benefits may need to be more clearly stated by firms. The second perspective is that a firm may recognise that not all consumers are going to be interested, or able, to increase involvement and that some consumers will always be **beneficiaries** of the collaborative activities of others.

The bottom right quadrant contains the **community member/untapped resource** category. Here would be found firms that for operational reasons or by choice have decided that they are not able to engage consumers outside the conventional service encounter dyads. Here consumers with high levels of resources may decide to engage with customer **communities** organised out with the auspices of the organisation. Alternatively a firm may look on such consumers as a potential **untapped resource** and consider ways in which they can more effectively engage them within the activities of the firm.

The final, bottom left quadrant contains the **foot soldier/passenger** category. This quadrant would appear to offer the least opportunity for effective collaboration. Consumers may be happy simply to act as passengers. Allow the firm to make decisions and not look to co-create beyond their own phenomenological activities. This quadrant may also be one where co-creation activities more akin to 'traditional' co-production may occur. Consumers may not wish to get involved but are happy to be involved in a foot-soldier capacity, following the orders of the firm and gaining value through low level participation.

This section contributes to the literature on value co-creation by suggesting how the environments in which co-creation is present (to varying degrees) can affect the

consumer. This adds to the growing literature on co-creation through the 'co-creation consumer impact matrix' and by demonstrating the potential outcomes of co-creation involvement on consumers. The following section explores the third objective of the thesis and considers the outcome of value co-creation on the firm.

7.3 Value Co-Creation 3 (Firm Effects)

The previous section outlines the benefits for consumers of engaging with firms and collaborating through co-creation activities. Cocreation activities should, however, benefit all parties in the exchange (Gummesson, 2007) and this section will explore the final objective of the thesis:

Objective 3: *To explore the extent to which firms benefit from collaborating with customers through value co-creation.*

Data from all three studies will be explored alongside the source literature to consider the impacts that firms may experience from increased co-creation. The first part of the section addresses the potential benefits for firms of collaboration with customers; the second part considers the drawbacks and the final part the continuing importance of loyalty.

7.3.1 Value Co-creation: the benefits of engaging customers

The benefits of value co-creation are not intended for customers alone. Lusch et al (2011, p. 132) note how the rewards 'for cocreating customer value must ultimately be shared among all of the stakeholders'. Firms that currently do not collaborate to any great extent would wish to learn what benefits might be derived from increasing customer engagement prior to embarking on any scheme. Within study 1 were examples of how increasing customer involvement or enabling the customer brought benefits to a firm. From travel agents making use of customer knowledge about airlines; to Architect clients providing their own computer generated designs; or even hotel guests advising on bar stock or room facilities the benefits were gained by enabling customer involvement and cherishing their input to the process, to the extent that successful interaction was dependent on the customer playing this role.

In study 3 the benefits of involving the local community groups as co-creators had a clear and measurable benefit on the firm and other actors. Again, the firm acted in a facilitatory way by providing facilities, some funding and essentially allowed adoption groups to be more or less self-managed. By improving the appearance of the station some of the groups have, as a result, won awards as a result of their involvement with the scheme (either as individuals or for the station), this adds to the benefit of their involvement by improving the perception of the rail firm in the eyes of the franchise holder and other stakeholders. The positive effect of engaging the local community is an important contribution of the research. Like virtual customer communities, adopter groups meet with a common shared interest and desire to promote a good/service. Unlike the virtual community the adopter group can have a tangible input to the activities of the firm, they perceive the benefit of adoption for them and their community but the firm receives benefits in the form of enhanced operating environments and improved affective and conative loyalty. The scheme started from fairly humble beginnings but with 110/343 stations now adopted (a growth of 24 stations since 2008) there is evidence of development with other groups taking more active roles in their local station.

The idea of firms acting in a facilitatory way is highlighted within the literature (Gibbert, et al., 2002; Grönroos, 2006; Gummesson & Mele, 2010a; Payne, et al., 2008) providing customers with opportunities (or platforms (Ramaswamy, 2011)) whereby they can contribute more to the firm. By integrating their own resource network, co-creation could provide firms with significant benefits if the interaction (and the costs involved with setting it up) is offset by the benefits of increased collaboration. The importance of the customer as a source of talent is also addressed (Ramaswamy, 2011) with Schau (2009, p. 30) highlighting how as customers can co-create strategy and innovation processes to the extent that they become ‘endogenous to the firm’.

The additional, knock on, benefits of engaging customers are also highlighted as co-creating value can enhance brand and relationship equity (Vargo, 2009, p. 375) and even enhance brand meanings through the creation of exogenous loyalty programs or customer communities (McAlexander, et al., 2002). These results suggest that firms should indeed be exploring the creation of a wider array of

practices and investigate how co-creation with the brand can be facilitated. Value co-creation has the potential of creating (for the firm) 'collaborative competency' (Lusch , et al., 2007, p. 9) something described as a 'nirvana position… because it leverages a firm's ability to absorb information and knowledge from the environment, customers, and its value networks and enables firms to adapt to dynamic and complex environments'. The use of 'Nirvana' is illustrative that some firms may never reach this position. Although this thesis has identified the benefits of co-creation in a range of settings (including those high in inertia), it is important to consider the costs of co-creating both in a financial sense but also in the way that co-creating might have negative outcomes for the firm. This will be considered in the next section.

7.3.2 Value Co-Creation: the costs of engaging customers

Value co-creation and collaborative competency is described as a state of Nirvana (Lusch , et al., 2007) and mutual satisfaction as utopian (Oliver, 2006). These terms suggest that achieving either is challenging and that some firms may manage better than others. The challenges associated with increasing collaboration were evident within the thesis. In study 1 several of the managers highlighted problems which were in contrast to the benefits highlighted in the previous section. One architect recalled how one relationship with a client had broken down irreparably because the customer was not able to express what he wanted. The other architect charged more to private customers as they always took up more time. Couriers working for one firm avoided private pickups as the customers didn't know what to do or didn't package up goods properly. One hotel manager was opposed to advertising cheaper deals on certain websites as they attracted guests who took up more time and didn't understand how to behave. These situations can be interpreted as the challenge of dealing with an unknowledgeable client and for every client who co-creates effectively there may be others who require extra effort from staff. Increasing customer engagement has the potential, therefore, of creating tiers of customers, some of whom have the necessary skills and knowledge to co-create and others who don't. Problems are therefore two-fold: firstly a cost associated with training customers or to be endured if customers simply do not have the requisite skills and

secondly, there could be a negative effect on staff that rely on the customer to make a contribution to the exchange.

One of the foundational premises of S-D logic is that firms only offer value propositions (Vargo & Lusch, 2004a, 2008b), the realization of value in use (or in context) is therefore entirely dependent on the customers added input (Zwick, et al., 2008). One challenge faced by firms, therefore, is how to co-create with customers lacking in the resources that are needed, or that the firm expects them to possess. Alternatively, Gummesson and Mele (2010) observe that customers often take initiative when co-creating value. This is portrayed as a positive trait, i.e. that customers are a source of value that traditional management approaches cannot capture. The alternative perspective is that of the customer who, by accident or design, doesn't co-create but destroy value (Plé & Cáceres, 2010) and negative actions could, subsequently damage a firm. If, as Schau et al (2009) suggest, customers are endogenous to the firm there must surely be a negative consequence of customers not playing their part. In the preceding section it was highlighted how firms, increasingly, may look to be more selective with the customers that they choose to co-create with (Lusch , et al., 2007). But this proposition could surely be reversed and considered from the perspective of the knowledgeable customer being more selective with their choice of firm. In that circumstance a firm, as highlighted in objective 2, may resort to transaction specific investments to entice customers into co-creation activity which will increase costs. Should any investment in infrastructure or technology not result in increased customer equity and CLV the only likely impact is negative and directly affecting company performance.

If customers can benefit firms by co-creating through increases in brand and relationship equity then negative acts or inadequate collaborative activity could surely have an opposing effect also. Customer communities may be sources of negative feedback which might adversely affect a firm's brand perception, something referred to as hijacking (Fournier & Avery, 2011).

The final point relates to the effect on employees. If employees become socialised into dealing with knowledgeable customers then those who are untrained may prove problematic. The service literature highlights many of the problems that staff

experience associated with a lack of control over the service encounter (Bateson & Hoffman, 1999; Harris & Ogbonna, 2002) and other authors have highlighted negative aspects of employees dealing with customers who are more involved (Bowers & Martin, 2007, p. 95; Hsieh , et al., 2004) also suggested by this research.

Essentially, despite notions of value co-creation offering a panacea for firms, the section above has highlighted some of the potentially negative outcomes that might be associated with closer collaboration with customers. Co-creation provides customers and firms with opportunities but as Prahalad and Ramaswamy (Prahalad & Ramaswamy, 2004a) observe it gives customers control over risk and benefit but not liability. On that basis firms may need to give much closer consideration to how, when and with whom they collaborate with. Alternatively firms will need much more assurance of the potential outcomes for customer loyalty of co-creation before engaging more closely with their client base, these are considered in the following section.

7.3.3 Value Co-creation: Loyalty Effects

Both study 2 and study 3 have results which contribute to our understanding of how value co-creation affects loyalty both in a direct and an indirect sense. In study 2 there was an effect of co-creation on behavioural intention (mediated by the level of relationship investment perceived by the customer in the exchange) and word of mouth (in experiment 2). These results suggest that firms need to enable the consumer to be more involved for consumers to perceive that the firm has invested in the relationship. If this investment is not there consumer perceptions, and subsequent behaviour may be less disposed towards repeat purchase.

In study 3 there was a strong effect that co-creation within the service encounter could have an indirect effect on affective and conative loyalty. This has important implications for firms. Firstly, given the relatively lack of knowledge of the firms engagement with the community (evidenced through the low awareness of customers of the scheme) the conative loyalty affects could be strengthened by educating a wider group of customers about the scheme which may impact on both relationship and brand equity. Secondly, the relative cost of administering the ‘adopt a station’ scheme was low. ScotRail adopts a hands-off approach to adopters (beyond basic

health and safety training) and therefore benefits from the consumer's freedom. The firm still invests in the relationship with the adopter groups but these are not large investments and they are outweighed by the reduction in fines the firm receives. Finally, the loyalty affects are shown within a context of low competition and high levels of inertia, this suggests that co-creation (with the few or the many) may indeed have a role to play in ensuring customer loyalty. Ultimately, simply allowing the customer access to your firm is unlikely to improve loyalty to any great extent, many of the products and services that are often associated with co-creation such as Harley-Davidson, Lego, Dell and Apple all share a common feature of a strong brand and product. It is perhaps unsurprising that customers loyal to these organisations have created strong communities of customers around them. More research is needed, across a range of contexts, to explore the loyalty effects of co-creation. This thesis contributes to the debate by suggesting that value co-creation with select 'community' members can have an indirect effect on customers (even those with inertia), within a more competitive environment the effects may be even more rewarding.

Within the literature surrounding S-D logic loyalty is not an issue that has been frequently addressed, perhaps due in part to its G-D association. Some authors have suggested that the increased levels of participation associated with closer collaboration could have relational and loyalty benefits (Dong, et al., 2008; Gibbert, et al., 2002; Jaworski & Kohli, 2006) and Auh et al (2007, p. 36) in a study directly addressing loyalty suggest that in terms of increasing collaboration 'there should be a meaningful impact on customer's loyalty for the benefits to outweigh the costs'. Value co-creation has to be worth it for firms to consider it as an appropriate strategy.

The final point on loyalty in relational to S-D logic relates to FP6 (the customer always a co-creator of value). Despite the universality of the statement it is likely that loyalty will be affected in the same way, pre and post S-D logic, as there is no real change in the way firms engage with customers. All that has changed is the way we perceive value as being created (which is itself an important development) and an accompanying, complementary growth in technology which enables firms and customers to further customize their products and services. Vargo (2010) criticises

the G-D perspective on relationships by suggesting that they were understood in production orientated terms such as multiple transactions, database marketing, CRM programs and CLV metrics. The important question therefore is the extent to which a S-D logic perspective will still result in firms wishing to learn (and store) information about customers, no doubt firms will also be keen to learn how the value of a particular customer can be maintained and improved over time. What will, as this thesis has indicated very strongly throughout, change is the way that firms perceive customers. If customers are to be viewed as an operant rather than operand resource then firms will want to maximise their resource output and ensure that customers are chosen carefully as a 'good match for the resources and capabilities of the firm and its stakeholders' Lusch et al (2011, pp.133).

The future for firms within a S-D logic is not, as Vargo suggests, utilising customers as operand resources to be measured in terms of repeat transaction but carefully selecting, enabling and facilitating the right customers to ensure both direct and indirect benefits for a firm and its stakeholders.

The final chapter will synthesise the main findings of this thesis and discuss the three main contributions and consider the potential for future research in the area.

Chapter 8 - Conclusions

This concluding chapter draws together the key contributions of the thesis, each of which is evidenced in more than one study with their respective theoretical and managerial implications - suggestions for future research are also discussed. First, a brief discussion on value co-creation is presented and some methodological implications are suggested; the next section presents the contribution towards our understanding of the contexts and conditions under which collaborative forms of co-creation are a viable approach for firms. The second contribution relates to the effect of co-creation on the consumer and some of the implications for firms on collaborating with a more proactive customer base. The final contribution relates to the indirect effects that co-created activity could have on a customer group and the wider ranging implications that this might have and presents some closing remarks.

8.1 Value Co-Creation: Reflections

Foundational Premise 6 from S-D Logic states that 'the customer is always a co-creator of value' (Vargo & Lusch, 2008b, p. 8). In chapter 2 various arguments and academic positions relating to (value) co-creation were presented and discussed. Some advocate what might be called the 'co-creation of value' position which is largely conceptual and relates more to our understanding of how value is created and does not necessarily represent a huge breakthrough in understanding how firms and customers should engage. If the customer is always a co-creator of value then surely they always have been and, on that basis, things do not need to change that much. However, others take a more pluralistic view of value co-creation as representative of a changing relationship between firms and customers and certainly a changing perspective of the role that the customer plays in contemporary markets.

In recent writing both Vargo and Lusch argue that they do not own S-D logic but aim to 'identify, elaborate, and extend what we see as a potential convergence in disparate thinking that suggests an evolutionary (rather than revolutionary) shift' (Vargo & Lusch, 2011b, p. 1320). They view S-D logic as 'as open source and ultimately will need the active support of a community of scholars co-creating,

refining and advancing it, if it is to move forward' (Lusch & Vargo, 2011, p. 1304). Gummesson, Vargo and Lusch (2010, p. 9) go one step further calling S-D logic 'Work in progress … anyone can participate in generating, testing, transforming and, if appropriate, abandoning the associated theory'. This presents researchers with an opportunity to advocate alternative perspectives. S-D logic has provided a useful foundation for this thesis providing justification for the pervasiveness of value co-creation but not necessarily in the same explicit terms set out by Vargo and Lusch. This thesis can also propose that in the case of value co-creation, theorizing lags behind reality somewhat and both firms and customers are comfortable in their respective value co-creation roles. The paradigm shift that Vargo and Lusch suggest that S-D logic represents maybe more of a paradigmatic catch up with changes that are already out there, something hinted at by other authors. Sheth (2011, p. 197) asks to what extent 'the notion of value co-creation is obvious' and that all we are doing is cutting out the 'middle man'. Ramaswamy (2011, p. 195) urges further debate and hints at this time lag with a field 'always playing catch-up with the dynamics of a structural real-world shift taking place in front of our eyes, one that is fundamentally altering the very nature of relationships among individuals and institutions'. Value co-creation (in its many pluralistic forms) is out there and like Brown (2007) this thesis observes that the empirical potential of S-D logic needs further exploration in order to develop beyond the dialogical and debate stage.

8.2 Methodological Implications

Each PhD thesis presents a unique set of challenges to the researcher. For this researcher the basic concept in question was a challenge in that it was, and to a greater extent still is, an unexplored concept. With the benefit of hindsight the Sequential Exploratory, Multi-Phase Design gave an excellent opportunity to explore value co-creation. An initial qualitative phase allowed the key dimensions of the concept to be explored and then tested through further studies. By employing mixed methods within a holistic design results were triangulated, corroborated across different methods, measuring 'overlapping but distinct facets of the phenomenon under question' (Caracelli & Greene, 1993, p. 196). The length of time associated

with a PhD thesis also overcame what is widely agreed to be a significant challenge for mixed methods researcher which is the time associated with conducting multiple studies. During this thesis five independent data collection exercises have been undertaken over a three year period which did make significant demands on the researcher in terms of skill development but it is possible.

The most challenging aspect of all the studies related to the measurement of value co-creation. Study 1 required the probing of interviewees about value co-creation and its dimensions but a lack of understanding of the concept by interviewees meant that the interviewer had to either provide a definition (which could have biased the responses) or explore certain dimensions and use these as an formative approach to gathering data. The latter method was selected and seemed an effective choice as interviewees all seemed comfortable discussing, for example, customisation or co-design as opposed to a more abstract concept. This approach could lead to criticism from a face validity perspective but this is countered through the plurality of the co-creation concept and support within the literature for the dimensions chosen. In study 2 both a (pseudo) formative (experiment 1) and a reflective (experiment 2) approach to measuring value co-creation were attempted. When this stage of the research was underway the perils of actually measuring value co-creation through a survey became apparent. There are no pre-tested value co-creation scales and therefore using value co-creation as a dependent variable was not considered as any existing scale such as those used to measure ‘co-production’ (see Auh, et al., 2007; or Dong, et al., 2008) would have also suffered from face validity. Manipulating value co-creation within the experiments was a success in that all manipulation checks (final pre-tests and main experiments) indicated that respondents could differentiate between levels of value co-creation in the scenarios. This was particularly successful in experiment 1 where the formative measures followed by a summative measure were included. In experiment 2 the manipulation check was successful but a lower statistical power of the output suggested perhaps that the level of co-creation within the scenario was not extreme enough to create a more statistically powerful result.

The use of multilevel modelling to determine the impact of value co-creation on customer groups was particularly successful. Key to its success was strong evidence of cocreation at the higher level, a well-defined group of level 2 units and level 1

subjects which could be clearly linked to the higher level. The sequential exploratory approach to study 3 allowed the dimensions of co-creation within the station adoption program to be identified along with any potential benefits. This had a strong impact on the survey (commuter stress, enjoyment and passenger safety being identified as independent variables as a result). This hierarchical approach is recommended to future researchers wishing to explore the effects of value co-creation.

The following section of the chapter explores how collaborative forms of co-creation might be context bound to a greater or lesser extent and considers the implications for our understanding of co-creation.

8.3 Contribution 1 – The contextual nature of value co-creation

This first contribution relates to our understanding of value co-creation in its, given a plurality of interpretations, collaborative form. Study 1 presented a model outlining the conditions for mutually beneficial value co-creation and that these are centred on attributes of the firm and the extent to which the firm is prepared to enable the customers as co-creators. There is also a customer dimension to the model and centring on the level of customer knowledge but also their motivation to participate.

8.3.1 Theoretical Implications

The notion of co-creation providing mutual benefits is an important part of the contribution in that it moves the debate away from the distinction between the 'co-creation of value' representing collaborative, customer-specific value creation, dialogical and interactive, and 'co-production' being joint activities based around firm output (Vargo, 2008). In the circumstance of a client working closely with an architect through dialogical interaction centred on the construction of a new house (i.e. co-design) it is difficult to argue that this is simply resourcing the customer in the creation of firm output. The customer is going to live in the house, gain value-in-context from the collaborative effort and benefits must therefore be mutual. This

represents a contribution to the extent that several authors argue for a much more pluralistic approach to value co-creation (Sheth & Uslay, 2007; Sweeney, 2007; Winklhofer, et al., 2007). This is supported by this thesis.

The hypernymic nature of value co-creation which was used throughout this thesis was an important starting point for the research as it clearly suggests that value co-creation is an umbrella term. However, much of the writing of Vargo and Lusch retains a dichotomous edge when addressing co-creation clearly differentiating co-production with its goods-dominant undertones from the co-creation of value (Lusch & Vargo, 2006c; Lusch , et al., 2007; Vargo & Lusch, 2008a). This thesis suggests that the boundaries between these two concepts are blurred and that value-in-context is gained not only from the customer integrating their own resources but also from direct, proactive collaboration with the firm. This thesis supports Macdonald et al (2011, p. 672):

> Although the co-creation of value is posited as a positive (as opposed to normative) position, the emphasis of Vargo and Lusch (and many other scholars) of the customers contributions as a co-creator of value suggests a shift is needed in the way that organisations elicit value from customers.

Zwick et al (2008, p.177) argue that co-creation is just a more advanced from of exploitation and that although firms appear happy to give birth to active, independent, creative, and voluntary activities' these are still simply representing 'unpaid labour that does not necessarily contribute to the customer's ability to buy more goods'. This thesis disagrees as by engaging more in the process of co-creation customers gain more resources (operant) which should, ergo, enable them to make improved decisions and benefit more from exchanges.

Prahalad and Ramaswamy's (2004a,b) DART dimensions (Table 2-7, p.46) hint at the changing nature of the relationships that firms have with customers where the traditional benefits of keeping customers at arm's length through limited access and information asymmetry must be discarded in favour of a much more open and interactive approach. Dialogue must be two way and learning shared within communities. This thesis strongly supports this dimension through the results of study 1 and study 3 where firms saw benefits in engaging customers as collaborators. Access is about enabling customers to make more active contributions to the work of

the firm. ScotRail presents a good example of a firm opening up to a group of consumers and enabling them to make a greater contribution. Shared risk was evident in the Adopt a Station scheme in that customers were taking a much more proactive role in the firm, the equity experiment suggests that customers may recognise their own input to the co-created exchange and are prepared to shoulder some of the blame. This aspect of DART, however, may yet be a barrier to closer engagement. Fournier and Avery (2011) note how the global environment is a much more transparent one where firms should be prepared for customers to learn and share information about the firm. Whether this does create an information transfer that removes the unequal benefit of information asymmetry is not proven by this thesis and the contribution is, therefore, somewhat incomplete. The partial ratification of these DART dimensions does provide some answers to the many questions about value co-creation that were introduced in chapter 1 relating to the replication of successful co-creation strategies. This clearly has implications for managers and firms which will be discussed in the following section.

8.3.2 Managerial Implications

With the rise of customer communities, C2C interaction and increasing transparency firms need to embrace the potential benefits of customer involvement within the firm. This thesis has highlighted the potential benefits for firms of working for a more pro-active, collaborative customer base which does not necessarily mean the majority of customers. Small numbers of well-resourced, passionate and committed customers can make a strong contribution to the work of the firm and provide wider, indirect benefits.

For firms, this change does require a cultural shift. There are many examples within the literature of academics presenting a ‘what if’ argument against increased collaboration (Gibbert, et al., 2002; Jaworski & Kohli, 2006; Kalaignanam & Varadarajan, 2006; Prahalad & Ramaswamy, 2002; Rust & Thompson, 2006) citing problems of ‘time-to-market costs’; ‘loss of efficiency’; ‘overburdened customers’; ‘cultural barriers’; ‘effect on employees’ to name but a few. However this thesis suggests that many firms, in a range of contexts, are already successful co-creating to varying degrees and in different ways. The barriers may ultimately turn out to be

more perceived than realised and the following section will consider the implications for future research in the area.

8.3.3 Future Research

This thesis suggests that many firms are already comfortable with the notion of co-creation and collaboration with an increasingly proactive customer. However, the perspective of the wider customer base also needs to be heard to broaden our understanding of the effectiveness and boundaries of value co-creation.

For firms, research might focus on: the implications of granting access to customers; how dialogue can be facilitated and supported; and the effect of sharing risk with customers. Also research is needed on how firms can motivate customers to increase collaboration in particular in environments where motivation is low and also the effects on employees of interacting with a more proactive customer group.

Future research should look to capture firm and customer perspectives on co-creating within and across specific contexts to gain a deeper understanding of how firms and customers perceive the collaborative act, the motivation for involvement and the benefits gained as a result. The research in this thesis is time bound in that long term benefits were implied but not measured, future research could focus on longitudinal studies with firms and/or customers to consider the developmental benefits and impacts of value co-creation.

8.4 Contribution 2 – The effects of co-creation on the consumer

Study 2 presented outcomes relating to the effects of value co-creation on consumers. The first would be the willingness of the customer to pay a price premium for a product or service that they have had a large input in creating. Secondly, that co-creating more results in increased behavioural intention when the customer perceives that a firm is prepared to invest in the co-created relationship. Finally experiment 2 provides evidence that there is a relationship between value co-creation and equity and that the potential for a negative effect of inequitable outcomes can be reduced by co-creating with the customer.

8.4.1 Theoretical Implications

Experiment 1 implies that the more that a customer collaborates in the service experience the more positive the outcomes. However, the experiment also serves to highlight the importance of trust in the S-D logic era. If academics imply that co-creation is simply exploitation hidden under a cloak of freedom then we can assume, perhaps, that customers might perceive it the same way. This would account for the mediating effect of relationship investment for both the price premium and behavioural intention variables within experiment 1. If a consumer perceives that a firm is prepared to invest in the co-created relationship through transaction specific investments and trust building activities then experiment 1 suggests that both firm and consumer will perceive increased benefits from the exchange.

Experiment 2 reinforces the strong effect of perceived inequity on consumer outcomes. Inevitably some co-created exchanges will have negative outcomes whether it is through accidental or deliberate misuse of a firm's or consumer's resources (Plé & Cáceres, 2010). Responding to failure through service recovery is an accepted part of the majority of firm's activities, no doubt co-destruction will require some form of recovery but experiment 2 also presents a tantalising outcome that increasing consumer resources through value co-creation including consumer education has the effect of reducing the negative outcomes associated with an inequitable outcome. Given the need for mutual satisfaction within co-created exchanges (Oliver, 2006) then perhaps in the future 'recovering' co-destruction will be as much the responsibility of the consumer as the firm.

8.4.2 Managerial Implications

The effect of co-creation on customer willingness to pay a price premium is an important managerial implication. It suggests that customers can respond positively to firms that enable them to become more involved and value the opportunity to collaborate more with firms. This provides a response to the view that co-creating will simply cost the firm financially (Jaworski & Kohli, 2006; Prahalad & Ramaswamy, 2000). This thesis does not provide any evidence to refute this in fact, the opposite is true, with experiment 1 suggesting that consumers will respond

positively to co-creation opportunities and firms can charge a premium for their provision.

The role of relationship investment is clearly of importance to a firm. Relationship building, consumer enabling initiatives like those outlined above provides tangible manifestations of the firm's commitment to the customer and the role that they are willing to let them play within the firm. If firms can evidence their commitment to their customers by highlighting opportunities and benefits it may also serve to minimise feelings of exploitation.

The changing role of the customer has been a strong theme through this thesis and it seems that firms have identified some of the benefits of collaborating with more proactive customers. However, not all customers will have the appropriate resources to enable them to operate as proactive collaborators with firms and customer education could have a key role in future co-creation initiatives. In the S-D world firms are encouraged to view customers, alongside employees, as operant resources (Vargo & Lusch, 2004a). On that basis training customers suddenly requires resources and investment and in the same way that new employees are inducted to the firm and given training the same will be required for customers.

8.4.3 Future Research

This section contributes to our understanding of value co-creation by providing empirical evidence of how co-creating effects customers. This is a contribution in the sense that empirical evidence on S-D logic concepts is, to date, limited and therefore this thesis takes an important first step in identifying how collaborating with customers could benefit firms. This is in opposition to some of the themes from the literature which views increased customer participation as a source of frustration and uncertainty (Bowen & Jones, 1986; Danet, 1981). To broaden understanding of the effects of co-creation it should be operationalized across service contexts, conditions and methodological approaches. Both experiments attempted to explore the impact of co-creation on positive but also negative conditions (low trust/inequity) and there was evidence in experiment 1 that even under conditions of low trust, increasing levels of co-creation still had a positive effect on customers. However, given the restricted nature of the single experiments, further exploration of negative co-

creating exchanges and co-destruction should also be a research priority, this would further the understanding of the effects of co-creation.

8.5 Contribution 3 – The wider effects of value co-creation

Study 3 focussed on the potential for co-created activity to have an indirect effect on customers not directly involved in the co-created exchange. This thesis was able to identify how co-creating with geographically bound community groups has resulted in affective and conative loyalty improvements amongst a larger group of customers. This makes an important contribution to the value co-creation literature as the benefits of engaging customers in much of the literature focus on the firm and/or customer (as study 1 and 2 have also done) and not on the potential for a ripple effect with other actors benefitting.

8.5.1 Theoretical Implications

Control

The first implication relates to control and how ceding control to customers and other actors could benefit a firm. The adopt a station scheme could be indicative of a shift towards greater contributions to society from the local community where local skills and passion can be 'set free' (Zwick, et al., 2008) and members take ownership of their communities; study 3 was able to highlight the benefits of the scheme for the members who were involved but also its indirect effects.

Key to the schemes success was the way that the community groups were empowered to make their own decisions about projects. As a result groups were legitimised enabling them to obtain funding, seek help from the wider community and other actors and make more improvements to their stations. This empowerment and 'setting free' resonates with recent notions surrounding the customer where companies are more likely to stand back and cede control (Ritzer & Jurgenson, 2010).

Empowerment and legitimization represents a transfer of control from firm to the customer group and ceding control to customers is seen as central to successful co-creation (Auh, et al., 2007; Bateson & Hoffman, 1999; Grönroos, 2006; Jaworski &

Kohli, 2006). This contribution offers an alternative perspective to that of Fournier and Avery (2011) who in their journal paper 'the uninvited brand' highlight how control has been wrenched from firms by groups of customers and how this can result in a form of hijack. This thesis suggests that firms could look to the real, as well as the virtual, community and how benefits can be obtained through increased collaboration.

Indirect effects

The second contribution of study 3 relates to the indirect effect that co-creation exchanges can have on a wider customer base. The efforts of the adopters within the ScotRail scheme have a positive effect on the affective and conative loyalty of the regular passengers who commute every day. The effect is equal or superior to all the other elements that make up the commuters daily experience suggesting that the co-creating role of the local community is a central component in ensuring the satisfaction of rail users. There are three implications to be drawn from this result: firstly, like Baron and Warnaby (2011) the contributors were a minority of the customer base and represent passionate and loyal users however, what Baron and Warnaby were not able to indicate was the effect of contributions on other users. Firms may be unwilling to invest in co-creation schemes like Adopt a Station if they perceive it is only of interest to a minority of users. Study 3 suggests that co-creation can have an important role to play in harnessing the power of resource integrating customers and providing indirect benefits to users. The second implication relates to the context in which the study was undertaken. The public transport context represents, perhaps, a low interest context for most customers but despite the influence of inertia the co-creation at station level still had a significant effect. In a more competitive environment when firms could draw on a larger proportion of passionate, proactive customers for their co-creation activities the benefits could be more significant and extend towards higher levels of loyalty. In the original 'evolving to a new dominant logic' paper Vargo and Lusch (2004a, p. 11) suggest that in the future profits should come 'from satisfaction… rather than units of goods sold'. In S-D logic the relationship with customers is more important than the transaction itself and ensures continued exchanges. Co-creation with an enabled empowered customer base and through dialogue and collaboration with both virtual

and geographical communities may be the way to achieve success in a S-D logic world.

8.5.2 Managerial Implications

The role of the community in modern society is subject to increasing scrutiny and political agendas focus more on the role of the community in a 'big society'. The adopt a station scheme is a tangible example of this where empowered customers take ownership of a community asset and through a process of collaboration and dialogue with the firm and a wider network of stakeholders are able to both improve their local environment but also the daily experience of other community actors. More and more firms are making overt efforts to engage with communities e.g. the Royal Bank of Scotland customer charter; Starbucks community notice board, IKEA sponsoring school libraries. A cynic might point to self interest in these activities but there is an important observation in that all of these examples, and others like them, are altruistic. The adopt a station scheme is unique in that the community is invited into the assets of the firm and thereby customize them to meet the specific needs of the community in question. This thesis suggests that firms who are prepared to engage with DART principles may reap benefits beyond simple dyadic interaction. Altruism may be one of a range of motivations for firms to collaborate with customers and benefits received indirectly as a result of co-creation are likely to increase company motivations to engage with communities.

8.5.3 Future Research

The potential for value co-creation to have wider, indirect effects is worthy of further exploration. Other studies (Baron & Warnaby, 2011; Fournier & Avery, 2011; Schau, et al., 2009) highlight contexts where a community of users exists either in collaboration with the firm or as a stand-alone customer community. Research which could highlight the value of collaboration with customer communities would be of significant importance and collaborating with community groups may have stronger effects when customers have more opportunities to engage with the firm.

Despite the positive outcomes here there may also be a darker side to value co-creation where customers misuse, abuse or hijack a firm. For a balanced perspective the development of value co-creation would benefit from studies that explore potential negative outcomes also.

The Adopt A Station scheme is also worthy of further study using a wider range of methodological techniques to discover the motivations for involvement of the community and the firm. Research of this nature would help to establish strategies that other firms might use to promote engagement of the community. Longitudinal research would also establish the long term effects of community engagement. In study 3 the effects of co-creation was restricted to cognitive/affective loyalty, future research could look to establish how co-creation might contribute to both conative and action forms.

Vargo et al (2008, pp. 214-215) observe that S-D logic:

> Is unfolding dynamically and has become much bigger than the work of Vargo and Lusch, let alone Vargo and Lusch (2004). Coupled with the long publication cycle, this creates a problem of currency.

This thesis has adopted a pluralistic view of value co-creation, supported by the three studies within the PhD but a broad level of consensus amongst scholars has not yet been achieved. A wide ranging debate on value co-creation on a conceptual level is worth the effort but as Vargo and Lusch's statement suggests (and other authors have commented on) there is a danger that the academic community could be left behind as firms and customers continue to discover new ways to collaborate and co-create value together. As a foundational premise of the emerging paradigm of S-D Logic value co-creation has rightly received a good deal of attention and will no doubt continue to over the coming years as greater sense is made of S-D Logic and the changing role of the customer in society, as Sheth and Uslay (2007, pp. 305-306) suggest:

> Value cocreation will inevitably transform marketing and become just as pervasive in business-to-consumer markets as it is in business to business marketing… the future of marketing will increasingly involve value cocreation.

This thesis offers some support to the statement above and can evidence the effect of value co-creation from both qualitative and quantitative perspectives and from a

range of industrial contexts. On the basis of the evidence within this thesis customers are more aware of the more active role that they play and in some cases are prepared to take on a high level of ownership of firm outputs. The firms and contexts used within the thesis also suggest that firms can identify, encourage and support this role. A world where customers and firms willingly work together has been described as idyllic and utopian; whilst this thesis presents evidence that both firms and customers have to be prepared to change long held habits the Shangri-La of mutual satisfaction may be closer than we think.

Matthew James Alexander – November 2011

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Appendix 1: Mixed Methods Notation

Notation	Example Application	What the Notation Indicates
Shorthand: **Quan, Qual**	Quan element	Quantitative Methods
Uppercase Letters: **QUAN, QUAL**	QUAL Priority	The qualitative methods are prioritized in the design
Lowercase Letters: **quan, qual**	qual supplement	The qualitative methods have a lesser priority in the design
Plus Sign	QUAN + QUAL	The QUAN and QUAL occur concurrently
Arrow: →	QUAN → qual	The methods occur in sequence QUAN followed by qual
Parentheses: ( )	QUAN(qual)	A method is embedded within a large design
Double Arrows: **→←**	QUAL→←QUAL	Methods are implemented in a recursive process
Brackets [ ]	QUAN →QUAL → [QUAN + qual]	Mixed methods are used within a single study or project within a series of studies
Equal sign: =	QUAN → qual = analysis	The purpose of mixing methods

Appendix 2: Study 1 Rating Form

Thank you for agreeing to participate in this exercise. Its purpose is to generate a typology of firms that could engage in the co-creation of value with their customers. Co-creation is a key concept within the theory of Service Dominant Logic developed by Vargo and Lusch (2004;2006;2008).

Co-creation of value has many dimensions but some of the key aspects are as follows:

- Product Customisation/Personalized experiences
- Dialogue with customers (developing and utilising customer knowledge)
- Access to company data
- Problem solving (Call centres, online help forums)
- Product Co-design
- Co-production (self-service, online booking etc.)
- Customer community (Consumer networks)
- Feedback

Using these variables as a guideline please rate the extent to which the following service firms might engage in co-creation across a 3 stage interaction process. The 3 stages are as follows:

Pre-Purchase Encounters – In this stage products and services which best fit a customer's requirements are selected. Firms may also wish to customise or modify products and services, integrating them to provide best fit with customer needs.

Purchase/Consumption Encounters – The stage in which the product or service is delivered to the customer and used/consumed. At this, potentially, interactive stage customers may suggest further modifications or customisations. Customers may also require supplementary information and training to be able to enhance the product/service they are have purchased.

Post-Purchase/Service Encounters – This stage may include an exchange of feedback alongside the provision of spare parts, operating information and maintenance. This stage in the process may also include relationship building activities between supplier and customer.
Please rate each stage of the process giving a total score for each firm out of 75. Each firm doesn't have to add up to 75, 25 is the maximum score for each stage in the process. So, if you felt that a firm wouldn't co-create at all you could rate the 3 stages as 0.

Electricity Supplier	
/25	**Pre-Purchase Encounters**
/25	**Purchase/Consumption Encounters**
/25	**Post-Purchase/Service Encounters**
/75	

Courier Firm	
/25	**Pre-Purchase Encounters**
/25	**Purchase/Consumption Encounters**
/25	**Post-Purchase/Service Encounters**
/75	

Bank	
/25	**Pre-Purchase Encounters**
/25	**Purchase/Consumption Encounters**
/25	**Post-Purchase/Service Encounters**
/75	

Supermarket	
/25	**Pre-Purchase Encounters**
/25	**Purchase/Consumption Encounters**
/25	**Post-Purchase/Service Encounters**
/75	

Public Transport Firm	
/25	**Pre-Purchase Encounters**
/25	**Purchase/Consumption Encounters**
/25	**Post-Purchase/Service Encounters**
/75	

Fast Food Restaurant	
/25	**Pre-Purchase Encounters**
/25	**Purchase/Consumption Encounters**
/25	**Post-Purchase/Service Encounters**
/75	

Travel Agent	
/25	**Pre-Purchase Encounters**
/25	**Purchase/Consumption Encounters**
/25	**Post-Purchase/Service Encounters**
/75	

Architect	
/25	**Pre-Purchase Encounters**
/25	**Purchase/Consumption Encounters**
/25	**Post-Purchase/Service Encounters**
/75	

5 Star Hotel	
/25	**Pre-Purchase Encounters**
/25	**Purchase/Consumption Encounters**
/25	**Post-Purchase/Service Encounters**
/75	

THANK YOU FOR YOUR PARTICIPATION
Matthew Alexander

Appendix 3: Study 1 Participant Information Sheet

Interview Information Sheet
Author: Matthew Alexander
June 2009

University of Strathclyde Business School

Study Title

Value Co-Creation: Contexts and Conditions

What is the purpose of this study?

This study aims to investigate the concept of value co-creation, the concept relates to the growing role that customers play within the activities of an organisation; a move from isolated to connected, from unaware to informed, from passive to active. Value co-creation is concerned with how customers derive value from goods and services and suggests that this is always done by co-creating with a firm through an exchange of skills and knowledge.

Why have I been chosen?

The research is investigating a range of service firm types based on a particular classification. Your firm is one of those classified.

The interview will be in two parts:

1. The first part will address the elements of value co-creation and how your firm may or may not use these to 'co-create value' with customers. These include:
    a. Customisation
    b. Customer involvement
    c. Co-production
    d. Use of technology
    e. Communication methods
    f.
2. The second part will explore the extent to which value is co-created at different contact points between you and your customer.
3.

Other topics for discussion may include:

- The impact of value co-creation on your firm
- The market leaders in value co-creation in your field.

How will the interviews work?

The intention is to hold the interview in a venue and at a time that is most suitable for you. During the interview I will ask you to discuss your views opinions and experiences of the topic area. To ensure I have an accurate record of the discussion I will take notes during the interview and will digitally record the interview. This recording will be transcribed to allow the discussion to be analysed. Once the transcription is complete I will send you a copy to comment on and add further information should you wish.

Will my taking part in this study be kept confidential?

The information you give during the study will be in confidence. Any information which is collected or reported on will have your (and your organisations) name removed so you cannot be identified from it. The digital recordings will be stored on my laptop for transcription purposes (transcription will be actioned in the department). The recording will be for my use only and will be wiped on completion of the study. The transcription and any interview notes will be kept in a locked filing cabinet when not in use. Transcriptions' may also be read by my supervisor; Professor Heiner Evanschitzky

What will happen to the results of the study?

Findings will be written up as part of a journal paper submission. The research will also be used as part of a wider PhD study. Within any publications no names will be disclosed.

Will anyone review the study?

All studies are subject to review by departmental ethics committee.

Contact for further information:

Matthew J Alexander
Strathclyde Business School
University of Strathclyde
Curran Building
94 Cathedral St
Glasgow
G4 0LG

matthew.j.alexander@strath.ac.uk
1st June 2009

Thank you for taking part in this study.

Appendix 4: Study 1 Interview Protocol

INTERVIEW SCHEDULE

ENTRY PHASE

'Thank you for agreeing to meet with me today'
'The purpose of this interview is to explore the concept of Value Co-creation in the context of your firms operations.

Some of the questions may seem a little obvious but are necessary to provide a comparison between different service industry firms.

'*do you mind if I audio tape this interview?' 'LEVEL CHECK'*

SUBSTANTIVE PHASE - *LISTEN*

SECTION 1 – Value Co-creation elements

'The first group of questions addresses some of the key aspects of value co-creation and how they impact on your firm'

1. To what extent can your product/service be customised? (**GREATER/LESSER**)
Follow Up/Probe: How is this actioned (consumer/employee)

2. Can you describe the level of customer involvement in your product/service?
Follow Up/Probe: Do customers have any input on the way the product or service is created or delivered?

3. Do you engage your customers as *co-producers* of your product/service?

Follow Up/Probe:
Can customers manage purchases online?
Is there any automated phone system?
Do customers take an active role in the delivery phase?

4. What role does technology play in your engagement with customers?
Follow Up/Probe:
Web-based/Check Out Automation/CAD/CRM

5. What methods do you use to communicate with your customers?
Follow Up/Probe: One way/Two way

6. How would you describe the transactions that take place between your firm and your customers?

Follow Up/Probe: ***is the transaction routine low priority or strategic high priority; is the transaction of high or low importance to your customers***

SECTION 2 – Value Co-creation Encounters

1. Pre-Purchase Encounters (involve the *design, modification and selection of appropriate products)*:

    a. What kind of interactions take place between you and your customers prior to purchase/consumption of the product or service?
        i. Pre-booking calls
        ii. Internet enquiries
        iii. Face to face meetings

    b. Can customers request product or service customisations in this stage?

    c. To what extent can you package products or services together for customers at this stage?
        i. Add value

2. Purchase/Consumption Encounters (*product/service delivery and installation)*:

    a. What modifications or customisations can be made by customers upon purchase?
        i. How are these communicated?

    b. To what extent do you customers need to be trained or educated about how to use your product/service?
        i. How is this communicated to customers?

3. Post-Purchase/Service Encounters (*providing support, creating future products/services, partnership)*:

    a. Does your firm exchange feedback with customer post-purchase?
        i. How is this feedback collected
        ii. Does your firm respond to customer feedback

    b. To your knowledge do your customers engage with any online community?
        i. Is your firm involved?

    c. Does your firm operate a service centre, either telephone or online?

    d. Does your firm attempt to build long term relationships with customers?
        i. What methods do you use to support this?

SECTION 3 – Value Co-creation impacts

'These questions relate to the impact of value co-creation on your business'

1. How would you summarise the overall impact of value co-creation on your business?
2. Based on the value co-creation factors we have discussed in the interview, who would you say was market leader in your sector?
    a. Why?

'Thank you very much for your time. Do you have any questions?' 'Would you like to see a copy of the transcript' 'You will be anonymised in the final script' 'Would you like to see a summary of the research findings?'

Appendix 5: Study 2 Pre-Test Scenarios

TRUST EXPERIMENT	
Pre-Test 1 – Value Co-Creation Scenarios	
High VCC	You are going to stay at a 'City Hotel' and you call the hotel to make a reservation. The hotel calls you 2 days prior to confirm booking and check details. At check in you are given a choice of room types. The receptionist gives you information about hotel facilities and you are shown how to use the room's interactive features. The hotel has 2 restaurants to choose from and staff at the hotel are very approachable and chatty. You are able to check-out in your room to allow early departure; the hotel also provides a self-service breakfast for early guests. There are leaflets about the hotels loyalty programme which you are encouraged to complete along with a feedback form.
Med VCC	You are going to stay at a 'City Hotel' and you call the hotel and make a reservation. At check in you are allocated a standard room. The hotel has 2 restaurants to choose from. The receptionist gives you information about hotel facilities and the room contains a brochure of hotel facilities and information about the hotels restaurants and bar. Staff at the hotel are friendly and willing to talk. You are able to check-out in your room to allow early departure. There are leaflets about the hotels loyalty programme in reception and feedback forms are available.
Low VCC	You are going to stay at a 'City Hotel' and you book online. At check in you are allocated a standard room. The hotel has a restaurant and bar. The room contains a brochure of hotel facilities and information about the hotel restaurant. Staff at the hotel are friendly and efficient but focussed on their jobs. There are no self check-out facilities in the hotel. The hotel does not advertise a loyalty programme; feedback forms are available when you check out.

Pre-Test 2 – Value Co-Creation Scenarios	
High VCC	You are going to stay at a 'City Hotel' and you call the hotel to make a reservation. The hotel calls you 2 days prior to confirm booking and check details. At check in you are given a choice of room types. The receptionist gives you information about hotel facilities and you are shown how to use the room's interactive features including a pillow menu. The hotel has a range of restaurants and bars to choose from. Employees at the hotel are very approachable and chatty and you have the impression that they are interested in finding out your opinion on aspects of your stay. You are able to check-out in your room to allow early departure and the hotel also provides a self-service breakfast for early guests. There are leaflets about the hotels loyalty programme in reception which you are encouraged to complete along with a feedback form. The hotel sends an email 1 week after your stay thanking you for your visit and asking for any further comments.
Med VCC	You are going to stay at a 'City Hotel' and you call the hotel and make a reservation. At check in you are allocated a standard room. The hotel has 2 restaurants to choose from. The receptionist gives you information about hotel facilities and the room contains a brochure of hotel facilities and information about the hotels restaurants and bar. Employees at the hotel are willing to help and appear to be open to suggestions. You are able to check-out in your room to allow early departure. The hotel does not appear to have a loyalty programme but you are asked to complete a feedback form.
Low VCC	You are going to stay at a 'City Hotel' and you book online. At check in you are allocated a standard room. The hotel has a restaurant and bar. Throughout your stay you sense that the hotel employees, whilst professional, are not particularly interested in engaging with you as a customer. The room contains basic information about the hotel facilities. Employees at the hotel are efficient but focussed on their jobs. There are no self-check-out facilities in the hotel. The hotel does not advertise a loyalty programme; feedback forms are not available when you check out.
Pre-Test 3 Trust Scenarios	
Low Trust	You have never stayed at this hotel before. You emailed the hotel requesting a brochure but they did not respond. The hotels website does not provide much information about the hotel or its policies. Through personal contacts you have heard that the employees in the hotel are not particularly well trained

	and the perception of the company is that they seem to be more interested in making profit than satisfying customers.
High Trust	You have stayed with this company on several occasions in the past. The hotel sends you regular communication about its products and services. The company offers a 'sleep well' guarantee and will refund your bill in the result of any problems. In the past you have always had positive contact with the employees of the hotel and your perception of the company is that they always have the customer's interests at heart.

EQUITY EXPERIMENT	
Pre-Test 1 - VCC	
High VCC	You are planning to go on a 'gap year' vacation. You decide to book through the 'Student Travel Company' who advertises gap year packages. You visit the store and discuss your gap year with one their advisors. They ask you a lot of questions about what kind of holiday you are looking for and what activities you might enjoy. You also discuss budget and flight options and you subsequently emailed some customised packages to consider. You select your favourite package and are able to make some alterations with your advisor. Whilst on your gap year trip you agree to post a weekly entry on the 'Student Travel Company' web community in return for a travel voucher.
Low VCC	You are planning to go on a 'gap year' vacation. You decide to book through the 'Student Travel Company' who advertises gap year packages. You scan the company's webpage and notice that they have several standardised packages to support gap year travel, one of these fits your budget and you visit the store and book the vacation.

Pre-Test 2 – VCC	
High VCC	You are planning to go on a ‘gap year’ vacation. You decide to book through the ‘Student Travel Company’ who advertises gap year packages. You visit the store and discuss your gap year with one their advisors. They ask you a lot of questions about what kind of holiday you are looking for and what activities you might enjoy. You also discuss budget and flight options and you subsequently emailed some customised packages to consider. You select your favourite package and are able to make some alterations with your advisor. Whilst on your gap year trip you agree to post a weekly entry on the ‘Student Travel Company’ web community in return for a travel voucher.
Low VCC	You are planning to go on a ‘gap year’ vacation. You decide to book through the ‘Student Travel Company’ who advertises gap year packages. You’ve been told that there is a standard package for gap year travel and one of these fits your budget. You visit the store and book the vacation.
Pre-Test 3 - Equity	
Equitable	You are planning to go on a ‘gap year’ vacation. You decide to book through the ‘Student Travel Company’ who advertises gap year packages. Your trip is really successful, all your flight connections work and the accommodation you booked is really nice.
Inequitable	You are planning to go on a ‘gap year’ vacation. You decide to book through the ‘Student Travel Company’ who advertises gap year packages. You have a lot of problems on your trip, you miss a couple of flight connections due to schedule changes and some of the accommodation is not up to the standard you expected.

Appendix 6: Study 3 Passenger Survey (adapted to fit page)

Station I.D. [ ]

Dear Participant,

This is a survey measuring commuter attitudes towards their regular rail travel experiences in the West of Scotland. You have been chosen as you started your journey at a station whose trains terminate at Glasgow central. The survey will take **around 5 minutes** to complete and you simply need to circle or tick your chosen response where advised. When you have completed the survey you can hand it back to our researcher or, alternatively put it into the pre-paid envelope and pop it in the nearest post box.

The survey is anonymous, but, if you choose to do so you can enter a prize draw by leaving your name and your chosen contact method at the end of the survey, *only fully completed surveys will be eligible for the prize draw.*

One lucky winner will receive an iPod Nano.

Three lucky winners will receive an iPod shuffle.

Thanks for taking part in our study

Matthew Alexander, Heiner Evanschitzky, Marketing Department

SECTION A – Your Rail Travel Behaviour
(tick one response for each question)

1**) Do you normally leave from the same station?**

Yes

No

2) **Do you normally complete your train journey at Glasgow Central?**

Yes

No

3**) How many days a week do you normally make this journey?**

1 or less

2

3

4

5 or more

4) What ticket type do you normally purchase?

Daily Single/Return
Weekly Zone
Card/Season Ticket
Monthly Zone
Card/Season Ticket
Annual Zone
Card/Season Ticket

5) **Are you a member of the 'Advance' loyalty scheme?**

Yes

No

6) **How did you purchase your most recent ticket?**

Ticket office
On train

Self-Service Machine

Online

Other (please state)

SECTION B – Travelling to the station

(tick one response for each question)

7. How far do you live from the departure station?

Indicate approximate distance in miles

8. How long does it take you to travel to the station?

Indicate approximate time in minutes

9. How do you normally travel to the station?

Walk

Bike

Car

Bus

Other (please state)

SECTION C – Your feelings about your commute

10. Please indicate your level of agreement with the following statements:

	Totally Negative		Totally Positive
In general, I feel positive about my daily commute	1	To	7
I value the time spent on my commute	1	To	7
I can usually predict when I will arrive at work	1	To	7
My commute to work is consistent on a day by day basis	1	To	7
Overall commuting is not stressful for me	1	To	7
Commuting to work doesn't take much effort	1	To	7

(circle one response)

11. My commute gives me:

	Totally disagree		Totally agree
time to think	1	To	7
time to relax	1	To	7
valuable private time	1	To	7

12. My commute affects my productivity on the job in the following ways:

	Totally disagree		Totally agree
It gives me energy	1	To	7
It wakes me up	1	To	7
It reduces my stress level	1	To	7

13. Indicate your overall feelings of safety

(circle one response)

	Very Poor		Very Good
Your overall feeling of safety when travelling with Scotrail	1	To	7
Your personal security whilst using your departure station	1	To	7
Your personal security whilst on board the train	1	To	7

SECTION D – Your opinion on your station, journey and rail company

14. Please indicate your level of satisfaction with the following elements of your DEPARTURE station:

(circle one response for each variable)	Not at all satisfied		Very Satisfied	N/A
Station Cleanliness	1	To	7	0
Station Attractiveness	1	To	7	0
Station Facilities	1	To	7	0
Station waiting areas	1	To	7	0
Employee Courtesy	1	To	7	0
Employee willingness to help	1	To	7	0
Station environment	1	To	7	0
Car Parking	1	To	7	0

15. Please indicate your level of agreement with the following statements:

(circle one response)	Totally disagree		Totally agree
I will continue commuting with First ScotRail in the foreseeable future.	1	To	7
I will consider First ScotRail for other travel requirements (e.g. Leisure)	1	To	7

16. Please indicate your level of agreement with the following statements:

(circle one response)	Totally disagree		Totally agree
I would say positive things about **First ScotRail** to other people..	1	To	7
I would recommend **First Scotrail** to someone seeking advice.	1	To	7
I would encourage friends and relatives to travel with **First ScotRail**	1	To	7

I would recommend **First Scotrail** in the future	1	To	7
I will prefer **First Scotrail** as opposed to other transport providers in the future	1	To	7

ScotRail's 'Adopt A Station' scheme seeks to find community or start-up uses for vacant accommodation at stations and allows further community involvement through gardening.

17. Is your normal departure station adopted?

[ ] Yes
[ ] No
[ ] Don't Know

18. If you answered yes to the previous question, indicate your perception of the level of community involvement at your departure station.

Low Involvement		High Involvement
1	To	7

Section E – About You

19. Gender

[ ] Male
[ ] Female

20. Age

Write in box ☐

If you would like to be considered for the prize draw please provide the following details:

Email Address phone number:

_____

Season Ticket/Zone-Card Number_____

Please note that any information supplied will be used strictly for the purposes of this study, no details will be passed on to any third party or shared with anyone other than the researchers. All details will be destroyed on completion of the project

21. Combined Household Income

[ ] £0 - £24,999
[ ] £25,000 - £49,999
[ ] £50,000 - £74,999
[ ] £75,000 - £99,999
[ ] £100,000 +

Thank you for taking the time to complete the survey. Please pass it back to our researcher on the train or place it in the pre-paid envelope provided.

Appendix 7: Study 3 Data Collection Spread Sheet

Station	Code	Adopted	Date	Time	DIST	2nd Visit(s)	Time	DIST	Collected	Posted	TOTAL	POST %	TOTAL%
Ardrossan Sth Beach	147	Y	02/08/2010	0907, 0935	**13**	03,04/08/2010, 04/08/2010	0816, 0844, 0741	**44**	17	13	**30**	0.33	0.53
Ayr	133		26/07/2010	0657, 0713, 0725	**36**				1	13	**14**	0.37	0.39
Barassie	136		27/07/2010	0727, 0738	**32**				13	11	**24**	0.61	0.75
Barrhead	122	Y	13/07/2010	928	**4**	14,15/07/2010,	757, 0757, 0820, 0828	**94**	11	40	**51**	0.46	0.52
Bishopton	162	Y	12/08/2010	0830, 0852, 0904, 0920	**46**	13/08/2010	0712, 0731, 0745	**35**	21	28	**49**	0.47	0.60
Branchton	152		06/08/2010	0725, 0802	**35**				15	9	**24**	0.45	0.69
Burnside	112	Y	05/07/2010	0747, 0757, 0827	**50**	06/07/2010	839	**9**	19	26	**45**	0.65	0.76
Busby	129		21/07/2010	0906, 0935	**15**				7	3	**10**	0.38	0.67
Cartsdyke	158		10/08/2010	802	**8**				4	2	**6**	0.50	0.75
Cathcart	101		30/06/2010	0717, 0732, 0741	**23**	02/07/2010	824	**18**	19	15	**34**	0.68	0.83
Crosshill	103		30/06/2010	0803, 0814	**18**	02/07/2010	736	**9**	7	11	**18**	0.55	0.67
Crossmyloof	126		15/07/2010	0920, 0941	**12**	16/07/2010	1005, 1017, 1021	**11**	17	3	**20**	0.50	0.87
Dalry	139		28/07/2010	0755, 0812	**25**				4	14	**18**	0.67	0.72
Dunlop	121	Y	13/07/2010,	910	**5**	14-16/07/2010,	736, 0707, 0736, 0808	**29**	10	14	**24**	0.52	0.71
East Kilbride	127		20/07/2010	0742, 0756, 0810	**73**				17	35	**52**	0.63	0.71
Fort Matilda	155		09/08/2010	754	**12**				3	4	**7**	0.44	0.58
Giffnock	131	Y	2207/2010	828, 0842	**55**	23/07/2010	0712,0742, 0815	**35**	35	24	**59**	0.44	0.66

Glengarnock	140		28/07/2010	834	**18**	29/07/2010	718	**16**	8	11	**19**	0.42	0.56
Gourock	154	Y	09/08/2010	722	**30**	10/08/2010	644, 706	**26**	14	11	**25**	0.26	0.45
Greenock Central	157	Y	10/08/2010	731	**8**	13/08/2010	0817, 0833	**12**	10	1	**11**	0.10	0.55
Greenock West	156		09/08/2010	0814, 0830	**40**				18	5	**23**	0.23	0.58
Hairmyres	128		20/07/2010	830	**17**	21/07/2010	0729, 0746, 0800	**61**	42	19	**61**	0.53	0.78
Howwood	142		30/07/2010	0759, 0843	**17**				7	4	**11**	0.40	0.65
Irvine	137		27/07/2010	0702, 0748, 0759	**42**				25	7	**32**	0.41	0.76
Johnstone	144	Y	29/07/2010	0752, 0803, 0809, 0818, 0829, 0834	**133**				27	42	**69**	0.40	0.52
Kennishead	124		15/07/2010	905	**3**	16/07/2010	935	**3**	5		**5**	0.00	0.83
Kilmarnock	118	Y	13/07/2010	722,753	**24**				15	4	**19**	0.44	0.79
Kilmaurs	119	Y	12/07/2010	0757, 0827	**40**				3	15	**18**	0.41	0.45
Kilwinning	138	Y	28/07/2010	0707, 0710, 0719, 0737	**83**				18	34	**52**	0.52	0.63
Kings Park	113		06/07/2010	910	**7**				3	3	**6**	0.75	0.86
Langbank	161		12/08/2010	818	**12**				3	3	**6**	0.33	0.50
Langside	106		01/07/2010	0729, 0750	**23**				8	15	**23**	1.00	1.00
Largs	145	Y	02/08/2010	0725, 0742	**12**				1	5	**6**	0.45	0.50
Lochwinnoch	141		28/07/2010	927	**1**	30/07/2010	0655, 0733	**15**	5	8	**13**	0.73	0.81
Maxwell Park	109	Y	01/07/2010	0842, 0856, 0911, 0941	**13**	09/07/2010	0711, 0722	**24**	11	19	**30**	0.73	0.81
Miliken Park	143		29/07/2010	740	**12**	30/07/2010	0902, 0910	**14**	12	6	**18**	0.43	0.69
Mount Florida	102		30/06/2010	755	**23**	02/07/2010	719	**10**	7	11	**18**	0.42	0.55
Neilston	114	Y	07/07/2010	0741, 0756	**28**	08/07/2010	822	**7**	11	11	**22**	0.46	0.63
Newton	111		05/07/2010	715	**12**	06/07/2010	0741, 0751, 0821	**57**	13	22	**35**	0.39	0.51
Patterton	115		07/07/2010	811	**18**	08/07/2010	849	**4**	4	10	**14**	0.56	0.64
Pollockshaws East	107		01/07/2010	808	**11**				3	8	**11**	1.00	1.00
Pollockshields East	105	Y	05/07/2010	0849, 0858, 0907	**10**	06-09/07/2010,	928/ 1009/ 0849	**15**	16	5	**21**	0.56	0.84
Pollockshields West	110		02/07/2010	0900, 0914, 0945	**17**				7	7	**14**	0.70	0.82

Pollokshaws West	**125**		**15/07/2010, 20/07/2010**	**0717, 0735, 0938**	**6**	**23/07/2010**	**0908, 0917**	**3**	**3**	**4**	**7**	**0.67**	**0.78**
Port Glasgow	159		12/08/2010	0638, 0700	**24**	13/08/2010	852	**3**	7	6	**13**	0.30	0.48
Preisthill & Darnley	123		14/07/2010	833	**12**	16/07/2010	905	**1**	11	1	**12**	0.50	0.92
Prestwick Town	134		26/07/2010	0748, 0803	**26**				8	12	**20**	0.67	0.77
Queens Park	104	Y	30/06/2010	0821, 0832, 0839, 0847,0856, 0906	**51**	02/07/2010	0747, 0759, 0805	**14**	21	27	**48**	0.61	0.74
Saltcoats	148		03/08/2010	909	**11**	04/08/2010	800	**18**	13	4	**17**	0.25	0.59
Shawlands	108		01/07/2010	831	**20**				5	9	**14**	0.60	0.70
Stevenson	149		04/08/2010	0821, 0849, 0912	**10**				4	3	**7**	0.50	0.70
Stewarton	120		12/07/2010	905	**9**	13/07/2010	832	**16**	14	7	**21**	0.64	0.84
Thornliebank	132		22/07/2010	914	**8**	23/07/2010	0830, 0845	**22**	14	10	**24**	0.63	0.80
Troon	135		26/07/2010	0825, 0848, 0854	**43**				17	12	**29**	0.46	0.67
Wemyss Bay	150	Y	05/08/2010	0713, 0750	**41**				10	16	**26**	0.52	0.63
West Kilbride	146	Y	03/08/2010	0735, 0752	**26**				8	13	**21**	0.72	0.81
Whitecraigs	116	Y	07/07/2010	0831, 0852	**27**	08/07/2010	913	**8**	24	3	**27**	0.27	0.77
Williamwood	117		07/07/2010	915	**11**	08/07/2010	941	**12**	21		**21**	0.00	0.91

Appendix 8: Missing Value Analysis Statistics (Hairmyres Station)

SUMMARY OF MISSING VALUES

	N	Mean	Std. Deviation	Missing Count	%
CSTRESS1	61	5.00	1.140	0	.0
CSTRESS2	61	4.21	1.380	0	.0
CSTRESS3	61	5.21	1.280	0	.0
CSTRESS4	61	4.84	1.655	0	.0
CSTRESS5	61	5.15	1.195	0	.0
CSTRESS6	60	5.25	1.159	1	1.6
CEnjoy1	59	5.03	1.402	2	3.3
CEnjoy2	60	4.92	1.499	1	1.6
CEnjoy3	58	4.12	1.612	3	4.9
CEnjoy4	57	3.37	1.410	4	6.6
CEnjoy5	57	3.82	1.571	4	6.6
CEnjoy6	59	4.19	1.503	2	3.3
SAFE1	61	5.46	1.149	0	.0
SAFE2	59	5.63	.963	2	3.3
SAFE3	59	5.69	.895	2	3.3
SSAT1	61	5.13	1.056	0	.0
SSAT2	60	4.40	1.251	1	1.6
SSAT3	61	3.90	1.513	0	.0
SSAT4	61	4.52	1.233	0	.0
SSAT7	61	4.51	1.233	0	.0
PINT1	61	5.90	1.121	0	.0
PINT2	59	5.03	1.575	2	3.3
WOM1	60	4.47	1.268	1	1.6
WOM2	59	4.54	1.264	2	3.3
WOM3	59	4.68	1.181	2	3.3
ATTL1	59	4.71	1.260	2	3.3
ATTL2	59	4.83	1.328	2	3.3

GENDER CROSSTABULATION (sample)

Variables			Total	Male	Female	Missing 999
CPROD1	Present	Count	57	29	27	1
		Percent	93.4	96.7	90.0	100.0
	Missing	% 999	6.6	3.3	10.0	.0
CPROD2	Present	Count	57	29	27	1
		Percent	93.4	96.7	90.0	100.0
	Missing	% 999	6.6	3.3	10.0	.0

Indicator variables with less than 5% missing are not displayed.

INCOME CROSSTABULATION (sample)

Variable			Total	0-24,999	25,000-49,999	50,000-74,999	75,000-99,999	1000,000 +
CPROD1	Present	Count	57	5	17	20	2	
		Percent	93.4	100.0	94.4	87.0	100.0	6
	Missing	% 999	6.6	.0	5.6	13.0	.0	100.0
CPROD2	Present	Count	57	5	17	21	2	.0
		Percent	93.4	100.0	94.4	91.3	100.0	5
	Missing	% 999	6.6	.0	5.6	8.7	.0	83.3

Indicator variables with less than 5%missing are not displayed.

PATTERNS OF MISSING DATA

No. of Cases	CSTRESS6	CPost2	CPROD3	SSAT2	WOM1	SAFE2	CPost1	SAFE3	PINT2	WOM2	WOM3	ATTL1	CPost3	CPROD1	CPROD2	ATTL2
46																
6																
1																
1																X
1				X												
1	X															
1														X	X	
1			X												X	
1		X	X										X	X		
1						X	X	X	X	X	X	X	X	X	X	X
1					X	X	X	X	X	X	X	X	X	X	X	

a. Variables are sorted on missing patterns.

Appendix 9: Study 3 Missing Values, Little's MCAR Test Results

Station	Code	*n*	Chi-Square	DF	*p*	*EM/Reg*
Ardssan Sth Bch	147	31	235.097	280	0.976	Reg
Ayr	133	14	0.000	32	1.000	Reg
Barassie	136	24	1549.298	186	0.000	Reg
Barrhead	122	51	259.420	277	0.769	Reg
Bishopton	162	50	283.750	286	0.526	Reg
Branchton	152	24	66.118	74	0.731	Reg
Burnside	112	45	337.817	317	0.202	Reg
Busby	129	10	3443.775	89	0.000	EM
Cartsdyke	158	6	247.770	63	0.000	EM
Cathcart	101	34	213.04	245	0.928	Reg
Crosshill	103	18	15.972	79	1.000	Reg
Crossmyloof	126	20	736.307	85	0.000	EM
Dalry	139	18	196.466	91	0.000	EM
Dunlop	121	24	158.860	205	0.993	Reg
East Kilbride	127	52	219.975	199	0.147	Reg
Fort Matilda	155	7	No missing values			
Giffnock	131	59	199.769	268	0.999	Reg
Glengarnock	140	20	78.037	64	0.112	Reg
Gourock	154	28	179.956	209	0.928	Reg
Greenock Central	157	11	208.089	63	0.000	EM
Greenock West	156	23	106.601	151	0.998	Reg
Hairmyres	128	61	212.436	219	0.612	Reg
Howwood	142	11	No missing values			
Irvine	137	33	132.407	150	0.846	Reg
Johnstone	144	72	404.076	370	0.107	Reg
Kennishead	124	5	13853.008	40	0.000	EM
Kilmarnock	118	19	No missing values			
Kilmaurs	119	18	408.003	116	0.000	EM
Kilwinning	138	52	192.137	177	0.207	Reg
Kings Park	113	6	1626.752	53	0.000	EM
Langbank	161	6	873.053	94	0.000	EM

Langside	106	23	151.182	124	0.049	EM
Largs	145	6	1920.710	17	0.000	EM
Lochwinnoch	141	13	93.129	121	0.972	Reg
Maxwell Park	109	31	246.673	286	0.955	Reg
Miliken Park	143	18	5110.135	138	0.000	EM
Mount Florida	102	18	0.00	62	1.000	Reg
Neilston	114	22	46902.993	50	0.000	EM
Newton	111	35	106.699	113	0.649	Reg
P'hill &Darnley	123	12	195.835	113	0.000	EM
Patterton	115	14	No missing values			
Pollockshaws E	107	11	2523.082	129	0.000	EM
Pollockshields E	105	21	1201.911	120	0.000	EM
Pollockshields W	110	14	944.622	135	0.000	EM
Pollokshaws West	125	7	0.000	32	1.000	Reg
Port Glasgow	159	13	41.177	103	1.000	Reg
Prestwick Town	134	20	100.285	161	1.000	Reg
Queens Park	104	48	290.119	295	0.569	Reg
Saltcoats	148	17	69.700	129	1.000	Reg
Shawlands	108	14	No missing values			
Stevenson	149	7	1358.311	42	0.000	EM
Stewarton	120	21	8139.060	134	0.000	EM
Thornliebank	132	24	1283.340	187	0.000	EM
Troon	135	29	172.601	196	0.885	Reg
Wemyss Bay	150	26	2373.052	221	0.000	EM
West Kilbride	146	21	761.142	120	0.000	EM
Whitecraigs	116	27	194.155	261	0.999	Reg
Williamwood	117	21	161.421	238	1.000	Reg

Appendix 10: Station Rating Form (adapted to fit page)

Station Name:		Rater:	

A. Involvement and co-production

Many stations feature flowers and gardening undertaken by the community and other groups. Other stations have empty rooms within the station used by adopters and community groups.

1. Is there evidence of gardening in the station?

Yes	
No	

In case there is evidence of gardening, how would you rate this?

Limited Evidence	1	To	7	Extensive Evidence

2. Is there evidence of community facilities use in the station?

Yes	
No	

In case there is evidence of facilities use, how would you rate this?

Limited Use	1	To	7	Extensive Use

B. Interaction and Dialogue

Effective cocreation requires interaction and dialogue between parties.

3. Is the station manned?

Yes	
No	

If the station is manned how would you rate the potential for interaction opportunities?

Limited opportunities	1	To	7	Extensive opportunities

C. Customization

Cocreation sometimes involves products and services being customized to suit the needs of customers. Rate stations in terms of the extent to which they appear to have been customized by the adopter or are more standardised in appearance.

4. Is the station customized beyond standard corporate appearance?	**Yes**	
	No	

If the station is customized how would you rate the level of customization?

No evidence of customization	1	To	7	Extensive customization

D. Education

Cocreation activity (such as station adoption) might be promoted to other passengers to educate them about the community involvement. Have a look around, what evidence can you see that might 'educate' passengers about the cocreation activity.

5. Any evidence of educational material (posters, artwork etc)	**Yes**	
	No	

Rate the level of passenger 'education' in evidence

No evidence of Education	1	To	7	Extensive evidence of education

E. Relationships

Cocreation has a strong focus on the building of relationships between firm and customer. In the case of the station how would you rate the relationship between the adopter/community and firm? A strong relationship might be evidence through indications of longevity through signage or displays.

If you ticked 'yes' for 5, rate the following scale

Little evidence of relationship	1	To	7	Evidence of a strong relationship

F. What is your overall impression of the level of cocreation at the station?

Low levels of Cocreation	1	To	7	**High levels of Cocreation**

Appendix 11: Summary Station Rating Scores

Station	Code	Garden	Facilities	Interaction	Custom	Education	Relation	Overall	RWG
Ardrossan Sth Beach	147	3.17	1.17	3.33	1.33	1.17	1.00	**2.67**	**0.99**
Ayr	133	5.17	3.17	4.50	2.67	2.67	2.50	**4.50**	**0.83**
Barassie	136	1.00	1.17	1.00	1.00	1.00	1.00	**1.00**	**1.00**
Barrhead	122	3.00	1.33	3.17	1.67	1.33	1.67	**3.00**	**0.97**
Bishopton	162	2.00	1.00	2.80	1.60	1.80	1.80	**2.40**	**0.97**
Branchton	152	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**	**1.00**
Burnside	112	4.00	1.00	3.50	1.00	2.00	2.50	**2.83**	**0.97**
Busby	129	1.00	2.67	1.33	1.00	1.50	1.33	**2.17**	**0.98**
Cartsdyke	158	2.67	1.00	2.00	1.00	1.00	1.00	**1.50**	**0.99**
Cathcart	101	1.00	1.00	2.33	1.00	1.00	1.00	**1.17**	**1.00**
Crosshill	103	1.00	1.00	2.33	1.00	1.00	1.00	**1.33**	**1.00**
Crossmyloof	126	1.33	1.17	1.00	1.00	1.00	1.00	**1.17**	**1.00**
Dalry	139	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**	**1.00**
Dunlop	121	2.00	1.00	1.00	1.00	1.67	1.83	**1.33**	**0.99**
East Kilbride	127	1.00	2.50	3.67	1.33	1.00	1.50	**2.00**	**0.99**
Fort Matilda	155	1.00	1.00	1.00	1.00	1.00	1.00	**1.17**	**1.00**
Giffnock	131	2.50	1.00	2.83	1.00	1.00	1.00	**1.83**	**0.99**
Glengarnock	140	1.00	1.00	2.67	1.00	1.00	1.00	**1.83**	**1.00**
Gourock	154	3.67	1.50	3.17	2.17	2.00	2.33	**2.17**	**0.95**

Greenock Central	157	4.00	1.17	3.83	1.83	1.17	1.83	**2.67**	**0.97**
Greenock West	156	1.00	1.33	2.67	1.00	1.00	1.00	**1.33**	**0.99**
Hairmyres	128	1.00	3.00	1.00	1.50	1.33	1.17	**2.17**	**0.97**
Howwood	142	1.50	1.00	1.00	1.17	1.00	1.00	**1.00**	**1.00**
Irvine	137	1.00	2.50	3.00	1.00	1.00	1.00	**1.83**	**0.99**
Johnstone	144	6.00	4.33	4.33	2.17	3.83	5.00	**4.67**	**0.94**
Kennishead	124	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**	**1.00**
Kilmarnock	118	4.33	1.33	3.83	2.33	3.33	3.17	**2.83**	**0.97**
Kilmaurs	119	3.67	1.17	1.00	1.00	1.50	1.50	**2.17**	**0.99**
Kilwinning	138	4.17	4.17	4.17	2.50	2.83	3.17	**3.67**	**0.90**
Kings Park	113	1.17	1.00	2.33	1.00	1.00	1.00	**1.33**	**1.00**
Langbank	161	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**	**1.00**
Langside	106	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**	**1.00**
Largs	145	3.33	2.67	3.67	2.50	2.17	3.00	**3.20**	**0.95**
Lochwinnock	141	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**	**1.00**
Maxwell Park	109	4.00	1.83	1.00	2.33	2.00	2.33	**2.33**	**0.89**
Miliken Park	143	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**	**1.00**
Mount Florida	102	1.00	1.00	3.00	1.50	1.00	1.00	**1.67**	**0.99**
Neilston	114	5.00	1.00	4.17	2.33	3.83	4.50	**3.83**	**0.94**
Newton	111	3.50	1.00	2.50	1.00	1.67	1.17	**1.83**	**0.99**
Patterton	115	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**	**1.00**
Pollockshaws East	107	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**	**1.00**
Pollockshields East	105	2.67	1.00	2.50	1.33	1.17	1.17	**1.67**	**0.99**

Pollockshields West	110	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**	**1.00**
Pollokshaws West	125	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**	**1.00**
Port Glasgow	159	3.00	1.00	3.00	1.40	1.00	1.00	**1.60**	**0.99**
Preisthill & Darnley	123	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**	**1.00**
Prestwick Town	134	2.67	3.17	3.33	2.17	1.33	1.83	**2.83**	**0.93**
Queens Park	104	2.67	1.00	3.17	1.33	1.00	1.00	**1.50**	**0.99**
Saltcoats	148	1.00	1.17	3.50	2.33	1.67	1.67	**1.83**	**0.96**
Shawlands	108	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**	**1.00**
Stevenson	149	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**	**1.00**
Stewarton	120	1.17	1.00	1.00	1.17	1.17	1.17	**1.00**	**1.00**
Thornliebank	132	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**	**1.00**
Troon	135	5.33	4.83	4.00	3.67	3.17	3.67	**3.83**	**0.72**
Wemyss Bay	150	6.50	6.83	6.00	5.17	6.00	6.50	**5.83**	**0.92**
West Kilbride	146	5.17	4.67	1.00	2.67	3.33	4.17	**4.00**	**0.92**
Whitecraigs	116	5.83	1.00	4.33	2.67	2.17	3.83	**4.00**	**0.85**
Williamwood	117	1.00	1.00	2.33	1.33	1.00	1.00	**1.83**	**0.99**
Woodhall	160	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**	**1.00**