An investigation into how strategic alignment is achieved in an innovation ecosystem: A case study of the Fintech ecosystem in Scotland

by

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Akwal Sunner
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ABSTRACT

Research on strategy process has been well documented over the last four decades, however, there are limited insights in strategy management literature on how the strategy process in ecosystems contributes to the alignment of ecosystem participants around a focal value proposition. The application of strategic management in innovation ecosystems can be understood to pose significant challenges to the traditional take on strategy as a vehicle for competitive advantage. It is argued in the existing research that there is a need to understand how ecosystem strategy is formulated and executed. This research suggests a process and activity-based approach to investigate the practice of strategic management in innovation ecosystems in order to tackle this challenge.

This exploratory study, based on three comprehensive case studies, investigates the strategy-making process of the Scottish fintech ecosystem through an exploration of the key strategic initiatives and activities, how they link together, and how strategy-making tools and techniques are used. This research concludes that a process-based approach is a useful and valid means to understand how strategy-making in ecosystems contributes to the emergence of a focal value proposition. The use of the process-based perspective decomposes the strategy-making phases into activities that present useful insights for academics and strategy practitioners into the nuances of ecosystem strategy making. However, there is a need to understand how strategy making in the generative phase of ecosystem development contributes to the focal value proposition materialising and subsequently how the open strategy lens informs our understanding of the alignment of ecosystem members to the value proposition. It is found that strategic management at the early stages of the Scottish fintech ecosystem genesis demonstrates characteristics of both planned and emergent approaches to decision-making. The planned ecosystem blueprint is augmented by open and inclusive dialogue amongst stakeholders with collaborative approaches to decision-making that help shape the design of the ecosystem.

The core strategy process, in the generative phase of ecosystem development, is characterised by (i) triple helix collaboration to enable innovation, (ii) nurturing the environment for ecosystem birth to create momentum for ecosystem activity, and (iii) identifying and connecting organisations to enable new synergies and collaborations to emerge.

Through the lens of open strategy, the aim is to understand the dynamics of strategic decision-making in the real-world scenario of an innovation ecosystem by assessing the ecosystem dynamics contributing to strategy development. The four dimensions of inclusivity, transparency, participation, and IT-enabledness were all recorded to varying degrees in the strategic management process observed in the Scottish fintech ecosystem. Although this study's findings may be criticised as they are grounded on observations from three case study organisations, the dimensions and insights generated into the dynamic nature of the ecosystem strategy process in the fintech ecosystem is achieved through data saturation and emergent themes identified in the dataset.

1. INTRODUCTION

Ecosystems are being touted as significant drivers to create and capture value from a number of complex value propositions. Finding its origins in the sphere of biological ecology, the concept of ecosystems has gained traction in academic scholarship over the last two decades (Peltoniemi and Vuori, 2004). In their recent publication, Jacobides, Cennamo, and Gawer (2018, p.2256) outline the growing practitioner awareness of this "new way to depict the competitive environment" citing the example of the 2014 initial public offering (IPO) prospectus of the Chinese giant Alibaba, where the term 'ecosystem' appeared on no less than 160 separate occasions.

The reference to ecosystems is increasingly being made across multiple established sectors, ranging from technology (Iansiti and Richards, 2006; Wareham, Fox and Cano Giner, 2014) to finance (Bryan and Crossman, 2013) and manufacturing (Gawer and Cusumano, 2014; Yang, Weber and Gabella, 2013) to public services (Dawson, Denford and Desouza, 2016; Joppa et al., 2016).

Extant literature in the domain of ecosystem strategy has primarily been focusing on the strategic interactions amongst participating firms, moving the discussion forward from the traditional bilateral relationships' perspective (Teece, 1986) to the context of the more contemporary ecosystem (Pisano and Teece, 2007). With a focus on collaborative cooperation, bargaining power, and exchanges of knowledge between participating firms (Adner and Kapoor, 2010).

Although strategy is shown to be a significant consideration for researchers in the area of ecosystems, the majority of publications thus far have been focused on strategic decision-making from the perspective of the lead or focal firm (Iansiti and Levien, 2004b; Zaheer and Bell, 2005; McIntyre & Srinivasan, 2016; Helfat & Raubitschek, 2017). Iansiti & Levien (2004b, p.71) explain a "keystone strategy is an operating strategy that improves the overall health of the ecosystem"; a sentiment echoed from the work of Moore (1996) who extends the power of these ecosystem leaders noting that they "tend to make other members of the ecosystem reluctant to switch". With the attention given to lead firms, prior research has failed to adequately address the strategizing activity of participating firms who deliver the complimentary products essential for driving the core products (McIntyre & Srinivasan, 2016).

Achieving strategic alignment amongst participating firms is the definition given to ecosystem strategy by Adner (2017), yet extant literature has thus far failed to address how this 'strategic alignment' can be achieved through strategizing practices; choosing instead to focus the analysis on governance and control mechanisms established by keystone firms. Hence, this research aims to address this gap through a focus on the activities of the ecosystem strategy process in order to help the reader understand the practices underpinning strategic decision-making at the generative stage of ecosystem development.

There is no one universal, one-size-fits all prescription for achieving strategic alignment (Henderson and Venkatraman, 1991). For the purposes of this thesis, strategic alignment is taken to mean that all businesses involved in ecosystem activity have bought into the same vision and objectives for the ecosystem (Lederer and Mendelow, 1986; Kearns and Lederer, 2000). In other words, how the participating firms in the ecosystem strategically align to the focal value proposition. Reich and Benbasat (2000) state that research on strategic alignment has approached the subject from a social dimension (for instance, the interaction between people) and the intellectual dimension (the content of strategy plans). This thesis will seek to explain how the process dimension also has a role to play in the strategic alignment of firms in an ecosystem.

In conclusion, this research contributes to the discussion on ecosystem strategy, from a strategy process perspective. This research builds on Adner's (2017, p.42) definition of the ecosystem as being the strategic alignment of the multilateral set of partners that need to interact in order for a focal value proposition to materialize. Here the question 'How do firms strategically align around a focal value proposition in an innovation ecosystem?' challenges strategy practitioners to craft and execute strategies capable of mobilising ecosystem participants in the anticipated direction. This doctoral research will outline the types of activities underpinning the strategic decision-making dialogue in the Scottish fintech ecosystem which guided its development in the generative phase of ecosystem establishment. To achieve this outcome, this research builds on the work of Dattée, Alexy and Autio (2018) to demonstrate how strategic alignment is achieved through the adoption of a process-based approach to ecosystem strategy.

1.1 Research Context

The topic of this Ph.D. is: *strategy process in an innovation ecosystem*. This is a timely and relevant topic because ecosystem constructs are becoming increasingly common forms of structure in technology, manufacturing, and increasingly financial and professional services sectors too. There are a number of studies exploring the network dynamics and structures of different forms of ecosystems e.g., business, technology, innovation, etc. Recently, there has been a growing body of literature calling for a better understanding of strategic planning and execution (Adner, 2017; Jacobides, Gawer, and Cennamo, 2018). Existing studies, however, are yet to fully address the nature of strategic decision-making in ecosystem constructs. Some studies have looked specifically at the role of the focal firm as the gatekeeper for decision-making (Iansiti and Levein, 2004a; 2004b, Kapoor and Lee, 2013), whilst others focus on the governance and control mechanisms that define ecosystem roles and responsibilities (Primmer *et al.*, 2015; Song *et al.*, 2018). Notably though, there are no studies to the best of the researcher's knowledge that have investigated the significance of strategic alignment of ecosystem members through the strategy-making process that enables the focal value proposition to emerge. This research aims to contribute to the growing academic debate by contributing to knowledge through the development of a deeper understanding of the Scottish fintech ecosystem strategy at the generative phase of ecosystem development.

1.2 Research Purpose

The broad aim of this research is to explore the 'network level strategy' in the Scottish fintech ecosystem. De Wit and Meyer (2017, p.8) explain that network strategy is "where a strategy is developed for a group of firms" collectively to enable them to adapt to the changing environment and landscape. Inherent in network level strategy is the concept of co-operation and competition that moves the discussion beyond traditional perspectives of competitive advantage as being the dominant approach in the strategic management literature.

The main objective of this doctoral research is contributing to knowledge through the extension of strategy process approach into the fintech innovation ecosystem context by integrating the views of multiple authors in the nascent fields of ecosystems and open strategy literatures. In doing so, this research will bring together current thinking in the field, carry out an empirical investigation of the Scottish fintech ecosystem environment, and provide a discussion on theory and practice to clarify this topic.

Four critical research questions are posed, these questions arise from the systematic review of the literature. Chapter 2 provides greater detail and insights into how the following questions emerged from the literature:

Overarching Research Question: *How do firms strategically align around a focal value proposition in an innovation ecosystem?* In order to address this broad research question, further research questions were derived from the relevant literature considered.

Research Question One: *What is the purpose of strategic decision-making in the early stages of ecosystem establishment?* This research questions aims to uncover how strategic decision-making in the generative phases of ecosystem establishment influence the direction taken by the ecosystem.

Research Question Two: *What are the ecosystem dynamics impacting strategic decision-making?* the goal of this research question is to offer some implications for ecosystem strategy scholarship and strategy practitioners by clarifying the focus of the strategy process in the context of establishing an innovation ecosystem.

Research Question Three: *What are the key strategy initiatives undertaken in the generative phase of an innovation ecosystem?* This question aims to shed light on the significance of strategy activity in the formulative stages of ecosystem development.

1.3 Thesis Structure

Each chapter in this thesis proceeds with an overview of the chapter outlining what the reader can expect to uncover. It also serves as a reminder of what this doctoral research is about, what the researcher is seeking to achieve in the chapter and how it relates back to the research topic. Similarly, at the end of each chapter there is a short summary of what the reader set out to achieve and to what extent those objectives are fulfilled in the corresponding chapter. The concluding summary also highlight any key or critical issues that emerge in each chapter. This thesis is structured into nine chapters, which are shown below:

Chapter 1. Introduction This chapter outlines the wider context of this doctoral research by introducing the topic and associated key concepts before setting out the approach taken, and structure adopted for the thesis.

Chapter 2. Strategy in Ecosystems: A review of the innovation ecosystem context This systematic literature review explains the process-based approach to understanding strategy in ecosystems by bringing together theories and frameworks into a conceptual framework. This chapter intends to clarify how innovation ecosystem strategy can be located in relation to the wider academic literature on strategic management.

Chapter 3. Research Methods Overview This chapter provides an overview of the different methodological aspects of management research. The researcher's personal experiences and preference are explained in relation to this research topic.

Chapter 4. Research Design This chapter introduces the research design adopted and the case study organisations chosen for the empirical investigation. Relatedly, this research investigates three institutional stakeholders that are members of the strategic partners' board of the Scottish fintech ecosystem.

Chapter 5. Field Work: Data Collection This chapter reveals the detailed case study selection process, refines the case study protocol, identifies the unit of analysis for this study, and outlines the data collection process undertaken.

Chapter 6. Field Work: Qualitative Data Analysis This chapter outlines a rigorous qualitative data analysis through the use of the 'Gioia method'. The data structure table presented in this chapter outlines how the data was allowed to speak enabling the story to emerge inductively. Nonetheless, the conceptual framework helped frame and guide what the researcher was searching for.

Chapter 7. Findings and Results This chapter presents the answers to the research questions posed as being significant for understanding the nature of ecosystem strategy in the generative stages of innovation ecosystem development. The answers proposed are driven by empirical investigation conducted.

Chapter 8. Discussions This chapter addresses the research questions by discussing similarities and differences with prior research compared with the empirical investigation conducted in this doctoral research. Contributions are made to both theory and practice as the researcher outlines implications for strategy academics and practitioners in this section. Finally, this chapter concludes by outlining how quality is ensured in this doctoral research alongside some personal reflections on the Ph.D. journey undertaken.

Chapter 9. Conclusions This final chapter summarises the key learning points this doctoral research by reviewing the research aim, findings and subsequent contributions to theory and practice.

2. STRATEGY IN ECOSYSTEMS: A review of the innovation ecosystem context

This chapter introduces the systematic literature review conducted in line with the guidelines introduced by Tranfield, Denyer and Smart (2003).

2.1 Introduction to Chapter

Strategic management has become a vitally significant and well-established field of study in management and organisation studies research. Originally referred to as 'business policy' research in early academic scholarship (Schendel and Hofer, 1979), the field of strategy management is a relatively young and emergent domain of management and organisation studies research. In their 1979 publication 'Strategic Management: A New View of Business Policy and Planning' Schendel and Hofer marked the birth of strategic management as a standalone discipline in management research. Yet, the field of strategy management is often said to be disjointed, devoid of a consistent identity or definition and overlapping with existing and established areas of the management and organisation studies domain (Volberda, 2004; Nag, Hambrick and Chen, 2007). Despite the existence of numerous approaches, academia has seen an influx of studies that mark the expansion of the strategic management field.

Ecosystems have received an increasing amount of attention in academic literature over the last two decades. The growth of platform-based and multi-sided markets (Gawer and Cusumano, 2014), has led to an explosion in the use of 'ecosystem' terminology in both scholarly and trade publications. The influence of ecosystems on contemporary organisational practices is giving rise to new forms of competitive behaviours (Moore, 1996). More specifically cooperative competition – or 'co-opetition' (Tsai, 2002) – whereby creating and achieving shared value becomes the defining purpose (Iansiti & Levien, 2004a). Extant literature has explored strategic management of these ecosystems from the perspective of focal or 'keystone' firms (McIntyre & Srinivasan, 2016), who are often determined as the leading organisation(s) responsible for the overarching health of the ecosystem. Although strategy is shown to be a significant consideration for researchers in the area of ecosystems, the majority of publications thus far have been focused on strategic decision-making from the perspective of the lead or focal firm. Extant academic scholarship has struggled to address how the strategic

alignment accrues across the wider spectrum of the ecosystem, and the role that ecosystem participants play in shaping the strategic direction being followed.

For the purposes of this PhD research, a number of strategic management textbooks and journal articles were considered along with literature on ecosystem constructs, using a systematic approach to the literature review (Tranfield, Denyer and Smart, 2003). The researcher adopted this approach in order to identify different theoretical frameworks to study strategy processes in ecosystems. The following section provides an informed review of the existing literature on ecosystems and open innovation strategy, identifying dominant perspectives and approaches outlined. Subsequently, by bringing together the two mostly distinct literature streams, the chapter concludes with the research questions to be tackled in this doctoral research study.

2.2 Historical Evolution of the Strategy Management Field

Strategy scholars have long grappled with providing a linear progression for the origins of strategy, with consensus over a standard ancestry being further complicated by the existence of the strategy content and strategy process schools of thought (Appleyard and Chesbrough, 2017). And whilst both approaches continue to carry weight in the contemporary discipline, it is important to map out the dominant perspectives ideating the lineage of strategy. McKiernan (1997, p.791) separates the historical evolutionary phases into 'two generic sources [that carry] momentum'; the 'ancient' and 'modern' narratives. The latter is widely recognised as the organic evolution of strategy, founded upon the premise of competition where the phrase 'survival of the fittest' best captures the application of the Darwinian evolutionary theory (McKiernan, 1997).

Whilst the historical narrative is derived from its militia origins. The Eastern perspective influenced by Sun Tzu's 'The Art of War', whereas in the Western world there are parallels from the ancient Greek stance of 'strategos'. Whilst it's insuperable to deduce a linear progression from these historical narratives to modern day strategy practice, it's not entirely inconceivable to derive contemporary strategy terminology from its historical heritages. Influences on the contemporary school of thought can also be observed from the 'competitive exclusion' principle of ecology scholar G.F. Gause, which Henderson (1989, p.139) effectively surmises as "*competitors that make their living in the same way cannot coexist – no more in business than in nature"*. These intricacies in the ancestral underpinnings are further confounded through the lack of a consistent vocabulary in strategy theory, despite dating back

to the Victorian era, "*the lexicon of strategic management is internally inconsistent and tends to be confusing, even for the cognoscenti"* (Ronda-Pupo and Guerras-Martin, 2012, p.162).

Even so, the origins of strategy in contemporary strategic management at least, can be disseminated into four categorisations. Where the evolution of the 'modern' strategy narrative can be mapped from the early days of the rational planning and marketing-inspired strategic thinking (Ansoff, 1965; Chandler, 1962). Through to the Industrial Organisations approach (Bain, 1972; Porter, 1980, 1981) and the static resource-based view (Penrose, 1959; Wernerfelt, 1984) all of which find their roots in economic theory (Barney, 1991). In elaborating, Sminia (2018) extends the notion of the rationalistic nature of these approaches attributing them as a snapshot of the organisation, where the external environment in which the organisation operates is taken to be homogenous and therefore a constant, and the organisation independent of the institutional changes that would invariably impact the focal firm.

2.2.1 **Rational Strategy Logic**

Synonymous with the rationalistic approach to strategy is the work of Alfred D. Chandler, who is widely regarded as the first recognised management scholar in strategy research. In his 1962 publication '*Strategy and Structure',* he explains strategy to be "*the determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals*" (Chandler, 1962, p.13). In doing so, Chandler outlines the deterministic or planned approach to strategy which he believes to be conceivable through an organisation's structure as the guiding force that directs the strategic activities and resources of the enterprise (Chandler, 1962).

In the same vein, Anthony (1965) in his book '*Planning and Control Systems*' lays out the foundations for strategic planning. Referring to the unpublished works of his colleague and long-time Harvard professor Kenneth Andrews, the definition given to strategy is:

> "*The pattern of objectives, purposes or goals and major policies and plans for achieving these goals stated in such a way as to define what business the company is or is to be in and the kind of company it is or is to be*" (Anthony, 1965, p.9).

Andrews' definition for strategy in this sense is interpreted to be all encompassing in that it draws parallels with the militaristic origins of strategizing – the notion of 'grand strategy' – resonates within the context of Anthony's (1965) publication. In essence, this depiction of

strategy is seen to promote the analytical nature of long-term planning and appraisal activity that is demonstrated to be vital in securing the long-run success of the business enterprise.

Relatedly, the work of Michael Porter (1980) provides a comprehensive framework of rationalistic approaches that support an organisation in understanding the industrial forces that influence the business enterprise and enable the firm to map out its evolution through a structured consideration of its own position and that of its competitors. Porter demarcated competitive strategy to be a:

> "*Broad formula for how a business is going to compete, what its goals should be, and what policies will be needed to carry out those goals*" (Porter, 1980, p.7).

He acknowledges the need to co-ordinate across the functional divisions of an organisation and emphasises the significance of rational strategic planning as a means of formal planning to align the policies of the organisation in order to be strategically competitive in the marketplace.

Although Porter demonstrates an awareness of factors emerging from the external environment as a result of heightened competition in the external marketplace, his model endorses the role of formal planning and positioning of the focal firm. In his 1989 publication '*How Competitive Forces Shape Strategy*' Porter identifies five competitive forces of industry competition, namely, bargaining power of suppliers, bargaining power of buyers, threat of potential new entrants, threat of substitute products and services and rivalry amongst competitors (Porter 1980, 1985, 1989). Porter argued that these 'forces' can be overcome through three planned and deliberate strategic initiatives; differentiation, cost leadership and focus (Porter, 1980).

Most of the strategy scholarship from that era has occupied itself with rational strategic planning (Ansoff, 1965; Chandler, 1962; Christensen, Andrews and Bower, 1973; Porter, 1980), claiming that long-term competitive advantage is an accumulative process of deliberate and coherent strategic planning. As such the rationalist logic dictates that the strategy formulation stage requires an overt definition for the purpose and intention of the strategy. Under the rationalistic view, strategic management can be seen as being divided into two distinct yet sequential phases, the *formulation* and *execution* stages.

2.2.2 **Emergent Strategy Logic**

The juncture of departure from the rationalistic logic emerged soon after with the role of execution in strategic management. Under the rational approach, execution was being heralded as the second of a two-part phased approach to strategizing after the planning phase. However, this drew criticism from an increasing body of strategy scholars (Mintzberg 1981, 1987; Mintzberg and Waters, 1985; Whittington, 1993) who instead proposed that the execution of strategic decision making be considered alongside the planning phase. In a critique of the underlying fundamentals of the rational logic to strategizing, the emergent approach challenges the belief that the planned method is concrete and accurate.

Instead, Whittington (1993) proposes that the planning and implementation phases are not to taken as sequential linear stages, rather they are more iterative processes as the act of strategizing is realised in action. In a similar vein, Mintzberg and Quinn (1992) argue that strategic decision-making and implementation are entangled in a complex web of activity in which organisational culture, values and management approaches have significant impact in influencing the outcome of the strategizing activity of the enterprise. Similarly, Mintzberg (1987) states that strategic initiatives emerge not from the intentions of human design, but instead from the actions of human actors engaged in strategic activity. Referring to the earlier works of Mintzberg and Waters (1985), the distinction is made between the 'intended' and 'realised' strategies, whereby the influence of emergent strategy is understood to be as a result of the interaction of the firm with its environment (Johnson, Scholes and Whittington, 1999; Whittington, Yakis-Douglas and Ahn, 2006).

In summation of this approach, emergent strategy develops from the understanding that the deliberate, planned strategies are not always realized as intended, instead strategies emerge from the dynamics of the interactions, experiments and operational learnings that the organisation undertakes during the formulation and implementation stages. Where the complexities of the external environment, in which the focal firm operates, are recognised in the sphere of strategic decision-making and the significance of internal competencies becomes paramount as a means of not only attaining but also sustaining competitive advantage. The call is for strategists to become visionaries and to creatively to propel their organisation "towards an imagined future and translate core competencies into new business" (Sminia, 2018, p.158).

2.2.3 **Processual Logic to Strategizing**

As a means of bridging the gap between the deterministic rational logic and the more innate emergent approach in strategy making, the processual logic enacts the role of complementor between the two (Ates, 2008). Academic scholarship started to concentrate on the *how* of strategizing as opposed to the traditional *what* or content branch (Chesbrough and Appleyard, 2017) at the end of the 20th century. Porter (1996) questioned the challenges surrounding how strategy processes are managed in organisations whilst Hamel and Prahalad (2005) drew attention to the need for research to investigate the process of carrying out strategy management in the same vein as scholarship had focused on the content. Regnér (2005, p.189) states that "*there seems to be no theory of strategy logic, i.e., the general process and management characteristics generating a certain strategy outcome*", once again highlighting the oversight of the dominant logics in strategy management.

Born from the desire of management practitioners' frustrations with how previous strategy planning initiatives had failed in accounting for the institutional contingencies influencing strategic decision-making (Szulanski, Porac and Doz, 2005). The processual approach to strategizing contradicts the earlier rational and emergent logics by acknowledging the contribution of organisational actors engaged in strategy planning and implementation, along with the influences of the contextual environment in which the strategy activity transpires (Johnson, Scholes and Whittington, 1999). This process logic to strategizing has been proven to be useful to management practitioners engaged in strategic activity (Pettigrew, 1992; Regnér, 2005). Rather than taking it to be an exclusively formal exercise in decision-making and implementation, the processual approach also recognises the significance of the everyday practices that collectively form the strategy processes (Whittington, 2006).

By drawing on the concept of 'strategy-as-practice', Jarzabkowski, Balogun and Seidl (2007, p.8) refer to the act of strategizing as the "*flow of activity through the actions and interactions of multiple actors and the practices that they draw upon*". In doing so, the process logic considers the intrinsic elements of organisational practices to be significant factors in shaping the strategic intent of the organisation, Whittington (2006) explains these elements under the '3 P's framework' consisting of *'strategy practitioners'*, *'strategy practices'* and *'strategy praxis'* (see Figure 2A). In the whole practice theorists have recognised the significance of one or more of these elements identified as distinct yet interconnected social phenomena (Giddens, 1984; Turner *et al.*, 1994).

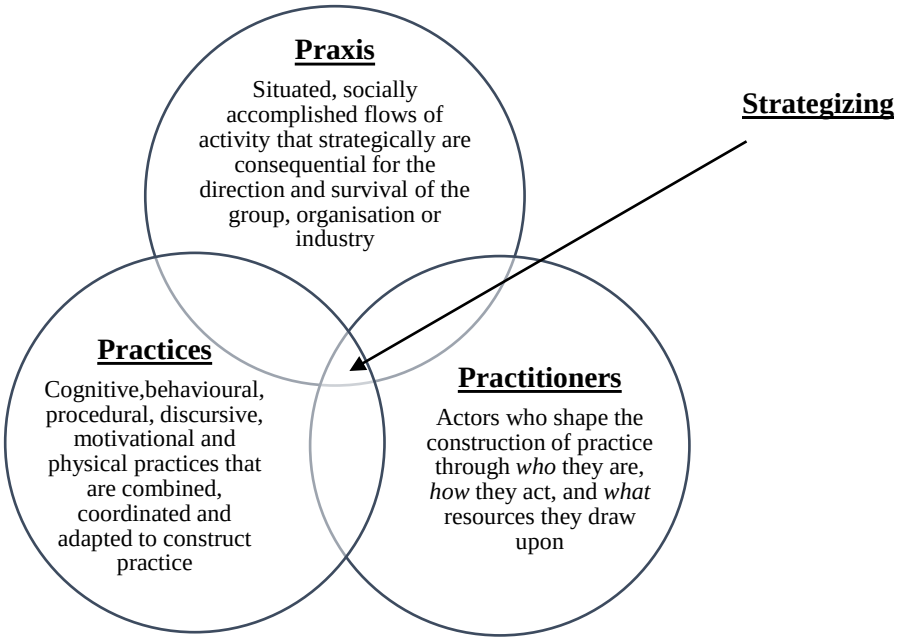


Figure 2.1. Adaptation of the '3 P's Framework' from Jarzabkowski, Balogun and Seidl (2007, p.11)

Reckwitz (2002, p.249) makes a useful distinction between the terms used in practice theory. Firstly, he defines practice ('*praxis*') as "merely an emphatic term to describe the whole of human action", this broad explanation attempts to reveal the complexities of what really happens in society and what people essentially do (Sztompka, 1991). As such praxis can be interpreted to include the interrelatedness amongst the actions of diverse, distributed individuals and groups within the wider sphere of the socio-political institutional settings that influences, and is influenced by, individual actors (Jarzabkowski, Balogun and Seidl, 2007). Secondly, in acknowledging that flows of activity in society as a whole are pluralistic rather than singular in nature, Reckwitz defines '*practices*' as:

> "*Routinised types of behaviour which consist of several elements, inter-connected to one another: forms of bodily activities, forms of metal activities, 'things' and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge*" Reckwitz (2002, p.249)

Intrinsically these practices can be associated with 'doing' as they deliver the "behavioural, cognitive, procedural, discursive and physical resources" that enable several individuals to interact and socially accomplish the collective activity being undertaken (Jarzabkowski, Balogun and Seidl, 2007, p.9). Given this routinised nature of practices and their supporting resources the study of the activity that they enact becomes possible, as such the study of routinised practices that form distinct patterns in strategic activity becomes achievable. Eden and Ackermann (1998) discuss the use of practices in the form of embodied materials – or in the word of Reckwitz (2002) 'things' – such as post-it notes and whiteboards that have

routinised properties in how they are utilised yet can contribute to various enactments of strategic activity. These practices can therefore be used "*as potential units of analysis for studying how strategy-as-practice is constructed… and the consequences of these patterns of use for shaping praxis at different levels*" (Jarzabkowski, Balogun and Seidl, 2007). Lastly, the role of '*practitioners*' according to Reckwitz (2002, p.256) resembles that of an agent who "consist(s) in the performance of practices". Such agency is therefore personified, representing the practitioner as an individual in action who is always linked to the contextual situation in which the agency is enacted (Balogun et al., 2005). In discussing the role of organisational learning Brown and Duguid (1991, p.48) summarise that "learning is about becoming a practitioner, not learning about a practice", demonstrating that practitioners are constantly learning from the contextual settings in which they enact the practices. Practitioners are thus seen to "derive agency through their use of the practices – ways of behaving, thinking, emoting, knowing and acting – prevalent within their society" (Jarzabkowski, Balogun and Seidl, 2007, p.10). From this definition, considering practitioners from a strategy perspective, they form clear units of analysis as participating actors in the construction of strategic activity, whereby they can shape strategy through their actions and the practices with which they engage.

One question that needs to be asked though, is how this practice approach fits within the realm of the processual logic? According to Ates (2008, p.16) "process and practice are complementary to each other", she goes on to explain that organisational processes, whilst providing structure and firmness, must also be flexible enough to accommodate practices. Brown and Duguid (2001, p.94) further substantiate this idea of complementarity between both concepts, stating that "practice without process tends to become unmanageable; process without practice results in the loss of creativity needed for sustained competitive advantage". Hence, it can be interpreted that the processual logic to strategizing requires that organisations manage both practices and processes in order to maintain their growth aspirations.

2.2.4 **Underpinning Theoretical Framework: A processual approach to strategy**

In recognising the various perspectives outlined in the literature on strategy, it is apparent that the concept of strategy can be interpreted to represent a multitude of different things. Yet perhaps it is in the variety of perspectives that these "*multiple definitions can help people manoeuvre through this difficult field*" (Mintzberg and Quinn, 1992, p.12). One of the foundational frameworks in the modern strategic management stream of literature is

Mintzberg's (1987) 'Five Ps for Strategy' framework, in which he outlines five definitions of strategy as follows:

- **Strategy as Plan**

  Interpreted as a form of consciously intended actions taken in order to prepare for and deal with a particular situation (Mintzberg and Quinn, 1992), these can be both generic or detailed and specific.

- **Strategy as Ploy**

  Alongside the 'Plan' perspective, Mintzberg proposed the concept of strategy as ploy where the intention of a firm to strategize is to specifically to outwit and outperform the competition. Resonating with the works of Porter's (1980) publication *Competitive Strategy* where he devotes an entire chapter to pre-empting competitive responses as well as the effects of announcing strategic decisions tactically.

- **Strategy as Pattern**

  Somewhat self-explanatory, in that strategy as pattern takes the perspective of strategy as being indicative of a set pattern in the actions being undertaken (Mintzberg and Quinn, 1992). In other words, strategy is taken to demonstrate some consistency in the behaviour of an organisation irrespective of whether this is intentional or not.

- **Strategy as Position**

  Takes into consideration the positioning of the organisation relative to its external environment, whereby strategy enacts the role of a mediator between the internal and external contexts of the organisation (Hofer and Schendel, 1978).

- **Strategy as Perspective**

  Takes the approach of strategy being a *concept* above all else, whereby the organisational identity and personality of the firm becomes the ingrained way in which the organisation views strategy (Mintzberg and Quinn, 1992). In other words, strategy as perspective provides insights into how strategy can be taken to be a shared concept, thus giving it a personality grounded in a particular culture or ideology (Tregoe and Zimmerman, 1980).

In order to provide structure and clarity for this research and to enable the reader to follow the reasoning and logic, the researcher will explicitly outline his own view. His perception of strategy is by no means original; indeed, it follows the development of the well-treaded path

of strategy process research (Pettigrew, 1992; Whittington, 2007) and the more recent strategy-as-practice approach (Jarzobkowski, 2004, 2005; Whittington, 1996).

The next section outlines the process adopted in conducting the literature review for this doctoral thesis. Following a tried and trusted framework helps to provide a sense of reliability by demonstrating that this process can be repeated and should produce similar results. Therefore, an explanation of the steps taken to ensure traceability of the process and enable replication for future studies.

2.3 Literature Review Method

This chapter outlines the 'state of the art', based on extant academic research, related to the topic of strategic alignment between participating firms within innovation ecosystem constructs. More specifically looking at how facets of open strategy practice can help structure the strategic processes in these 'innovation' ecosystems. As such, the theoretical framework for this study draws upon two primary strands of literature: 1) innovation ecosystems, and 2) open strategy. This is demonstrated below in Figure 2B.

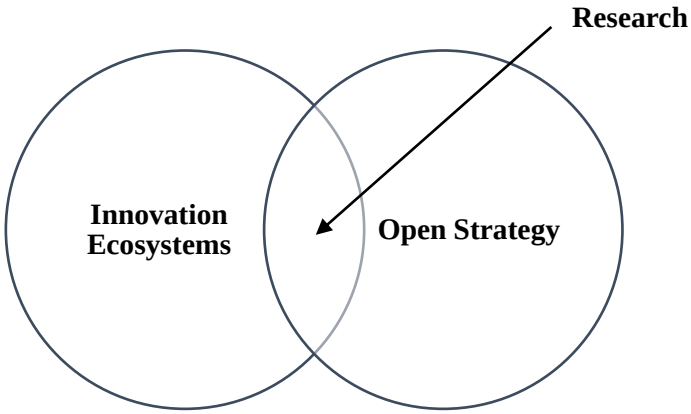


Figure 2.2. Theoretical Framework for this Research

Following the work of Ridley (2012), the purpose of this thesis is to contribute to the existing literatures on the strategic alignment between participating firms in an innovation ecosystem construct by introducing concepts from the open strategy literature. In doing so, this research seeks to participate in the scholarly conversation on strategy practices within innovation ecosystems, looking at the processes and practices underpinning the strategic decision-making dialogue. In Chapter 8, where the contribution of this research is presented, there is an attempt to bridge the gap between the existing literatures with the findings from this

study in an attempt to extend the academic literature on the collective strategizing practices of firms that engage in the strategizing activity within innovation ecosystems.

The chapter proceeds with a comprehensive overview of the extant literature on ecosystems, looking specifically at the related concepts of innovation, business, and knowledge ecosystems. A deeper exploration of the strategizing activity in these network-inspired organisational couplings provides the contextual background for this study. In investigating the strategic management literature, the point of departure is in the unbundling of the open strategy concept in order to form a consistent definition for strategizing in innovation ecosystems. Thereafter, rationales and drivers of open strategizing are reviewed from the strategy process perspective as a means of understanding how these practices can inform and influence the strategizing process in innovation ecosystems.

2.3.1 **Strategizing in Innovation Ecosystems SLR**

A systematic literature review (SLR) approach is adopted in order to recognise and synthesize the most significant scholarly literature within the respective field. In doing so, this method implements a comprehensive, reliable, and transparent logical process that is intended to curtail bias by means of a meticulous bibliographic search of published journal articles (Hair *et al.*, 2007; Hart, 2018). Adopting a SLR approach delivers suitable guidelines that can easily be followed by researchers in other domains (Petticrew and Robert, 2008). Moreover, the linear evolution of research on strategizing practices within innovation ecosystem constructs can be explored in order to identify whether academic interest has grown in recent years. Additionally, a SLR enables the researcher to focus on the purpose as opposed to the usefulness of the publications considered (Wrona and Sinzig, 2018), whilst presenting a structured summary of the findings such that potential bias is minimized (Okwir *et al.* 2018).

This thesis adopts the guidelines outlined by Tranfield, Denyer and Smart (2003) in structuring the SLR into six stages, as presented in Figure 2.3. Specified management databases, including ABI Inform, Business Source Complete and Web of Science were examined to identify relevant publications.

Step-by-step guidelines followed for selecting publications.

Stage 1. The keywords related with open strategy and business ecosystems are acknowledged from the related literature, scientific publications and associated fields of research. Although Tranfield, Denyer and Smart (2003) suggest using more than one researcher

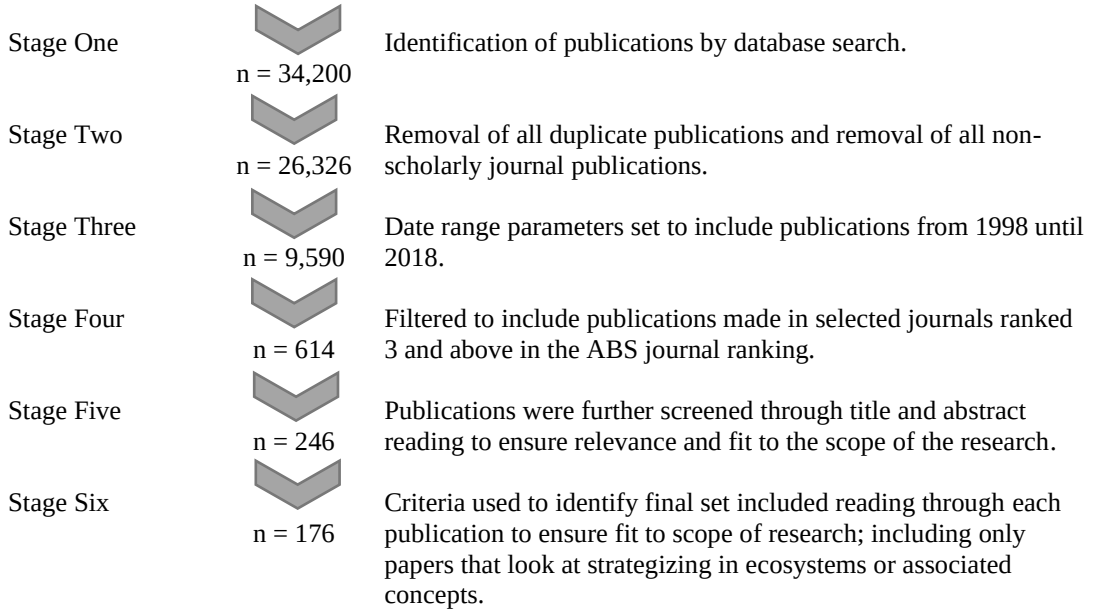


Figure 2.3. *Six stage process for SLR sample selection*

to select the keywords and the associated combination of search strings, in this case, through consultation with the primary research supervisor, keywords were selected, and effective search strings generated. Emphasis was given to the different types of terminology used to explain the constructs of open strategy and innovation ecosystems as encountered during preliminary readings of extant literature streams.

1. ‘innovation ecosystem’ OR ‘inter-organi*ational collaboration’ OR ‘multi-sided platform’
2. ‘innovation’ AND ‘open strategy’
3. ‘ecosystem’ AND ‘open-innovation’
4. ‘open strategy’ OR ‘open innovation strategy’ OR ‘interactive strategy’ OR ‘democratic strategy’
5. ‘strategic alignment’ AND ‘ecosystem’
6. ‘strategic alignment’ AND ‘inter-organi*ational’

In carrying out the keyword search using the above search strings, the databases ABI Inform (ProQuest), Business Source Complete (EBSCOhost) and Web of Science were used, as they provide a comprehensive reporting of areas within the chosen discipline and enable flexibility over search criteria and filtering options (López-Illescas, Moya-Anegón and Moed, 2008). The combination of keywords above were sought in the title and/or abstracts of each journal paper, with Table 1 demonstrating the overall number of results published in the databases considered.

Stage 2. Table 2.1 highlights the initial keyword search strings yielded 34,200 results in stage one of the process, these were further filtered to ensure only full scholarly papers that had been peer-reviewed were included in the search (Jones and Gatrell, 2014). As more than one database was used in this search, duplicates in results meant that that a total of 7,874 outputs were removed in stage two.

Keywords	***ABI Inform***	***Business Source Complete***	***Web of Science***	***Total***
*innovation ecosystem; inter-organi*ational collaboration; multi-sided platform*	1,779	865	1,712	**4,356**
innovation; open strategy	7	0	21	**28**
ecosystem; open innovation	76	0	6	**82**
open strategy; open innovation strategy; interactive strategy; democratic strategy	10,177	11,840	7,674	**29,691**
strategic alignment; ecosystem	4	2	8	**14**
*strategic alignment; inter-organi*ational*	10	10	9	**29**
Total	**12,053**	**12,717**	**9,430**	**34,200**

Table 2.1. *Total number of articles identified in database search*

Stage 3. Further filtering criteria was applied in the form of date range parameters, to include only publications between the period 1998 – 2018. Table 2.2 provides a chronological breakdown of the number of articles published in various journals, as identified in the chosen databases. The term 'open strategy' was coined by Chesbrough and Appleyard in 2007, whilst the related concept of 'open innovation strategy' was termed a year earlier (Chesbrough, 2006). Similarly, in the domain of innovation ecosystems, the earliest publication was found in James Moore's 1993 publication *'The Death of Competition',* whilst scholarly literature on innovation ecosystems did not materialise until late in the 1990s (Kandiah and Gossain, 1998; Iansiti and Levien, 2002).

Therefore, this research adopts an approximate time period of ten years prior, and ten years post the initial conception of the term 'open strategy', in doing so, it captures a comprehensive range of publications on open strategy, innovation ecosystems and other associated concepts. Table 3 presents a detailed breakdown of publications by keyword search, demonstrating the rise in publications in the first two decades of the 21st century.

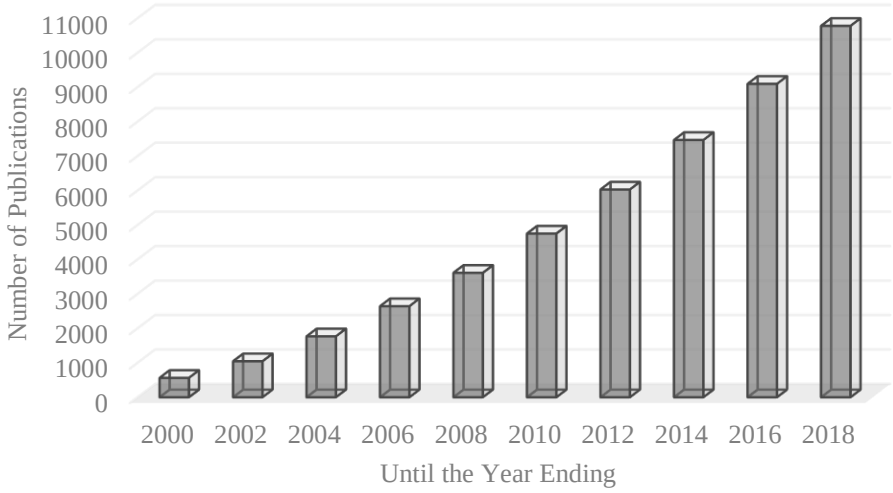


Table 2.2. *Number of publications identified in database searches*

Stage 4. At this stage articles were further filtered to incorporate specific journals ranked 3* and above in the Chartered Association of Business Schools 'Journal Guide 2018' to ensure only those articles that met a set quality criterion were considered in the literature review process. Tranfield, Denyer and Smart (2003, p.216) state "management researchers usually rely on the implicit quality rating of a particular journal, rather than formally applying any quality assessment criteria to the articles they include in their reviews". Whilst this remains a critique of the adoption of the SLR approach by management researchers (Jesson, Matheson and Lacey, 2011), Tranfield, Denyer and Smart (2003) acknowledge the struggle of establishing a management research methodology for the systematic review that overcomes the constraint of identifying which journals are recognised as 'quality' publications. This SLR adopts a similar approach, using selected journals that meet the criterion outlined above, narrowing down the number of results from 10,779 outputs to 614 articles that reveal useful insights into research directions and trends.

Stage 5. The articles were further screened through the reading of the title and abstract in order to ensure only those publications that fit the research scope are considered for the purposes of this systematic review. This narrowed the total number of results to 246 papers. This approach is similar to those adopted in previous SLRs conducted in related fields (Brozovic, 2016). In instances where the abstract was not entirely clear, these papers were included in the selection for full appraisal.

Stage 6. At this stage it becomes a repetitive process of comprehensively appraising all 246 papers to assess their relevance, fit and suitability for this literature review using an additional layer of filtering criteria. Only papers that directly explore strategizing activity in business ecosystems or related concepts of multi-sided platforms, inter-organisational collaborations and platform-based networks were considered to be relevant. Overall, 176 papers were carefully analysed and appraised, these are presented in Table 4, where a structured breakdown is given for publications by journal type. Moreover, these were complemented by supplementary papers found through citations tracking together with publications in scholarly books and trade publications.

2.3.2 **Synthesis of SLR Method Adopted**

Following the guidelines proposed by Tranfield, Denyer and Smart (2003), the researcher has conducted a comprehensive SLR for this doctoral thesis. It was the intention of the researcher to be transparent about the process adopted in conducting the review, and it is anticipated that documenting the steps as observed in the preceding section, will enable traceability and replication.

The subsequent section proceeds to explore the ecosystems literature, discussing some of the publications identified through the SLR and identifying the research gaps and problems that this thesis will investigate through empirical research. The research questions and objectives formed are presented at the end of this chapter.

Keywords	*Until 2000*	*2002*	*2004*	*2006*	*2008*	*2010*	*2012*	*2014*	*2016*	*2018*	*Total*
*innovation ecosystem; inter-organi*ational collaboration; multi-sided platform*	106	88	153	268	389	352	478	583	531	618	**3,566**
innovation; open strategy	0	0	0	0	2	2	3	2	5	14	**28**
ecosystem; open innovation	0	0	0	2	6	11	8	17	15	18	**77**
open strategy; open innovation strategy; interactive strategy; democratic strategy	454	287	395	428	445	668	651	807	834	907	**5,876**
strategic alignment; ecosystem	0	0	0	0	0	1	3	3	1	6	**14**
*strategic alignment; inter-organi*ational*	0	0	0	0	5	2	12	2	8	0	**29**
Total	**560**	**375**	**548**	**696**	**847**	**1,036**	**1,155**	**1,414**	**1,394**	**1,563**	**9,590**

Table 2.3. *Keyword and search string analysis of articles until 2018*

Journal	*Until 2000*	*2002*	*2004*	*2006*	*2008*	*2010*	*2012*	*2014*	*2016*	*2018*	*Total*
Academy of Management Annals	0	0	0	0	0	0	1	0	0	0	**1**
Academy of Management Journal	0	0	0	0	0	0	0	0	0	1	**1**
Academy of Management Review	0	0	0	1	0	0	0	0	0	0	**1**
British Journal of Management	0	0	1	1	0	1	2	1	1	0	**7**
Business Ethics Quarterly	0	0	0	0	0	0	0	1	0	0	**1**
California Management Review	6	0	0	0	2	0	0	2	1	0	**11**
European Management Review	0	0	0	0	0	0	1	0	1	0	**2**
Harvard Business Review	1	0	1	0	1	1	0	0	0	0	**4**
International Journal of Management Reviews	0	0	0	0	1	0	0	1	0	0	**2**
Journal of Business Ethics	0	0	1	0	0	2	0	0	1	2	**6**
Journal of Business Research	0	0	0	1	0	0	0	0	0	0	**1**
Journal of Management	0	0	0	0	1	0	0	0	0	2	**3**
Journal of Management Studies	3	2	2	2	2	3	0	0	3	1	**18**
Journal of Product Innovation Management	0	0	0	0	1	0	0	2	0	0	**3**
Leadership Quarterly	1	0	0	0	0	0	0	0	0	0	**1**
Long Range Planning	1	1	0	0	0	0	0	0	1	17	**20**
Management Science	1	0	0	4	2	2	0	0	0	2	**11**
MIT Sloan Management Review	0	0	1	1	2	0	3	1	2	2	**12**
Organization Science	2	1	1	0	0	0	1	1	1	1	**8**
Organization Studies	0	1	0	0	0	2	0	0	0	0	**3**
R and D Management	0	0	0	0	0	0	0	0	1	0	**1**
Research Policy	0	0	1	0	1	3	2	6	1	4	**18**
Strategic Management Journal	12	4	1	6	1	2	3	2	5	3	**39**
Technovation	0	0	0	0	0	0	0	1	1	0	**2**
TOTAL	**27**	**10**	**8**	**16**	**14**	**16**	**13**	**18**	**19**	**35**	**176**

Table 2.4. *Number of publications identified as relevant to this study through the SLR in selected journal*

2.4 Ecosystems Literature

2.4.1 Introduction

Increasingly, scholars in the domain of business and management research have been interested in network-inspired clusters of organisations (Miles and Snow, 1992), multi-sided platforms (Helfat and Raubitschek, 2018) and inter-organisational collaborations (Zaheer and Bell, 2005). These terms have been used interchangeably in extant literature to explain concepts that are principally similar, at least in definition anyway, yet often are used to explain instances of organisations collaborating on new products and services. Gobble (2014) notes that, despite the increased use of ecosystem terminology in contemporary management scholarship, the term goes beyond the limitations of traditional management fads. The primary distinction made by Hwang (2014) arises in the form of these constructs, he differentiates organisational clusters or networks as being "*rather static... [describing] the mere presence of assets in a system*", whilst ecosystems, in his words are "dynamic interactions between things" (Hwang, 2014).

2.4.2 What is an Ecosystem?

The context of the innovation ecosystems is integral for this study, consequently, it is vital to take a step back to recognise and define what innovation ecosystems represent. Relatedly then, the broader ecosystem construct is a good place to start in order to position this recent phenomenon in existing management research. Finding its origins in the sphere of biological ecology, the concept of ecosystems has gained traction in academic scholarship over the last two decades (Peltoniemi and Vuori, 2004). In their recent publication, Jacobides, Cennamo and Gawer (2018, p.2256) outline the growing practitioner awareness of this "*new way to depict the competitive environment*" citing the example of the 2014 initial public offering (IPO) prospectus of the Chinese giant Alibaba, where the term 'ecosystem' appeared on no less than 160 separate occasions. In citing the work of James Moore (1993), Kelly (2015) accredits him as being the first to apply ecosystem ideology to commerce, with his observations coming before the era of the internet and over a decade before the invention of the first smartphone. Moore's pioneering thinking was applied predominantly in the technology sector, with Silicon Valley often cited as the early adopters of ecosystem constructs (Adner and Kapoor, 2010; Kapoor and Lee, 2013). Kelly (2015) refers to the Apple Inc ecosystem and the infrastructure they have in place to ensure a seamless user experience, and to the Facebook developer ecosystem that hosts their platform of products as two contemporary examples of ecosystems in practice. Increasingly though, the reference to ecosystems is being made across multiple established sectors, ranging from technology (Iansiti and Richards, 2006; Wareham, Fox and

Cano Giner, 2012) to finance (Bryan and Crossman, 2013) and manufacturing (Gawer and Cusumano, 2014) to public services (Dawson, Denford and Desouza, 2016; Joppa et al., 2016). Conducting a Google Ngram search enabled the researcher to identify the increasing frequency with which ecosystem terminology appeared in publications (see Table 5).

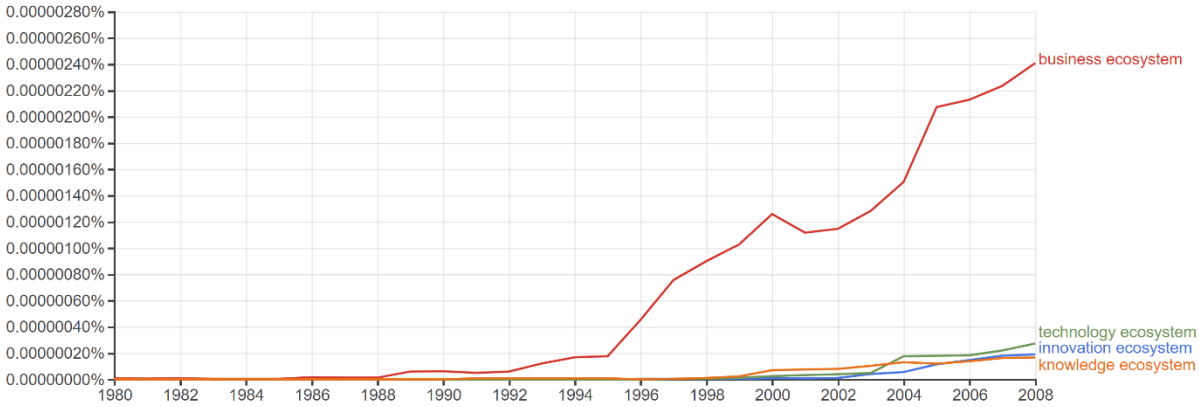


Table 2.5. Google Ngram demonstrating the increasing use of the word ecosystem in related phrases as measured by Google, during the period 1980 and 2008.

Academic scholarship on the broader concept of ecosystems has predominantly made reference to them as theoretical constructs (Overholm, 2015) that originate from the wider domain of interorganisational networks (Powell, Koput and Smith-Doerr, 1996); multi-sided platforms (Gawer and Cusumano, 2008; Zhu and Iansiti, 2012) and strategic networks (Gulati, Nohria and Zaheer, 2000). Whilst these terms are relatively distinct in terms of application and acknowledgement in various streams of academic literature, there appear to be areas of overlap in their characteristics. It is important to recognise these areas of overlay as these are significant in helping to shape the understanding of what ecosystems represent. Despite the attention given to this recent ecosystem construct, there is no one universally accepted definition is provided in extant literature. Instead, there are multiple related definitions given in preceding academic scholarship, which are presented in Table 6. Nonetheless there seems to be consensus around three key underpinning constructs for the definitions provided, firstly, existing streams of literature refer to the creation of 'value' (Adner, 2016, 2017; Clarysse et al., 2014; Jacobides, Cennamo and Gawer, 2018; Kelly, 2015; Miles, Coleman and Creed, 1995). Secondly, emphasis is placed on the involvement of multiple participants and actors in the ecosystem environment (Adner, 2016, 2017; Miles and Snow, 1992; Moore, 2006), and finally on the arrangement structure of participating firms (Adner 2016, 2017; Chesbrough, Kim and Agogino, 2014; Gawer and Cusumano, 2014; Helfat and Raubitschek, 2018; Wareham, Fox and Cano Giner, 2014).

AUTHORS	DEFINTION	KEY CONCEPTS
Jacobides, Cennamo and Gawer (2018)	*Ecosystems are groups of firms that must deal with either unique or supermodular complementarities that are nongeneric, requiring the creation of a specific structure of relationships and alignment to create value.* (2018, p.2263)	Business ecosystem, innovation ecosystem, platform ecosystem, complementarity, modularity, coordination, collaboration, value creation and value capture, governance
Moore (2006)	*The term 'business ecosystem' and its plural, 'business ecosystems', refer to intentional communities of economic actors whose individual business activities share in some large measure the fate of the whole community. A business ecosystem definition is at its core a plan for how the contributions in the proposed system will be modularized, and what sorts of firms will provide which element.* (2006, p.33)	Co-evolution, tactical disclosure, modularity, platform leaders, business ecosystems, power and abuse in business ecosystems
Adner (2006)	*I see the innovation ecosystems as a multilateral set of partners that need to be aligned for a focal value proposition to materialize. These partners collaborate because they want to compete with whatever the established proposition is.* (2006, p. 98)	Value proposition, ecosystem strategy, alignment, execution
Peltoniemi and Vuori (2004)	*As a conclusive definition we consider a business ecosystem to be a dynamic structure which consists of an interconnected population of organizations. These organizations can be small firms, large corporations, universities, research centres, public sector organizations, and other parties which influence the system.* (2004, p.13)	Biological ecosystems, industrial ecosystems, economy as ecosystem, digital business ecosystems, business ecosystems, complexity in organisations, self-organisation, ecosystem emergence, co-evolution and adaptation
Moore (1993)	*In a business ecosystem, companies coevolve capabilities around a new innovation: they work cooperatively and competitively to support new products, satisfy customer needs, and eventually incorporate the next round of innovations.* (1993, p.76)	Evolution of an ecosystem lifecycle, ecology of competition, co-evolution
Adner (2017)	*The ecosystem is defined by the alignment structure of the multilateral set of partners that need to interact in order for a focal value proposition to materialize.* (2017, p.42)	Ecosystem-as-affiliation, ecosystem-as-structure, elements of ecosystem structure; activities, actors, positions and links

Table 2.6. *Ecosystem definitions provided in extant academic literature.*

Whilst the definitions outlined above are inherently useful in providing structure and clarity for comprehending what ecosystems supposedly represent in reality, albeit on a predominantly conceptual basis; with a few notable exceptions (Ansari, Garud and Kumaraswamy, 2016; Chesbrough, Kim and Agogino, 2014; Leten et al., 2013 and Overholm, 2015). Even then, these studies are concerned with outlining the role of lead firms in designing the ecosystem and establishing frameworks for governance and control. The lack of empirical research that

validates the theoretical descriptions given to explain ecosystems represents a challenge for management practitioners, as whilst extant studies refer to reality by providing examples of practical application of ecosystems thinking, the literature review process failed to identify any empirical publications investigating the strategic decision-making activity of the collective group of participating firms in ecosystems.

This is made all the more surprising given the deluge of literature across the business domains that refers to the term 'ecosystems', using it to describe various forms of alliances and networks at the firm level, the organisational level and in some cases the national level too.

> *"In annual reports, the term ecosystem occurs 13 times more frequently now than it did a decade ago. But like any buzzword, it's often overapplied. The term has been used to refer to everything from a country ('China is the second strongest ecosystem…') to a support function ('the HR ecosystem'), a portfolio of products ('the Darico ecosystem is made up of 5 products') and even a bundle of services intended to make people happy ('a happiness ecosystem')".*
>
> (Fuller, Jacobides and Reeves, 2019, p.1)

At risk of becoming semantically convoluted in business and management research, the term ecosystem has become a hot buzzword used to represent a lot of inter-related concepts. Extant literature in the domain of ecosystem strategy has primarily been focused on the strategic interactions amongst participating firms. The general trend seems to be a movement in the discussion from the traditional bilateral relationships perspective (Teece, 1986) to the more contemporary ecosystems context (Pisano and Teece, 2007), looking specifically at the collaborative co-operation, bargaining power and exchanges of knowledge between participating firms (Adner and Kapoor, 2010).

2.4.3 Ecosystem Constructs

Scanning the published literature unravels three primary groups of ecosystem research streams (Jacobides, Cennamo and Gawer, 2018). Firstly, the 'innovation ecosystem', concerned primarily with the involvement of multiple stakeholders in new product developments and innovations. Secondly, the 'platform ecosystem' centred upon the technology driven platforms facilitated by the collaborative efforts of participating firms. And finally, the 'business ecosystem', that explains the role of firms and their wider environment. Whilst the three ecosystem constructs mentioned above are the dominant designs, there is also a recognition of entrepreneurial ecosystems (Alvedalen and Boschma, 2017) and knowledge ecosystems (Clarysse et al., 2014) in recent literature. For the purposes of this doctoral thesis,

these are not considered as being distinct from the aforementioned ecosystem constructs listed above as both entrepreneurial and knowledge ecosystems can be iterations of any one of the three - innovation, technology or business - ecosystems. Each of these are now explored in greater detail in order to enhance our understanding of the different types of ecosystem constructs.

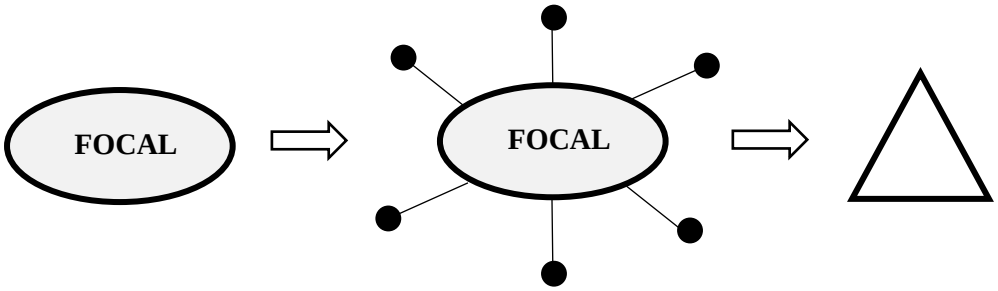
2.4.3.1 **Business Ecosystems**

In discussing the concept of business ecosystems Jacobides, Cennamo and Gawer (2018, p. 2257) summarise that the focus of prevalent literature has been on the recognition of "individual firm[s] or new venture[s]", with Teece (2007, p. 1325) extending this further by identifying the role of the wider community of ecosystem participants, "community of organisations, institutions, and individuals that impact the enterprise and the enterprise's customers and suppliers". As such, the ecosystem environment can be understood to be an amalgamation of collaborative efforts of individual firms that all impact each other through their activities, incorporating those actors that rest out-with the confines of traditional industry boundaries. Iansiti and Levien (2004a, p. 69) further substantiate the idea of a "shared fate" amongst ecosystem participants, emphasising the ties between the individual members and the influence of the ecosystem on the collective performance capabilities of the participants.

2.4.3.2 **Technology Ecosystem**

The second stream explores technology ecosystems - or as they are more commonly known; platforms - looking specifically at the role of the different participating firms, the sponsor firm and the complementors who are hosted on the sponsor's platform (Gawer and Cusumano, 2008; Gawer, 2014). Taking a more traditional "hub and spoke" form (Jacobides, Cennamo and Gawer, 2018, p. 2258), technology ecosystems enable multiple complementary firms to attach themselves to the central platform hosted by the sponsor – or lead – firm (see Figure 2D). This approach promotes modularity for participating firms (complementors) to contribute to, and gain from, the platform at various stages of the ecosystem lifecycle. Iansisti and Richards (2006, p. 79) acknowledge the inter-dependencies between participating firms, stating that an "*IT ecosystem is characterised by a large number of participants who depend on each other for their mutual effectiveness and survival*". In essence, the overall success of the ecosystem is

contingent upon the performance of participating firms and the output produced collectively by those involved in the ecosystem.



Lead firm creates the ecosystem to generate new value for customers.

Figure 2.4. *'Hub and Spoke' ecosystem construct. Adaptation taken from Overholm (2015, p.16)*

Crucially though, there is a distinction between the actors involved, as despite the dependencies on one another, not all participating firms are the same. Kapoor and Furr (2015) distinguish between two types of technology ecosystem participants; firstly, there are those firms that provide the user interface or the application that is consumed directly by the end user (Iansiti and Richards, 2006), and secondly there is the platform providers which enact the building blocks by providing the necessary tools and instruments that enable the application providers to reach the customer (Kapoor and Furr, 2015). Fundamentally then, each type of participating firm holds varying degrees of power and influence in these technology ecosystem environments (Balogun et al., 2014; Williamson and De Meyer, 2012), which to the best of the researcher's knowledge is relatively underexplored in preceding academic scholarship. The only notable exception being Iansiti and Richards (2009), who looked at the IT ecosystem in the Silicon Valley geographical cluster and how the technology gargantuan Microsoft Corporation's Windows operating system has fared in the face of fierce competition from Google Inc., and Apple Inc.

Consequently, there is an obvious requirement in existing academic research for understanding the relational interplay between participating ecosystem firms. As well as a concentrated investigation of the power and influence these participants hold over each other individually, but also over the collective whole.

2.4.3.3 **Innovation Ecosystem**

Innovation ecosystems are defined by Adner (2006, p. 98) "as a multilateral set of partners that need to be aligned for a focal value proposition to materialize. These partners collaborate because they want to compete with whatever the established proposition is". The fundamental

purpose of such collaborations is to encourage new product developments and commercialization of the collective innovation efforts by the participating firms in order to meet the needs of the end user – usually the consumer (Adner and Kapoor, 2010). Underpinning the logic of innovation ecosystems is the central premise that the end user benefits through the fulfilment of the "focal value proposition" (Adner, 2017, p. 42) which otherwise would not be possible as without the coordinated collaborative efforts of the participating firms in the ecosystem, the innovation would inevitably fail (Adner, 2012).

As such, the ecosystem in this context is designed around capturing the connections between the fundamental product, its component parts and the complementary products and services that collectively add value for the end user (Jacobides, Cennamo and Gawer, 2018). The relationship between the interacting actors is captured by Adner and Kapoor (2010) in their publication '*Value Creation in Innovation Ecosystem*' as is demonstrated in Figure 2.5, the innovation ecosystem moves beyond the traditional linear value chain of involving suppliers for component parts to also incorporating the contribution of complementary products and services in the final output that is consumed by the customer.

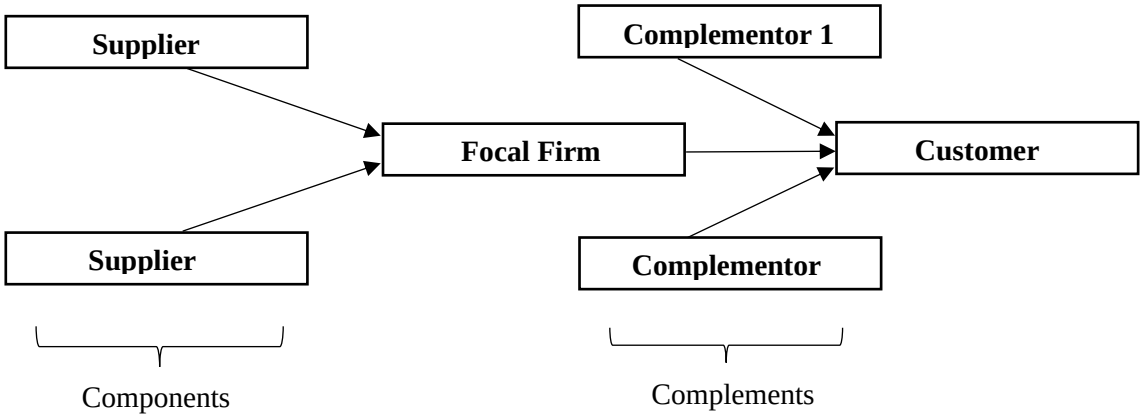


Figure 2.5. *General Schema of an Ecosystem (Adner and Kapoor, 2010, p. 309)*

The events in this type of innovation ecosystem construct can be broken down into the upstream activities involving the components (suppliers) to the focal firm, and the downstream involving complementors (third-party service providers) who augment the product offering of the focal firm. Upstream suppliers provide the necessary component materials that serve as factor inputs into the product offering of the focal firm. For the end consumer, the focal firm's output may be bundled together with complementary products and services that augment the

product offering of the focal firm. Therefore, it can be argued that components and complements are characterized according to where elements are bundled in the flow of activities that contribute to the fulfilment of the focal value proposition.

Relatedly then, in considering the relational interplay between participating firms in these types of ecosystems constructs the following research question emerges:

How does the focal value proposition emerge in an innovation ecosystem?

According to Adner (2006, p.98, 2012, 2017, p.40) the value proposition is realised through "the alignment structure of the multilateral set of partners that need to interact". Adner (2017) goes on to provide a more comprehensive breakdown of these terms in order to explain their significance in relation to the value proposition:

Alignment Structure

In ecosystem constructs, participating firms will have assigned roles and positions, the role they will play, to a large degree, will be well-defined (Adner and Kapoor, 2010). Alignment, therefore, is the level or the extent to which the members of the ecosystem are consistent with those roles and positions. It can sometimes be the case that ecosystem members have varying end goals and intentions in mind, for Adner (2017, p.42) "such cases illustrate the difference between participation and alignment". According to Adner, for alignment to be achieved a Pareto equilibrium, albeit temporarily, is required whereby all ecosystem actors (firms) are satisfied with their position (Adner, 2017). In order to attain this state of transitory equilibrium, Adner implies it is important for ecosystem members to engage in a "consistent construal of the configuration of [ecosystem] activities".

Multilateral

"An ecosystem is inherently multilateral" (Adner, 2017, p.42), where the multiplicity of relationships in the ecosystem provides it with the unique characteristics that allow for the ecosystem construct to be distinguished from a mere "aggregation of bilateral interactions". In the words of Adner (2017, p.42) "for the ecosystem construct to matter, it must be the case that there is a critical interaction across these relationships" that cannot be simplified into a series of bilateral agreements with visible lines of direct and indirect linkages between the members.

Set of Partners

Membership of the ecosystem is not in any way open-ended, instead by explaining it to be a 'set of partners' there is an inference that there is generally a shared goal amongst the ecosystem members. For Adner (2017, p.43) this shared goal materializes in the form of the focal value proposition, whereby "participating actors in the system have a joint value creation

effort as a general goal". Nonetheless, Adner (2017, p.43) cautions that this set is by no means complete or uncontested, instead he notes that:

"The defining attributes of partners is that they are actors on whose participation the value proposition depends, regardless of whether or not they have direct links to the focal firm".

Therefore, in order for a focal value proposition to materialise there is seemingly a requirement for *alignment* between the *multilateral set of partners* (Adner, 2006). However, what remains ambiguous in the literature thus far is how this alignment is achieved? What are the mechanisms and processes that drive alignment of participating ecosystem members around the focal value proposition? What does this need for alignment mean for strategic decision-making in the ecosystem? Hence, a related subset question that deserves attention in academic research is:

How does the focal value proposition influence the strategizing activity of participating firms in an ecosystem?

Having carried out a comprehensive review of extant literature on innovation ecosystems and the strategizing activity of firms engaged in such ecosystem constructs, there is little empirical evidence that the researcher is aware of accounting for the process through which the focal value proposition is substantiated and secondly, the influence of the focal value proposition on the strategic decision-making of participating firms.

Therefore, this gives rise to the first research question to be addressed in this doctoral research project:

RQ1. What is the purpose of strategic decision-making in the early stages of ecosystem establishment?

2.4.4 Value in Ecosystems

Recognising the growing influence of both 'value creation' and 'value capture' noted in innovation ecosystems literature, Demil, Lecocq and Warnier (2018) refer to the struggle of strategic management scholarship to conceptualise these constructs using the traditional strategy lexis. They suggest there appears to be a recognition that the language spoken by management practitioners needs to be updated, in order that the vocabulary reflects contemporary strategic management practices in these emerging ecosystem environments.

In order to provide a consistent vocabulary, one that will be adopted for the purposes of this study. This section sets out to explain ecosystem strategy by firstly exploring the constructs

of ‘value creation’ and ‘value capture’ as key concepts in the innovation ecosystems literature. Subsequently, this section will seek to address the dominant perspectives observed through the literature review on strategy within ecosystem constructs.

2.4.4.1 **Value Creation & Value Capture**

In the opening line to their publication *‘Value creation in innovation ecosystems’*, Adner and Kapoor (2010, p.306) state “a firm’s competitive advantage depends on its ability to create more value than its rivals (Porter, 1985; Brandenburger and Stuart, 1996)”. These traditional perspectives at the firm-level are prevalent in strategic management studies. However, they do little to explain how value creation is influenced in ecosystem constructs, as by definition these ecosystems involve a multilateral set of partners being aligned (Adner, 2006). Hence, the dominant perspectives on firm-based competition rest uneasy in the context of ecosystem strategy. Instead, ecosystem business models require an inherent degree of flexibility that promote collective and collaborative approaches to value generation (Khademi, 2020). De Vasconcelos Gomes *et al.* (2018) argue that the innovation ecosystem concept was developed in order to overcome this issue of joint value creation. In a similar vein, Carayannis and Campbell (2009) proposed that the definition of value varies depending on the ecosystem context, as they argue that knowledge creation is the value generation activity in knowledge ecosystems. Romero and Molina (2011) investigate value co-creation in network-based interactions within technology-led ecosystems.

Iansisti and Richards (2006, p.79) acknowledge the interdependencies between participating firms by suggesting that ecosystem participants tend to “depend on each other for their mutual effectiveness and survival”. In essence, the overall success of the ecosystem is contingent upon the performance of participating firms and the output produced collectively by those involved in the ecosystem. Consequently then, given the importance of the collective success of participating firms in ecosystems, a related subset question emerges that deserves further exploration:

Given the interdependencies between participating firms, how do they both compete and collaborate within these ecosystem constructs.

Yet, as argued by Khademi (2020) the literature remains fragmented, with scholars focusing on multiple themes and perspectives. Despite the wide-ranging approaches to understanding value creation activity, there appears to be consensus that collaboration between ecosystem members plays a fundamental role in enabling value capture (Van der Borgh, Cloodt

& Romme, 2012; Ikävalko, Turkama and Smedlund, 2018; Strokosch and Osborne, 2020). For instance, Amit and Zott (2001) outline four sources of value creation: (1) *novelty*, (2) *complementarities*, (3) *efficiency* and (4) *lock-in* by grounding them in theoretical perspectives from both entrepreneurial and strategic management literature. Van der Borgh, Cloodt & Romme (2012) present two main patterns in value creation activity: firstly, facilitation of individual firms' innovation processes and secondly, the creation of an innovation community.

According to Adner (2017, p.39) "the notion of ecosystems has raised awareness and focused attention on new models of value creation and value capture". Breaking down traditional industry boundaries through interdependencies between networks of organisations, Parker, Van Alstyne and Choudary (2016) suggest that serendipity could have a significant role to play in explain the value created in ecosystems. However, Adner (2017, p.43) argues through his *ecosystem-as-structure* perspective that there are four key elements underpinning the structuralist approach to value creation: (1) *activities*, (2) *actors*, (3) *positions*, and (4) *links*. For Adner (2017, p.44) these "four elements characterise the blueprint for how value is created in the interdependent collaboration that is the ecosystem". However, Adner (2017) stops short of confirming how this blueprint for value creation is implemented to enable multiple ecosystem partner firms to pursue the same objectives through 'interdependent collaboration'. Instead, both Adner (2017) and Jacobides, Cennamo & Gawer (2018) lead calls for a better understanding of ecosystem strategy, which can help explain the dynamics influencing strategy-making in the ecosystem. Therefore, the second research question posed and tackled in this doctoral thesis is:

RQ2. What are the ecosystem dynamics impacting strategic decision-making?

2.4.5 Ecosystem Strategy

According to Adner (2017, p.42) ecosystem strategy guides "the multilateral set of partners that need to be aligned for a focal value proposition to materialize." Adner implies that there is a need to coordinate the collaborative efforts of ecosystem partners to develop a focal value proposition. These value propositions are characteristically dependent on the synchronised availability of complementary inputs from a wide range of stakeholders. The leading perspectives in the literature centre on the ecosystem lifecycle model championed by the

seminal work of Moore (1993, 1996). With strategy seen as a means of navigating the four stages of ecosystem birth, growth, maturity and decline (Teece, 2017; Cantner *et al.*, 2021)

The dominant approach in the preceding literature has been to champion the role of the 'keystone' firm (Iansiti and Levien, 2004a). Guiding the rest of the platform through their blueprint for ecosystem success, a predefined vision that governs and controls the value proposition for the ecosystem (Adner, 2006; Adner and Kapoor, 2010; Clarysse *et al*, 2014). There are a number of underlying assumptions that inform this logic, not least the need for the 'keystone' entity to have a clear vision of the needs of the customers before there is any clarity on who is involved in the ecosystem (Andersen, 1999). Dattée, Alexy and Autio (2018) give the example of Apple as being a pioneering 'keystone' firm in their ability to articulate their iTunes music platform, allowing record labels and artists to understand their role in this closed system.

Nonetheless, this approach cannot be applied universally for all types of innovation ecosystems, particularly where the underpinning technologies are in the infancy stages of their development (Parker, Van Alstyne and Jiang, 2016). Taking for example Blockchain technologies, the range of alternative applications and future prospects have only recently begun to funnel down into tangible streams for industry to pursue. As such, previous efforts to advance potential products/ services have been undermined by the wide array of future possibilities for the underlying technology, and a lack of clarity over what tangible needs of the consumer can be addressed (Avital, 2018).

Dattée, Alexy and Autio (2018) have constructed a process model that looks at the foundational underpinnings for creating an innovation ecosystem (see Figure 2). They contend that the formation of an ecosystem blueprint is preceded by the proto-visioning stage and succeeded by the level of momentum generated internally and externally to the ecosystem. Their model demonstrates the mutual dependencies of the different stages of ecosystem development; showing that the ecosystem is created though an iterative process of feedback loops that inform each evolving round of the ecosystem construct.

Whilst the model depicted in Figure 2.6 shapes our understanding of how these iterations help strengthen the *enacted resonance,* it tells us relatively little about the role of the actors involved in this process. How do the individuals or collectives involved in the ecosystem creation activity help the progression from the *protovision* phase through to the *enacted?*

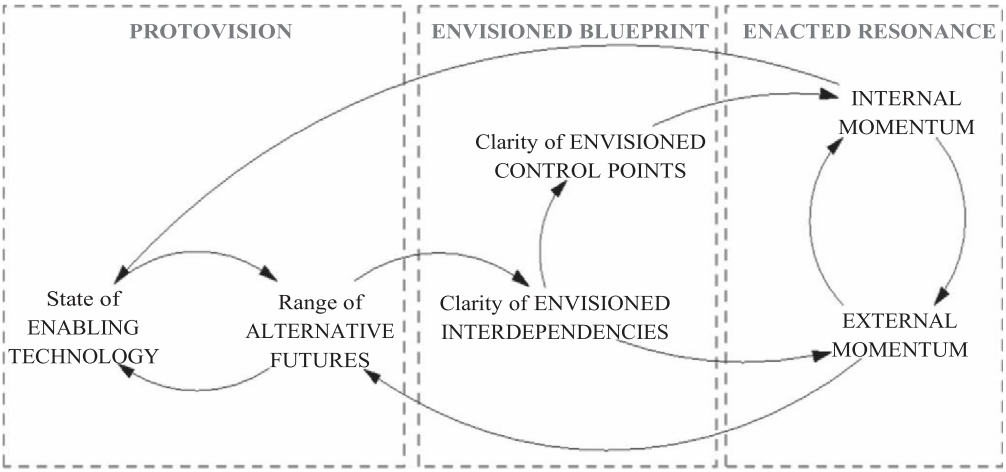


Figure 2.6. Process Model of Innovation Ecosystem Creation. Adopted from Dattée, Alexy and Autio (2018, p.487)

resonance? What can be said of the decision-making processes and procedures? How do multiple groups of firms and their individual employees work towards the same-shared goal?

These are all questions that, to the best of the researcher's knowledge, have yet to be addressed in the extant academic literature. Therefore, a further subset question that emerges from this literature review is:

What are the strategizing activities of firms engaged in ecosystem activity?

Through the SLR, this doctoral research provides a framework that can further our understanding of the strategizing activity of participating firms in an ecosystem as well as providing both scholars and practitioners a useful tool to identify strategizing practices that may aid ecosystem development. In doing so, this research attempts to bridge together the literature on ecosystems and open strategy. The next section presents a review of the literature on open strategy before then attempting to bridge these perspectives together and present the conceptual framework adopted in this doctoral research.

2.5 Open Strategy

2.5.1 Introduction

Considering the growing body of literature exploring the tendency of organisations to engage a wide-ranging audience of internal and external stakeholders in their strategy formulation stages (Whittington, Cailluet and Yakis-Douglas, 2011). As well as the growing trend to publicise the strategic direction being followed (Stieger *et al.*, 2012; Whittington, Yakis-Douglas and Ahn, 2016). There is merit in exploring the implications of both these approaches in strategy design and implementation. There remains both a theoretical and practical need to understand how openness in strategy practices influence strategy formulation and how organisations can incorporate larger audiences in their strategic decision-making processes.

And, although the involvement of several actors at various layers of organisational hierarchy isn't necessarily a novel concept (Burgelman, 1983; Pettigrew, 1992), with Birkinshaw (2017, p.423) crediting it as a form of "sharing information widely as a means of gaining buy-in and alignment", nevertheless, openness in strategic decision-making has noticeably manifest itself over the last two decades (Appleyard and Chesbrough, 2017).

Whilst a growing body of academic literature is focusing on open strategy as a concept through which "strategizing practices [are] aimed at including more internal and external stakeholders and communicating strategic choices more transparently" (Luedicke *et al.*, 2017). There remains a lack of consensus over how prevalent these practices are in the domain of contemporary strategic management, or the extent to which these are measured empirically in extant strategic scholarship.

2.5.2 **The Evolving Perspective on Strategy**

Referring to mainstream scholarly thought in strategic management discourse, the underlying components of strategy are centred upon creating a blueprint to enable an organisation to compete, by assigning goals and setting policies required to achieve those goals (Porter, 1980, p.16). In Porterian terms competition is seen as a key driver that spurs organisations, and the pursuit of overcoming the competition is seen as the hallmarks of what strategy represents. And it is this interpretation of strategy that has prevailed going into the new century and has provided the theoretical and practical underpinning for the rise of the Multi-national Corporation and recent trends of globalisation.

The emergence of open strategy into the domain of management science has been somewhat preceded by the emergence of the open innovation paradigm (Chesbrough, 2003; 2006) which first advocated the significance of collaborative practices in inter-organisational relationships. Manzini, Lazzarotti and Pellegrini (2017, p.260) surmise the benefits from extant literature as the *"accessing [of] new competences and know-how, sharing costs and risks of innovation, reducing time to market, increasing creativity, broadening product range, catching market opportunities, and monitoring technological change"*. It is therefore somewhat inevitable that Chesbrough and Appleyard (2007) would deduce that this phenomena rests uneasily within the boundaries of the established theoretical stances in business strategy. Open innovation directly challenges the traditional school of thought through the advocation of communities of participation and what Chesbrough and Appleyard (2007) refer to as innovation ecosystems. The concept of ecosystems is gaining traction in business research, seen as loosely connected networks of complementary firms that influence and, in turn, are influenced by the development, creation and commercialisation of a participating firm's offering (Iansiti and Levein, 2004a). With governance and alignment across participating firms in the ecosystem a prominent area for investigation within the field of strategic management scholarship, research has yet to adequately address strategic decision-making in these organisational clusters.

The social theorists take on strategy; or strategy-as-practice as it is more commonly recognised, attempts to bridge the gap between the theoretical depictions of what managers do as opposed to what is observed in practice (Jarzabkowski, 2005). The recognition of recursive practices and the bounded cognitive nature of organisational roles and routines, as Giddens (1984) describes in his structuration theory, represents these collective systems with which humans interact in their everyday tasks building an implicit level of habitual performance. The strategy-as-practice school of thought attempts to draw upon the internal systems of practice and organisational routines that are an institutionalised embodiment of what the firm represents, promoting the significance of contexts for the creativity and improvisatory practices that arise from repetitive engagement with artefacts (Whittington, 2003). In other words, the role of actors, tools, and organisational processes and practices cannot be ignored in the act of strategy formulation and implementation.

2.5.3 **What is Open Strategy?**

Whilst numerous authors have attempted to provide seasoned descriptions for what this phenomenon of open strategy constitutes; more explicitly democratic strategy, strategy as a practice of thousands, open-source strategy, open coordination, and open strategizing have all been used interchangeably in literature to explain comparable concepts (Matzler *et al.*, 2014). More ubiquitously though, the underlying fundamentals, or principles of open strategy (Amrollahi and Rowlands, 2016); those of *inclusion* and *transparency* (Whittington, Cailluet and Yakis-Douglas, 2011) and more recently *IT-enabledness* (Tavakoli, Schlagwein and Schoder, 2015a) have remained consistent in academic publications. Presently, these three philosophies of open strategy are widely acknowledged in the field of strategic management planning, with numerous theoretical studies (Whittington, Cailluet and Yakis-Douglas, 2011; Chesbrough and Appleyard, 2012) and empirical investigations (Stieger et al., 2012; Dobusch and Kapeller, 2013) upholding the view that these three foundational elements increase the effectiveness of strategic planning and decision making. This study proposes that there is a fourth dimension of participation, that whilst recognised in scholarly debate, has received relatively little attention as a standalone entity that merits further exploration under the broader theoretical principles of open strategy. Referring to the existing literature, the concept of open strategy can be recognised through these four general principles identified above and discussed in more detail in Table 2.7.

These four underlying principles have been investigated through numerous theoretical and empirical studies. For instance, Newstead and Lanzerotti (2010) imply open strategy is an enabler for leveraging the knowledge of external stakeholders in strategy creation, Whittington, Cailluet and Yakis-Douglas (2011) promote the practice as a way of developing commitment and understanding in the implementation of strategy as well as informing the scope of ideas considered. Based on the literature, ultimately the four elements identified are interweaved as the foundational elements underpinning what changes open strategy represents in strategy formation and implementation. Significantly though it should be noted that the degree of openness in strategic decision-making is contingent upon a spectrum (Tavakoli, Schlagwein and Schoder, 2015b) rather than a binary, either-or category. "*Organisational strategies differ on the degree of openness on a continuum; that is, organisational strategies are not either completely open or completely closed*" (Tavakoli, Schlagwein and Schoder, 2015b, p.4). Acknowledging the extent to which organisations become more (or less) inclusive, transparent,

participative, and IT-enabled intrinsically influences the degree of openness in strategy formulation.

Principles of Open Strategy	*Facets/Descriptors*
Inclusiveness	• Seeking user opinion through active engagement and involvement of external stakeholders in the decision-making process (Gegenhuber and Dobusch, 2017) • Digital/internet-based forum participation to enable interactions between varied group of internal and external stakeholders (Malhotra, Majchrzak and Niemiec, 2017) • Dependency on external resources from out with the boundaries of the focal firm (Appleyard and Chesbrough, 2017) • Refers to involvement of both internal and external actors in the process of stakeholder consultations and co-strategizing (Doz and Kosonen, 2008)
Participation	• Means of amassing a greater level of input through the collation of ideas and suggestions to influence decision making (Quick and Feldman, 2011) • Enables centralised organisations to amass greater amounts of information about its environment and generate robust contingencies (Mack and Szulanski, 2017)
Transparency	• Accessibility of information about an organisation's strategy, both during the planning process and also the generated output (Mack and Szulanski, 2017) • Distribution of relevant information and material that is clearly visible (Gegenhuber and Dobusch, 2017) • Making project results visible and accessible for external actors (Appleyard and Chesbrough, 2017) • Visibility of information to both internal and external audiences, involving the creation and sharing of knowledge and ideas (Whittington et al., 2011)
IT-enabledness	• Use of IT in order to increase participation is essential for the strategy process (Tavakoli et al., 2015a; Haefliger et al., 2011) • Social media and associated platforms as facilitators for participation and engagement (Amrollahi et al., 2014) • Co-creation and collaboration platform that enable participation in open strategy (Schlagwein et al., 2011)

Table 2.7. The four key principles of Open Strategy

These four underlying principles have been investigated through numerous theoretical and empirical studies. For instance, Newstead and Lanzerotti (2010) imply open strategy is an enabler for leveraging the knowledge of external stakeholders in strategy creation, Whittington, Cailluet and Yakis-Douglas (2011) promote the practice as a way of developing commitment and understanding in the implementation of strategy as well as informing the scope of ideas considered. Based on the literature, ultimately the four elements identified are interweaved as the foundational elements underpinning what changes open strategy represents in strategy formation and implementation. Significantly though it should be noted that the degree of openness in strategic decision-making is contingent upon a spectrum (Tavakoli, Schlagwein and Schoder, 2015b) rather than a binary, either-or category. "*Organisational strategies differ on the degree of openness on a continuum; that is, organisational strategies are not either completely open or completely closed*" (Tavakoli, Schlagwein and Schoder, 2015b, p.4). Acknowledging the extent to which organisations become more (or less) inclusive, transparent,

participative, and IT-enabled intrinsically influences the degree of openness in strategy formulation.

2.5.4 **Defining Open Strategy**

Initially, Chesbrough and Appleyard's (2007) innovations perspective and Doz and Kosonen's (2008) take on strategizing through a conversational dialogue through a wider organisational audience, were the original publications in the strategy management domain; the first recognition of open strategy appears in the psychological sciences field. Liinamaa et al. (2004) refer to this phenomenon as a form of 'collaborative strategic planning' where participants share knowledge and partake in strategic planning initiatives designed to encourage dialogue and conversation. With this social science take on collaborative strategy, Whittington, Cailluet and Yakis-Douglas (2011) attempt to contemporise open strategy by characterising this as a transparent and inclusive means of strategizing that facilitates wider involvement of actors beyond the traditional inward-looking boundaries of the firm, before adding the third dimension of IT-enabledness as a support mechanism that enables the widespread dispersion and involvement of internal and external stakeholders. Whilst the fourth dimension of open strategy remains a recognised, however in our opinion undervalued component part, the widespread omission of participatory practices in the definition of open strategy is an oversight in existing academic publications. As the study has shown participation to be different from inclusion, it's submersion within the inclusion branch of open strategy literature diminishes its impact on open strategy practices. In order to compute a consolidated definition for open strategy, a review of the definitions given in prevalent literature is presented in Table 2.8.

Founded upon the review of existing literature, the four principles, dimensions or even characteristics of open strategy are taken to be sufficient underpinnings to define the 'open' element of open strategizing. Having already defined strategy under the umbrella of Porter (1980, p.16) where strategy is seen to be a blueprint for "*how a business is going to compete, what its goals should be, and what policies will be needed to carry out those goals*".

Borrowing from Tavakoli, Schlagwein and Schoder (2015b, p.5), the practice of open strategy therefore is taken to be "*an inclusive, transparent, [participative] and information technology (IT)-enabled process to develop and enact a formula for how an organisation is going to compete, what its goals should be and what policies will be needed to carry out those goals*".

Publications	***Definition***	***Key Facets of Open Strategy***
Appleyard and Chesbrough (2017)	*Open strategy balances the tenets of traditional business strategy with the promise of open innovation. It embraces the benefits of openness as a means of expanding value creation for organisations.*	Collaboration Open Innovation Value Creation
Whittington, Cailluet & Yakis-Douglas (2011)	*Open strategy widens inclusion and increases transparency.* *Inclusion refers to participation in an organisation's strategic conversation, the exchanges of information, views and proposals intended to shape the continued evolution of an organisation's strategy.* *Transparency refers to the visibility of information about an organisation's strategy, potentially during the formulation process but particularly with regard the strategy finally produced.*	Inclusion Transparency IT Tools & Platforms
Hautz, Seidl & Whittington (2017)	*Openness in the strategy process is a multifaceted, contingent and complex phenomenon.* *The framework focuses on how increasing levels of openness through broader inclusion change the way how and with whom involved individuals interact and build relationships.*	Contingencies Network-Perspective Inclusion Transparency
Mack and Szulanski (2017)	*Open strategy in centralised organisations requires to overcome the generalisation that decision making is driven by top management, they suggest that centralised organisations can manage this tension by combining participatory and inclusive practices. Whereas participation is about increasing stakeholders' input for decisions, inclusion is about creating and sustaining a community of interacting stakeholders engaged in an ongoing stream of issues in the strategy process.*	Participation Inclusion Transparency (De)Centralisation
Luedicke, Husemann, Furnari and Ladstaetter (2017)	*Strategizing practices aimed at including more internal and external stakeholders and communicating strategic choices more transparently.*	Open agenda setting Open participation Open governance
Birkinshaw (2017)	*The easiest way to define Open Strategy is in terms of what it is not. The traditional model of strategy-making was elitist and secretive: a small number of executives at the top of the firm (plus their advisors) were involved in the formulation process, and information about key decisions was shared on a need-to-know basis. In truth, this traditional model is a caricature that few firms entirely lived up to, but it provides a useful anchor to our understanding of the ways in which strategy-making is changing, namely towards giving employees and outsiders more involvement in the process and more information about what is decided.*	Commons-based production Crowd-based inputs Collective buy-in and action Collective sensemaking
Appleyard & Chesbrough (2017)	*Two branches of Open Strategy have emerged: a 'content' branch that examines the ability of organisations to sustain themselves economically with an open approach to innovation; and a 'process' branch that explores the systems that can enhance strategy formulation by furthering participation of both internal and external actors and improving transparency inside and outside of the firm.*	Participation Open Innovation Reversion Strategies
Tavakoli, Schlagwein and Schoder (2015a)	*Open strategy refers to an inclusive, transparent and IT-enabled process to develop and enact a formula for how an organisation is going to compete, what its goals should be and what policies will be needed to carry out those goals.*	Inclusion Transparency IT-enabledness Strategy Process Model

Table 2.8. Open strategy definitions given in existing literature

This definition of open strategy reciprocates to the requirement for a comprehensive characterisation of what the phenomena entails, and whilst the field remains relatively

emergent this definition isn't absolute or definite, instead it provides the framework for more considered integration of future research in this field. This paper proceeds to outline a research agenda with suggested directions for future scholarly explorations to investigate, and whilst it is by no means exhaustive, it provides an indication of potential streams for scholarly debate.

2.5.5 **Open Strategy Perspectives**

Initial concepts of open strategy were diverse in their interpretation of what characterised this phenomenon. Chesbrough and Appleyard (2007) first derived the term open strategy as an extension of the open innovation paradigm, advocating the ideologies of collaboration and open dialogue as parallels between the two areas of discourse. They promote open strategy as an iteration of and strategic development following-on from the popular open innovation school of thought. Doz and Kosonen (2008) progress the increased dialogue nuance of open strategy resulting in a more comprehensive form of co-strategizing, whilst Schmitt (2010) in following a similar line of academic enquiry provides impetus on the flow of knowledge and ideas through a consultative approach to strategizing.

Whittington, Cailluet and Yakis-Douglas (2011) attempted to capture these wide-ranging explanations across two dimensions in their conceptualisation of what constitutes open strategy. Namely the dimension of inclusion, "*referring to internal or external consultation*" and transparency, "*referring to the internal and external visibility of information about an organisation's strategy*" (Hautz, Seidl and Whittington, 2017, p.299). However, these two dimensions should not be restricted in application to solely the early scholarly views, as they have been used to convey interrelated themes in equivalent research paths both within the specific domain of open strategy and in associated fields. Research in Information Technology (IT) is promoting the potential of social media channels and platforms as a means of accessing and engaging wider audiences, thus encouraging inclusiveness whilst also ensuring transparency of communication through increased visibility of conversations and threads of conversational exchanges between both internal and external actors (Gast and Zanini, 2012; Haefliger et al., 2011). Tavakoli, Schlagwein and Schoder (2015a) provide a more informed discussion of where academic literature positions itself in relation to the empirical research conducted on open strategy – see Table 2.9 for an insight into the practitioner-based elements of open strategizing.

Moreover, looking at the transparency dimension, schools of thought in the impression management and public relations field have been investigating the role of increased openness

towards external actors (Hautz, Seidl and Whittington, 2017) as means of significantly improving the comprehension of strategy by external stakeholders (Benner and Zenger, 2016).

CASE	PRACTICES IN OPEN STRATEGY		
	Transparency	**Inclusivity**	**Participation**
IBM	> Centralised platform used to facilitate social discussions > Encouraging input through open internal calls that are all-encompassing	> Following open strategy principles that encourage inclusiveness > Online portal used to facilitate discussions and encourage sharing of knowledge and ideas	> Collated ideas and gathered group consensus using machine learning and analytics to support this process
Wikimedia Foundation	> Public Wiki forum to discuss strategy initiatives and objectives > Captured all ideas and discussions on accessible wiki pages > Forums and accompanying commentary methods used to engage users	> Collective process of generating ideas and strategic decision-making with the online community. > Changes/alterations were tracked through multiple versions of Wiki page(s)	> Agreeing on topics to be progressed collaboratively through wide participation > Made us of video conferencing technologies to facilitate discussions amongst decision makers.

Table 2.9. Open strategy in practice. *Adapted from Tavakoli *et al.* (2015a, p.175)

Baptista et al., (2017) explore the various mechanisms through which IT can facilitate open strategy practice, such as wikis, blogs, and live video streaming. They argue that these technologies harvest varying degrees of openness in transparency, particularly in relation to the types of information made available to certain audiences and the freedom from control measures and moderators. Yakis-Douglas et al., (2017) extend this notion further by distinguishing between the disclosure of information willingly by organisations as well as involuntarily due to external, and in some cases internal pressures.

The most pertinent example of this mandatory disclosure can be seen in the aftermath of the global financial crisis, where banks and other financial institutions came under immense pressure from regulators, government bodies and institutional investors to mandatorily disclose information regardless of managerial preference.

In a similar vein, the element of inclusiveness also incorporates differing levels of openness, the primary distinctions of which come in two forms: participation and inclusion. Quick and Feldman (2011) differentiate between participation and inclusion in government initiatives, conveying participation to be a lesser form of engagement, concerned with harnessing ideas and gathering information (Mack and Szulanski, 2017). Whereas inclusion refers to more powerful involvement of actors in the crowd-sourcing strategic efforts of an

organisation, whereby stakeholders are involved in the evaluation of and commenting on the wider sphere of strategic decision making and implementation (Hutter *et al*., 2017). Participation differs from inclusion, despite Whittington, Cailluet and Yakis-Douglas, (2011) using the two terms interchangeably to describe inclusivity in open strategy, Andersen (2004) advocates participations as a method for generating multiple ideas and suggestions. Herein lies the primary distinction between participation and inclusion, as broader stakeholders don't necessarily have the required insights to partake in prolonged strategic conversations, counterintuitively this could actually contribute to an ineffectual outcome as stakeholders may feel burdened with responsibilities that fall out with their remit (Mack & Szulanski, 2017; Westley, 1990). Instead by providing their ideas and suggestions through participatory involvement, stakeholders are not burdened with the deeper involvement more commonly associated with inclusiveness

There is a growing sense that openness isn't binary - as straightforward as being open or not - instead it is enacted across a spectrum with varying degrees of openness within which the nature of the disclosed information is not always discretionary (Hautz, Seidl and Whittington, 2017). Organisations are increasingly involving a wider range of internal and external stakeholders in their strategizing practices, yet the field remains relatively under-researched given the newness of the phenomena and its application as a practice-in-motion study that is constantly evolving.

2.6 Bridging the Literature

The preceding sections provided a synthesis of the key literature on ecosystems and open strategy. This section will now present a conceptual analysis of how bridging these two separate streams of research could provide fruitful insights into the strategic decision-making activity in ecosystem constructs, as shown in Figure 2.2. In doing so, two key are made distinctions; firstly, the unit of analysis is the systemic level of the ecosystem. Where the focus of the strategic decision-making activity of the firm is concentrated on its contribution to the focal value proposition of the ecosystem. Secondly, the concept of openness disposition in strategic decision-making means that participating firms do not necessarily need to adopt a binary position between being 'open' or 'closed'.

The theory of the firm presents firms as self-serving entities that exist to accrue competitive advantage in the Porterian sense. Yet with the ecosystems approach, there seems to be a secular

shift towards the more Ricardian perspective of comparative advantage. Adner (2006, p. 98) explains that in innovation ecosystems, "firms combine their individual offerings into a coherent, customer-facing solution". According to Jacobides, Cennamo and Gawer (2018, p. 2257) "the anchoring point is the system of innovations that allows customers to use the end product". The extent to which participating firms in the ecosystem align will influence their ability to create value for the end customer (Adner, 2017). Through the open strategy lens, the researcher purposes that strategic alignment between ecosystem participants is contingent upon their openness towards a collective approach to decision-making.

2.6.1 **Conceptual Framework**

Leaning on the work of Dattée, Alexy and Autio (2018), this research adapts the process model of innovation ecosystem creation in order to acknowledge where the principles of open strategy apply in the development of these ecosystem constructs (Figure 2.7). It is proposed that a Ricardian approach of 'comparative advantage' fosters the need for the collective wellbeing and growth of the ecosystem construct. Individual firms in the ecosystem will have an evolving role to play in the development of the ecosystem. Just how these roles evolve, will depend on the state of the ecosystem.

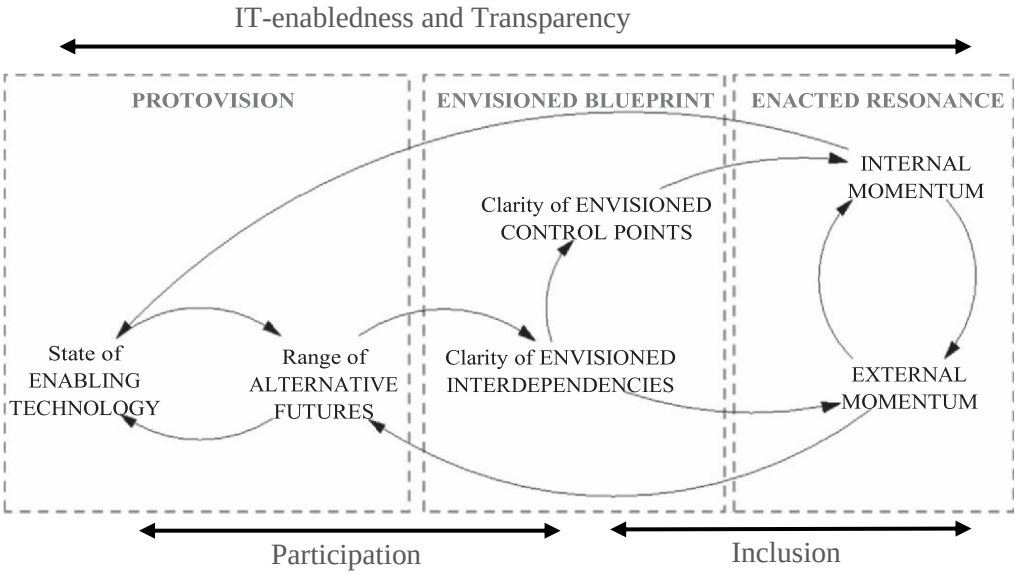


Figure 2.7 Process Model of Innovation Ecosystem Creation and Open Strategy. Adapted from Dattée, Alexy and Autio (2018)

As demonstrated in Figure 2.7, there is a need for transparency throughout the three stages of ecosystem development in order to keep individuals informed and engaged. Similarly, the

IT-enabledness is a concurrent theme that extends the duration of the ecosystem development lifecycle, not least because of the technological advances and requirements of contemporary management practice. There is a distinction made between inclusion and participation depending on the phase of ecosystem development. In the early stage of *protovisioning*, it is anticipated that ecosystem members participate in the dialogue to generate ideas on the alternative future scenarios, and subsequently in forming clear independencies between the different component parts of the ecosystem. In this earlier phase of ecosystem development, the role of participants is too narrow the range of alternative futures to form a considered blueprint for how the ecosystem will shape up.

Yet, the literature remains ambiguous on how strategy initiatives are agreed and implemented in the ecosystem, particularly during the early stages of ecosystem birth. When the ecosystem is still in the generative phases of development, somewhere between the *protovisioning* or *envisioned blueprint* stages of Dattée, Alexy and Autio (2018) model. Therefore, this gives rise to the final research question to be tackled in this doctoral research project:

RQ3. What are the key strategy initiatives undertaken in the generative phase of an innovation ecosystem?

2.7 Summary of Chapter 2: Revisiting the purpose

Following on from the extensive review and discussion of the literature relating to ecosystem strategy process, it is useful to revisit the research purpose and outline how this objective can be fulfilled through this doctoral research project. The purpose of this research as stated in the first chapter is:

To understand how strategic alignment of participating firms in an innovation ecosystem around a focal value proposition can be achieved. This includes demonstrating the utility of a processual approach as well as shedding light on how strategy processes can shape an emerging ecosystem.

The application of strategic management process to ecosystems is seen to pose particular challenges because the extant literature on strategic management is predominantly concerned with competitive approaches that take a firm-centric view on strategy formulation and

implementation. It is argued, however, that ecosystems require a different understanding of the dynamic interactions between firms that shape and influence strategic decision-making (Adner, 2017; Jacobides, Cennamo & Gawer, 2018). Also, there is a need to develop a refined understanding of the significance of strategic decision-making in the initial stages of ecosystem emergence and growth that are grounded in empirical examples. Therefore, the subsequent chapters will seek to deliver a detailed research design and empirical investigation to provide an understanding of the practices of strategy management in innovation ecosystems.

The research purpose outlined is rather generic. In order to help guide the research design, data collection and interpretation, it is essential to specify exactly what is being investigated through the empirical research. Based on the theoretical discussions in the preceding sections, the following research questions, deduced from the systematic literature review, are outlined below:

1. What is the purpose of strategic decision-making in the early stages of ecosystem establishment? This research questions aims to uncover how strategic decision-making in the generative phases of ecosystem establishment influence the direction taken by the ecosystem. It seeks to clarify the significance of strategic decision-making at this early stage by identifying and explain the key initiatives undertaken.

2. What are the ecosystem dynamics impacting strategic decision-making? Activities undertaken within the strategy process are considered to be significant elements of the strategic decision-making dialogue (Whittington, 2006). Therefore, the goal of this research question is to offer some implications for ecosystem strategy scholarship and strategy practitioners by clarifying the focus of the strategy process in the context of establishing an innovation ecosystem.

3. What are the key strategy initiatives undertaken in the generative phase of an innovation ecosystem? This question aims to shed light on the significance of strategy activity in the formulative stages of ecosystem development. The intention is to identify the catalysts driving strategic decision making in an emerging innovation ecosystem.

The research questions outlined above offer guidance for both the research design and empirical investigation undertaken in this thesis. The subsequent chapter will address the research design for this doctoral research project.

3. RESEARCH METHODS OVERVIEW

The purpose of this chapter is to provide an overview of the multiple methodological choices offered to management scholars, as well as an appreciation of their methods of data collection, techniques of data analysis and theory building. This chapter is designed to provide a considered understanding of the key debates and issues relating to the different approaches and will conclude with a comprehensive discussion on the chosen research strategy.

Research methodology is critical in order to legitimise and provide credibility to any form of management and organisation studies research. Failing to adequately account for the philosophical positioning taken within the research can have profound implications for the quality and outcome of the research being undertaken. The manner in which the researcher interprets and makes sense of the world around them will naturally influence the process of conducting the research and subsequently the results and findings drawn from the study. Therefore, acknowledging the philosophical assumptions underpinning the research will assist in enabling the researcher to identify and proceed with the correct research approach and associated techniques.

The benefits of providing an understanding and appreciation for the various research strategies available to scholars are well recognised in extant research methodology publications. Firstly, by undertaking a wide-ranging review of research techniques the researcher is able to develop their own research identity. Secondly, an appreciation for the diverse philosophical paradigms and positioning can aid the researcher in envisioning which research design is best aligned to their epistemological outlook. Lastly and perhaps most significantly, it enables the researcher to outline the design process of the research transparently.

3.1 Introduction: Research Paradigms

"I am not here to speak the Truth. I am here just to give you a method to perceive it."

Vasudev (2012)

Vasudev's (2012) quote is appropriate to reference here as it provides a foundation for debating the purpose of research philosophies and the approach taken by the researcher relative

to those positionings. At the crux of the research philosophy debate are considerations on what exists in the world and how we come to know about what is out there. Accordingly, scholars in the field of management and organisation studies research are disciplined in the different philosophical paradigms as a result of their decision to view the social world under the guise of several different lenses. The succeeding section provides an informed review of literature on prominent research philosophies and approaches as observed in management and organisation studies research.

3.2 Deliberating on Research Philosophies

Research on management and organisation studies is concerned with issues encountered in the social world, which predominantly are centred around the involvement of human interactions that are messy and complex in nature. In management research there a multitude of approaches for conducting research. Sheldon (2003) discusses two dimensions as the critical criteria for the philosophical modelling of management and organisational studies research, stating there is a distinction to be made between the rational logic and existentialism. In doing so, there is a fundamental need to define whether there is just one reality in existence which is independent to the researcher, or whether this reality is instead rather more subjective and constructed through social interactions.

In order to understand these opposing approaches, there are four key components of research philosophy; epistemology, ontology, methodology and research technique that are explored in greater detail below. In doing so, the main purpose will be to clarify the key debates on the nature of research in the social sciences domain, or more specifically management and organisational studies research through the introduction of different positions, epistemologies, and implications for research design.

Taking a holistic view of extant research in the field of strategy or more broadly management and organisation studies demonstrates that there isn't a dominant singular epistemological or ontological paradigm. Instead, existing research is philosophically positioned across a scattered and often fragmented arena of academic scholarship characterised by ongoing debate. Nonetheless, the purpose of research design is paramount in delivering a rigorous and robust empirical study, as explained by Yin (2003, p.20) the underlying principles of any research methodology is to "[connect] the empirical data to a study's initial research questions and, ultimately, to its conclusions".

3.2.1 Ontology

Ontology is associated with the form and nature of reality, or in other words the pursuit of truth in the world (Runes, 2001; Williams, 1989). Historically speaking, both ontology and epistemology form distinct dimensions of the philosophical branches commonly associated with metaphysics (Rawnsley, 1998). Indeed, ontology is almost synonymous with metaphysics in that both are concerned with explaining the ultimate nature of being (Audi, 1999), a central concern of philosophy that has transcended through the classical, modern, and postmodern lines of thought.

The debate around ontology in the science and social sciences domains is often contrasting given that ontology can be either objective or subjective. Holistically speaking, research in the domain of social sciences has not followed the traditional objective approach and therefore is considerably richer in philosophical debates (Meredith *et al*., 1989). The key differentiators between the two approaches are outlined below in Figure 3.1 in order to demonstrate the opposing characteristics of the two ontological positionings.

Objective Ontology	**Subjective Ontology**
➢ Deals with facts. ➢ Seeks causality and fundamental laws. ➢ Reductionist approach in order to comprehend phenomena in its simplest form. ➢ Focus is on testing hypothesis as a means of measurement and objective reality. ➢ Predominantly incorporates a large research sample. ➢ The aim of the objective ontology is to discover what is out there.	➢ Attempts to understand what is happening. ➢ Seeks to build understanding by investigating a given phenomenon in its totality. ➢ Inductive approach to developing ideas. ➢ General centred on smaller samples or focus groups where investigation is in depth and longitudinal. ➢ The aim of the subjective ontology is to understand people's interpretations and perceptions.

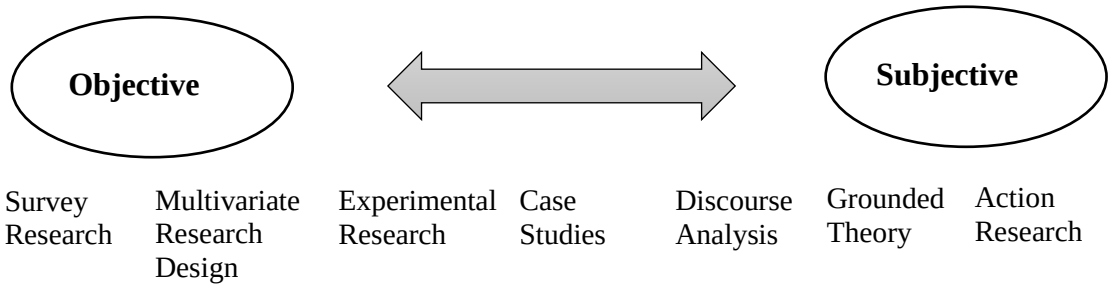


Figure 3.1 Choice of research methods relative to ontological positioning (Dörfler, 2018)

3.2.2 Epistemology

Epistemology concerns the way in which we observe the nature of reality in the world around us. It is essential in all forms of research methods, addressing the need for justification of what is thought to be true. In observing issues related to the social world, it is argued that these are filtered through the various lenses acquired through the background, cultural upbringing, education, personal and professional life experiences of the researcher (Dilley, 2004). There are five core epistemological positionings identified in extant social sciences research (Guba and Lincoln, 1994), these are noted to be:

1. Positivism
2. Relativism/ Critical Realism
3. Social Constructionism
4. Post-Positivism
5. Post Modernism

It is useful to note here that there is a deluge of different philosophical debates in management and organisational studies research. The succeeding sections will endeavour to touch base on the idiosyncratic features of each epistemological positioning or paradigm. Also, worthwhile noting here is the use of the terms epistemology and paradigm which are both used interchangeably in this study. Dörfler (2018) expands on the use of the term paradigm, explaining it to be a means of representing a theoretical framework within the bounds of which the research is to be conducted.

3.2.2.1 Positivist Epistemology

At the fundamental level, positivism describes a way of studying society such that scientific evidence is essential in order to reveal the underlying truth about how society functions. The positivist paradigm is centred upon the underlying assumption that it is possible to account for social life and create reliable knowledge about how society operates. The fundamental premise of the positivist outlook is that sociology should only be concerned with what can be experienced through human senses. Following on from this, the subsequent theories generated on social life can be structured in a linear and methodical manner based on verifiable facts. Even in the most arduous of positivist research design in management and organisational studies, the researchers are not solely dealing with cold, hard, and objective data. Instead, there is usually the inclusion of academic readings, discussions with peers and academic scholars, theoretical models and frameworks that also provide context to the research being undertaken.

In summary, the positivist epistemology can be understood to envelop the following characteristics (Comte, 2009):

- Large sample sizes.
- Reductionist approach that aims to break down problems into their smaller element parts.
- Hypothetical deduction whereby a hypothesis is constructed with observations conducted in order to demonstrate whether it holds true or not.
- Generalisability is the primary focus as a sufficient sample size is required in order to provide a generalisation of the population.
- Researcher independence as the observer is seen to be wholly impartial and detached from the phenomena under investigation.
- Objective and value-free decision-making on the method and choice of subject which is not based on beliefs or interests.
- Empirical orientation with a predominantly quantitative research design.

Whilst the above characteristics provided for the positivist paradigm are not individually unique to the approach, collectively they surmise the key characteristics underpinning the positivist epistemology.

3.2.2.2 Relativist/ Critical Realist Paradigm

Critical to the philosophical positioning of the purely positivist or the purely interpretivist paradigm is the distinctive gulf between either end of the epistemological spectrum. Intriguingly though, the pure application of either paradigm is rarely found in social sciences research. Despite the intentions of management and organisational studies scholars and researchers to be explicit in their philosophical stance, in conducting field research and immersing themselves in the study, it is often observed that different research designs are implemented at the convenience of the researcher (Sheldon, 2003).

The critical realist paradigm is seen as a middle ground which combines the strengths of both positivist and interpretivist epistemologies, whilst seemingly avoiding the limitations imposed by each approach too (Easterby-Smith, Thorpe and Jackson, 2012). Much of the popularity surrounding the critical realism approach is down to the pioneering efforts of Roy Bhaskar (1978), with the social sciences domains of sociology and economics being amongst the first to adopt this philosophical framework. Nonetheless, the critical realist approach has been making forays into the sphere of management and organisation studies research (Tsang

and Kwan, 1999). According to Bhaskar (1978) the predictive validity sought under Popper's logical positivism paradigm is insufficient in the case of social sciences research. Relating this more specifically to the field of strategy research, Mir and Watson (2001, p.1171) infer those statements such as "market share leads to profitability" cannot be proved nor tested, and therefore research that attempts to prove such assumptions is flawed.

In summation, the critical realist epistemology seeks to problematize research that fails to establish the difference between causality and correlation. As such, the critical realism is concerned with replication in research studies, suggesting that generalisation is only possible whereby the study can be replicated. Even in the realm of management and organisation studies, critical realism seeks the same rigorous design. Take for example, Amihud and Lev's (1981) agency theory study that implied that the strategic behaviour of managers is influenced by the monitoring and control efforts of shareholders. According to Mir and Watson (2001) this finding was given significant status within management theory, however following the study conducted by Lane, Cannella and Lubatkin (1998) it was found that the findings were not as generalizable as Amihud and Lev (1981) had originally led us to believe. In a similar vein, the work of Henry Mintzberg (1973) where he reanalyses the work of managers and provides insights into stakeholder analysis, in doing so he demonstrates an attempt to diversify the idea of firm performance, incorporating several different perspectives.

3.2.2.3 Social Constructionist Paradigm

Whilst social construction does not outright reject 'genetic inheritance' (Gergen, 1985, p.265), instead it concentrates on the social effects of both the constructs of the individual and the collective social orders. What social constructionism concerns itself with has to do with what is known as culture in the world of anthropologists, or sociologists constructs of society, and the psychological branch of shared society (Galbin, 2014). As such social constructionism places significance on the complexity of causality between the multiple facets of individuals in their own societal constructs; challenging the plausibility of what we often hold to be common knowledge (Demeritt, 2002).

More specifically though, social construction implies that the manner in which we understand the world around us is subject to the historical narratives of interaction and communication between different groups in society. Mirroring the tendency for researchers to be inherently reflexive in their analysis of the observed phenomena assuming a critical position on the universally accepted assumptions on the nature of the social world in which we live.

Irrespective of the benefits outlined above, the most prominent critique of the social constructionist approach is that social constructionists' researchers build their knowledge based on the relived experience as narrated by the person's experience as opposed their expert knowledge (Haslanger & Haslanger, 2012). Indeed, the premise of social construction dictates those social accounts are prioritised and that the community of voices is given a platform to capture these individual accounts in relation to the wider system (Greggoratto, 2015).

Yet the flexibility this approach offers to the ethnographic researcher cannot be underestimated. The opportunity exists for the researcher to immerse himself in a given scenario by studying the interactions, perceptions and behaviours that occur during the strategic decision-making dialogue. Reeves *et al.*, (2008, p.1020) explain how social construction – under the branch of a postmodern epistemology – enables the researcher to elicit "rich, holistic insights into people's views and actions".

Whilst the dominant paradigm in strategy literature has perhaps resonated with the constructivist approach to generating theory, there is arguably an intrinsic requirement to advance academic scholarship into the realm of critical realism, in order to validate some of the theoretical conceptualisations being made about this emergent management practice of strategizing. Yet given the relatively youthful progression of both the ecosystems and open strategy research streams and the essential requirement for research to theorise the underlying fundamental components of what constitutes this emergent concept of openness in strategic practice. Prevailing common sense would dictate that academic scholarship pursue the social constructionist's logic in forthcoming research. In short, with social construction, the construction of reality through shared understanding and assumptions about the human world is made via social and interpersonal influences (Burr, 2006).

3.2.2.4 Post-Positivist Paradigm

> *"Now, what I want is, Facts. Teach these boys and girls nothing but Facts. Facts alone are wanted in life. Plant nothing else and root out everything else… stick to Facts, Sir... In this life we want nothing but Facts"*
>
> Dickens, (*Hard Times (1854, pp.1-2)*

Referring to his 1959 publication 'The Logic of Scientific Discovery', Karl Popper makes the intrepid assertion that 'logical positivism' is dead (Popper, 1976). Indeed, it's not difficult

to understand why the verification of cognitive knowledge through scientific factuality would be so appealing to researchers – particularly in the fields of physics and mathematics. According to Gibson & Lessnoff (1975, p.g.165) for Popper "social reality is an objective fact" whereby a researcher can assume a neutral position and objectively observe the external world (Johnson & Duberley, 2000). Yet its application in the social sciences domain, and more specifically business subjects is open to criticism, not least due to the 'existential propositions' and negative 'universal' propositions (Schlick, 1948) being the only two forms that can be characterised through clear verification methods.

Nonetheless, irrespective of Popper's bold claims, Bakker and Halfpenny (1985) argue that despite the critique of its more simplistic forms, the assumptions underpinning positivism remain ubiquitous and provide the dominant reasoning behind social sciences research. It is somewhat telling that Johnson and Duberley (2000, p.g.11) begin their investigation into the different types of philosophical positioning in management research with a consideration of the positivist epistemology, claiming that it remains deeply "embedded in Western cultures that [it is] virtually an aspect of our common sense".

"In the span from Comte, through logical positivism and the Vienna Circle, to critical rationalism, operationalism…, this framework has undergone several modifications and variations", Adam (2014, p.g.5) explains the epistemological development of positivism to be unambiguous, with the empirical application of positivism very loosely linking to its theoretical underpinning. The emergence of post-positivism is often interpreted to be an iteration of - or building upon - the foundations of the traditional form of positivism, yet as Johnson and Duberely (2000) explain, post-positivism is neither anti-positivist nor a continuation of the traditional form. Instead, "its essence is an attempt to transcend and upgrade positivism, not the rejection of all positivist ideas and postulates of the scientific method" (Adam, 2014, p.g.6). Taking into consideration Popper's 'falsification' dimension and the 'methodological pluralism' dimension from Feyerabend's work, post-positivism attempts to bridge quantitative research with more abstract and complex research designs.

3.2.2.5 Postmodern Epistemology

Numerous theoretical positionings postulate a postmodern epistemology, commonly clustered under the umbrellas of 'social constructionism' and 'constructivism'. Attempting to define the postmodernist approach is somewhat difficult as the very premise of the postmodernist positioning postulates that no absolute truth or definite boundaries exist, therefore there is varying degrees of beliefs and opinions on subjects within the realm of the postmodern epistemology. In essence postmodernism is often seen as a rejection of the meta-narratives and ideologies of modernism, challenging the underlying assumptions of the Enlightenment rationality (Bertens, 2003).

The historical narrative for the postmodernist approach is understood to have gained traction in the mid-part of the 20th century, with Peter Drucker suggesting this movement towards a conceptual world where purpose and process is determined through the emergent patterns of what is being observed as opposed to the perceived mechanical approach of the positivist approach. Other influential thinkers in the realm of postmodernism include the works of Martin Heidegger who originally championed phenomenology and Michel Foucault who introduced the idea of a discursive regime (Jameson, 1984).

Nonetheless, comparing the post-positivist and postmodern narratives (Table 3.1) from an ontological and epistemological perspective enables a congruent understanding of both positionings and provides the philosophical assumptions for my own research project.

	Post-Positivism	**Post-Modernism**
Ontological Positioning	Assumption that there is an apprehensible truth or reality	Belief that there are multiple realities, and no one factual truth
Epistemological Positioning	Deconstructs the research, distinguishing between the researcher and the subject/focus of the research	Researcher and subject of research are intertwined and therefore cannot be separated

Table 3.1 Comparing post-positivist and post-modern paradigms.

3.2.3 Methodology

Methodology can be explained as an amalgamation of research techniques that are collectively utilised in order to conduct an academic enquiry into an explicit situation (Easterby-Smith, Thorpe and Jackson, 2012). There are a number of different methods available to researchers, such as deductive, inductive, and abductive inquiry. The deductive logic is commonly associated with the positivist paradigm, whilst the inductive reasoning approach begins with the data rather than the existing literature in the field. The abductive

approach can be interpreted as a middle ground between the polarising deductive and inductive methodologies, as it seeks to build upon existing theory through the empirical investigation of a phenomenon. Table 3.2 below highlights the differences between the positivist and interpretivist approaches to research methodology.

Elements	**Positivism**	**Interpretivism**
Truth	Is determined through verification predictions	Depends on who establishes it
Facts	Concrete	All human creations
Aims	Discovery	Invention
Starting Points	Formulation of explicit hypotheses which guide research	Meanings/ Research questions
Research Position (goal investigation)	Prescriptive, causal, deductive, theory confirming, ungrounded	Descriptive
Direction of Research Inquiry	Measurement and analysis of causal relationships between variables that are generalisable across time and context	Development of ideographic knowledge based social experiences such as human ideas, beliefs, perceptions, values etc.
Designs	Experiment, survey	Reflexivity, interviews, participant observations
Methodology	Outcome oriented, verification oriented	Observation, process oriented
Techniques	Measurement	Conversion
Sample Size	Large	Very Small
Data Collection	Structured	Unstructured
Types of Data Gathered	Replicable, discrete elements, statistics	Information-rich, contextual, non-statistical, somewhat subjective reality
Interview Questions	Mainly closed with limited probing	Very open
Interaction of interviewer and phenomenon	Independent and value-free, a one-way mirror	Passionate participant, transformative intellectual
Information per Respondent	Varies (specific to question)	Extensive
Analysis/ Interpretation	Verification/ falsification	Sense-making
Type of Data Analysis	Objective, value-free, statistical methods	Value-loaded, non-statistical
Causality	Cause-effect relations	Not addressed
Outcomes	Causality	Understanding

Table 3.2 Ontologies and epistemologies in social sciences research. Adapted from Denzin and Lincoln (2000)

3.2.4 Methods and Techniques

Methods refer to the individual techniques used to gather data and conduct data analysis (Thornhill, Lewis and Saunders, 2016). Researchers make implicit decisions around choice of research methods and techniques in choosing their epistemological pursuit, espousing methods that are generally associated with the chosen epistemology. In essence, the purpose of methods and techniques is to derive the different practices of research to be undertaken. Relatedly then, the chosen approach will naturally impact on the findings from the data collection, as the methods and techniques adopted will inevitably provide a lens for the observation of the

phenomena under investigation (Easterby-Smith, Thorpe and Jackson, 2012). Examples of research methods and techniques expand the spectrum of quantitative and qualitative approaches, from hypothesis testing by means of experiments and statistical testing through to ethnographic observations and inquiry.

3.3 Research Design Summary

In summation, Figure 3.2 maps out how the research project can be scoped and filtered through the choice of a specific ontological paradigm, epistemological positioning, research methodology and associated methods and techniques. These are the fundamental building blocks in any academic inquiry in management and organisational studies research and are vital in ensuring the integrity of academic research.

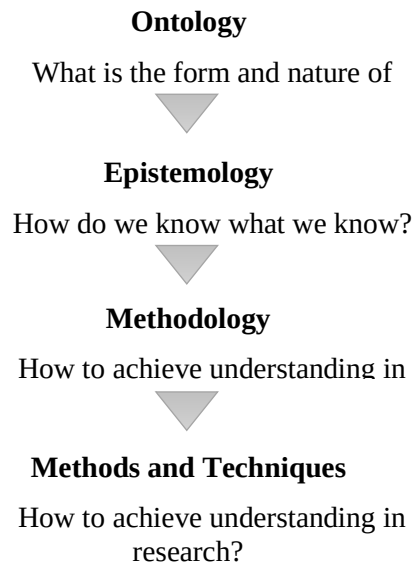


Figure 3.2 Fundamentals of Research Methodology (Dörfler, 2018)

3.4 Review of Dominant Research Methodologies and Methods

The origins of various different research methods and techniques can be traced back to various junctures in time, where different approaches have gained popularity. Since the turn of the twentieth century and leading up to 1950's, academic research was mainly concerned with providing logical, credible and objective understandings through deductive research approaches which were representative of the predominant positivist paradigm. Following on from the Second World War, the modernist paradigm became more widely accepted in

research, perhaps the most ground-breaking approach of that time period being that of Glaser and Strauss' (1967) 'Grounded Theory'.

Nevertheless, social realism, ethnographic research, grounded theory and naturalism approaches remain relevant in contemporary academic studies. Qualitative researchers had an array of research paradigms, methodologies, techniques and strategies at their disposal by the 1980's with the prominence of the post-positivist and constructionist paradigms during this period in time. Towards the end of the 20th century reflexive research practices gained traction, as academic scholars started questioning issues of race, gender and social class whilst simultaneously concerns with validity and reliability resurfaced in the qualitative research doctrine.

Fast-forwarding from then until the more recent contemporary management research, the impression of the researcher as being detached or aloof from the phenomenon under investigation has been discarded, with grand scale theory-based, generalisable research findings being abandoned for local, concentrated studies that focus on specific problems and situations.

This shift towards a more concentrated approach is captured effectively by Quinn (2002, p.96), who goes on to state that "today's world calls for less hypothesis testing and more systematic observation". Generally, researchers tend to follow logical steps when designing their research, choosing methods and techniques that align with their chosen paradigm. Figure 3.3 demonstrates the adoption of a specific paradigm commonly guides researchers to accept methods that are representative of that epistemology.

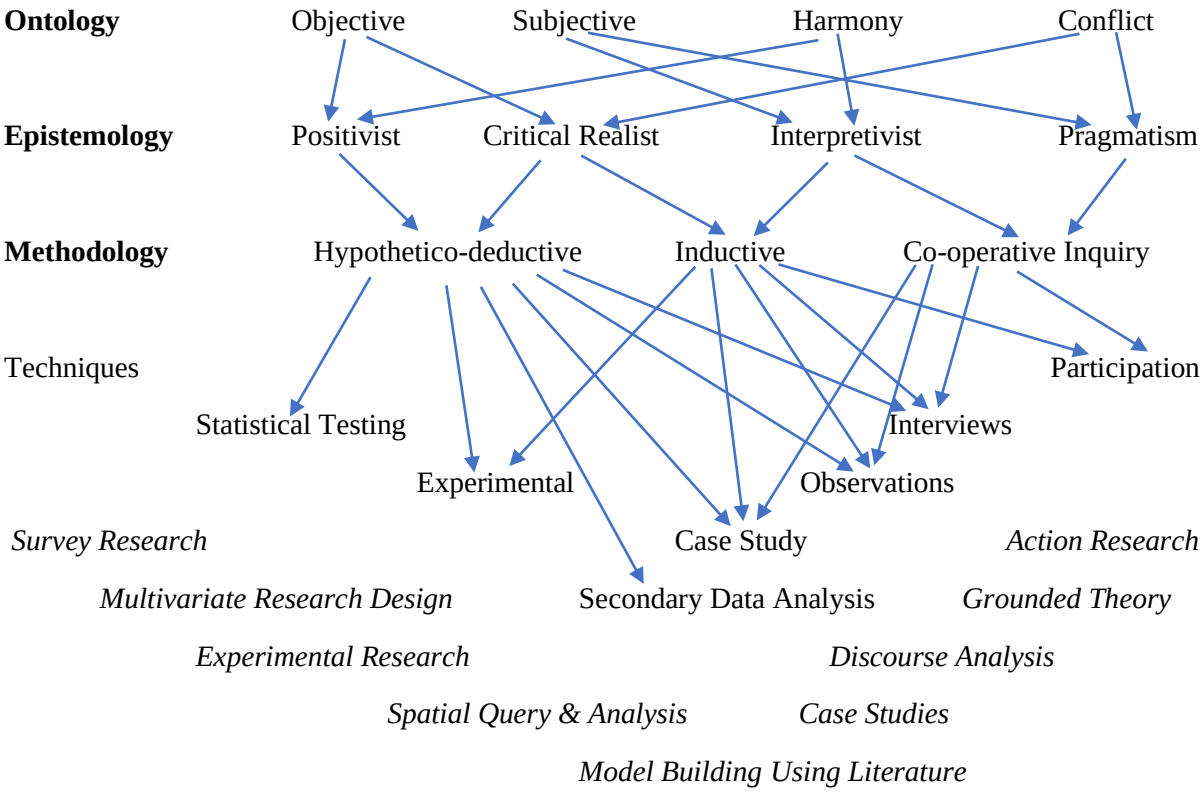


Figure 3.3 Sample Research Design Topology (Briken and Quigley, 2018)

Identified above in Figure 3.3 are the different combinations of appropriate methods available to use within the given paradigms. The researcher's selection of ontological and epistemological positioning tends to naturally influence the choice of research methods and techniques adopted.

The subsequent section provides an outline of the various different methods and techniques available to researchers in the domain of management and organisation studies research. It is important to note here that the purpose is not to provide a detailed account of all the methods available to researchers, instead focusing on the case study method in particular as it seems to an appropriate choice for this explanatory research study. As such, Table 3.3 provides an overview of the dominant research paradigms that resonate with the social sciences approach to academic scholarship. Moreover, focusing specifically on the choice of research methodology, case study research has continued to gain momentum in contemporary management and organisation studies research, due in large parts to its ability to focus the researcher's attention on small-scale, concentrated conclusions as opposed to more universal and generalisable findings (Denzin and Lincoln, 1994). Therefore, in this chapter the researcher focuses on the case study research method. Appendix 3 acknowledges some of the different methodologies used in social sciences research, other than the case study approach.

	Positivism	Critical Realism	Interpretivism	Pragmatism
Ontology	Naïve realism: 'Real' reality but apprehendable.	Historical realism: Reality shaped by social, political, cultural, economic, ethnic, and gender values, crystallised over time	Relativism: Local and specific constructure realities	External, multiple, view chosen to best enable answering of research question
Epistemology	Dualist/ objectivist, findings true	Transactional/ subjectivist, value mediated findings	Transactional/ subjectivist, created findings	Observable/ subjective, meanings can provide acceptable knowledge, dependent upon research questions
Methodology	Experimental/ manipulative, verification of hypotheses, chiefly quantitative methods but can use qualitative	Dialogic/ dialectical, Methods chosen must fit the subject matter, quantitative or qualitative	Hermeneutical/ dialectical, Small samples, in-depth investigations, chiefly qualitative	Mixed or multiple method designs, quantitative and qualitative

Table 3.3 Overview of the dominant research paradigms in social sciences research. Adopted from Guba and Lincoln (1994)

3.5 Case Study Method

Yin (2014) describes a case study to be a detailed inquiry into a specific phenomenon or topic under investigation within its natural setting. With the unit of analysis varying from the individual (e.g., a manager) to the collective (e.g., project team), from the organisation (e.g., a firm) to an industry (e.g., pharmaceuticals), from a particular process (e.g., change project) to an event (e.g., an annual general meeting), as well as multiple other potential case subjects (Thornhill, Lewis and Saunders, 2016). Yin (2003, p.12) effectively synthesis potential case study topics as extending from "decisions, individuals, organisations, processes, programs, institutions and events".

Critical to conducting any case study research is to determine the boundaries of the study early on and ensuring that the case to be studied can be defined concisely (Flyvbjerg, 2011). Eisenhardt (1989) states that case studies are empirical investigations that address the following:

- Examine a contemporary phenomenon within its real-life context, particularly where the boundaries between the contextual backdrop and the phenomenon itself are blurred.

- To manage theoretically idiosyncratic situations whereby there are multiple variables that encapsulate numerous points of interest.
- Rests on the premise of several sources of information, with the data collated requiring converging zin order to validate findings through methods such as triangulation.
- Jump on the back of existing viewpoints and perspectives on theoretical propositions in order to inform the data collection and analysis (Yin, 2014).

According to Leonard-Barton (1990, p.249) case studies can "include data from direct observations and systematic interviewing as well as from public and private archives". As such, they can be interpreted to be a form of story-telling narrative that depicts the current situation as observed and evidenced in the collection of data. Broadly speaking, case studies are predominantly used when addressing the '*how'* and '*why'* research investigation questions, when the phenomenon under investigation is grounded by real-life context, and finally only where the researcher has little control over the events that are unfolding.

3.5.1 Case Study Research Designs

Case study research has been applied for various types of research intentions (Yin, 2014). The following are the most prominent case study types (Thornhill, Lewis and Saunders, 2016):

- Explanatory/ Casual case study
- Descriptive case study
- Exploratory case study
- Theory building
- Theory testing
- Theory extension/ refinement

Case study designs are popular in doctoral theses exploring the occurrences of a contemporary phenomenon within its natural setting. The richness of detail and content included in case studies can allow for the recording of intricate and dynamic interactions, relationships, and events.

These six types are now explored in detail below:

3.5.1.1 Explanatory/ Casual case studies

With explanatory case studies the researcher seeks to find causality between variables identified in a dataset. Yin (2014, p.214) states that explanatory case studies are where the

researcher attempts to "determine whether event *x* led to event *y*. Thus, the researcher investigates causality between variables however it is very important not to miss any other variable that might cause *y*". It is often found that '*how'* and '*why'* based research questions are addressed through an explanatory/ casual case study, as these types of questions are concerned predominantly with operational relationships that need to be traced over a period of time (Yin, 2014).

3.5.1.2 Descriptive case studies

The purpose of descriptive case studies is to "describe a phenomenon in its real-world context" (Yin, 2014, p.238). Historical, archival and survey approaches are often seen as appropriate methods in descriptive studies, however the case study approach can also be beneficial. Dulock (1993, p.156) explains that case study designs are "useful for studying phenomena or life events over time or in one or more subjects". It is often the case with descriptive case studies that the researcher is exploring the *'how'* and *'why'* questions, similar to explanatory case studies. The primary distinction between the two approaches being when the sequence of events under investigation occurred: with the descriptive approach adopting a historical outlook.

3.5.1.3 Exploratory case studies

The exploratory case study tends to "identify the research questions or procedures to be used in subsequent research study" (Yin, 2014, p.238), which need not be in the form of a case study. Often addressing questions regarding the *'what'* or *'who'* of a particular phenomenon, exploratory case studies tend to be accompanied by further data collection methods – such as questionnaires, interviews etc. In general, the exploratory case study is universally accepted as a suitable method for the exploratory phase of a management research project (Pan and Scarbrough, 1999). In this instance, the exploration method can be used to nurture research questions and ideas for further investigation.

3.5.1.4 Theory Building

According to Christensen & Sundahl (2001) a theory is essentially an account of what variable causes another, together with a justification of why this happens in a particular way. One of the predominant reasons why theory building is used in case study methods is its ability to clarify meanings and help in removing any uncertainty or confusion in the explanation of key constructs (Voss, 2010). In the process of theory building, Christensen and Sundahl (2001)

explain that a researcher would go through observation and classification cycles in order to seek proof of theory in empirical work.

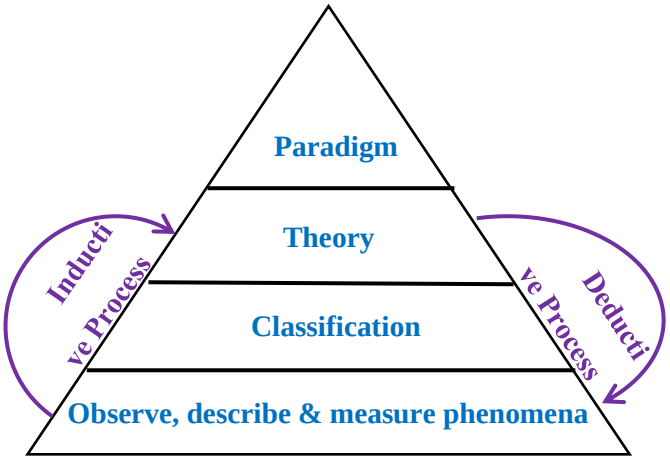


Figure 3.4 Process of Theory Building (Christensen & Sundahl, 2001)

When theory is built upon a solid classification structure, it can help explain why a particular phenomenon or variable causes another, and under what set of circumstances this is significant. In this context, it can be observed that theory is a conditional explanation of causality as it enables researchers to understand or provide explanation for why things play out the way they do.

A well-constructed theory using a sound classification scheme, as defined above, enables a researcher to predict what they will encounter in the empirical investigation when observing the phenomena under various conditions. Somewhat intuitively then, if the theory is able to accurately reflect what is observed in practice, then it can be deduced that the theory is useful under the circumstances in which the empirical investigation took place.

3.5.1.5 Theory Testing

Case studies can also be used together with survey research to provide a form of triangulation in theory testing research. Whilst this approach is generally not as widely adopted in management and organisational studies research, there are examples of it being applied in the wider realm of business studies (Johnson, Leach and Liu, 1999). Associated with a positivist approach, the deductive theory testing technique resonates most prominently within quantitative research (Bitektine, 2008). That's notwithstanding it's potential in qualitative studies however, with the same author going on to explain that:

> *"a substantial body of empirical research… has demonstrated that case studies can serve as an important form of quasi-experimental theory test providing us with a better understanding of the explanatory power of competing social theories".*
>
> (Bitektine, 2008, p. 160-161)

Quintessentially though, positivist critiques remain that challenge the rigor of theory tested under qualitative methods as the hypotheses suggested are often clouded in ambiguity given the potential for more than one plausible hypothesis to be derived from the chosen theory. Moreover, researcher bias is arguably compounded through the effects of researcher awareness of the outcomes from the case studies at the point of hypothesis formulation.

3.5.1.6 Theory Extension/ Refinement

Case studies have also been used as a follow-up to survey or questionnaire-based research in order to examine a phenomenon in greater detail and depth to then authenticate the empirical results. This approach is particularly useful in the context of new or emerging phenomena which has not been explored in the context of a given theoretical perspective or outlook. In doing so, the case study method can be used to augment existing theoretical perspectives given the findings in the observed results (Voss, 2010). McCutcheon and Meredith (1993, p.165) surmise that case study research is "excellent means for development of theory", alongside the aforementioned purposes too.

Building upon the work of Handfield and Melnyk (1998), Voss (2010, p. 166) proposes some basic distinctions (see Table 3.4) between the case study types that researchers should consider when choosing their case study method.

Purpose	*Research question*	*Research structure*
Exploration Uncover areas for research and theory development	Is there something interesting enough to justify research?	In-depth case studies Unfocused, longitudinal field study
Theory building Identify/ describe key variables Identify linkages between variables Identify 'why' these relationships exist	What are the key variables? What are the patterns or linkages between variables? Why should these relationships exist?	Few focused case studies. In-depth field studies. Multi-site case studies. Best-in-class case studies.
Theory testing Test the theories developed in the previous stages Predict future outcomes	Are the theories we have generated able to survive the test of empirical data? Did we get the behaviour that was predicted by the theory, or did we observe another unanticipated behaviour?	Experiment Quasi-experiment Multiple case studies Large-scale sample of population
Theory extension/ refinement To better structure the theories in light of the observed results	How generalizable is the theory? Where does the theory apply?	Experiment Quasi-experiment Case studies Large-scale sample of population

Table 3.4 Matching Research Purpose with Methodology. Adopted from Voss (2010, p. 166)

3.5.2 Case research framework, constructs, and questions

"No matter how small our sample, or what our interest, we have always tried to go into organisations with a well-defined focus".

Mintzberg (1979, p. 585)

Case study research is identified by Yin (2014) as being particularly useful in examining the *how* and *why* questions, as both these types of questions are valuable precursors for both theory development and theory extension. According to Voss (2010), in these types of case research, it is important for the researcher to have prior insights of the general constructs to be studied. One of the ways in which this can be achieved is through the creation of a conceptual framework (Miles and Huberman, 1994). Such a framework is designed to map out the core variables and concepts under investigation and any presumed links or relationships between them.

In order to explore the significance of creating a structured and well-defined case study research framework, Eisenhardt (1989, p. 533) identifies the following eight core steps on the "nearly complete roadmap for executing this type of research". These are explained in greater detail in Table 3.5.

Step	Activity	Reason
Getting started	➢ Definition of research ➢ Possibly a priori constructs. ➢ Neither theory nor hypotheses	➢ Focuses efforts. ➢ Provides better grounding of construct measures. ➢ Retains theoretical flexibility.
Selecting cases	➢ Specified population. ➢ Theoretical, not random, sampling	➢ Constrains extraneous variation and sharpens external validity ➢ Focuses efforts on theoretically useful cases-i.e., those that replicate or extend theory by filling conceptual categories.
Crafting instruments and protocols	➢ Multiple data collection methods ➢ Qualitative and quantitative data combined. ➢ Multiple investigators	➢ Strengthens grounding of theory by triangulation of evidence. ➢ Synergistic view of evidence ➢ Fosters divergent perspectives and strengthens grounding.
Entering the field	➢ Overlap data collection and analysis including field notes. ➢ Flexible and opportunistic data collection methods	➢ Speeds analyses and reveals helpful adjustments to data collection. ➢ Allows investigators to take advantage of emergent themes and unique case features.
Analysing date	➢ Within-case analysis ➢ Cross-case pattern search using divergent techniques	➢ Gains familiarity with data and preliminary theory generation ➢ Forces investigators to look beyond initial impressions and see evidence through multiple lenses
Shaping hypotheses	➢ Iterative tabulation of evidence for each construct ➢ Replication, not sampling, logic across cases. ➢ Search evidence for “why” behind relationships	➢ Sharpens construct definition, validity, and measurability. ➢ Confirms, extends, and sharpens theory. ➢ Builds internal validity
Enfolding literature	➢ Comparison with conflicting literature ➢ Comparison with similar literature	➢ Builds internal validity, raises theoretical level, and sharpens construct definitions. ➢ Sharpens generalisability, improves construct definition, and raises theoretical level.
Reaching closure	➢ Theoretical saturation when possible	➢ Ends process when marginal improvement becomes small

Table 3.5 Process of building theory from case study research. Adopted from Eisenhardt (1989, p. 533)

1. Getting Started
2. Selecting Cases
3. Crafting instruments and protocols
4. Entering the field
5. Analysing Data
6. Shaping Hypotheses
7. Enfolding Literature
8. Reaching Closure

Eisenhardt (1989) suggests that each stage in this theory building or testing case research framework also provides verification of the approach being followed. In essence, following a structured framework as identified above contributes to consolidation of the constructs, theory, and internal validity.

In summation, the case research approach provides a means of dealing with multiple variables of interest, with the aim of developing a narrative that helps explain the phenomenon under investigation. Drawing upon multiple different sources of evidence and using data convergence techniques, such as triangulation, to legitimise the value of the findings. Theory building and extending case studies seek to develop previous theoretical propositions through the data collection and analyses.

3.6 Decisions Faced by Researchers

As demonstrated in this chapter, large overlaps exist amongst the various research methods used in management and organisation studies research. Therefore, the choice of research method adopted the by the researcher should ideally be contingent upon favouring the most useful approach which can be appropriately justified (Yin, 2014). Two key characteristics influencing the researcher's choice of paradigm are:

- The nature of the phenomenon under investigation and the type of outcome sought are significant in deciding the choice of research paradigm.
    - The researcher should always seek to justify their approach.
- The experiences and personal preferences of the researchers informing their philosophical assumptions.
    - There is a need to explain the researcher's way of constructing knowledge.

These are explored in detail, with respect to this study, in the subsequent chapter.

Another significant choice facing researchers when considering the alternative research designs is the trade-offs they face when selecting a particular method and subsequently designing a research study around this. The following trade-offs are identified by Yin (2014) as being important to the design of a study:

- Degree of researcher involvement (independent vs. involvement)
- Sample size (small vs. large)
- Theory development (theory building vs. theory testing)
- Existing theory (verification vs. falsification)
- Theory narrative (local vs. grand)

More often than not, the choice of research paradigm and methodology will decide the research design most suited to the study being undertaken. A rigorous design can ensure that the researcher follows a valid and reliable process for conducting the study at hand.

3.7 Quality Criteria for the Research

In any doctoral research, the methodology is crucial in determining and capturing the rationale behind key decisions undertaken in the construction of the research design. In defining a thorough and rigorous research design, the researcher is able to demonstrate the means to achieving research accuracy and quality.

The objective of the research process at all times is to unearth the answers to the research questions outlined in the previous chapter. Quintessentially then, through the empirical investigation the aim and purpose of this study is to find answers to the research questions posed. Critical to ensuring that this is done in a credible and robust manner is to ensure quality of and adherence to the quality criteria established. There are a number of logical tests that can be adopted by researchers judge the quality of the research design. According to Yin (2014, p. 45) “these tests include trustworthiness, credibility, confirmability, and data dependability” which can be used to “establish the quality of any empirical social research”. These are explored in relation to the case study research method in Table 3.6.

This chapter seeks to explain the research quality criteria that will guide the methodological choices adopted in this study and will provide the means to structure the

Tests	Case Study Tactics	Phase of Research in which Tactic Occurs
Construct Validity	➢ use multiple sources of evidence. ➢ establish chain of evidence. ➢ have key informants review draft case study report.	➢ data collection ➢ data collection ➢ composition
Internal Validity	➢ do pattern matching. ➢ do explanation building. ➢ address rival explanations. ➢ use logic models.	➢ data analysis ➢ data analysis ➢ data analysis ➢ data analysis
External Validity	➢ use theory in single case studies. ➢ use replication logic in multiple case studies.	➢ research design ➢ research design
Reliability	➢ use case study protocol. ➢ develop case study database.	➢ data collection ➢ data collection

Table 3.6 Case study tactics for 'Four Design Tests'. Adopted from Yin (2014, p. 45)

research process. In doing so, the purpose is to provide a reliable and systematic process to conducting the empirical investigation and analysing the subsequent data collected. This will be followed by an assessment of the ways in which this research study adheres to the established quality criteria. Finally, any possible limitations identified and directions for future research will be covered in the later chapters of this thesis.

3.7.1 Construct Validity

One of the dominant critiques levied against the case study researcher is the plausibility for subjective judgments to conform to preconceived notions held by the researcher about the phenomena under investigation (Flyvbjerg, 2006). Construct validity provides a way of overcoming such concerns by ensuring that the correct operational measures for the research concepts and design are in place. According to Yin (2014) there are three key measures to ensure construct validity; firstly, use of *multiple sources of evidence* in order to identify patterns in the lines of inquiry. Secondly, by *establishing a chain of evidence* in order to increase the reliability of the information covered in the case study. And thirdly, to provide a *draft of the case study report to the key informants to review* in order to corroborate the main outcomes of the case research and the interpretations given to the evidence.

3.7.2 Internal Validity

Concerned predominantly with explanatory case studies, the internal validity test is seldom applied to exploratory or descriptive research. In essence, the internal validity check looks at the causality identified by the researcher to ensure that there is no external or omitted variable that may have impacted the outcome obtained. Failure to recognise how a third factor may have affected a given outcome suggests that the research design has not accounted for "some threat to internal validity" (Yin, 2014, p. 47). Moreover, with the case study approach the researcher can be accused of make inferences where a particular phenomenon under investigation cannot be observed at a particular moment in time. In this instance, the researcher is reliant on documentary evidence or personal recollections of participants to infer that a particular evet led to another. Questioning the inferences and ensuring that these are airtight, is just some of the ways in which these inferences can be anticipated and included in a rigorous research design.

3.7.3 External Validity

Another key critique levelled against the case researcher is concerned with the external validity rule. According to Yin (2014), this rule is designed to test whether the findings of the case research are generalizable beyond just the context of the study at hand, irrespective of the types of research methods used to extrapolate the findings. The concept of external validity is constantly raised as a problem in case research. It is considered that the use of a single case study presents a weak foundation for generalisation purposes, hence one way to overcome this hurdle is to use multiple case studies in order to demonstrate the *replication logic.* This will enable the researcher to test and replicate the findings across different contexts (Yin, 2014).

3.7.4 Reliability

The reliability test is probably one of the most familiar tests for all types of researchers, not just those adopting the case study type. Explained by Yin (2014, p. 48), with the reliability test:

> *"The objective is to be sure that, if a later researcher follows the same procedures as described by an earlier researcher and conducts the same case study over again, the later investigator should arrive at the same findings and conclusions".*

In order to achieve this form of reliability, it is critical that the operations of the study – that is the research design and the process of data collection – are documented in an auditable trace. The essential purpose of the reliability test is to reduce the likelihood of any errors or

biases creeping into the study. There are two tactics highlighted by Voss (2010, p. 182) to overcome the reliability concerns; firstly, the *use of a case study protocol* overcomes the documentation problem and secondly, through developing a *case study database* to organise and document the collected data.

3.8 Summary of Research Methods Chapter

Revisiting the objective of this chapter, it sought to explain the importance of the research methodology in management and organisational studies research. In doing so, due diligence has been given to the significance of philosophical positioning and generic methodologies. The case research method is given particular focus as it has gained popularity in business studies. The structure, content, and design of the research along with the researcher preferences need to be analysed to define the methodological requirements of this research.

The different philosophical paradigms and the research methods, tactics and techniques given in this chapter serve as a prologue to the research design adopted for this study. The tactics and research methods presented in this chapter will help to inform the researchers choices for this doctoral study. Lastly, the research quality criteria outlined in this chapter (as presented in Table 3.6) demonstrates the significance of ensuring that the research findings are robust and credible. These will be taken into consideration to ensure credible research findings are produced in this doctoral thesis.

4. RESEARCH DESIGN

Holistically speaking, research in the domain of management and organisational studies has not conformed to a single ontological or epistemological paradigm, notwithstanding more traditional studies conducted in the American approach, which follow the positivist positioning in predominantly quantitative research (Ghauri and Grønhaug, 2002). According to Tranfield and Starkey (1998, p.346) the design of a research study can be seen as an "arrangement of resources to deliver optimal task performance and social cohesion, it may be argued to exhibit features of both *engineering* and *craft* orientations". Therefore, the significance of research design is paramount in carrying out a reliable and robust empirical investigation.

4.1 Research Design for this Study

The purpose of the research design extends beyond a standard work plan to incorporate a considered and astute logical plan in order to mitigate the risk of the empirical evidence not addresses the requirements of the research question. Yin (2003) effectively summarises the purpose of the research design as:

> *"...the logical sequence that connects the empirical data to a study's initial research questions and, ultimately, to its conclusions"* Yin (2003, p.20)

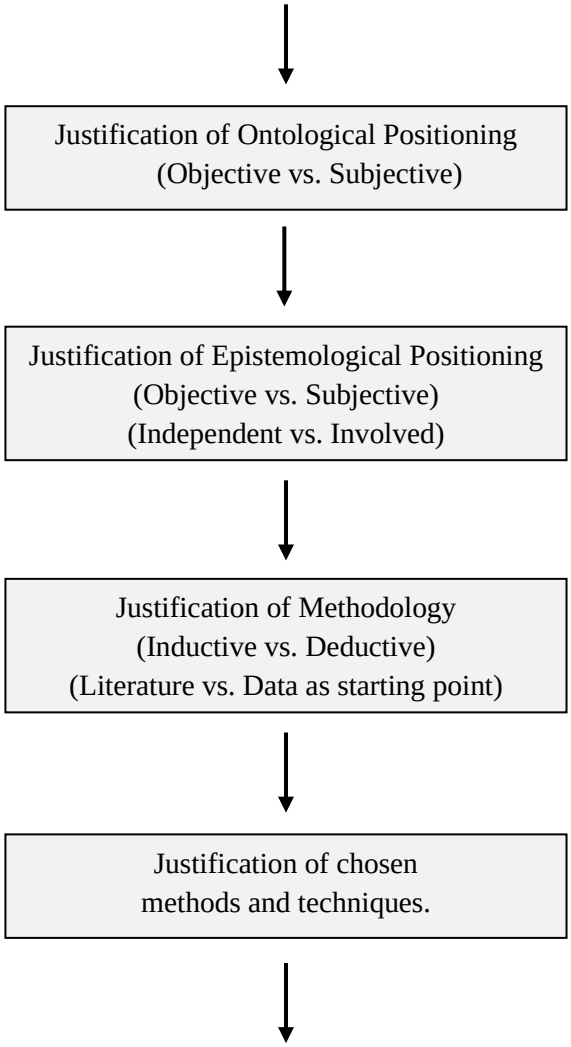
Given the nature of a PhD, a novel contribution to research is required in connecting together literature pieces; and either building or testing theory (Mowbray and Halse, 2010). The purpose of this is to make explicit the ideas and philosophies underpinning this study which also set out the novelty of this research. Subsequently a justification is given of the most relevant methods that are anticipated to be most useful in this study and its associated research questions.

The researcher outlined the different methods in which the field can be scoped (Figure 3.1) in the previous chapter. This will be used as the foundational basis for the methodological design decisions undertaken in this research. In designing the research to be conducted, Briken and Quigley (2018) outline the following process (Figure 4.1) as being synonymous with robust and reliable studies, these are then clarified in the subsequent sub-sections.

Research Problem

+

Researcher preferences as influenced by their own experiences, interests,



Data Analysis
Addressing the Research Question
Generating Knowledge

Figure 4.1 Research Design Map (adapted from Briken and Quigley, 2018)

4.1.1 Broad Research Problem

This research aims to clarify how strategic alignment is achieved in an innovation ecosystem. Similar to many concepts in management and organisational studies research, there is a lack of one universally accepted definition for strategy agreed upon and commonly used in academic practice. In this present study, my focus lies in exploring the underlying processes of

strategy, with an interest in the role of specific activities undertaken by groups of individuals and firms within the context of the innovation ecosystem. Therefore, it could be argued that this thesis is situated within the tradition of *strategy process* research.

Sminia (2016) explains that investigating strategy processes is not entirely feasible nor practical without providing due consideration to the content and the context of the said strategy. Hence, normative or prescriptive research with a considered take on the content perspective can enhance our understanding of strategy processes in the ecosystem. This will be explored further in the 'unit of analysis' section.

As a result, the broad research question posed at the point of departure for this thesis is: *How do firms strategically align around a focal value proposition in an innovation ecosystem?* This will be answered through the observed findings of the empirical work. As such, the *exploratory* nature of the aforementioned research question implies adopting a case study method would be useful.

4.1.2 Researcher Preference

The background, experiences and preferences of the researcher can influence the research paradigm and method pursued (Onwuegbuzie, Leech and Collins, 2008). Not least because the researcher needs to be familiar and comfortable with the chosen paradigm. Murray and Cunningham (2011) explain that the researcher joins a debate in a PhD study, and they themselves are responsible for establishing the boundaries for what is under investigation through the theoretical grounding, academic literature and chosen methodology. Essentially, the researcher is responsible for narrowing the scope and consolidating the topic of the project.

Implied within this perspective is that researchers will have developed a view of the world prior to becoming researchers and that it would not be appropriate to develop separate perspectives whereby, the personal beliefs and experiences are divided from scientific reasoning. During the early stages of this doctoral studies, the researcher started to appreciate the role of his prior education and its influence on the philosophical positioning and the reality of how he perceives the external world. Given their significance to the chosen research paradigm, these will now be addressed.

The researcher's undergraduate degree in International Business with Management studies has contributed to him developing an interest in understanding strategic decision-making in organisations. Furthermore, his postgraduate degree in Project Management and Innovation

consolidated his knowledge on the different functional areas of organisational practice. In general, his educational background has involved general management studies, which have fused his desire to pursue organisational decision-making. His work experiences involve working for a large British financial institution; hence he is exploring the *process* of strategic decision-making in the Scottish fintech ecosystem. The process-based approach allows the researcher to dissolve the rudimentary approach of strategy formulation, implementation, and review segments into more detailed activities. As such, a case study analysis should allow for making informed observations into the strategic activities as opposed to the higher-level strategic management concept.

4.2 Philosophical Positioning

> *"Now, what I want is, Facts. Teach these boys and girls nothing but Facts. Facts alone are wanted in life. Plant nothing else and root out everything else… stick to Facts, Sir... In this life we want nothing but Facts"*
>
> Dickens, (1854, p. 1-2)

The fundamentals of what constitutes philosophy can be split into the ontological and epistemological foundations of how a researcher can interpret and construct their reality of the world around them. Ontology concerns itself with the nature of being (Runes, 2001), whilst epistemology refers to claims of how a researcher constructs knowledge; through the beliefs, inferences and reflections on what reality is (Runes, 2001). Historically speaking, both ontology and epistemology form distinct dimensions of the philosophical branches commonly associated with metaphysics. Indeed, ontology is almost synonymous with metaphysics in that both are concerned with explaining the ultimate nature of being (Audi, 1995), a central concern of philosophy that has transcended through the classical, modern, and postmodern lines of thought. Meanwhile epistemology is essential in all forms of research methodology, addressing the need for justification of what is thought to be true.

4.2.1 Ontological Positioning: Subjective Ontology

The search for 'truth' in academic research pivots between the objective and subjective outlook on what constitutes 'truth'. Whilst it can be argued that the dichotomy of true and false is applicable to a number of constructs in life, such as life and death; one cannot be both dead and alive at the same time. Yet in the context of the same example, it is plausible for one to be

alive in the knowledge that they are dying. Therefore which 'truth' is accurate is dependent on the individuals own ontological positioning. It would be reasonable then to argue that the search for a concrete truth in reality poses a number of dilemmas for researchers. The positivist paradigm would suggest that this 'truth' is directly accessible in the form of a singular construct, whilst the interpretivist perspective implies that reality is a human construct. The way in which we as human beings understand the material world around us and the interpretations, we make are fundamental to how we perceive social phenomena. The individual interpretations we make may provide an aggregate picture of a collective reality, yet fundamentally, they will differ at the micro-level due to our experiences, beliefs, and worldviews (Sheldon, 2003). Therefore, social reality is a significant component of individuals' decision-making and naturally should be subject to our interest in this study.

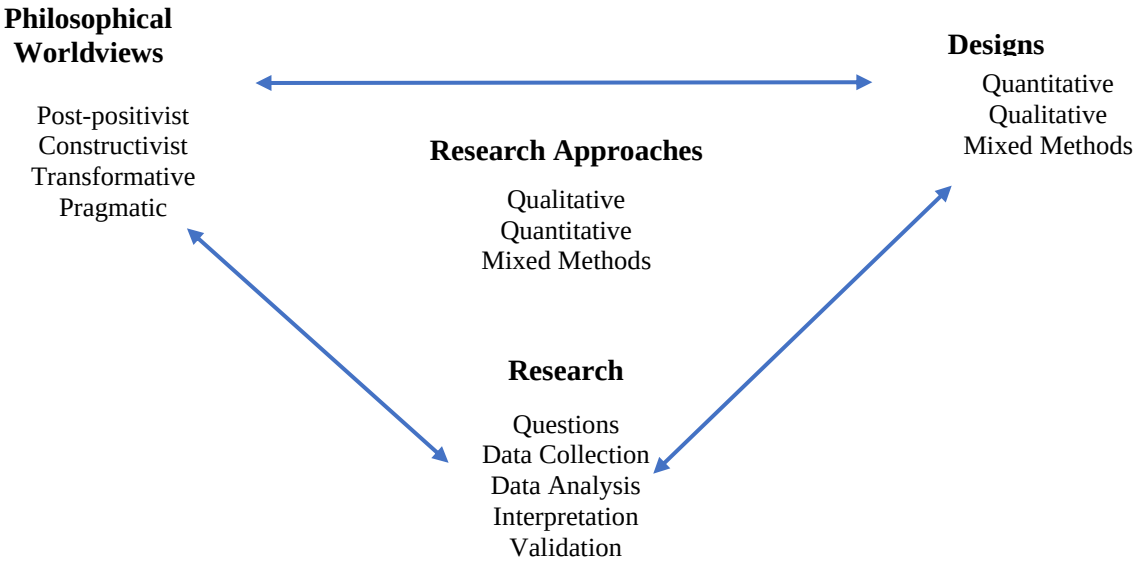


Figure 4.2 A Framework for Research – The Interconnection of Worldviews, Design and Research Methods Adaptation from Creswell (2013, p.5)

The researcher believes that reality is constructed when we perceive the world around us to provide meaning and context, as opposed to an independent reality that exists as a standalone entity. Therefore, the role of the researcher is seen to be intertwined with the research itself, and how the researcher interprets the 'strategic thinking' and 'action' to be constructed in a social reality context. Through this perspective, the researcher is comfortable with understanding the world as being a collection of different perspectives that are suited to the interests of each individual. Hence, a *subjective ontology* is the preferred positioning for this study as it allows the researcher to examine the process of strategic decision-making in the

innovation ecosystem. The focus of the research is to provide meaning to how the strategy process is enacted as opposed to clarification and fact-finding.

4.2.2 Epistemology

Concerned with "how we know what we know" (Crotty, 1998, p.8), or in the words of Guba and Lincoln (1998, p.201) "the nature of the relationship between the knower or would-be knower and what can be known". Epistemology is all about creating a philosophical foundation that outlines how knowledge can be constructed to ensure that it is both legitimate and adequate (Bryman, 1984). Whilst, epistemology and ontology are explained as two separate constructs, Crotty (1998) notes that the ontological stance taken indicates a specific epistemological positioning and vice versa.

4.2.3 Epistemology choice for this research: Social construction paradigm

Looking specifically now at this doctoral study, strategy is taken to be a construction, enacted through a diverse number of practices that create meaning in this world. Through this research project, the researcher aims to provide meaning and clarity to the strategy processes and explain how these are enacted in the context of an innovation ecosystem. These processes and activities of strategic decision-making in these ecosystems are seen as being contingent upon the social interactions between individuals as well as their firms; therefore, it is thought that the research should take a *social constructionist* approach.

In considering the methodological constraints, the researcher could choose to follow a positivist paradigm which advocates that realist exists independently of how we perceive it. This objective ontological outlook distorts the influence of personal experiences. In turn, removing the significance of our individual ways of constructing the world around us. Moreover, given that the researcher plans to explore and explain the strategy process in the ecosystem, he anticipates that a subjective approach would allow for a nuanced understanding of the dynamics and relational interplay involved in ecosystem strategic decision-making.

4.2.3.1 Social construction overview

Derived from the work of Karl Mannheim, social constructionism can be understood as "all meaningful reality, precisely as meaningful reality, is socially constructed" (Crotty, 1998, p. 55). In this case, the term 'social' refers to the approach towards generating meaning as opposed to the individual object holding meaning as a social entity. That is to say, that in the context of social construction the object used in meaning construction does not necessarily

have to be humanistic in form and therefore, not 'social' in that sense of the word (Crotty, 1998). In the eyes of Scott and Marshall (2009, p.159), social constructionists "emphasize the idea that society is actively and creatively produced by human beings", and that the social world is "woven by individuals and groups". Berger and Luckmann (1966) in their publication *The Social Construction of Reality* introduced the term into mainstream sociological vocabulary through their investigation into the social construction of religion.

Whilst social construction does not outright reject 'genetic inheritance' (Gergen, 1985, p. 265), it instead concentrates on the social effects on both the constructs of the individual and the collective social orders. What social constructionism concerns itself with has to do with what is known as culture in the world of anthropologists, or sociologists constructs of society and the psychological branch of shared society (Galbin, 2014). As such social constructionism places significance on the complexity of causality between the multiple facets of individuals in their own societal constructs; challenging the plausibility of what we often hold to be common knowledge (Demeritt, 2002).

Moreover, whilst the dominant paradigm in strategy literature has perhaps resonated with the constructivist approach to generating theory, there is arguably an intrinsic requirement to advance academic scholarship into the realm of critical realism, in order to validate some of the theoretical conceptualisations being made about this emergent management practice of strategizing. Yet given the relatively youthful progression of open strategy research streams and the essential requirement for research to theorise the underlying fundamental components of what constitutes this emergent concept of openness in strategic practice, prevailing common sense would dictate that academic scholarship pursue the social constructionist's logic in forthcoming research. In short, the construction of reality through shared understanding and assumptions about the human world is made via social and interpersonal influences (Burr, 2006). Which in turn, informs the epistemological positioning of the researcher and is mirrored in the approach taken for this doctoral research.

4.2.3.2 Relevance to this research

Looking specifically now at the chosen research area, that of open and collaborative strategic decision-making within the context of innovation ecosystems, the work of Popper (1945) can be traced as the underlying foundation for the philosophical positioning upon which research in this field is predominantly centred. In accordance with Popper's work, desirability of an open society rests in the ability to test and eventually adapt the guiding assumptions upon

which that society is formed. Indeed, Popper's depiction of an open society mirrors the dominant themes in the emergent properties of open strategy literature of *transparency and inclusivity* (Whittington et al., 2011), *democratisation* (Stieger et al., 2012), *accountability* (Zoppè & Caratti, 2017).2

Armbrüster and Gebert (2002) explored the closed vs. open forms of organizing within society at large, building their argument on the premise of Popper's socio-philosophical underpinnings. They concluded that broader management practices could be seen as promoting collectivist or individualistic traits, whereby the collective form of open society is seen as the superior in contrast with the closed nature of the individualistic society. Tsang & Kwan (1999) attribute the role of contingent relationships between the phenomena under investigation and the social and political structures as the primary focus of the critical realist. Although that is not to discount, the 'mind-independent' realist approach to ordering that remains significant too.

Moreover, in the sphere of strategy research, the strategy-as practice approach emerged from a detachment from the traditional view that strategy as an entity belonged to an organisation. Instead, Johnson *et al*. (2003) suggested that strategy be interpreted as an activity – something that people enact. Fundamentally, the 'as-practice' approach would imply an ontological shift towards a "genuinely social reality created and recreated in the interactions between various actors" (Golsorkhi *et al*., 2010, p. 7). Yet, intriguingly the *Cambridge Handbook of Strategy-as-Practice* suggests that academic researchers have thus far not given the requisite attention to epistemological questions (Golsorkhi *et al.*, 2015).

Social construction is deemed to be suitable for this doctoral research project, namely because of the tendency for researchers to be inherently reflexive in their analysis of the observed phenomena. Adopting a critical position on the universally accepted assumptions on the nature of the social world in which we live. More specifically though, social construction implies that the manner in which we understand the world around us is subject to the historical narratives of interaction and communication between different groups in society. This understanding of social constructionism marries together with the nature of this research as open strategy is observed to be a social construct dependent on the dialogue and interaction between multiple stakeholders in a given context. The socially constructed 'reality' or, in this case strategic direction of the ecosystem, is contingent upon the social knowledge between the participating actors in the strategy dialogue and meaning is construed through the 'cultural

frame of social, linguistic, discursive and symbolic practices' (Cojocaru, Bragaru & Ciuchi, 2012, p. 65).

The significance of a robust and rigorous research design is critical at the early stages of any research project. Equally, the feasibility and practical application of the research design is significant at the beginning of the study. Undoubtedly, the nature of inductive research means that interviews, observations, and historical analysis of data will be a time-consuming element of the research project. Nonetheless, through a well-considered and detailed research design, it is anticipated that the researcher will be able to capture meaning within the strategy processes and activities captured in the dataset. In summation then, through the social construction paradigm, the researcher will focus on the dynamics of the Scottish fintech ecosystem that inform the ecosystem strategy practices. Figure 4.3 below helps to clarify the researcher's epistemological positioning in line with the subjective ontological stance that was justified in the above section.

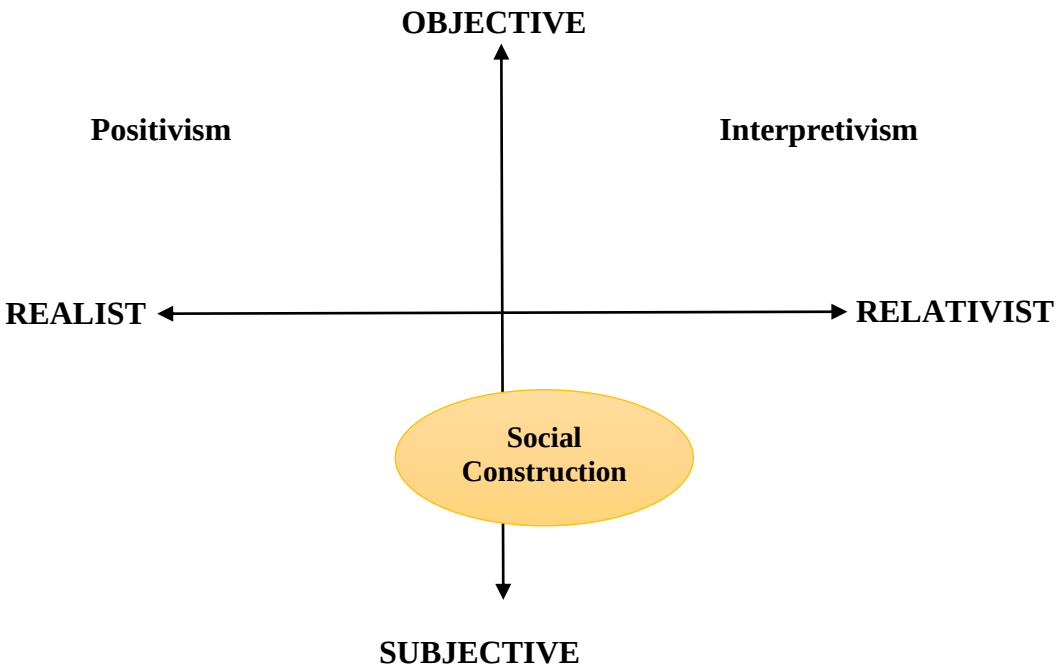


Figure 4.3 Positioning the chosen research paradigm.

4.3 Methodology chosen for this research: Inductive approach

This thesis is driven predominantly by the literature in the areas of open strategy and ecosystems; therefore, the first port of call is the development of a conceptual framework. As such, this research does not proceed with any preconceived hypotheses, nor does it set out to

test existing theories. Through a systematic literature review of both conceptual and empirical studies, the researcher has improved his awareness of the academic debate that he will be entering. Through the lens of the open strategy, the aim is to understand the dynamics of strategic decision-making in the real-world scenario of an innovation ecosystem by assessing the ecosystem dynamics contributing to strategy development.

It is plausible that the research direction taken in this study could have taken a different route had the researcher followed a positivist epistemology and relatedly an objective ontology. The methodology for example, would likely take the form of a deductive approach whereby the researcher would look to test hypotheses against empirical observation. Whereas, under the interpretivist epistemological positioning adopted in this study, this research will look to bridge the existing literature on open strategy and innovation ecosystem in order to create a novel conceptual framework. Subsequently, the following step in this process is to carry out field research in order to compare the reality of what happens in the external world with the conceptual model.

It is anticipated that the conceptual framework will provide the theoretical underpinnings and foundational groundwork for guiding the empirical research. Nonetheless, the researcher will not discard the significance of empirical inquiry, as any emerging findings through the empirical investigation will feed into the academic literature in order to consolidate and extend the argument being made. Therefore, this research balances the tenets of in sight harnessed through the literature alongside the empirical investigation as demonstrated in Figure 4.4.

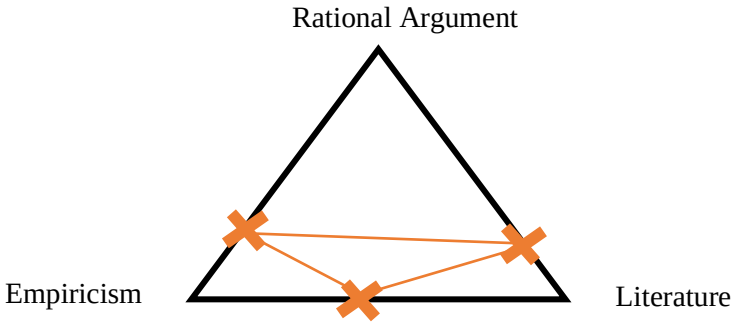


Figure 4.4. The REL (Rational, Empiricism, and Literature) triangle (Dörfler, 2018).

Relatedly then, this study adopts an *inductive* methodology. The construction of the conceptual framework out of the academic literature offers ideas and insights before the empirical research is conduction; nevertheless, this study will be open to emerging patterns and trends from the empirical dataset.

4.3.1 Research method chosen: Case study method

The ontological and epistemological positioning often influences the researcher's choice of methods employed within a study. For this research, a subjective ontology coupled with a social constructionist epistemology and an inductive methodology are taken to be the most appropriate as explained in the preceding sections. Consequently, this leads the researcher to make a choice from a number of given research methods and techniques that would be informative for the purposes of this doctoral study. These methods are identified to be experiments, case studies surveys and participation (Thornhill, Saunders and Lewis, 2016).

The choice of a research method in line with the researcher's choice of research paradigm is critical, not least because this will influence the approach to data collection and subsequent analysis of the empirical evidence gathered (Yin, 2014). Further to the discussion above, this section will provide an explanation for choosing the case research method ahead of experiments, surveys, and researcher participation. Whilst all four of these methods have their strengths and weaknesses, in this section, the researcher will aim to highlight the choice of case study methods in relation to his own research paradigm as being the most appropriate to this type of study. The choice of research method is critical, as the researcher must demonstrate how the chosen method can provide reliable and rigorous solutions to the research questions identified in Chapter 2 (literature review chapter).

Revisiting the research questions that are identified as being of interest to this empirical study, then it can be surmised that these are *how* questions, and therefore, by nature more exploratory as opposed to being prescriptive. It is through the exploration of the strategizing processes in the innovation ecosystem that this study will seek to provide a clarification as to *how* strategic alignment is achieved.

The following criteria provided the structural framework for deciding which research method would be adopted in this doctoral study. Identified by Yin (2014, p. 9) as the three conditions for choosing the appropriate research question, these allowed me to make an informed assessment between the research methods discussed at the beginning of this section.

- Research questions proposed.
- The level of control held by the researcher over the subject of study.
- The level of access afforded to the investigator, together with available resources.

The subsequent sections will provide a considered explanation of why the case study method was chosen as the most appropriate research method. As such, the following sections will make comparisons between the case study method against the methods of experiments, surveys, and participation, in order to demonstrate why the case research approach is favoured in each instance.

4.3.1.1 Case study versus experiment method

"Experiments are done when an investigator can manipulate behaviour directly, precisely, and systematically" (Yin, 2014, p. 12). Based on this explanation, the experimentation method is not at all suitable for this study, as the researcher will have no means to control or influence the strategy process in the innovation ecosystem. Instead, the purpose of this study is to understand and clarify *how* strategic alignment is accrued in the ecosystem context.

Moreover, Boruch and Foley (2000) explain that experiments are often enacted in a laboratory or field/ social setting, where the role of the investigator is to treat groups of people in different ways in order to measure the changes between one or two isolated variables. Taking into consideration the first and second conditions highlighted above, firstly the research questions posed and secondly, the level of researcher control over the phenomena in action, then the case study method comes out on top against the experimental approach.

4.3.1.2 Case study versus survey method

Survey methods can encapsulate a range of different research methods, extending from case studies to questionnaires, nonetheless, the dominant research question type addressed by survey methods tends to resonate with the '*what'* approach to empirical investigations. In other words, exploratory studies would be best suited to the survey method, which generally is "designed to enumerate the 'what', whereas a case study would not be an advantageous method in this situation" (Yin, 2014, p. 10).

Given the need to investigate *how* strategic alignment is achieved in the innovation ecosystem, this study will look to illicit the embedded practices that may not yet be formally recognised by the participants themselves at a holistic level. Therefore, this research will aim to capture detailed evidence of the activities outlined in the conceptual model – namely the open forms of strategy activity and the role of the institutional actors in realising the strategic decision-making process. Taking this into consideration, the case study method is assumed to

be more advantageous to this type of study as opposed to the questionnaire-based survey method.

4.3.1.3 Case study versus participation method

Commonly associated with the ethnographic approach to research, participant observation, discourse analysis, and indeed ethnography itself are often used with the grounded theory approach. From an epistemological perspective, it can be argued that this approach resonates with the fully interpretivist epistemology – which is the approach this study adopts. From a theoretical viewpoint, any of these aforementioned participation methods could have been adopted in relation to this doctoral research, however, from a resource and data access perspective, the case study method has been chosen as the preferred method of choice.

Whilst participation in strategy-making sessions or strategic meetings would have helped to augment the empirical evidence gathered, access limitations and restrictions meant that the case study approach is taken to be the best available approach. This will also enable the researcher to capture the more intuitive and intricate dynamics influencing the strategizing activity of firms in the ecosystem.

Method	*Form of research question*	*Requires control of behavioural events?*	*Access to/ and availability of resources*	*Applied in this study*
Experiment	Why? How?	Yes	No	No
Survey	What? Where? Who? How many? How much?	No	Yes	No
Participation	How? Why?	Yes	No	No
Case study	How? Why?	No	Yes	Yes

Table 4.1 Relevant situations for different research methods. Adopted from (Yin, 2014, p. 9)

4.3.1.4 Case study research and generalisation

Whilst the preceding sub-sections have predominantly explained the benefits of adopting the case study approach and highlighted the advantages of the case study method in qualitative inquiry, it is important to acknowledge and explain any potential drawbacks of this approach. The case study method itself can be divided into a single or multiple-case study design, as demonstrated in Figure 4.5, the difference between these approaches is explained in the sub-sections below.

4.3.1.4.1 Single case design

The most prominent critique of the case research method is arguably the generalisability of findings and conclusions drawn. Indeed, the single-case study design often faces concerns around how valuable the research will be, given the generalisability concern associated with a single case study design (Kennedy, 1979). Nonetheless, there is support for the single case study design in its capacity to provide rich and detailed analysis of embedded phenomena, Flyvbjerg (2006) states that it would be inappropriate to dismiss the findings from such case study designs as being not generalizable.

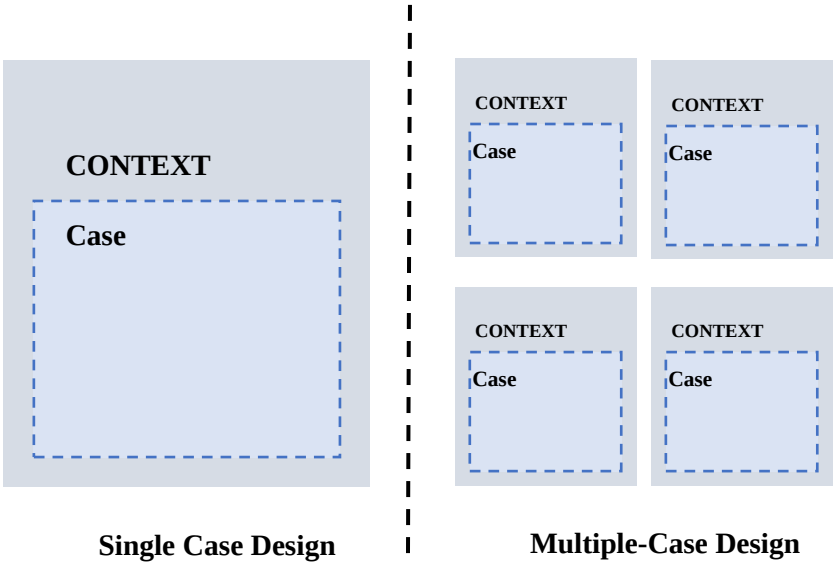


Figure 4.5 Basic types of designs for holistic case studies. Adapted from Yin (2014, p. 50)

For Flyvbjerg the debate surrounding the usefulness of single case study designs rests with the type of case being studied and the rationale for choosing this design. He goes on to state that generalisability is only an issue where the purpose of social sciences research is understood to concern itself with replicating the study (Flyvbjerg, 2006). Moreover, according to Thornhill, Saunders and Lewis (2016), case studies are becoming increasingly popular in organisational research, particularly when attempting to generate or extend theory. Flyvbjerg (2006) concludes that the case study approach is indeed useful where the phenomenon under investigation can only be identified through a handful of holistic examples.

4.3.1.4.2 Multiple case design

Yin (2014, p. 57) explains the multiple case study design to be “more compelling” and “robust” in comparison to the single case-study approach. He goes on to state that “the logic

underlying the use of multiple-case studies is the same" (Yin, 2014, p. 57). The choice of case should be considered so that it:

(a) predicts similar results (*literal replication*), or,
(b) Predicts contrasting results but for anticipatable reasons (*theoretical replication*)

> *"The logic underlying these replication procedures also should reflect some theoretical interest, not just a prediction that two cases should simply be similar or different"* (Yin, 2014, p. 57)

This idea of replication is significant in case study research and is illustrated in Figure 4.6 The first step, as shown in the diagram, is to develop theory and "show that case selection and the definition of specific measures are important steps in the design and data collection process" (Yin, 2014, p. 59). The purpose of the research is to seek convergent evidence for each case, this evidence should then be considered in line with the focus of the overall research study in order to identify points of replication. Alternatively, as the case may be, to identify contrasting results and reasons for these.

In summary of the multiple-case design, it is important to follow the replication logic, as opposed to the sample logic adopted in most other research method designs. The researcher should take care to choose each case carefully, ensuring that it meets the requirements of the research questions established. To successfully implement the multiple-case study design, the cases should serve the purpose of a multiple experiment design, whereby similar or contrasting results should be sought as outlined at the start of the empirical investigation (Yin, 2014).

4.3.1.5 Summary of chosen research method: case study

Given the trade-offs discussed in the preceding sub-section, the researcher believes that case study research would be the most advantageous approach to gathering and analysing the data collected in the empirical investigation. Despite the epistemological positioning adopted being grounded firmly in the interpretivist paradigm, the researcher believes that the social constructionist positioning does not embrace the pure grounded theory approach. Therefore, he would not position my study in a pure interpretivist paradigm; instead, on the interpretivist side of the scale would be a more accurate reflection of my philosophical basis.

The social constructionist positioning does not advocate the use of large-scale samples or questionnaire surveys, but rather promotes the idea that a researcher can understand the real world through the context-specific concepts. Relatedly then, the validity of constructs and

creating informed concepts to enable access to reality are critical to building a picture of how reality is constructed. As this study does not aim to change the phenomena under investigation, the use of an experimental design would not be suitable. Similarly, as this research contains more *'how'* questions, the use of a case study method is shown (see Table 4.1) to be the most advantageous approach (Yin, 2014).

As Yin (2014) explains, when dealing with real-life phenomena it is important to understand the contextual and situation in which the event occurs. An experimental approach, by design, intentionally separates the context and the phenomena under investigation in order to focus the research on a few variables. Meanwhile, surveys attempt to do both, exploring the phenomena and the context, although their ability to tackle the more intricate contextual elements remains contested (Yin, 2014).

Hence, in considering the benefits and drawbacks of each research method, the researcher believes the case study approach will best serve the empirical investigation in this study. The case research will be augmented by in-depth interviews and analysis of archival data – namely firm-level and ecosystem records and publications – in order to triangulate the findings. Figure 4.7 provides a visual representation of the research design topology adopted for this study.

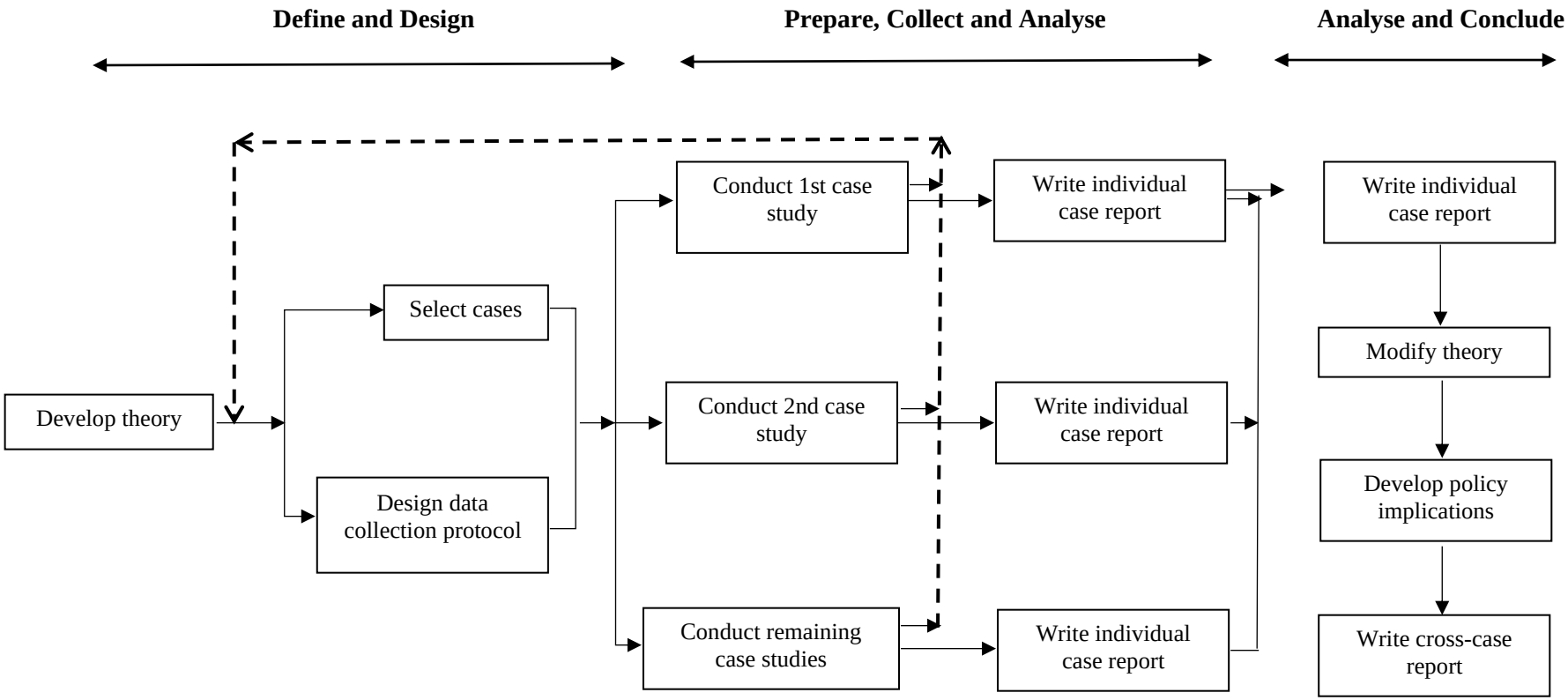
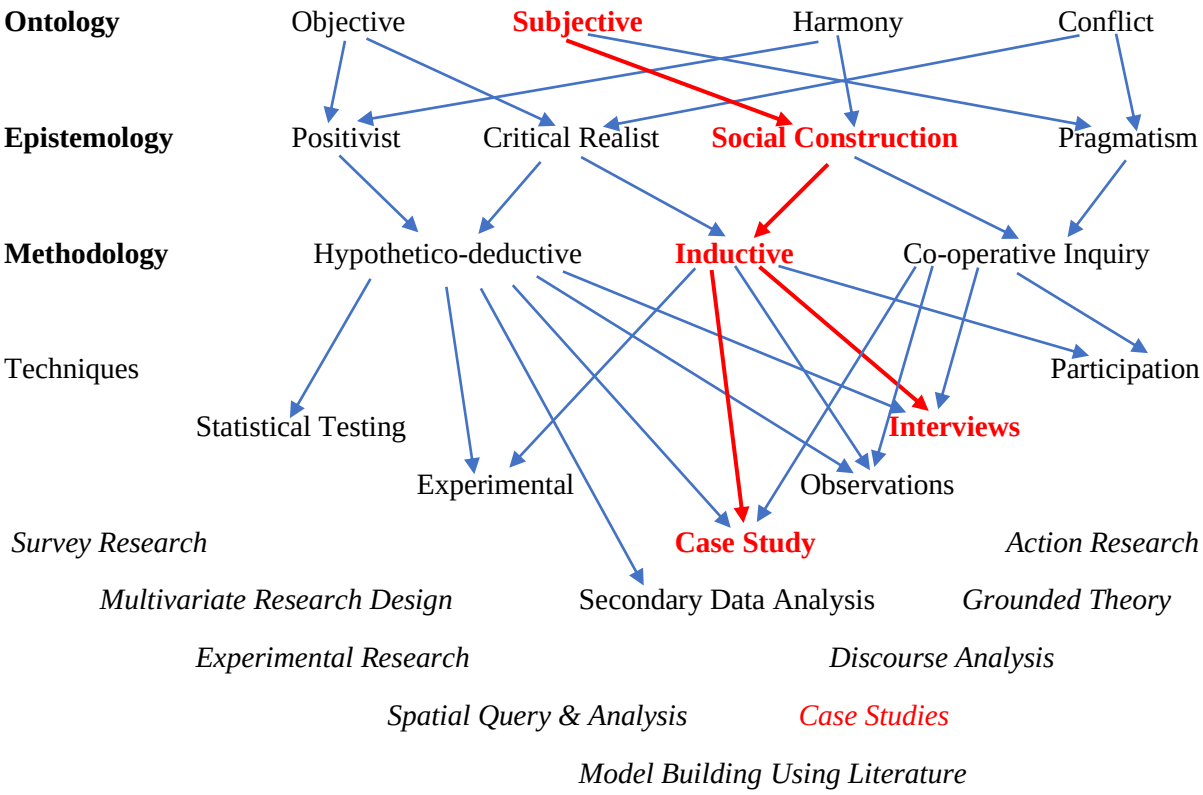


Figure 4.6 Multiple-case study procedure. Adopted from Yin (2014, p. 60)



***Choice of methods for this research**

Figure 4.7 Research design topology for this study

4.3.2 Case study design for this research

A well-thought through and considered case study design and selection of case studies is critical in a multiple-case study approach (Yin, 2014). In order to harness some of the rich descriptions and insights into the social world, qualitative researchers believe in creating detailed pictures to depict reality. Contrastingly, the quantitative researcher would be less concerned with building a detailed picture, as they prefer to develop generalisations using large samples of data. According to Yin (2014) there are four key components to adopting a successful case study design, these will be discussed in the subsequent sections.

- Choosing the case study type
- Developing a research framework, research constructs and research questions
- Selecting appropriate and relevant cases
- Developing the research instruments and protocols

This study adopts the ***multiple-case study approach*** as it allows the researcher to generate robust and reliable results and make useful theoretical contributions using rigorous concepts and constructs, triangulation of different datasets and by means of the replication logic. In doing so, the purpose of the case study is to extend upon the preceding theoretical interpretations of strategy-making in ecosystems (see Table 4.2).

4.3.2.1 Defining the specific research questions

Strategy process research tends to address questions on how strategic decision-making unfolds, looking at the formation and implementation of the said strategy. In order to address the high-level research question: *How do firms achieve strategic alignment in an innovation ecosystem?* The researcher has formed the following research questions to be addressed through this study (see Chapter 2).

1. What is the purpose of strategic decision-making in the context of an innovation ecosystem?
2. What are the ecosystem dynamics impacting strategic decision-making?
3. What are the key strategy initiatives undertaken by innovation ecosystem participants in the strategy process?

Purpose	*Research question*	*Research structure*
Exploration Uncover areas for research and theory development	Is there something interesting enough to justify research?	In-depth case studies Unfocused, longitudinal field study
Theory building Identify/ describe key variables Identify linkages between variables Identify 'why' these relationships exist	What are the key variables? What are the patterns or linkages between variables? Why should these relationships exist?	Few focused case studies In-depth field studies, multi-site case studies, best-in-class case studies
Theory testing Test the theories developed in the previous stages Predict future outcomes	Are the theories we have generated able to survive the test of empirical data? Did we get the behaviour that was predicted by the theory, or did we observe another unanticipated behaviour?	Experiment Quasi-experiment Multiple case studies Large-scale sample of population
Theory extension/ refinement To better structure the theories in light of the observed results	How generalizable is the theory? Where does the theory apply?	Experiment Quasi-experiment **Case studies** Large-scale sample of population

Table 4.2 Matching research purpose with methodology. Adopted from Voss (2010, p. 166)

The social constructionist research paradigm followed in this research seeks to explore phenomena through the lens of social interplays that help to explain how things come together. In essence, the social constructionist attempts to understand the world through the intricacies of how concepts and constructs are brought to life in particular contexts, as opposed to large-scale samples. Using qualitative scales, such as degrees of involvement from *low to high*, or *near to far*, the researcher intends to measure the extent to which the concepts and constructs are observed in the empirical investigation. Hence, the conceptual framework developed from the comprehensive review of literature is made up of the *concepts* of open strategy and innovation ecosystems being explored.

The motive is to build understanding of the patterns observed in strategic decision-making activity of both the ecosystem and the firms that participate in ecosystem strategizing activity. The researcher will seek to find repetition in the patterns in order to produce generalizable answers to the research questions posed. Thus, there is a need to develop a reliable, robust, and replicable case study design to address the research questions rigorously through empirical investigation.

4.3.2.2 Selecting case study organisations

For this study, the primary aim is to examine how strategic alignment is achieved in innovation ecosystems, through an empirical investigation of the strategizing activity of firms engaged in ecosystem activity. The focus of the investigation is on the Scottish financial technology (fintech) ecosystem. Which forms part of the wider Glasgow City Innovation District (GCID). Case studies are advantageous in this situation as they can enable the researcher to reach the reality through the field-based empirical investigation.

In essence, the case study approach provides the context and situational dependencies upon which this research is based – i.e., the contextual environment of the innovation ecosystem. Therefore, the case study approach would allow the researcher to investigate the patterns demonstrating the interaction between theory and practice (Eisenhardt, 1989). According to Yin (2014), there are two key components in selecting the case study organisations; firstly, there is a need to define the case, and secondly bounding the case. Significant to this step is establishing the unit of analysis, this will be explained in more detail in relation to this study in the following sub-section.

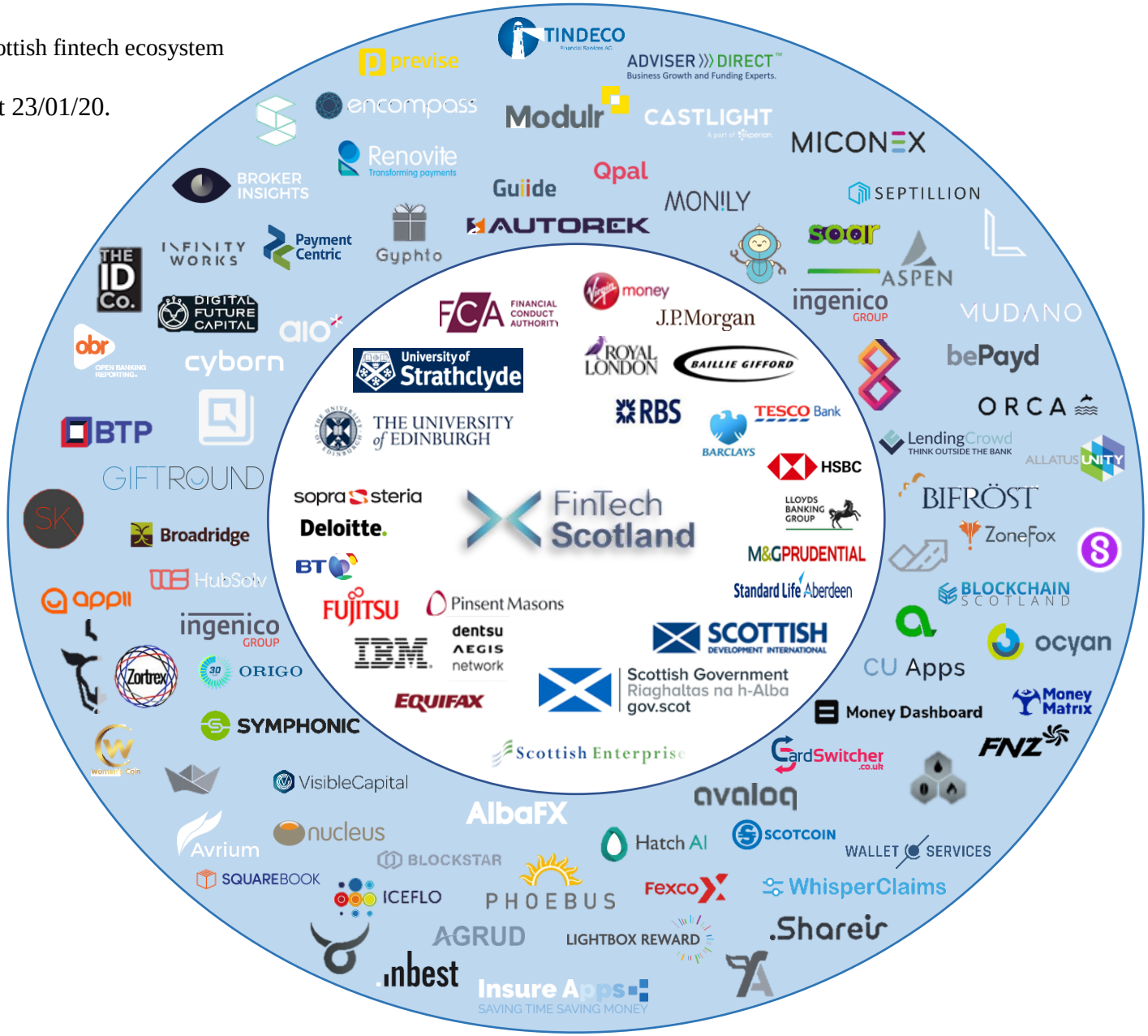
One of the most significant factors when choosing case study research is to ensure that cases chosen are comparable in order to ensure that reliable answers can be given to the research questions. Hence, there is a need for uniformity or even homogeneity in at least a few variables for each chosen case study. Taking this into consideration, this research will investigate the strategizing activities of 'strategic partner' level firms in the Scottish fintech ecosystem (see Figure 4.8).

4.3.2.3.1 Unit of Analysis

The process approach to strategy research seeks to explore how strategy is formulated and implemented in its organisational context (Hodgkinson and Johnson, 1994). In essence, scholars such as Pettigrew (1992) and Whittington (2006) elucidate the need to consider both the content and context of strategic initiatives in order to deliver theoretically and practically robust research outputs. In general, during the strategy formulation and implementation processes, organisational decision-makers need to consider the context and content of the potential strategy initiative.

Figure 4.8 Scottish fintech ecosystem

*Correct as at 23/01/20.



Therefore, this study investigates content issues as the unit of analysis, which can provide understanding into how strategic alignment is achieved in an innovation ecosystem. This research is interested specifically in how the dynamics of strategic activities in innovation ecosystems can help achieve strategic alignment around a focal value proposition through the empirical study of the Scottish fintech ecosystem. The case study approach is the preferred method in empirical qualitative research (Yin, 2014), through which this study aims to understand the practices underpinning the strategy processes within the Fintech ecosystem. Hence, the strategic journeys undertaken, decisions made, and initiatives taken on will serve as the *unit of analysis* as opposed to any one individual firm or organisation.

In relation to this study, the researcher takes strategy to be concerned with significant organisation decisions at the network level (De Wit and Meyer, 2017, p.8), "where a strategy is developed for a group of firms". This is demonstrated below in Figure 4.9, where the 'network' level strategy making activity will serve as the *unit of analysis*.

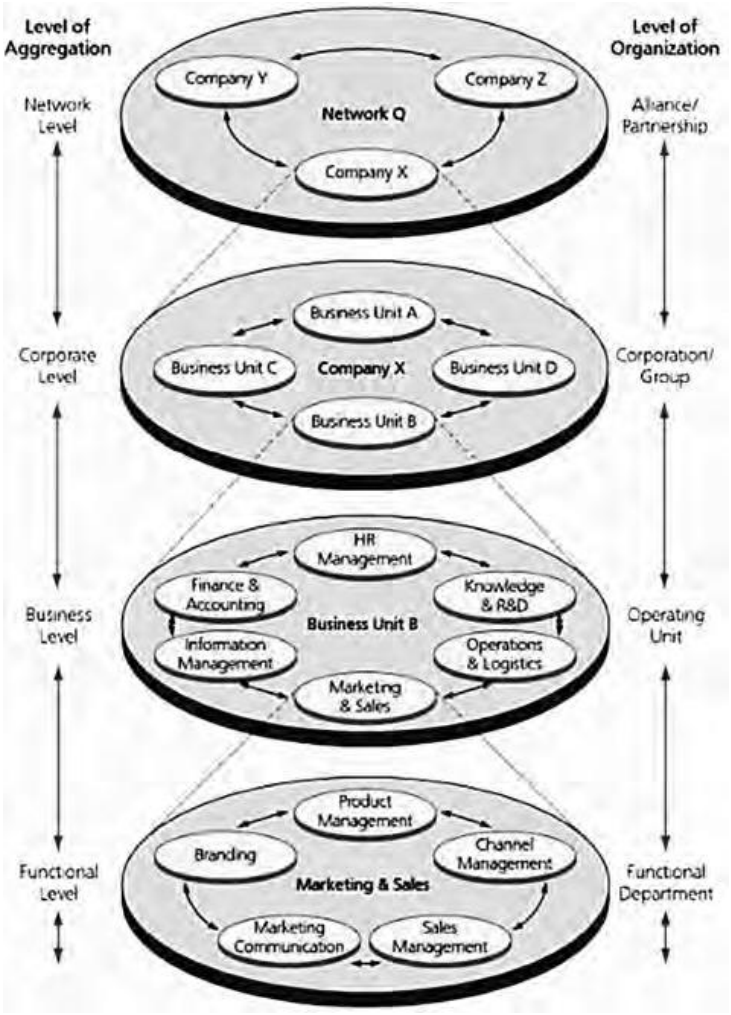


Figure 4.9 The levels of strategy. Adaptation from De Wit & Meyer (2017, p.7)

In contrast, the researcher could have considered the less important issues of functional or business level strategies – which collectively can have a substantial impact on the organisation. Nonetheless, the distinction drawn here is essentially a subjective dividing of the more and less significant strategic issues facing an organisation. For the purposes of this study, the label 'network level' strategy is taken to be the most significant strategic issues in the context of the fintech ecosystem.

4.4 Summary of Chapter 4

This research proceeded with a comprehensive review of the prevailing literature on innovation ecosystems and open strategy (Chapter 2), before then constructing a conceptual framework (Figure 2.7) from the literature. Whilst the literature has informed the development of the initial argument, the subsequent chapters will enrich the conceptual framework deducted earlier in the thesis. Through the data analysis in empirical setting of the fintech ecosystem, this research seeks to validate the conceptual framework through empirical findings.

As suggested by Yin (2014), this study is open to emerging findings and ideas that appear from the dataset. Indeed, this can also be used to provide a detailed picture about the strategy processes in the fintech ecosystem. Hence, theory extension/ refinement through a multiple case study approach is adopted as the preferred research method. In summation then, this chapter outlines the choice of research design adopted by this study to join the dots between the empirical data and the research questions set. As such, this chapter has laid out the choice of appropriate research methods, the philosophical research paradigms and their assumptions that underpin this research.

In conclusion, this chapter emphasizes that this study meets the requirements of a *social constructionism paradigm* and selects the *case study method* to conduct the empirical research. Limitations of adopting this methodology are discussed in line with learnings from the empirical study at the end of the thesis. The next chapter seeks to address the data collection and presentation protocols relevant to this study.

5. FIELD WORK: DATA COLLECTION

According to Yin (2014) the key steps involved in conducting case study research are as follows:

- Choice of case study type,
- Developing a research framework, research constructs and questions,
- Selecting the cases to be investigated,
- Developing the research tools, instruments, and protocols,
- Go into the field,
- Analyse recorded data,
- Reach closure.

The choice of case study type and selection of cases was outlined in the previous chapter, whilst the research framework, constructs and questions were developed following the comprehensive review of literature and gap analysis in Chapter 2. In summation, this study adopts a *multiple case study* approach with the aim of *extending the existing theory* on the strategizing practices of firms engaged in ecosystem activity. This research seeks to investigate the corporate level firms engaged in the Scottish fintech ecosystem.

The purpose of this chapter is to outline the research tools, instruments and protocols adopted, as well as outlining the means of entering the field for data collection. The remainder of this chapter deals with explaining the process undertaken in order to prepare for a robust, reliable, and repeatable approach to data collection.

5.1 Case Study Selection Process

For this study access to strategic decision-making was required in order to investigate the underlying processes and practices influencing the emergence of a focal value proposition in the innovation ecosystem. The proximity of the Glasgow City Innovation District (GCID) and the existing links and connections with the University of Strathclyde (also the funding institution for this research), made it a preferential choice for further investigation.

> *In partnership with the (Glasgow City) Council, Scottish Enterprise, Entrepreneurial Scotland and the Chamber of Commerce, the University of Strathclyde has established the Glasgow City Innovation District (GCID). This brings together all the parties in a commitment to develop the district of the city around the Technology and Innovation Centre (TIC) and Tontine into an innovation zone.*
>
> Migueis *et al.* (2018, p.6)

Having identified the GCID as a suitable example of an innovation ecosystem, the next step was to select the level of analysis for the case study research. Prior to the launch of the GCID zone in early 2019 the existing infrastructure in place, namely the Technology Innovation Centre (TIC), was used to house three existing strands of research and industry engagement activity by the University of Strathclyde. These were identified as Pharmaceuticals, Energy and Enabling Technologies, three areas of strategic interest to the University over the last decade.

Supporting Glasgow City Council, Scottish Enterprise, Entrepreneurial Scotland and the Chamber of Commerce, the University has played a fundamental role in developing and establishing the GCID. Central to this new innovation zone is the development of a new TIC building (TIC 2) which will allow the University to develop six new separate streams clustered under the umbrella of the GCID; there are: FinTech, Space, MedTech, 5G, Quantum and Industrial and Industrial Informatics (see Appendix 4).

Investigating each stream under the wider remit of the GCID innovation ecosystem would be time and resource intensive, which doesn't suit the nature of this PhD research project. Moreover, during the early phase of the pilot study the researcher found that there was limited connectivity between the clusters with each operating independently of one another. Therefore, there was a requirement to choose a particular stream and then investigate the respective ecosystem formed under the chosen stream.

The decision to investigate the fintech cluster was taken as a result of considering the development of each stream, together with the researcher's personal preference and familiarity with the content and context of each of the six streams. Prior knowledge and experiences influence the researcher's choices (as discussed in Chapter 4), and in this instance given the researcher's background in the technology division of a leading financial services firm, it made sense to investigate the development of the Scottish fintech ecosystem, which had connections to the GCID block.

5.1.1 The Scottish Fintech Ecosystem

The fintech stream of GCID centres around the Fintech Scotland community, which was originally established in January 2018 as a joint initiative between the Scottish Government, Scottish Enterprise, Lloyds Banking Group, HSBC and the University of Edinburgh (Fintechscotland.com, 2020). Since its inception the Fintech Scotland community has grown to incorporate multiple partner firms including other financial services firms, service providers such as BT Telecoms and the regulatory body; the Financial Conduct Authority (FCA). Moreover, fintech SMEs form the largest stakeholder base with over two hundred firms joining the community. The total number of firms involved in the Fintech Scotland ecosystem is shown in Figure 4.8.

For this PhD research project, the unit of analysis is the strategic decision-making activity undertaken at partner level - the inner circle of the Fintech Scotland ecosystem demonstrated in Figure 4.8. Therefore, the researcher is concerned with investigating the strategic decision-making between the partner firms engaged in the strategizing activity within the Scottish fintech ecosystem. Hence, the researcher will seek to select those firms that are active participants in the decision-making practices and processes of the ecosystem. Moreover, early discussions during the preliminary pilot phase revealed that the partner firms were directly involved in shaping the future direction taken by the ecosystem. There seemed to be consensus from the pilot participants suggesting that the partner firms contributing directly and indirectly to the focal value proposition of the ecosystem.

In summation then, the Scottish fintech ecosystem was selected as the case study for this research, Figure 4.8 provides details on the different firms engaged in ecosystem activity. Interview participants were chosen from Fintech Scotland and the partner firms; including: the University of Strathclyde and Glasgow City Council.

5.1.2 Role of the Researcher

The case study design, data collection and analysis were all conducted by the doctoral researcher, who also carried out the case study interviews himself. Subsequently the case study reports were also completed by the researcher, these were used to inform the findings from this research.

5.2 Case Study Data Collection Process

Semi-structured interviews with managers and senior stakeholders from participating in the fintech ecosystem, each taking around 60-90 mins were conducted over a period of two calendar months. The interviews coupled with findings from desk research conducted by the author - predominantly in the form of documentary evidence and archival records - and field observations formed the basis for data collection in the context of this PhD research. During the pilot study, the researcher was able to obtain copies of supporting company documents such as strategy documents, minutes from ecosystem participant meetings, organisational reports, and other related content. Table 5.1 contains a list of all individuals engaged in the pilot study discussions and Table 5.2 contains details for interview participants involved in the research. To maintain anonymity of all individuals engaged in this research, both their Christian and surnames have been intentionally blanked out.

	Pilot Case Study Discussions		
	Interviewee	**Position**	**Organisation/ Affiliation**
P1		Regional Development	Glasgow City Council
P2		Strategic Relations	University of Strathclyde
P3		Innovation Consultant	Vivolution Glasgow
P4		Business Director	University of Strathclyde
P5		Owner/ Consultant	O'Herily & Co.
P6		Secondment	Fintech Scotland/ FCA
P7		Marketing Director	Fintech Scotland

Table 5.1 Individuals engaged in pilot case study discussions

	PRIMARY DATA Semi-structured Case Study Interviews				
	Interviewee	**Position**	**Organisation/ Affiliation**	**Length of Interview**	**Transcription Length**
IFS1		CEO	Fintech Scotland	00:28:11	8 Pages
IFS2		Secondment	Fintech Scotland/ FCA	00:41:16	11 Pages
IFS3		Marketing Director	Fintech Scotland	00:42:55	11 Pages
IGCID1		Project Director	Glasgow City Innov Dist.	00:31:14	8 Pages
IGCID2		Strategic Relations	Glasgow City Innov Dist.	00:39:06	10 Pages
IUoS1		Senior KE Fellow	University of Strathclyde	00:19:04	6 Pages
IUoS2		Senior Lecturer	University of Strathclyde	00:53:36	15 Pages
IUoS3		Strategic Relations	University of Strathclyde	00:38:41	10 Pages
IGC1		Regional Development	Glasgow City Council	00:32:38	8 Pages
IV1		Innovation Consultant	Vivolution Glasgow	00:32:54	11 Pages
I11		Visiting Professor	University of Strathclyde	00:41:23	13 Pages
I12		Business Director	University of Strathclyde	00:34:17	9 Pages
			TOTAL DURATION/ LENGTH	**07:15:33**	**120 Pages**

Table 5.2 Individuals interviewed for this study

Therefore, the case study reports presented within this thesis are constructed through various sources of evidence gathered through triangulation of data in order to reach saturation. Beyond the primary data collected through the use of semi-structured interviews, secondary data was also consulted. Table 5.3 provides further detail on the types of data used. Finally, the researcher also made use of field notes that were taken during his attendance, in an observatory

capacity, at Fintech Scotland's Strategic Partner Board meetings in May and June 2020. It should be noted that these were held remotely over Microsoft Teams.

SECONDARY DATA

Online Publications and Reports

Source	Document Title	URL
Scottish Government	FOI/18/00864-part 1A-pp.1-10	https://www.gov.scot/publications/foi-18-00
Scottish Government	FOI/18/00864-part 1B-pp.11-21	https://www.gov.scot/publications/foi-18-00
Scottish Government	FOI/18/00864-part 1C-pp.22-31	https://www.gov.scot/publications/foi-18-00
Scottish Government	FOI/18/00864-part 1D-pp.32-41	https://www.gov.scot/publications/foi-18-00
Scottish Government	FOI/18/00864-part 1E-pp.42-51	https://www.gov.scot/publications/foi-18-00
Scottish Government	Fintech Cluster Wins European Recognition	https://www.gov.scot/news/fintech-cluster-v
The Scotsman	University of Strathclyde's strategy to create a fintech ecosystem	https://www.scotsman.com/future-scotland/
Glasgow City Council	Glasgow City Innovation District Growth Accelerator Model	http://www.glasgow.gov.uk/CouncillorsandC
University of Strathclyde	Scotland first in UK to gain Fintech Cluster Excellence Award	https://www.strath.ac.uk/whystrathclyde/ne
University of Strathclyde	Vision 2025 Strategic Plan	https://www.strath.ac.uk/whystrathclyde/str
CRP 2018	Strathclyde Innovation	http://www.crp-eut.org/2018_McDonald.pdf
CESAER 2018	Role of Universities of Science and Technology in Innovation	https://www.cesaer.org/news/towards-missi

Official Websites

Fintech Scotland	Website	https://www.fintechscotland.com/

Videos and other Media

Source	Document Title	URL
Real Asset Investment Briefings	How to combine collaboration and innovation	https://investment-briefings.com/media/hov
YouTube	Fintech Scotland's CEO interview by The Scotsman	https://www.youtube.com/watch?v=UiqUTyI
YouTube	Highlights of The Scotsman's 2018 FinTech Conference	https://www.youtube.com/watch?v=451GbE
YouTube	We are Fintech Scotland	https://www.youtube.com/watch?v=OyHWA

Table 5.3 Secondary data artefacts used in this study

Further detail surrounding the triangulation of data sources will be presented and explained in the following sections. In summation by taking the steps demonstrated in the process map below (Figure 5.1), the data collection process was validated through consultations with fellow academics (primary and secondary supervisors for this PhD research). All interviews were originally scheduled as face-to-face, however the global COVID-19 pandemic restricted data collection to predominantly Zoom and Microsoft Teams based interviews.

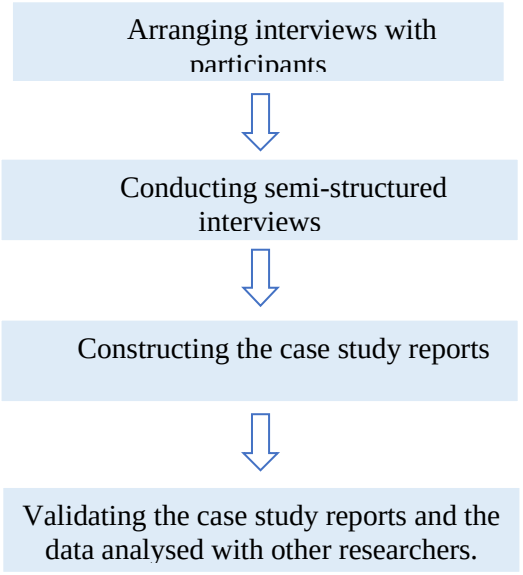


Figure 5.1 Data collection process for this study

5.3 Case Study Data Collection Techniques

The principal method of collecting data for this research will be a triangulation of different qualitative techniques (Flick, 2004), extending both primary and secondary forms of data. The dominant technique resonates with the interview approach, where the purpose of the researcher will be to seek data that explains the central themes of this research study. Whilst this research will also use participant observations and data from published documentation in order to provide a form of validation and legitimacy to the findings and conclusions made. Therefore, this section provides a detailed overview of the three techniques and explains how these can be used together in order to address the research questions posed.

5.3.1 Methods for Qualitative Data Collection

Referring to methods of data collection as modalities, Easterby-Smith, Thorpe and Jackson (2012) suggest that the researcher has the freedom to be creative with the choice of modalities. Loosely grouping the different methods under three types; *natural language data*, *observations* and *interactions*, they imply that qualitative researchers have the opportunity to experiment with their chosen modality (Easterby-Smith, Thorpe and Jackson, 2012). The most popular methods used in case research are presented in Table 5.4, together with an appraisal of the key strengths and weaknesses of each modality.

Irrespective of the chosen modality, when researching case-based data it is in the interests of the researcher to seek out respondents that are best informed about the phenomena under investigation. Yet the most significant stumbling block is usually access to the right types of data (Easterby-Smith, Thorpe and Jackson, 2012; Voss, 2010). Easterby-Smith, Thorpe and Jackson (2012, p.126) go on to state that "securing access may have an effect on the [quality of the] research".

In respect to this research, access to the participants for this study was enabled through the contacts and links established between the University of Strathclyde, Glasgow City Council, and Fintech Scotland. The existing relationship between the funding institution for this study and the empirical case study context enabled the researcher to gain access to the organisations chosen for the case study relatively easily. Therefore, negotiating access with participants was a relatively simple process; the key to doing this was to present each participant with a clear account of the purpose of the study and the type of access being sought. Detailed participant information sheets, together with consent forms were provided to each participant (see Appendix 1), these outlined the roles and responsibilities of the researchers and the participant.

These documents also ensured that the participant was clear on how their information was being used in this study.

DATA COLLECTION METHODS FOR CASE STUDY DEVELOPMENT: STRENGTHS AND WEAKNESSES		
METHOD	Strengths	Weaknesses
PARTICIPANT OBSERVATION	➢ Can obtain a first-hand account and an in-depth understanding. ➢ Provides detailed assessment of interpersonal activities.	➢ Not appropriate in many situations. ➢ Hard to gain access. ➢ Time consuming ➢ Difficulty in assessing objectivity. ➢ Potential for Hawthorn effect.
OBSERVATION	➢ First-hand account of events and the context of these events.	➢ Time consuming ➢ Hard to gain access. ➢ Selective as broad coverage would be difficult without a team of observers.
INTERVIEWS	➢ Focuses directly on the case study topic. ➢ Provides perceived casual inferences (e.g., perceptions, attitudes and meanings).	➢ Interview questions must be systematically developed. ➢ Inaccuracies from poor recall. ➢ Potential for interviewees to provide interviewers with answers they want to hear or to provide socially acceptable answers.
ARCHIVAL RECORDS	➢ Produced outside of the research (objectivity). ➢ Electronic communication has created numerous new forms of documentation. ➢ Precise and consistent. ➢ May allow for a review across several years. ➢ Usually available as quantitative data.	➢ Must be carefully scrutinized for objectivity (what was the purpose of the document's author). ➢ May be difficult to access or access may be deliberately blocked. ➢ Can be difficult to retrieve for traceability.
PHYSICAL ARTEFACTS	➢ Provide insights into cultural features. ➢ Can provide insides into the technical features and specifications of tangible datasets.	➢ Selective reporting bias – as researcher can choose to disregard certain artefacts. ➢ Availability of artefacts as access can be restricted.
DOCUMENTARY EVIDENCE	➢ Produced outside of the research (objectivity). ➢ Electronic communication has created numerous new forms of documentation. ➢ May allow for a review across several years. ➢ Can be obtained unobtrusively depending on availability.	➢ Must be carefully scrutinized for objectivity (what was the purpose of the document's author). ➢ May be difficult to access or access may be deliberately blocked. ➢ Can be difficult to retrieve for traceability.

Table 5.4. Data collection methods for case study development. Adapted from Johnson, Leach and Liu (1999) and Yin (2014).

Three separate modalities or data collection techniques were used in this study in order to triangulate the findings and draw conclusions that could be internally validated by the analysis conducted. Table 5.5 details the data collection techniques employed in this thesis; these are discussed in depth in the subsequent sub-sections.

Data Collection Techniques	Use in this Research
Semi-structured interviews	Twelve semi-structured interviews with participants of the Scottish fintech ecosystem. Length of interviews varied between 45 and 60 minutes. Average length of interviews was 49 minutes.
Field Notes	Electronic recordings and case study diary were maintained throughout the research process. This detailed the pilot study and any informal conversations held with stakeholders during all phases of the project.
Documentation	Multiple documentation data relating to the GCID zone, and in particular the fintech ecosystem were considered, together with any formal strategic planning documents for Fintech Scotland made available to the researcher.

Table 5.5 Data collection techniques used in this research

5.3.1.1 Interviews

> ***"****Typically, the prime source of data in case research is structured interviews, often back up by unstructured interviews and interactions"* Voss (2010, p.174)

Gubrium and Holstein (2001) outline three types of interview techniques; structured interviews, semi-structured interviews and unstructured interviews, all of which can be conducted through a variety of channels including face-to-face, telephone, group or online. According to Voss (2010, p.177) "much, but not all field data will be collected through interviews", and what is judged to be most significant in interviewing is the skillset of the researcher, who Leonard-Barton (1990) suggests should mirror an investigating reporter. There are two key things an interviewer has to keep in mind during the interview process (Yin, 2014, p.110),

> *"(a) to follow your own line of inquiry, as reflected by [the] case study protocol, and (b) to ask … questions in an unbiased manner that also serve the needs of your own line of inquiry".*

5.3.1.2 Field Notes

Maintaining a case study diary ensured that the researcher was able to capture some of the more intangible detail surrounding the case study research, such as direct observations from field visits to the case study site (Yin, 2014). A small sample of the interviews conducted were done face-to-face, therefore site visits enabled the researcher to capture any direct observations pertinent to this study. The pilot study was conducted predominantly at the case study site, this further allowed the researcher to capture snapshots at different intervals. Field notes are useful for capturing the dynamics of the conversations and help detail the progression of the research study and capture other insights not necessarily relevant directly to this project. Finally, these field notes will be used in conjunction with the researcher's personal experiences of undertaking this PhD journey to provide reflections, as presented further in this doctoral thesis.

5.3.1.3 Documentation

In the context of this research the following types of documents were considered alongside the semi-structured interviews; announcements and minutes of meetings, internal reports, published material and records, newspaper and other media clippings and articles accessible through online and traditional media. Government publications from the Scottish Government and Glasgow City Council were also considered important to the strategic outlook for both Glasgow City Innovation District and the fintech ecosystem.

5.3.2 Converging Evidence

The combination of interviews, documentation and field notes provides the data used for analysis in this project. Convergence of the evidence collected is achieved through triangulation of data gathered from the sources identified above, as shown in Figure 5.2. According to Yin (2014, p. 241), triangulation is "the convergence of data collected from different sources, to determine the consistency of a finding". Triangulation can therefore be taken as a means of corroborating the same findings. Relating this back to the discussion around construct validity in Chapter 2, then it can be deduced that through the development of converging evidence, data triangulation enables the researcher to "strengthen the construct validity" of the case study design (Yin, 2014, p.121).

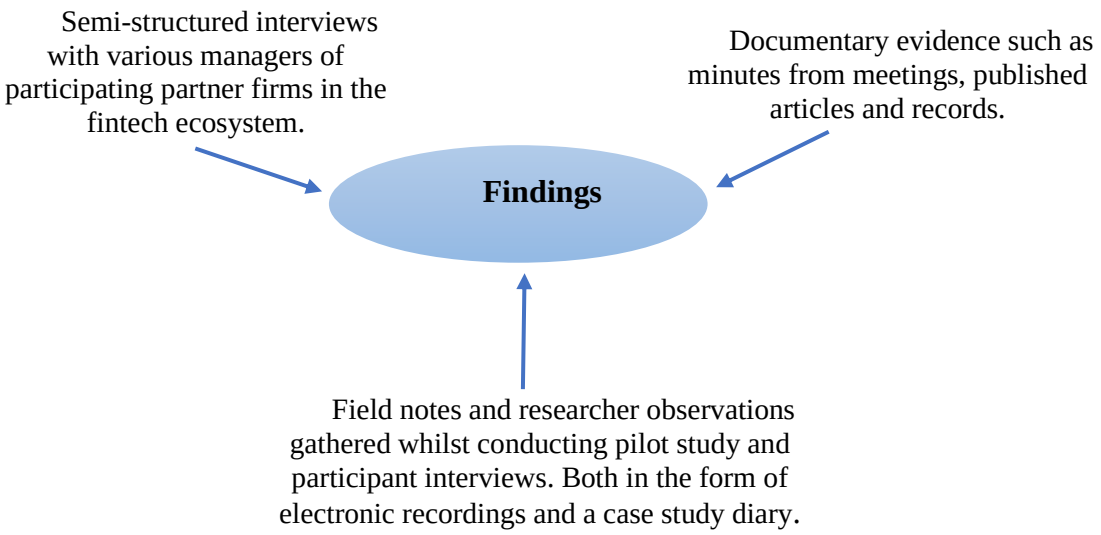


Figure 5.2. Convergence of Evidence. Adapted from Yin (2014, p. 121)

5.4 Case Study Reports

In conducting the data collection process, twelve semi-structured interviews were carried out with the partner level firms of the fintech ecosystem, each of these interviews were captured electronically and subsequent transcriptions were computed. The number of interviews completed with each organisation varied between two and three, depending on access and direct involvement in the strategic decision-making within the fintech ecosystem.

Additionally, during the pilot study process, it was discovered that several management consultancy firms were involved in advising Fintech Scotland and the Scottish Government in order to develop and nurture the growth of the ecosystem. Although these firms were not direct participants in the collective strategizing activities of the ecosystem participants, they were considered relevant and pilot-study interviews were conducted with two consulting firms – Vivolution and O'Herlihy and Co. Ltd. In total fifteen participants were interviewed across a number of partner firms and two management consultancies in the case-study and pilot-study interviews. Each interview was loosely structured and lasted approximately 60 – 90 minutes in length.

Writing up the case study reports is a useful method for maintaining a chain of evidence (Yin, 2014). Moreover, case study reports pose an opportunity "to make a significant contribution to knowledge or practice and share this contribution with others" (Yin, 2014, p.177). Case studies were computed for the following organisations only and are attached in Appendix 7 in line with the case study protocol.

- Appendix 7A – Fintech Scotland
- Appendix 7B – University of Strathclyde

Computing case study reports for each of the partner firm's interviews was not feasible given the remit of this doctoral thesis and moreover, was considered to be outside the scope of the study. For instance, the Scottish Government spans from national Government down to local Council level. As well as their associated bodies and agencies. Furthermore, time restrictions imposed by the duration given to doctoral researchers to complete their studies, together with the impact of the COVID-19 global pandemic prevented the researcher from extending the case study to include a greater number of partner organisations of the fintech ecosystem.

5.5 Case Company Profiles

Each of the case study organisations – highlighted in bold font – are outlined in Table 5.6 below. The table provides information on the basic characteristics of each firm participating in the ecosystem, demonstrating details such as the name, age, location, and ownership. The purpose of presenting this is to demonstrate factual information about each organisation and show the varied and diverse profile of firms engaged in ecosystem activity. Only those firms highlighted in bold were investigated through the empirical investigation conducted in this research.

5.6 Summary of Chapter 5

The objective of this chapter was to present the data collection process and identify the tools and instruments used. The data collected from the case study organisations was gathered in line with the case study protocol developed in Chapter 4 so as to ensure consistency and reliability in the collection and presentation of data. The following chapter will provide further information on the qualitative data analysis techniques employed. By analysing data both within-case and cross-case study organisations the researcher aims to explore and explain the dominant themes emerging from the dataset and provide summarized accounts of the strategic activities and practices as understood in the empirical context of the ecosystem under investigation. Furthermore, coding exercises and pattern searching will be used as the penultimate step prior to drawing conclusions.

Organisation Name	Head Quarters	Year Founded	Ownership	Total Interviewed (12 interviews)
Fintech Scotland	Edinburgh	2018	Not-for-Profit	2
Scottish Government	Edinburgh	1999	Public Sector	3
Scottish Enterprise	Glasgow	1991	Public Sector	1
Scottish Development International	Glasgow	2001	Public Sector	
University of Strathclyde	Glasgow	1796	Private	5
University of Edinburgh	Edinburgh	1582	Private	
Financial Conduct Authority (FCA)	London	2013	Regulatory Body	1 – Senior Management Position in Retail Banking Division
HSBC	London	1865	Private	
Lloyds Banking Group	London	1765	Private	
RBS	Edinburgh	1727	Private	
Virgin Money	Newcastle	2003	Private	
Royal London	London	1861	Private	
JP Morgan	New York	2003	Private	
Barclays	London	1896	Private	
Tesco Bank	Edinburgh	1997	Private	
Baillie Gifford	Edinburgh	1908	Private	
M&G Prudential	London	1931	Private	
Standard Life Aberdeen	Edinburgh	1825	Private	
Equifax	Atlanta	1899	Private	
IBM	New York	1911	Private	
Fujitsu	Tokyo	1935	Private	
BT	London	1969	Private	
Deloitte	London	1845	Private	
Sopra Steria	Paris	1968	Private	
Pinsent Mason	London	1769	Private	
Dentsu Aegis Network	London	1989	Private	

Table 5.6. Case Study Companies: Organisational profiles and key characteristics

6. FIELDWORK: QUALITATIVE DATA ANALYSIS

The previous chapter outlined the processes and procedures for data collection through multiple-case studies, without extending the discussion into the data analysis in depth. The purpose of this chapter is to elaborate on the qualitative data analysis, which is the final step prior to concluding the case study research (Eisenhardt, 1989; Yin, 2014).

- Choice of case study type
- Developing a research framework, research constructs and questions
- Selecting the cases to be investigated
- Developing the research tools, instruments, and protocols
- Go into the field
- Analyse recorded data
- Reach closure

Arguably, qualitative data analysis is the crux of any qualitative research study. The qualitative analysis of evidence from a multiple case study design can be fraught with difficulties. Foremostly, unlike the quantitative analysis methods, there is no universal or dominant technique for conducting data analysis through case study designs. “The analysis of case study evidence is one of the least developed aspects of doing case studies” (Yin, 2014, p.133). The nature of qualitative data does not lend itself it to any one data analysis method or technique, the unstructured nature of evidence gathered can become challenging to manage effectively. Nonetheless, academics such as Eisenhardt (1989), Miles and Huberman (1994) and Yin (2014) propose a number of techniques to support the analysis of qualitative data.

One such approach is to develop an analytic strategy (Yin, 2014, p.135) which encourages the researcher to search “for patterns, insights or concepts that seem promising”. He goes on to identify five specific techniques that can be used for data analysis, these are identified as “pattern matching, explanation building, time-series analysis, logic models [and] cross-case synthesis” (Yin, 2014, p.143). Irrespective of which analytic strategy or technique is adopted, the following four principles are considered important for good quality social sciences research (Yin, 2003, 2011, 2014).

- Data analysis should demonstrate that the researcher has considered *all the evidence*.
- The analysis should address, wherever possible *any and all plausible rival interpretations.*
- Analysis conducted should demonstrate that the researcher has addressed *the most significant aspect* of the case study.
- Finally, the researcher should – if plausible – demonstrate their own *prior, expert knowledge* in the case study.

Overall, the researcher is responsible for ensuring that they treat the evidence gathered objectively, in order to produce credible conclusions. Moreover, by limiting the number of alternative interpretations the researcher can achieve the objective of delivering a rigorous and robust qualitative data analysis. The next section will outline the process undertaken for qualitative data analysis in this PhD research study.

6.1 Data Analysis Process

The first stage in qualitative analysis involves reading through the interview transcripts, field notes, or documents and listening to the digital recordings of the interviews (Miles and Huberman, 1994). Through this phase of reading and listening, the researcher was able to capture notes and memos on what was emerging from the recorded data, this then enabled the development of tentative thoughts surrounding the categories and relationships between the concepts. Categorisation of data will be achieved via coding and thematic analysis.

It is widely accepted that one of the primary dangers of qualitative research is the inability to decode and make sense of a large volume of unstructured data. Whilst qualitative research designs invariably do provide a number of rich insights into the phenomena under investigation, the nature of the unstructured and messy data can make it difficult to interpret and understand what is really going on. Therefore, reducing the volume of data and information gathered through documentation; that is by presenting qualitative data in a visual representation, the researcher will derive the conclusions (see Figure 6.1). In respect to this research study, the case study reports given in Appendix 7 portray the data in a coherent and consistent format to allow the researcher to extract findings across the case studies undertaken. According to Miles and Huberman (1994) this step in the data analysis process provides a narrative for the researcher to work on. Thus, allowing for the reduction of data to take place in order to aggregate data under different themes and trends identified in the overall dataset.

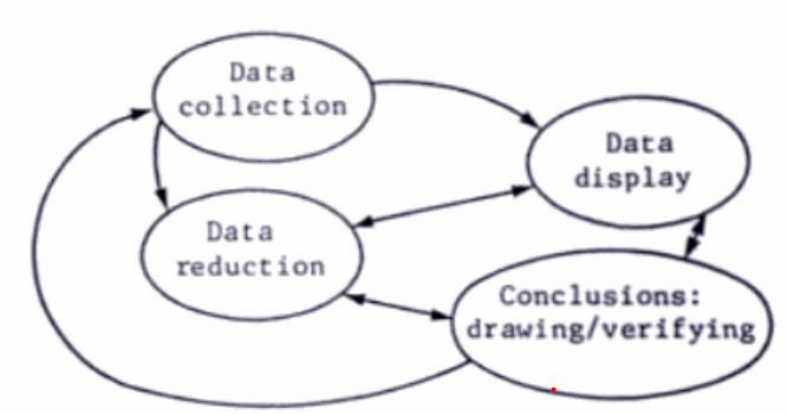


Figure 6.1. Components of Data Analysis. Adopted from Miles and Huberman (1994, p. 12)

The dominant method for data categorisation in qualitative research is accomplished through coding (Glaser and Strauss, 1967). This is where the researcher has to condense the wider dataset into categories and trends identified. According to Miles and Huberman (1994) the purpose of coding is not to simply aggregate the data by merely adding up components. Instead, the researcher should deconstruct the data and restructure this into categories that allow comparison between data in the same category and enable the researcher to develop more abstract theoretical concepts (see Figure 6.2 below). This process also facilitates pattern spotting as means of theory development or extension (Sinkovics, 2018).

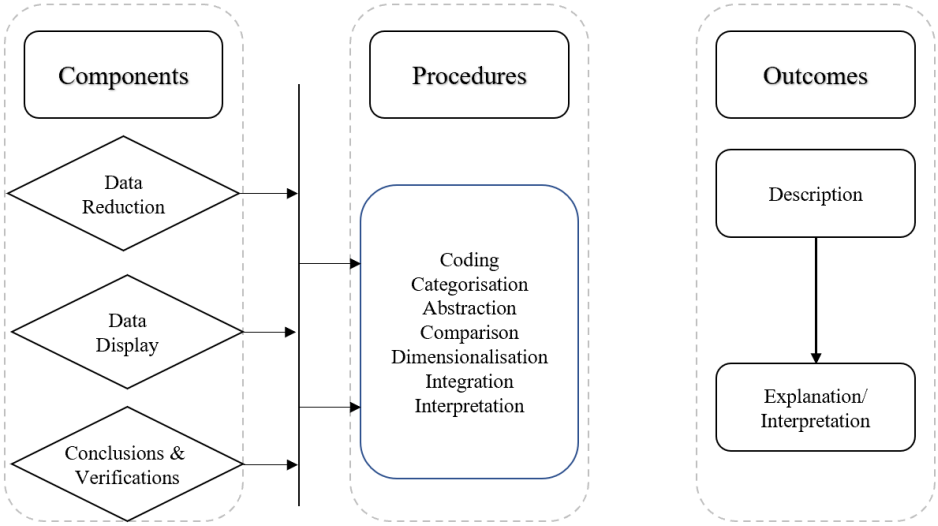


Figure 6.2. Data Analytical Process. (Adopted from Strauss and Corbin, 1999, Miles and Huberman, 1994)

Miles and Huberman (1994) have identified the following three methods for creating classifications that allow the researcher to undertake coding:

1. Codes can be developed from the data itself, although this method is predominantly used with a grounded theory approach.

2. Codes can be derived through the chosen research question and the underlying components of the conceptual framework.

3. High-level codes can be created and augmented with codes that emerge inductively from the dataset. This method combines both of the first two approaches.

Creating these taxonomies involves three layers of groupings, Saldana (2009) identifies these as *codes, categories and themes/concepts*. Codes are broad areas of interest, usually established prior to undertaking empirical data collection. In respect to this thesis, the researcher used an abductive approach to create codes based on both the conceptual framework developed in Chapter 2 and the data itself in order to carry out the qualitative data analysis. In other words, following the third approach outlined by Miles and Huberman (1994, p.55), who state that "conceptual frameworks and research questions are the best defence against overload". They explain overload to be the potential for the sheer volume of data to inundate the researcher. Moreover, the researcher is able to connect key components of the conceptual framework with the data from an early stage in the data analysis process (Saldana, 2009).

Subsequently, the next step is to form categories that – in the whole – tend to be descriptive and theoretical in nature. These categorises play a fundamental role in transforming the coded data into an abstract framework. Finally, the high-level themes and concepts feed into theory development and theory expansion. This chapter provides insights into how these groupings, particularly categories and themes/ concepts are significant in respect to this research study and can provide a reliable and robust mechanism for drawing conclusions in Chapter 8.

6.1.1 Unit of Analysis

The individual firms and organisations involved in the ecosystem, their strategic journey, and their influence and impact on strategic decision-making represents the unit of analysis for this study. According to Zahra and Nambisan (2012, p.220),

> "*Established companies and new ventures need to engage themselves in thinking strategically about the ecosystem in which they exist, their place within it, and how to develop and cultivate relationships with its other members".*

Therefore, these strategic intentions can be understood as a representation, not only for what the organisations are seeking to achieve, but also, for how the ecosystem as a whole will

operate. Revisiting the purpose of this doctoral thesis, this study set out to address the question: *How do firms achieve strategic alignment in an innovation ecosystem?* Hence, the strategic journeys and decision-made by the individual case study firms identified in this doctoral research will serve as the *unit of analysis.*

Saunders and Mann (2008) suggest that studies exploring the practices involved in strategy activity have tended to focus on individual projects or initiatives. However, in contemporary management practice, practitioners face challenging dynamic environments where organisations are pursuing multiple – sometimes even competing – initiatives (Pettigrew et al, 2003). Therefore, in the context of this research, the fintech ecosystem poses a complex and dynamic environment in which ecosystem participants are involved in multiple strategic dialogues that collectively form the overarching ecosystem strategy.

The researcher chose to focus on three specific case study organisations for this research, chosen from both the interviews and documentation examined and presented in the case study reports. These were discussed in detail in Chapter 5, where the boundaries for the fieldwork associated with this research are outlined. Whilst the fintech ecosystem consists of a multitude of different actors representing both public and private enterprises. Representational concerns and issues with access to such a vast array of stakeholders resulted in a focus solely on the role of institutions, for example, the University of Strathclyde. The involvement of each firm in the ecosystem strategy dialogue was noted in the interviews and further resurfaced when reading through the interview transcriptions. It is worth mentioning here that multiple sources of evidence, gathered predominantly by interviewing at least three senior stakeholders at each organisational entity allowed the researcher to illicit these strategic intentions and enable for data triangulation too in a reliable and robust manner.

6.1.2 Data Analysis Framework

The data analysis process for this research study adopts the established techniques and procedures for a grounded theory building approach (Glaser and Strauss, 1967). For empirical investigations, the social construction epistemological perspective discussed in Chapter 3 expounds the virtues of using a naturalistic inquiry mode of inference (Locke, 2001). In doing so, the researcher made use of NVivo 12.0, a fairly user-friendly software for qualitative research which has been utilised in numerous studies to facilitate the analysis of qualitative data. The data analysis procedure consisted of the following series of steps:

Step One. In the first instance, transcriptions of the interviews conducted together with secondary data from publications, which were input as text files into NVivo, were coded on the basis of 'in vivo' words. These predominantly comprised of the terms, phrases and descriptions given by the interview participants, all revolving around the dynamics of the fintech ecosystem. These descriptions included, amongst other things, comments on the size and scale of the ecosystem; the role of various actors and institutions involved in the ecosystem; the purpose of the ecosystem; collaborations and innovations resulting from interactions; etc. This formed the first iteration of the first order codes. The coded files were kept to one side, as the researcher then re-read each interview this time using key concepts from the conceptual framework to code the dataset. This included ecosystem development phases, protovisioning; envisioned blueprint and enacted resonance, and the principles of open strategy, inclusion; transparency; participation and IT-enabledness. Constant comparisons were made across the coded documents in order to identify possible conceptual patterns. The results of this process were shared by the researcher with both of his supervisors, thus allowing for internal validity of the conceptualisation through discussions about the conceptual patterns. Throughout this process, NVivo software was used to facilitate the organisation of all the codes that emerged from the dataset. In total, this resulted in 386 coded passages from this step.

Step Two. The second step in the process involved seeking out codes across interviews that could be amalgamated into higher level nodes. For example, comments made on 'chance encounters' or 'personal interactions and dialogues' were grouped into a node labelled 'informal networks'. In the process of doing so, careful consideration was given to ensure that the researcher retained the language used by the interview participants. Subsequently, these higher-level nodes, or 'tree nodes' (Bazeley and Jackson, 2013) were further refined through triangulation of sources (participant interviews, field notes, documentation etc.) to compute a set of first order categories. Such examples of first order categories include building a sense of community, organising and deploying resources, attracting firms to the ecosystem etc.

Step Three. The next step in the process involved seeking out links across the first order categories in order that these could be collapsed into second order themes, or theoretical clusters (Glaser and Strauss, 1967). This was an iterative rather than a linear process, involving numerous iterations of conceptualisation between the first order categories and the emerging patterns in the data until suitable conceptual themes became apparent (Eisenhardt, 1989). For example, where interview participants noted the significance of attracting firms to the ecosystem or forming a cluster of activity, these were collated into a second order theme

labelled ‘shaping the ecosystem’. Second order themes established include: ecosystem aspirations, current ecosystem offering, network ties and links, engagement in ecosystem activity and decision-making, shaping the ecosystem, and creating a focal value proposition.

Step Four. The final step in the data analysis process involved the organisation of second-order themes into the overarching dimensions that ultimately underpinned the theorizing for this study. Three aggregate dimensions emerged during this step. The first theme centres around the necessary conditions required to create the foundations for ecosystem success; the second dimension focused on the inclusive and collaborative practices of participating firms that allow for ecosystem growth; finally, the third dimension emphasized the function of strategy in ecosystems.

In addition to the steps outlined above, the researcher relied on two distinct techniques to help ensure the validity and reliability of the data. Firstly, by constantly engaging with the supervisory team, the researcher was able to ensure independent assessment of the coding and creation of first order categorisation. Codes were discussed during supervisory meetings to ensure that agreement was reached over accurate categorization into first order themes. Where there were disagreements, categories were modified, thus resulting in multiple iterations until agreement over categorizations was strong. Distinguishing between the first order categories and second order themes was an iterative process that required high-level thinking and multiple rounds of conceptualisation. Undertaking this process ensured the development of a sound and transparent theoretical argument. Similar to the first order categorisation, the process of forming second order themes was internally validated through constant dialogue and discussion with the researcher’s supervisory team. Secondly, external validity is an important way to ensure trustworthiness of data. Corley and Gioia (2007) recommend carrying out ‘member checks’ with participants and informants to ensure that the interpretive schemata made sense to those who are involved in the fintech ecosystem on a regular basis. In this respect, the researcher was able to gain additional insights and feedback on the interpretations made. This resulted in validation of existing interpretations as well as additional insights into certain material that emerged. The researcher was fortunate to be well positioned through links at the University of Strathclyde, as well as the close proximity of relationships between the Business School, Fintech Scotland, and Glasgow City Council.

The subsequent section proceeds to dive into the data analysis exercise in depth, exploring the first order categories, second order themes and the overarching dimensions.

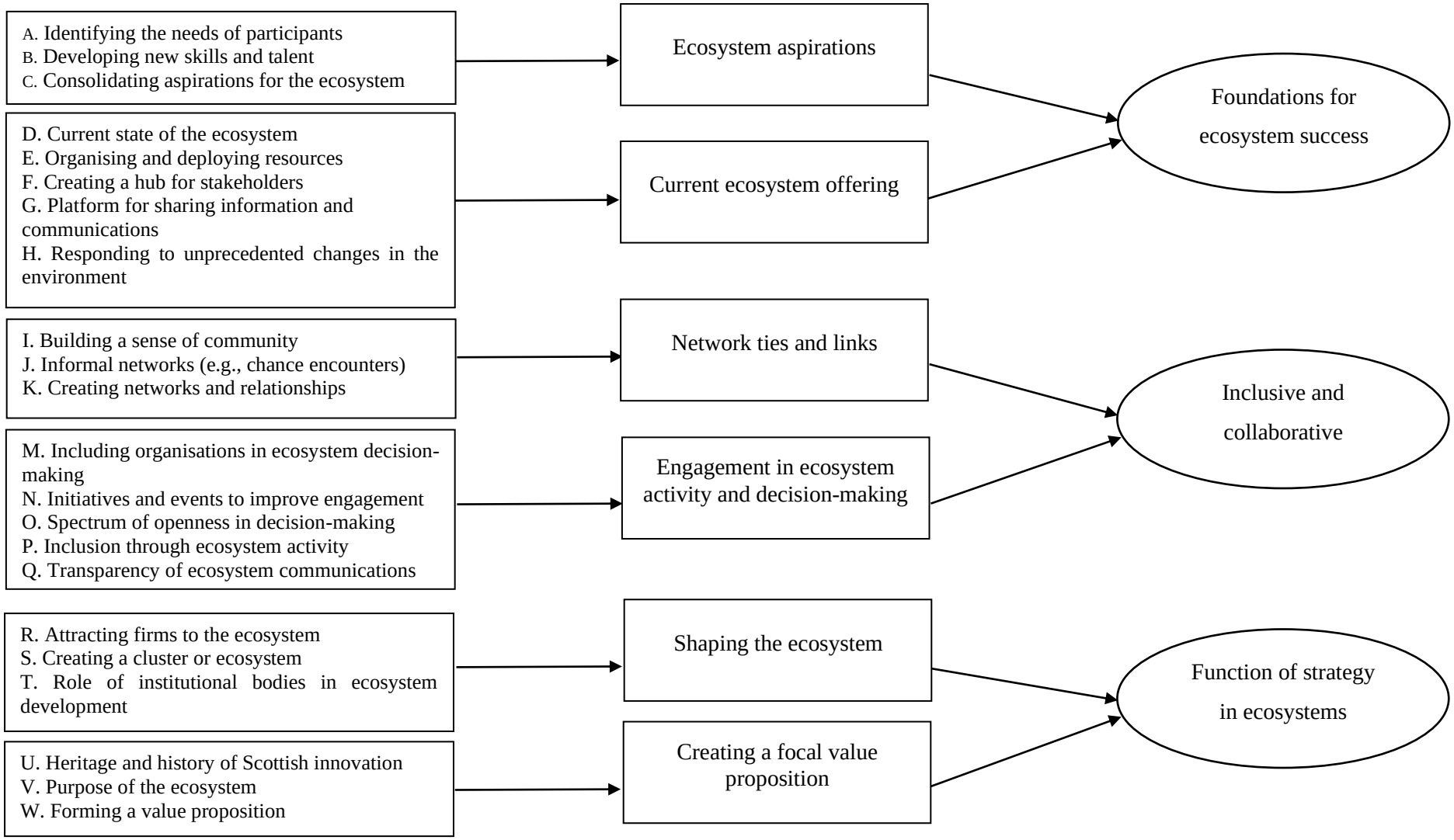


Figure 6.3. Data Structure Table

Figure 6.3 illustrates the final data structure table, highlighting the categories and themes that were developed from the findings of the data collection and subsequent relationships identified between them. Additional supporting evidence for the findings is shown in the proceeding section, this underpins the first order categories to show how the coded data feeds into the data structure.

The subsequent section explores the key themes emerging from the transcriptions taken from the participant interviews. Following this, the interview transcriptions will be coded at level of the first order in the taxonomy (i.e., phases of ecosystem development) taking into consideration the main themes. Secondly, the researcher codes the data at the second order (i.e., ecosystem strategic activities). The coding exercise was conducted in line with the Coding Book to prevent alternative data interpretations.

6.1.3 Coding: taxonomy and coding book

Constructing a multi-level typology consisting of high-level concepts that incorporate low level constructs (Leech and Onwuegbuzie, 2007; 2008; 2011), the researcher used the conceptual framework (Figure 2.7 in Chapter 2) developed from the literature together with code developed abductively from the dataset to code the qualitative data. Table 6.3 demonstrates the taxonomy employed when coding the data. Consisting of three distinct phases i.e., Protovisioning, Envisioned Blueprint and Enacted Resonance as the three stages in the process of developing innovation ecosystems, each phase within this taxonomy comprising of ecosystem activities. The researcher also applied the principles of 'open strategy' explained in Chapter 2 (Table 2.7) as part of the coding book, which was determined when coding the data against the conceptual framework. The coding book allows the researcher to clarify the phases and activities (Table 6.3) involved in the strategy for ecosystem development, whilst also ensuring replicability and reliability of data coding in order to mitigate against idiosyncratic interpretations.

Activity number	Item
	Protovisioning Phase
	1. Ecosystem Aspirations
EA1.1	Identifying the needs of ecosystem participants
EA1.2	Developing new skills and talent
EA1.3	Consolidating aspirations for the ecosystem
	2. Network Ties and Links
EA2.1	Building a sense of community
EA2.2	Chance encounters and informal networks
EA2.3	Creating networks and relationships
	Envisioned Blueprint Phase
	3. Shaping the Ecosystem
EA3.1	Attracting firms to the ecosystem
EA3.2	Forming a 'cluster'
EA3.3	Role and influence of institutional organisations
	4. Creating a Focal Value Proposition
EA4.1	Purpose of the ecosystem
EA4.2	Building on the existing heritage and infrastructure
EA4.3	Forming a value proposition
	Enacted Resonance Phase
	5. Current Ecosystem Offering
EA5.1	Current state of the ecosystem
EA5.2	Organising and deploying resources
EA5.3	Creating a hub for different stakeholders
EA5.4	Platform for sharing information and communications
EA5.5	Responding to unprecedented changes in the environment
	6. Engagement in Ecosystem Activity and Decision-Making
EA6.1	Including organisations in decision-making
EA6.2	Openness and closedness in decision-making
EA6.3	Initiatives and events for increasing firm engagement
EA6.4	Inclusion through ecosystem activity
EA6.5	Transparency of information and communication

**Note: EA represents Ecosystem Activity.*
***EA steps are developed inductively.*
****Ecosystem Development Phases (i.e., Protovisioning) are constructed deductively using theory*

Table 6.1. Ecosystem strategy process based on inductive coding (taxonomy)

6.2 Data Analysis Results

Prior to undertaking the field research, the researcher's knowledge and past experience of financial technology was largely influenced by his previous employment in the technology division of a large Scottish bank. Together with popular accounts and casual conversations with members of the fintech ecosystem in Scotland based at the University of Strathclyde. The researcher's impression, going into the empirical investigation, was that the fintech ecosystem was largely built upon formal transactional relationships between various enterprises engaged in fintech activity. Preconceptions of the fintech ecosystem were such that the researcher assumed the ecosystem served a limited purpose beyond serving as a means to group together

related activity that was enacted by corporate financial services firms and Scottish fintech SMEs.

Nonetheless, when combining the analysis of the participant interviews and secondary data gathered from publications and documentation, as well as case study field notes made by the researcher regarding ecosystem activity in the Scottish fintech space, a new understanding started to take shape. It became apparent that the remit of the ecosystem extends beyond the commercial benefits afforded to the business enterprises, incorporating instead the wider stakeholder base, for example, amongst others: universities; local and national government; consumer advisory organisations; etc. Specifically, collaboration and innovation were promoted amongst ecosystem participants, with open dialogue and discussion encouraged to allow for new synergies to be formed.

Moreover, ecosystem dynamics played a significant role in determining how different organisations involved in ecosystem activity engage with one another and contribute to the overall success of the community. Specifically, the researcher found that the involvement of institutional organisations, such as the university, in the ecosystem played a significant role in fostering strategic relationships between participating firms. The role of institutional actors in the fintech ecosystem involves the following activities.

First and foremost, institutional ecosystem participants play a significant role in developing the aspirations for the ecosystem. These aspirations centre on the creation of a network-level blueprint for ecosystem success, one that lays out the foundations for what the ecosystem will set out to achieve, based on leveraging the skills, resources, and capabilities accessible through ecosystem activity. This aspiration also demarcates the current offering within the ecosystem, which may be limited depending on the maturity of the ecosystem. This distinguishes between the operational strategy and the grand strategy, which is more visionary and forward-looking. Next, the establishment of network ties and links plays a fundamental role in the growth of the ecosystem. The relational interplay, both formal and informal, between ecosystem participants is paramount to the success of the ecosystem as the network itself is only as strong as these underpinning ties and links between participating members.

Subsequently, ecosystem participants will have a vested interest in the wider activity of the ecosystem as well as their own interests and objectives that they are pursuing through the networks they develop. Significant to this is the level of involvement and engagement these participating firms take in contributing to a collective form of decision-making. Whilst the

ecosystem blueprint laid out the foundations for prospective ecosystem activity, the realised strategy is truly influenced by the collective efforts of ecosystem participants that are engaged in the operational activity undertaken on a daily basis. Finally, these firms inevitably become responsible for shaping the trajectory of the ecosystem. Through the development of new links, ties and essentially the growth of the network, together with active engagement in ecosystem activity and decision-making, then they have a significant role to play in shaping the ecosystem for the future.

Lastly, the focal value proposition materialises as a result of the combination of the aforementioned activities. In this type of ecosystem, the focal value proposition is dynamic and constantly evolves in line with the development of the ecosystem and the evolving network relationships and ecosystem activity. Where there is no identifiable focal or keystone firm that leads the ecosystem, in these scenarios there is often an innovation or service that becomes the focal point of congruence across the ecosystem. In this case, the fintech ecosystem in Scotland doesn't necessarily have a lead firm like in the case of the Amazon or Apple ecosystems. Instead, it is the development of the financial technology innovations that form the central premise for ecosystem activity. Hence, the dynamic nature of fintech innovation contribute to a dynamic and evolving focal value proposition materialising in the ecosystem.

The subsequent section provides a detailed breakdown of the findings of this empirical research study. The second order constructs, as shown in Figure 6.3, are delayered into the corresponding first order categories in order to demonstrate the significance of the underpinning ecosystem activities that help to shape the ecosystem strategy.

6.2.1 Ecosystem Aspirations

Establishing aspirations early on for what the ecosystem will set out to achieve provides not only a sense of direction for the proceeding activity that will follow, but also allows for a considered and measured approach to developing the infrastructure required for ecosystem success. The analysis conducted suggests that there are three key activities that underpin this stage (see EA1.1-EA1.3 in Table 6.3), these are explored in detail below:

EA1.1 Identifying the needs of ecosystem participants

Interview participants stressed the importance of developing a blueprint for ecosystem activity by engaging with the fintech community. To understand the needs of the firms engaged

in fintech activity and to identify what challenges they were facing. This was evidenced in the interview transcripts, with one respondent commenting:

> *To be able to address what particular pains they want to solve. You know that is the element of what we are all doing, we're looking at what the pains are and to be able to come up with a solution which fits that. Not with something else you think you are trying to solve, which is often the case.* (IGCID1, Interviews 2020)

Critical to the development of the ecosystem was the necessity to identify the needs of the fintech community in Scotland, and to tailor the solutions offered through the ecosystem such that they were able to address the collective needs of the participants. There seemed to be widespread recognition, across the pool of interview participants, that in order for the ecosystem to provide value, it had to address the needs of the fintech community in Scotland. Crucially, for the development of the ecosystem, there seemed to have been a shift in the approach taken by Fintech Scotland in setting up the ecosystem. In discussing the early stages of laying the foundations for the ecosystem, one senior interview participant from the organisation stated that:

> *And most of those opinions were from government or large financial services or large third-party firms, one of the big four. They all had their own opinion as to what we needed to do. But we, we didn't go with that. We basically looked to the fintechs and asked them what they needed? And it was very easy for us to prove that 'no they didn't need a fintech fund managed by Fintech Scotland, they didn't need a Fintech Scotland building'. All those things that we were told we needed to put in place, no. What they needed was; collaboration opportunities, funding opportunities, profiling opportunities, and all those opportunities that we have been focusing on for the past two years.* (IFS3, Interviews 2020)

By removing the preconceptions and assumptions contained within the original business plan, Fintech Scotland sought to engage with the fintech community at the very early stages of developing the ecosystem. This ensured that they were able to better understand the needs of, and challenges faced by the fintech SMEs'. In doing so, they were able to steer the ecosystem towards facilitating collaborations and solutions for the challenges faced by the aforementioned stakeholder group.

Nonetheless, the organisation also had to cater to the needs of the large corporate stakeholders too – the large financial services firms and the third-party technology service providers – who themselves had a vested interest in the fintech ecosystem in Scotland. Not only do some of these organisations form part of the strategic partners group (see Figure 4.8), but they also contribute financially to the ecosystem, allowing Fintech Scotland to enact its

role as a "strategic enabler" (IFS1, Interviews 2020). This sentiment was not lost on the interview participants, with one stakeholder from the public sector stating that:

> *Every one of those organisations, and we say this all the time to Scottish Enterprise and to Fintech Scotland, each one of those strategic partners have got a commercial reason for being part of it.* (IGCID2, Interviews 2020)

Despite the commercial incentives, there were other motivations for the large corporate organisations to be involved in the fintech ecosystem too. As noted by the Marketing Director at Fintech Scotland when discussing the interests of incumbent banks and financial services organisations:

> *But we've got their commitment and what they've committed to, although very different between all of them. They all have different reasons to be part of the Fintech Scotland family. They all have one thing in common, they understood that they cannot do everything by themselves. So, in a way, working with us, is to ensure that they are always aware of the latest innovations, in contact with innovators and talented people if they want to recruit.* (IFS3, Interviews 2020)

Evidently there are a number of different underlying motivations for the various ecosystem participants, from the small fintech SMEs to the large corporate entities, as to their respective involvements in ecosystem activity. Fintech Scotland sought to identify these early on, recognising that creating an environment conducive to collaboration between members. One that fosters innovative thinking and products, and finally, the potential to develop new skills and talent, all of which are important to the wider fintech community. This leads into the subsequent first order category under the umbrella of ecosystem aspirations.

At the fundamental level, in order to create an ecosystem that accommodates the needs of various stakeholders, there is a direct requirement to understand what these needs are at an early stage. Forming ecosystem aspirations that are ill-informed and do not represent the collective needs of the whole can be detrimental for ecosystem growth and momentum. Hence, as seen in the interview excerpts above, Fintech Scotland took a measured approach in listening to the needs of the various stakeholders when overseeing the successful establishment of the fintech ecosystem.

EA1.2 Developing new skills and talent

One of the fundamental components for the establishment of the fintech ecosystem was the need for creating a pool of resources, skills and capabilities that can help drive the innovation and collaboration activity. From the responses received across the group of interview

participants, it became apparent that skills development was a key component underpinning the fintech movement in Scotland. The following excerpt is taken from an interview participant involved in the preliminary discussions through which emerged the fintech ecosystem:

> *Well, four years ago Skills Development Scotland identified a skills gap in the financial sector for FISAB, which is co-chaired by Nicola Sturgeon the First Minister. And that skill set identification was a shortage of digital skills, namely programming and visualization and analytical techniques.* (IUoS1, Interviews 2020)

The Financial Services Advisory Board, chaired by the Scottish First Minister, provides an added policy implication to the fintech ecosystem. Mandated by the Scottish Government, fintech is a strategic priority at all levels of local ('central belt' region) and national Government in Scotland. Evidently, the 'skills gap' was something that was identified at the highest strategic level through FISAB. This had knock-on implications for a number of different stakeholders in the fintech ecosystem beyond just the private enterprises themselves.

Firstly, Scottish universities identified the opportunity to expand their curriculum offering, by providing dedicated further education in financial technology in order to develop the necessary skills and talents in Scotland. An interview participant from the fintech teaching team at Strathclyde Business School stated:

> *So, in that respect, it was clear that the skills needed and that we teach currently for finance are changing. And people now and in the future are going to need programming and data analytic techniques as well as core financial theory to sort of have a use in world of finance in the future.* (IUoS1, Interviews 2020)

Inevitably this created an opening for universities to reconsider their course offerings, in light of the high-level, strategic focus on finance and technology in Scotland. And whilst a number of universities across Scotland have attempted to capitalise of the opportunity, only post-graduate taught courses are currently available across the recognised academic institutions across Scotland. Therefore, further opportunities exist for additional academic offerings and skills development courses across the various levels of education, a point that was not lost on one interview participant from the University of Strathclyde:

> *So, the question, I guess, to a certain extent is that for fintech, can we continue to develop teaching propositions? You know, currently it is at the Masters level but are there opportunities at the Undergrad level? Are there opportunities in executive education? As we have quite a big Executive Education function at Strathclyde, and there we are working on an apprenticeship degree, a Masters apprenticeship degree.*

And equally the development of a CPD for the professional firms, or firms within the fintech community. (IUoS3, Interviews 2020)

Universities though were not the only institutional organisation involved in actively pursuing skills development in financial technology. Fintech Scotland recognised that they had a role to play in helping overcome the skills shortage. As one senior member from the organisation commented:

Skills and talent are a big issue; you've got a lot of discrepancy between demand and offer. It is not going to fix itself, and it is certainly not going to slow down. It is going to accelerate, especially around jobs like data scientists, developers, and as much as the universities are doing a great job at training people, the demand is going to be so strong, that it is not going to be enough. (IFS3, Interviews 2020)

Given their role as a 'strategic enabler' for fintech activity, the priority given to skills development by Fintech Scotland demonstrated just how critical this was to the growth of the fintech ecosystem. This was also apparent from the published communication coming from Fintech Scotland, as shown in the following excerpt taken from the organisation's website:

We work closely with universities across Scotland to develop tailored fintech programmes. We're here to support the development of skills and talents amongst students and people who are looking to reskill or upskill to face an ever-changing job market. We also work with companies such as CodeClan and the Datalab on more specific skill requirements. (Fintech Scotland, 2020)

Finally, local Government had a similar outlook for supporting the fintech agenda. In order to attract more jobs and opportunities to the local area, regional city councils were interested in progressing the skills and training offering in financial technology. The following comments were noted from a senior member of Glasgow City Council's business growth, development, and regeneration team:

We've got four universities; we have two that have strong fintech curriculums generating a huge number of students each year.

I think critical to that is having a cross fertilization of disciplines. So, it's not just about the MSc in fintech. It is about equipping the students are coming out of that or going on to those programs with the entrepreneurial skills. (IGCC1, Interviews 2020)

Evidently, there was a widespread recognition across the various institutional stakeholders that skills development would be a fundamental component for evolving the fintech landscape in Scotland. Progressing ecosystem activity and evolution would require new skills amongst the existing workforce too, so upskilling of the existing workforce in the financial technology

domain was also seen as critical to ensuring long-term success. Relatedly then, participating firms and organisations in the fintech ecosystem would have a crucial role to play in organising and deploying resources to position themselves for continuing success and longevity.

Fundamental then, to the success of establishing an innovation ecosystem, is the need to have a clear route map that recognises what future skills and talents are required to enable the ecosystem to grow. With the fintech ecosystem in Scotland, there was an acknowledgement that local universities were looking to address this through their curriculum offerings, however, despite their efforts there remained a skills and training gap. Multiple stakeholders noted, as shown in the excerpts above, that there is a requirement for ongoing investment in training and development for both the existing and future workforce in the finance and technology domain.

EA1.3 Consolidating aspirations for the ecosystem

Fundamental to the establishment of the fintech ecosystem is a clear, long-term plan for how it should be shaped over the coming years. Identification of what the participating firms need, together with the type of resources and skills that should be developed is important. Nonetheless, a long-term outlook for what the ecosystem should set out to achieve is also paramount. Not only for providing a sense of direction and clarity over where the ecosystem is going, but also to help lead the strategic dialogue for the various participating firms. The below interview transcript is taken from a discussion with a senior director at Fintech Scotland:

> *"What you want to see, you still want to see a lot of start-ups. And you want those start-ups to move very quickly from start-ups to scale-ups to growth."*
>
> (IFS3, Interviews 2020)

Pivotal to the expansion of the ecosystem is the ability for small fintech firms, at the early stages of development, to evolve into small and medium sized business enterprises. Indeed, one of the key reasons for creating the fintech ecosystem is to foster the necessary environment that is conducive to the growth of small fintech firms. There seems to be a recognition within the financial technology landscape that all too often these small firms were failing to progress beyond those early hurdles. As is evidenced in the below interview excerpt:

> *"Right now, you have got lots of companies spending way too much time in start-up phase, and then staying in the scale-up phase for years, and years, and years. Not always being able to grow quickly, or at all."* (IFS3, Interviews 2020)

In effect, the lack of an upwards trajectory being witnessed amongst the smaller fintech community was a real concern for the wider stakeholder base. In order for the ecosystem to

flourish there was a need for these organisations to grow, capitalise on their potential and form new products and solutions through innovation and collaboration with the larger finance and technology services providers. Secondly, there was another concern amongst policy makers that many of the upcoming fintech firms, with new and innovative ideas, were being swallowed up by the large banks and financial services organisations. The below excerpt is taken from an interview with a senior member of Glasgow City Council:

> *"Despite their growth potential, a lot of the fintechs were being gobbled up the large banks through their accelerator programmes. Many of these businesses had great idea and solutions, however they never got to realise their true potential."*
>
> (IGCC1, Interviews 2020)

Evidently, without the structural support frameworks brought into place by Fintech Scotland and further consolidated through the wider community of ecosystem participants, small fintech firms would have continued to struggle in the early stages of development. Therefore, it is of little surprise that a multitude of interview participants stressed on the significance of enabling small fintech enterprises to develop beyond simply fledgling businesses. The following extracts were taken from interviews with various participants during the empirical investigation:

> *"So, if in five years, there aren't companies spinning out of the ecosystem and/ or significant increase in jobs coming to Glasgow, because it's seen as a Fintech centre, then I think we would have failed to achieve all of our key metrics. So essentially the proof of that innovation and that success is in jobs and wealth creation."*
>
> (IUoS1, Interviews 2020)

Recognising that the fintech ecosystem is being created to foster innovation, encourage collaboration, and develop new products and services. There would be an inevitable feeling of failure if the ecosystem didn't generate new opportunities for both the existing and future participants. This sentiment was echoed in the following excerpt:

> *So, as I think about that innovative community. I would like to see us maintain, at least, and kind of grow that number, in five years' time, I'd like to see us reach that kind of two hundred level. I am not quite sure what does saturation point look like for fintech SMEs, there needs to be some thinking on that. But I'd like to see that number increase by, at least kind of, 30% and I'd like to see of that two hundred that we have quite a few at scale-up stage, not just start-up stage. So, definitely have attracted more fintechs into the community, but not just that, we've also seen those established just really going from strength to strength.* (IFS2, Interviews 2020)

Again, there was a recognition that growing the number of small fintech firms, both coming into and also spinning out of the ecosystem, would be a critical measure of success. Given the limited support available to these small firms prior to the existence of the ecosystem, it would be natural to expect an improvement in their fortunes over the coming years.

Moreover, it wasn't just an increase in the number of small fintech firms, another key aspiration for the ecosystem revolves around the relationship between the large corporate organisations and the smaller fintech SMEs. Other than organisation specific accelerator programmes ran independently by the large financial services firms, for example, Barclays and RBS, there were limited opportunities for collaboration between the two types of enterprises. The fintech ecosystem was created as a means of reducing the barriers between the two, creating opportunities for fintech firms to gain easier access to the relevant people in large organisations. Whilst simultaneously allowing them to showcase their products, solutions, and services to a wide array of financial and technology service providers. This was documented during various interviews with participants, a short excerpt taken from one such interview transcript is shown below:

So, greater links between the corporate entities and the smaller ones.
(IUoS2, Interviews 2020)

The academic interviewed was making reference to the need for superior levels of understanding between the large corporate entities and the smaller fintech organisations who often don't know enough about each other' respective needs and product offerings. It could be said that the lack of linkages and connections between the large and small players is fundamentally what the fintech ecosystem would seek to address. And this is arguably what is required as per the following passage from another interview transcript:

So, aspiration-ally, in five years' time, I would like to see a lot more connectivity
(IGCC1, Interviews 2020)

Connectivity is understood to be a significant driver for creating the fintech ecosystem, not only to encourage increased dialogue and collaboration between the different types of organisations. At the fundamental level, as explained by Fintech Scotland's CEO, the ecosystem would:

join up the dots, to bring together the component parts. (IFS1, Interviews 2020)

Furthermore, the real driving force behind creating the ecosystem is the aspiration to nurture useful strategic connections, as demonstrated in the below extract taken from an interview with a senior member of management at Fintech Scotland:

> *And from an impactful collaboration point of view, again, I'd like to see there's been quite a number of really good strategic connections made that allow those businesses to evolve.* (IFS2, Interviews 2020)

Forming strategic relationships and connections became a fundamental ambition for the fintech ecosystem, through which it is anticipated that *impactful collaborations* will emerge. These relationships would be the catalyst for increased activity across the fintech spectrum, enabling new business ideas and opportunities to be realised and spin-off companies to emerge and establish themselves as viable business enterprises.

Establishing ecosystem aspirations is pivotal in determining the long-term goals and objectives for the fintech ecosystem to pursue. Alongside identifying the needs of the different stakeholder groups engaged in ecosystem activity and developing a mandate for developing new skills and talent. The combination of the aforementioned activities underpins the early stages of the provisioning phase, as outlined in Table 6.3. The subsequent section explores the importance of relational interplay between the participating firms, highlighting why networks play a significant role in underpinning the infrastructure of the ecosystem.

6.2.2 Network Ties and Links

The strength of the fintech ecosystem is contingent upon the size of the network and the intensity of the underlying relationships and ties between participating members. In order to develop a cohesive ecosystem structure, there is a requirement for a strong foundation of underlying network links and ties that facilitate the interaction between the firms engaged in ecosystem activity. Indeed, one of the key reasons outlined for the creation of a fintech body (Fintech Scotland) by the FISAD committee was to help overcome the siloed and disparate nature of existing fintech activity in Scotland. By strengthening the underlying structure or foundations of the ecosystem, it was intended that the network-effect would allow for greater opportunity for the fintech SME community to gain exposure and allow for better collaboration and innovation opportunities across the wider fintech community.

EA2.1 Building a sense of community

In general, the consensus with both the political and industrial spheres was that there is a need for a guiding body, someone who can gel together the various component pieces in a

cohesive manner that would enable a greater experience for the whole fintech community. As such one of the key objectives for, firstly, Fintech Scotland but then also the wider institutional stakeholders are the importance of building a sense of community. As noted by one of the interview participants from the public sector when asked about their role in the fintech ecosystem:

> *Building a community. Making the community much more cohesive.*
>
> (IGCID1, Interviews 2020)

Evidently, building a community spirit within the fintech space was seen as a significant priority at the levels of local and national government. There seemed to be a widespread recognition across the wider fintech stakeholder community that there was a requirement for some form of coalescing mechanism that could connect the different pieces of the jigsaw in Scotland. The incarnation of Fintech Scotland was an attempt to provide the necessary environment for fintech organisations to thrive. There was never any doubt about the potential that existed within the financial technology landscape in the country, however until the organisation was born, there was no overarching body that facilitated and convened over the need to develop an underlying structure or blueprint for ecosystem activity. This was highlighted by a senior director from Fintech Scotland, who commented on the role his organisation plays in nurturing the community aspect:

> *And then companies that were already there before Fintech Scotland doing things on their own. So not connected. So fintechs, for example, on the Isle of Skye, fintechs in Melrose like 'Ice-Flo' they were not connected. We put them in the community.*
>
> (IFS3, Interviews 2020)

Recognition that the fintech landscape required a coalescing presence was the first step towards building that sense of community within the ecosystem that would inevitably develop, grow and strengthen the underlying network ties and links. And whilst, it can be said that the presence of an organising body, such as Fintech Scotland, has been pivotal for the growth for the fintech ecosystem in Scotland, there still remains a lot of work to be done for the fintech ecosystem to truly realise its full potential and deliver on the aspirations and ambitions discussed in the preceding section. The following excerpt is taken from an interview with a senior figure at the City Council:

> *Now, it's still a work-in-progress, and Stephen [CEO Fintech Scotland] will be the first to admit that there is still a huge amount of work to go in terms of creating a vibrant, connected SME community.* (IGCC1, Interviews 2020)

Relatedly, a number of fintech stakeholders acknowledged the difficulties in engaging the fintech SMEs with the wider community, given their finite resources and constraints on time they are able to dedicate to fintech events and engagement opportunities. Whereas the large corporate stakeholders, including the financial services firms and technology service providers, were able to access these opportunities more readily. As was noted during the interviews:

> *It's easier in many ways to bring together the big players, the big financial services institutions that, obviously I've mentioned Barclays, JP Morgan, Morgan Stanley. You know we can bring them together in a more accessible way.*
>
> *What is more difficult is bringing in the smaller players, and helping them see what that value proposition is, in terms of being part of that wider community.*
>
> (IGCC1, Interviews 2020)

As would be expected, the large corporate organisations are more able and likely to participate in fintech engagement activity as they have the resource and time to dedicate to such activity. Whilst smaller SMEs are not as well equipped to keep abreast of ecosystem activity. Hence, the role of Fintech Scotland is critical in understanding the needs of the SME community and building these into the ecosystem activity. In doing so, they allow the fintech SMEs to feel part of the community and unlocks opportunities for them that would otherwise have been difficult to attain.

It was also apparent from the interview transcripts that the fintech SME community appreciated this support and the increased opportunities for collaboration that emerged as a result of their involvement with the ecosystem. This was something that was commented on by an interview participant from one of the leading universities in Scotland:

> *But you go to these meetings and a lot of these people will say 'but the softer part of the infrastructure, which is the links that exist and the fact that people who can help each other out, is enormously helpful for somebody starting out'.* (IUoS2, Interviews 2020)

Consequently, the significance of strengthening the foundations of the ecosystem through the nurturing of network-level relationships, links and ties should not be underestimated. This is increasingly important in developing ecosystem strategy, as the underpinnings of ecosystem success will rest on the strength of those network-level level links.

Nonetheless, the nature of these relationships, links and ties remains ambiguous particularly when we are to consider how these are bought into fruition. The fintech ecosystem in Scotland seems to be a concoction of informal networks or 'chance encounters', coupled with pre-planned collaborative agreement and relationships. The subsequent section explores these

relationships in greater detail in order to provide insight into how these dialogues emerge and bring to life the relational interplay between ecosystem participants.

EA2.2 Chance encounters and informal networks

The vast majority of fintech activity within Scotland is located along the conventional 'central belt' region that spans from Edinburgh in the East all the way through to Glasgow in the West, encapsulating cities like Livingstone and Stirling in that catchment area. It is of little surprise then that the geographical co-location of large financial services organisations, third-party service providers and the smaller fintech SMEs can yield a number of chance encounters or serendipitous opportunities.

One of the key reasons for establishing an innovation district that would host, amongst other activity, the fintech ecosystem was the opportunity for firms to engage with like-minded businesses and explore opportunities for collaboration and innovation. As explained by an interview participant, the whole purpose of the ecosystem is to support those businesses by providing the environment to engage with one another:

> *"The whole point of the innovation district is… this is a place that we want to encourage people to eat, work, live, collaborate, innovate. We want this to be the place that people want to come and carry out research or set up a business. An innovation district has a buzz and a life to it. It is one of those places where you have got those chance encounters."* (IGCID1, Interviews 2020)

Somewhat related to the community aspect discussed in the preceding section, the idea that the ecosystem can generate opportunities for collaborations and innovation is significant for the momentum and traction of the fintech ecosystem. The impact of these 'chance encounters' should not be downplayed in the wider context of the fintech ecosystem, not least because of the opportunities that emerge from the serendipitous interactions between participating firms. There was a widespread recognition across the wider fintech stakeholder community that co-locating in a geographical cluster would allow for better realisation of opportunities for working together and expanding fintech activity in the region.

To further demonstrate the utility of these serendipitous interactions, the interview transcripts noted that these chance encounters opened many avenues for potential collaborations:

> *"And that was very much, that was quite an exciting… no not an exciting… there was a measure in the air. You know there was people going like 'Oh, I could use you, I must do that going forward'. I could see some of the people that we had around the table. I*

could see them talking about 'why do I need to go to London to get somebody to do my marketing? Why am I not using you, across the road? I could just nip in and have a chat with you and sort the whole thing out." (IGCID1, Interviews 2020)

Rather than simply providing the environment for potential collaborations, it was evident there were serendipitous encounters that led to successful outcomes for the businesses engaged in ecosystem activity. As previously mentioned, the majority of fintech SMEs didn't have the necessary resources to reach out to the wider community and seek out opportunities to showcase their products to others. Their participation in the fintech enabled them the possibility of engaging a much wider audience base, both potential customers, suppliers, and collaborators, than would otherwise have been afforded to them without the ecosystem. And through, these serendipitous encounters, they were able to grow their own enterprise and explore opportunities to collaborate with other businesses and further enhance the innovation activity undertaken in financial technology.

In order to generate these chance encounters there was a need for a mediating body, someone who could facilitate the brokering of these collaborations. As was noted during an interview with a representative of Strathclyde University heavily involved in the fintech ecosystem:

"I think in the initial phases Akwal, that these are personal relationships. It is an informal approach, where the cluster leader or the people who work in the clusters can see the opportunity and can talk to one another." (IUoS3, Interviews 2020)

Whilst Fintech Scotland are not necessarily the cluster leader, they play a significant role in connecting up the ecosystem and joining up the different component parts. As such they have been facilitating these chance encounters by creating the opportunities for these firms to engage in ecosystem activity. The role of Fintech Scotland in enabling these chance encounters was also discussed in an interview with an external innovation consultant involved in the fintech landscape:

It gives them a good insight and gives them a chance to be able to engage with guys and girls to look at, you know, maybe connections that they've got that the fintechs don't have and it's often done in a very informal setting. (IV1, Interviews 2020)

The role of Fintech Scotland is evidently critical in growing the ecosystem, and their identification of collaboration opportunities provides an additional dimension to the evolution of the ecosystem. Notwithstanding the significance of chance encounters and the serendipitous

opportunities afforded to participating firms, there is also evidence that the role of Fintech Scotland can nurture more formal networks and relationships between the ecosystem participants. The subsequent section explores the importance of structured relationships and networks within the ecosystem, and how these are significant in driving fintech activity.

EA2.3 Creating networks and relationships

The fundamental premise for the fintech ecosystem is to enhance the financial technology capabilities within Scotland, by creating an environment conducive to collaboration and innovation. In order to foster these relationships, Fintech Scotland was established as a standalone body that would help to create the necessary environment for engagement between participating firms. And although employees at Fintech Scotland acknowledge the pivotal role their organisation played in developing the ecosystem, however they were keen not to lose sight of the community aspect. The following excerpt is taken from an interview with a senior manager in Fintech Scotland:

> *And so really a huge part of our job at Fintech Scotland is to make their… to make really useful strategic connections to how build perspective and to build collaboration and it's by having all of the players on the pitch, if you like. All of the contributors there and available to us that we're able to be informed and through being informed, we're able to make those sensible decisions about who best to connect to. And how best to progress, our strategic objectives which are about that impactful collaboration, inclusive cluster and innovative community.* (IFS2, Interviews 2020)

Building 'useful strategic connections' through purposeful interactions is the manner in which Fintech Scotland have attempted to start connecting financial technology firms with the large financial services organisations, technology service providers, and other fintech SMEs in the community. As was evidenced in the following excerpt from the interview transcriptions:

> *So, we've created an environment that is welcoming because Fintech Scotland is able to connect those organizations or those new businesses who want to settle in Scotland. We're able to connect them with large financial services organizations, with investors, Scottish Development International and others, and with large financial services players and professional services who work in finance the financial services industry.*
> (IFS2, Interviews 2020)

For organisations seeking to join the fintech ecosystem, there is a clear incentive in the form of access to the wider network of the financial technology landscape that extended beyond the opportunity to engage with like-minded organisations. The ecosystem enables them access to business development organisations, such as Scottish Development International and

Scottish Enterprise, which would enhance the growth aspirations for the smaller fintech SMEs. And it is precisely the opportunity to build these relationships and enhance their network that seems to be attractive to the various SMEs engaged in the ecosystem. This perspective was noted in an interview with a senior representative from Glasgow City Council who discussed the importance of these organisations to nurturing growth in the fintech ecosystem:

> *We have got Entrepreneurial Scotland there; we have got the Chamber of Commerce who are a key partner. How can these bodies, how can these organisations help with bringing fintech SME's together in same way that we do with other sectors, for example design, and architecture, the creative economy?* (IGCC1, Interviews 2020)

The local government seemed keen to apply lessons learned from other industries and sectors, into the development of the fintech landscape in Scotland. Hence the involvement of government funded organisations allowed for greater support mechanisms for the fintech SME community, helping them to scale their operations in a planned and organised manner. Meanwhile, the large corporations in the finance and technology services space are equally enticed by the prospect of accessing the new ideas and innovations that the fintech SMEs can bring to the table. For them, the chance to build strategic relationships with not only other large organisations, but also the smaller fintech firms provides the incentive to be involved. The following excerpt taken from an interview transcript with a senior manager in Fintech Scotland:

> *The other aspect is working with the large financial services organizations. And thinking about their innovative needs and making strategic connections for them so that helps them progress and it helps the innovative SME community progress.*
>
> (IFS2, Interviews 2020)

The innovation ecosystem is founded upon the collaboration opportunities afforded to the participating firms, to engage with one another and identify synergies that can be pursued and developed into meaningful, strategic relationships. As these relationships progress, they in turn drive ecosystem activity as firms working together on new innovative products and solutions will help improve the overall benefit to the entire fintech community. Therefore, establishing a network and creating strategic relationships – in the context of the fintech ecosystem – can be seen as a significant component for encouraging ecosystem growth.

6.2.3 Shaping the Ecosystem

Firm level motivations for joining the fintech ecosystem extend beyond the intrinsic benefit at the individual level to the collective benefit accrued by all participants from involvement in ecosystem activity. Through their active engagement in fintech activity, ecosystem participants

play a fundamental role in determining how the ecosystem is shaped over the near-term future. The researcher found three key activities underpinning this phase ecosystem development (see corresponding activities EA3.1-EA3.3 in Table 6.3), these are explored further in the section below:

EA3.1 Attracting Firms to the Ecosystem

At the early stages of establishing an innovation ecosystem, the significant driving force behind generating momentum for growth is the ability to attract firms that will participate in ecosystem activity. Different institutional stakeholders play a significant role in enabling this to take place, including local and national Government, Fintech Scotland, large corporations, universities, third-party public sector organisations and also the small fintech firms too. And whilst they may use differing mediums to communicate to the target audience, the message appears to be fairly consistent across the aforementioned stakeholders. The excerpts below represent the collective sentiment that appeared throughout the interview schedules:

> *Obviously, in order to attract people to the area, we need to talk about the success stories. And talk about the benefits of the district, and the benefits of being in an innovation district. We need to start pulling together those success stories and promoting them.* (IGCID1, Interviews 2020)

> *And I think by telling these stories to the outside world, they will better understand the benefits of what can be achieved through innovation and collaboration.*
>
> (IFS3, Interviews 2020)

There seems to be an inherent recognition amongst the institutional stakeholders that growing the ecosystem and delivering on the aspirations for the ecosystem would be contingent upon the ability of the ecosystem to attract firms to undertake fintech activity. Sharing the success stories and showcasing what has been achieved by the existing firms can provide the incentive for external organisations to join. In essence, the existing participants' success stories can be an effective marketing tool for demonstrating the benefits that can be accrued through ecosystem activity. Targeting the right types of organisations, which can contribute to the fintech ecosystem through their involvement, is critical to ensuring the ongoing and future success of the ecosystem.

This was done predominantly by leveraging on the network capabilities discussed in the preceding section. In order to attract more firms to join, existing members and their representatives played an important role in raising the profile of the fintech ecosystem amongst

the wider fintech community across Scotland. A strategic relations adviser for the innovation district commented that:

> *What they've done, as far as I can understand, I think they've identified some business ambassadors as well that are going to try and help with that.*
>
> (IGCID2, Interviews 2020)

Relying on the more traditional form of networking and relationship building, the institutional stakeholders were keen to attract the right calibre of organisations to the ecosystem. Those small fintech firms that could leverage the benefits of being part of a large and organised fintech community, and the larger financial and technology service providers that were actively pursuing engagement opportunities within the fintech domain.

Moreover, Fintech Scotland recognised that engaging solely with Scottish fintech firms and organisations operating in Scotland would limit the exposure of the community to the expertise, innovation and knowledge of the global fintech community. Hence, the organisation regularly took part in international events and initiatives designed to raise the profile of the Scottish fintech ecosystem across the world. As was noted by a senior manager in Fintech Scotland when discussing the work done by their CEO:

> *And equally then, through the program of activity, Stephen Ingledew has been doing quite a lot of outreach, you know, he's been to New York, he has been to Singapore, he's been to Dublin and recently he's been to Canada. So, that you know he's out and about, as well.* (IFS2, Interviews 2020)

Taking part in this type of outreach activity enabled Fintech Scotland to raise the profile of Scotland as a serious contender in the fintech arena and gave organisations around the world a better understanding of how involvement in the Fintech ecosystem in Scotland could progress their respective agendas. By selling the benefits of the Scottish fintech ecosystem to a global audience, there was an opportunity to attract the types of firms that would contribute to the growth aspirations of the ecosystem. And this charm offensive seems to be yielding the type of response from global fintech firms that Fintech Scotland were hoping for, as was documented in the excerpt below:

> *I think there's quite a bit of evidence here actually, where we're seeing fintechs come and innovate and want to be part of the Scottish ecosystem."* (IFS2, Interviews 2020)
>
> *By working with our Scottish Development International colleagues we've also seen a growing interest even since the start of the year from enterprises that are currently in Australia, in the Far East, and even in the US who potentially see Scotland as a very*

exciting base from which to start to expand their operations Europe wide.
(IFS2, Interviews 2020)

Foreign fintech firms were being convinced, through the outreach activity of organisations like Fintech Scotland and Scottish Development International, of the benefits they could access by joining the ecosystem in Scotland. As well as the potential for them to progress their business in Scotland before expanding into the rest of the United Kingdom, Europe and beyond. Casting the net as wide as possible was a purposeful attempt by the institutional stakeholders to start shaping the ecosystem by attracting the types of firms that would enhance the value created within the Scottish fintech community. This was significant to the strategy being pursued by Fintech Scotland in growing the ecosystem by adding organisations into the ecosystem that could enhance the reputation and profile of the fintech ecosystem. The CEO of Fintech Scotland touched on this in the below excerpt taken from the fuller interview transcript:

But certainly, put Scotland on the map to form a reputation. And that's important because then it encourages other enterprises to want to come to Scotland to be part of it." (IFS1, Interviews 2020)

Evidently, in the early stages of establishing the ecosystem, attracting the right types of firms was extremely important in contributing to how the ecosystem would be shaped for the coming years. Therefore, attracting the right calibre of firms, those that represent value for what the fintech ecosystem is seeking to achieve, can assist with helping shape the ecosystem at the early stages of development. These firms would become an embodiment for the types of activity the fintech ecosystem was designed to foster and nurture, therefore it is critical that the firms coming into the ecosystem can contribute to its growth aspirations.

EA3.2 Forming a 'Cluster'

Attracting the right types of firms into the ecosystem is critical, however, once they have been encouraged to join, it is vital that they start interacting and engaging with the existing ecosystem participants. Whilst the lure of the ecosystem can attract organisations to join, the benefits of membership can only be realised through participation and engagement in ecosystem activity. In order to foster this type of activity, there was a need for some purposeful intervention in the ecosystem. The below extract is taken from an interview with a senior stakeholder in Glasgow city Innovation District:

But initially my role as Project Director was to get involved in promoting and marketing the innovation district, and to link-up the businesses with other like-minded business that could help and support each other. (IGCID1, Interviews 2020)

Extending the role of institutional stakeholders beyond just being marketing agents responsible for attracting firms to the ecosystem, there is inevitably an understanding that these agents play a critical role in nurturing the growth of the ecosystem. Facilitating the links between the business enterprises is fundamental to jumpstarting the network effects discussed in the preceding section. In essence, these facilitators help to join up the dots and connect the different component parts of the ecosystem into a more concerted whole, whereby the participating firms can collaborate and work with each other to progress their business ventures.

One of the fundamental arguments for the creation of the fintech ecosystem in Scotland is the opportunity to enhance collaborations between the various stakeholders engaged in fintech activity. By attracting the different types of organisations – small and large, public and private sector – the intention is for them to collaborate on new products and services that are driven by the advancing financial technologies. This was evident from the words of Fintech Scotland's CEO:

It brings together government, big companies, small companies, academia, investors, those who provide support and services like big tech companies those who provide incubators and accelerators and these types of environments all the other accountants and lawyers, if you bring everyone in to really work together as a team."

(IFS1, Interviews 2020)

Referring to the combination of the various stakeholders as a team demonstrates the importance of creating an inclusive culture within the ecosystem, where participating firms have a role to play in developing the ecosystem offering. Teamwork is a fundamental component of building out the ecosystem; by working with each other, the participating firms would collectively contribute to achieving the objectives of the fintech ecosystem. When discussing the importance of teamwork, the CEO drew upon the analogy of a football team and the different roles and responsibilities of those participating:

Absolutely, that's really sort of crucial because we can't have everyone playing as the number nine as a striker wanting to score the goal, because they're not going to get the ball to them for those goals to be scored. So, everyone understanding their different roles they play, and how actually by everybody collaborating there is a benefit for everybody. So, everybody is involved in the benefits of that, not just a few really who are involved in that sort of specialist area. (Ingledew, 2018)

From the excerpt above it is evident that the sum of the collective parts of the ecosystem by far exceeds the individual components. It is only with each participating firm understanding their roles and responsibilities in ecosystem activity, and by working together with like-minded participating firms that the fintech ecosystem will be able to achieve its growth prospects. Therefore, whilst attracting firms is fundamental to growing the size of the ecosystem, in order to achieve the ambitions of the ecosystem it is critical that there is co-ordination. Hence, the analogy using a football team is appropriate in explaining the need to form a cluster that promotes togetherness behind a common cause and purpose.

Moreover, there was recognition beyond Fintech Scotland and the local Government that uniting the different firms involved in ecosystem activity is critical to progressing the fintech agenda. In the academic sphere, universities were promoting the need to merge the individual interests of participating firms into a collective purpose for ecosystem activity. One of the strategic advisers to the University of Strathclyde commented that:

> *So, it was from those early thoughts, those early beginnings that the interpretation of the cluster. Fintech had already been selected as an area of future opportunity, and how to take that model forward was really, with the beginnings of my work, as I say to create an effective coalescing mechanism that would enable a cluster approach.*
>
> (IUoS3, Interviews 2020)

In their capacity of advisory bodies, with cutting-edge research capabilities, universities are often seen as a reliable source of guidance and support in developing technology-led innovations. In relation to the fintech ecosystem, there inevitably was support from stakeholders at the university for forming a cluster effect whereby the constellation of participating firms would be working together towards shared goals and objectives. This sentiment was shared with stakeholders at Fintech Scotland, where during his interview, one of the directors stated:

> *So, it's what some people refer to our role as - a cluster management company. So, in a way, my role is also to be a cluster manager.* (IFS3, Interviews 2020)

Recognising that the wider fintech community may see them as a cluster management company, senior stakeholders from Fintech Scotland identified themselves as “cluster managers”. Given their central role within their ecosystem, it is evident why the organisation would be seen as the coalescing driver for fintech activity in Scotland. Through their

knowledge, experience and appreciation of the different firms engaged in the ecosystem, Fintech Scotland are able to co-ordinate the efforts of participating members.

Forming a cluster that promotes collectiveness amongst the fintech community is fundamental to the evolution of the ecosystem. By meaningful engagement with ecosystem activity, participating firms can make a decisive difference to the progression of the fintech agenda in Scotland. Therefore, creating a cluster within the ecosystem allow for organisations to engage in value-adding activity that in turn can help to propel the overall benefit to the wider fintech community. For the ecosystem as a whole, developing clusters of activity enables greater levels of interaction, collaboration, and innovation across the participating firms.

EA3.3 Role and Influence of Institutional Organisations

Institutional organisations have been shown above to play a critical role in attracting firms to the ecosystem and fostering a cluster type environment for greater interaction and collaboration across participating firms. For the purposes of this empirical study, the following institutional organisations were investigated in depth to understand their role and influence on the growth of the ecosystem. Fintech Scotland – the standalone body responsible for overseeing the formation and early growth of the Fintech ecosystem, the local Government – Glasgow City Council and their associated bodies, and the University of Strathclyde – with their fintech specific academic and research interests. Each of these organisations are explored in greater detail, with a focus on their contributions to expanding the potential of the fintech ecosystem.

EA3.3.1 Fintech Scotland

In the preceding sections, this study has extensively referenced the role and responsibilities of Fintech Scotland in coordinating the growth of the ecosystem through their strategic networking. Evidencing extensively how they have contributed to the inception and ongoing evolution of the fintech ecosystem through their direct and indirect involvement. Taking into consideration the extent to which Fintech Scotland is involved in developing the ecosystem, their website states:

> *We exist to create an integrated fintech ecosystem through provision of funding, support, infrastructure and talent that recognises and responds to the needs of all stakeholders* (FintechScotland.com, n.d.)

Given their widespread involvement across the ecosystem, it is not wholly inconceivable to look at the role of Fintech Scotland as an ‘one-stop shop’ for firms engaged in fintech activity. Yet, speaking to the different stakeholders engaged in the fintech ecosystem provides

a nuanced comprehension of how Fintech Scotland enables the ecosystem to thrive. Looking internally at the organisation, one of the firm's strategic advisers commented during the interview:

> *The purpose of Fintech Scotland is to create opportunities for the wider Scottish economy* (IFS2, Interviews 2020)

Her insinuation that Fintech Scotland 'creates opportunities' within the wider context of the Scottish economy implies that they can be better understood as an enabling body within the fintech ecosystem. Responsible for creating the necessary environment that fosters an increase in interactions, collaborations and innovations across the fintech community and beyond. This perspective was echoed in an interview with a strategic relations adviser from the University of Strathclyde, who stated that:

> *I think that given, you know, Fintech Scotland is a is a construct with a specific purpose, the purpose, the purpose for me is more about being a facilitator, or a broker or even an enabler you know. To affect the development of a so-called ecosystem or a Fintech community, I think, as Stephen calls it.* (IUoS3, Interviews 2020)

Comprehending the role of Fintech Scotland as a 'facilitator' or an 'enabler' captures the essence of what the organisation set out to achieve when established in early 2018. As is showcased on their website, the organisation has a clear purpose and vision for what they are attempting to accomplish:

> *We develop and enable collaborative innovation across the fintech ecosystem by facilitating and encouraging connections*. (FintechScotland.com, n.d.).

In order to deliver on the purpose outlined above, Fintech Scotland have spent time understanding the needs of the different organisations in the ecosystem – both large corporates and small fintech firms – in order to facilitate and encourage interactions and collaborations between like-minded organisations. This is evidenced in the below excerpt taken from an interview with a director at the organisation:

> *So, I spend a lot of time with the fintech firms understanding what they do, their challenges. And then a lot of time with large incumbent firms to then identify collaboration opportunities.* (IFS2, Interviews 2020)

Through this form of networking activity, Fintech Scotland are able to link firms together and identify where new synergies can be formed, enabling collaborations, and contributing to the emergence of potential new innovations. This view of the organisation is shared by external stakeholders too, with a senior academic at Strathclyde University noting that:

So, one of the many wonderful things that Fintech Scotland has done and continues to do, as this is a huge project, is to try to bring those two sides closer together.
(IUoS2, Interviews 2020)

The recognition that Fintech Scotland have a crucial role to play in developing the ecosystem is evident from the researcher's interactions with other stakeholders in the fintech community. Private firms and enterprises were benefitting from the involvement of fintech Scotland in the ecosystem. Their role as mediators that facilitated the development of strategic connections, allowing corporate and SME firms to understand each other's needs. Moreover, other institutional actors, such as, Glasgow City Council benefitted from Fintech Scotland's other institutional actors, such as, Glasgow City Council benefitted from Fintech Scotland's intermediation in fintech activity. The following excerpt is taken from an interview with a senior stakeholder from Glasgow City Council:

To help grow and maximise the potential that fintech has as a sector, that is where Fintech Scotland come in, in terms of helping us harness that potential.
(IGCC1, Interviews 2020)

Fintech Scotland's networking activity enabled the organisation to connect the different component parts (large organisations and small fintech SMEs). This in turn facilitated increased dialogue and interaction between participating firms, allowing for the potential of the ecosystem to be realised in practice. Evidently, the other institutional stakeholders recognised the significant role played by Fintech Scotland in fostering strategic connections between firms and nurturing the potential for increased collaborations and innovations. This perspective of the organisation was acknowledged internally too, with the Marketing Director of Fintech Scotland, when queried about the role of his organisation in the ecosystem, stated:

But we offer a different alternative, which is: let us understand the problems, let us understand the solutions. And bring those two together (IFS2, Interviews 2020)

It was observed that their ability to connect different organisations and firms within the ecosystem is unique to them and gives them an increased sense of importance within the fintech community. The interventions made by Fintech Scotland inevitably help to accelerate the number the development and growth of the ecosystem by facilitating and nurturing new collaboration and potential innovations.

From the interview transcripts and researcher observations, there was sufficient evidence to demonstrate that Fintech Scotland play a fundamental role in developing the fintech ecosystem. The role of facilitator, mediator and strategic enabler are all effective in describing

how the organisation make a tangible impact on ecosystem activity. Nonetheless, Fintech Scotland are not the only institutional stakeholder in the fintech ecosystem, the Scottish Government also have a critical role to play, as is explained din the following section.

EA3.3.2 Scottish Government

Having already discussed the significance of fintech on the agenda of the Scottish national Government in preceding sections, this study also looked at the role of both national and regional Government in establishing and progressing the fintech ecosystem. The original blueprint for a fintech ecosystem was commissioned by the Financial Services Advisory Board (FISAB) which is chaired by the First Minister for Scotland, Nicola Sturgeon herself. Subsequently, the Scottish Government ushered in Fintech Scotland as an independent body to oversee the development of the ecosystem.

Two years on from the launch of Fintech Scotland and the ensuing establishment and early development of the ecosystem, the Government continues to perform a vital role in contributing to its expansion. The following excerpt, taken from an interview with a senior stakeholder at Glasgow City Council, details the interests of the Scottish Government in the ecosystem today:

> *At this moment in time, the primary concern for the Government in understanding how the district can be supported to help realise it's ambition and achieve scalability*
>
> (IGCC1, Interviews 2020)

There was a recognition that the local and national Government were concerned with the economic regeneration opportunities made available through the developed of the fintech ecosystem. The increased activity being realised in the local area, as a result of firm collaborations and innovation, would have a positive impact on the surrounding industries. These knock-on effects to the local economy can bring positive socio-economic benefits which are of utmost importance to the Government, as was noted by a Project Director for GCID:

> *I think these are major drivers for the Council and for Scottish Enterprise. You know that social inclusion is not all about gentrification of the area, it's not all about, you know, people having degrees. It's also about what are the benefits that this brings to the local community.* (IGCID1, Interviews 2020)

The same perspective was echoed by the strategic adviser for GCID during his interview:

> *So that you know, if you took that line out that's what Glasgow City would be interested in, Scottish Enterprise you know an economic development engine concerned with employment, job creation, inward investment and R&D type activity.*
>
> (IGCID2, Interviews 2020)

Attracting businesses to the local area, both large corporate organisations and the small fintech firms, enabled the Scottish Government to deliver more jobs to the 'Central Belt' region. Simultaneously, the Government are contributing to the growth of the local economy with increased economic activity generated through the co-locating of prominent financial services organisations in and around the innovation district. It is anticipated that this will bring greater opportunities for the local community, with local businesses benefitting from greater through-fare of workers and, in general more hive and activity in and around the innovation district.

Whilst the end goal for the Scottish Government, at both regional and national level, is to deliver on the socio-economic objectives of Government policy. In order to reach that stage, the Government have an important role to play in the development of the fintech cluster in Scotland. The types of regeneration activity being seen around the River Clyde and the East End of Glasgow, as well as the wider 'Central Belt' region, requires significant financial resources from the Government. By prioritising the expenditure on national infrastructure and regional regeneration, the Government is playing its part in making Scotland an attractive proposition for financial services and technology providers to invest in. Therefore, the Scottish Government play a fundamental role in shaping the fintech ecosystem for success.

EA3.3.3 Strathclyde University

Unsurprisingly, universities play a fundamental role as institutional actors in multiple different industry sectors given their cutting-edge research capabilities and their responsibility for developing the pipeline of talented graduates that enter the workplace. To this regard, the University of Strathclyde falls into the same bracket however, given the university's substantial involvement in both the innovation district and the fintech ecosystem extends beyond the simple prerogative of nurturing future talent. This section explores how the university has played a significant role in nurturing the growth and development of the fintech ecosystem in Scotland.

First and foremost, the University has a vested interest in the fintech ecosystem given their substantial involvement in the Glasgow City Innovation District (GCID). The bulk of GCID activity is undertaken in the Technology and Innovation Centre, in which University of Strathclyde is a dominant stakeholder The following excerpt is taken from an interview with a Project Director for GCID, in which she discusses the role of the University:

With the university being the anchor tenant, the University opened the Technology and Innovation Centre five years ago. It is very much a flagship building for the University where industry and academia are working collaboratively.

And we saw through the development of the Technology and Innovation Centre, that more and more businesses were looking to co-locate in close proximity to the University to take advantage of the skills and the experience and the research that was being undertaken by the University. And to use that by the businesses to further develop their own business. (IGCID1, Interviews 2020)

Immediately, there is a recognition of the ongoing industry engagement and collaboration work being undertaken at the University whereby the Technology and Innovation Centre is the University's flagship cornerstone for showcasing its industry-academia collaborations. Amongst the multitude of activity being undertaken in the building, fintech forms one of the six 'new' clusters of activity identified as strategic priorities by the University. Figure 6.4 below outlines the six clusters that collectively underpin the activity being undertaken in the innovation district. Through their unique position in GCID, the University is able to work collaboratively with fintech organisations – large corporate banks, technology service providers and fintech SMEs – to enable the fintech ecosystem to realise its full potential.

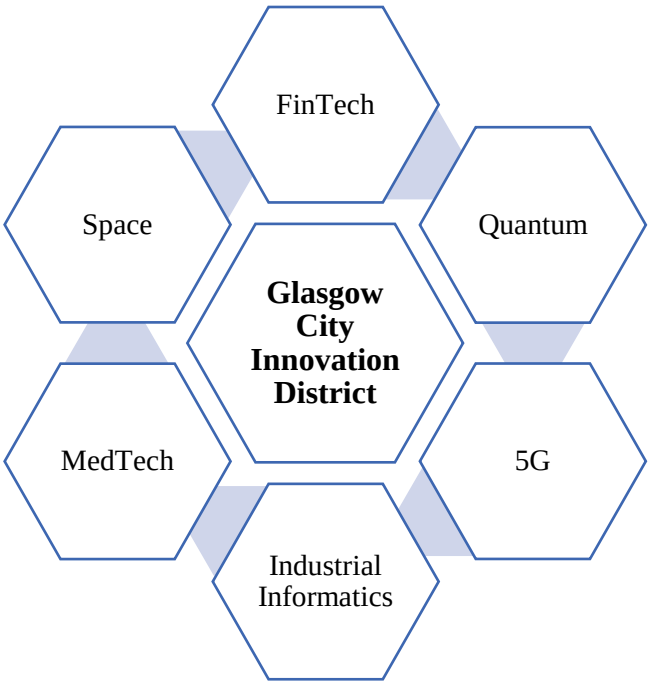


Figure 6.4 Six 'new' clusters under the umbrella of GCID.

One of the primary advantages of being in close proximity to the innovation district is the ability to harness the potential of knowledge spill-over between academia and industry. Through the University's ongoing research interests in fintech and the fintech and data science curriculum offerings at the institution, there is a great opportunity for engagement with the fintech community. The following excerpts are taken from an interview with a senior strategy consultant recruited by the Scottish Government:

> *Key also is the role of the anchor tenant – the University of Strathclyde in fostering the environment for R&D, innovation, and academic research.*
>
> *Potential exists for the Business School to be the mediator – not just for spin-off's emerging from the ecosystem and any knowledge spill-over activity - but to drive the innovation and exploit any research opportunities in this space.*
>
> (IDOHC1, Interviews 2020)

There is an inherent recognition within the University too that they can play a significant role in the development of the fintech ecosystem. The strategic adviser to the Business School notes:

> *We certainly see, in the University, an opportunity for us to be a facilitator or the broker of those collaborations. That's one of the things we're looking to do. So, understanding the demand side of things, the drivers and where we can add value both strategically, if we can engage in the strategic conversation dialogue, and equally operationally.*
>
> (IUoS3, Interviews 2020)

Similarly, this perspective was echoed by the strategic adviser to GCID, who stated:

> *But from my point of view, the development and the delivery of cluster-related activity, particularly the six new clusters and within the two new buildings that's really the University's responsibility to make that happen.* (IGCID2, Interviews 2020)

Hence, the University has a fundamental role to play in progressing activity undertaken across all clusters of GCID – including fintech – in order to realise the full potential of industry and academia engagement and collaborations. Through their involvement in the fintech ecosystem in Scotland, the University are able to progress the agenda on two fronts – the fintech cluster under the remit of GCID and the wider fintech ecosystem. Across their research and development capabilities, ongoing and future academic scholarship and an evolving fintech curriculum, the University plays a significant role in helping to advance fintech ecosystem activity in Scotland.

In summary then, shaping the ecosystem is fundamental to generating the necessary momentum to progress fintech activity. By attracting the right calibre of organisations, both large corporates and the SMEs, the number of potential opportunities for engagement and

collaboration between participating members grows exponentially. This leads to a growth in the size and strength of the networks and relationships within the ecosystem, which subsequently requires a clustering of related activity, expertise, and areas of focus. Nurturing the development of these clusters of activity are the institutional stakeholders who play a fundamental role in fostering collaborative relationships within the ecosystem. They carry out the role of coalescing mechanisms that enable a greater number of collaborations and innovations to emerge from the ecosystem.

6.2.4 Creating a Focal Value Proposition

Attracting the right calibre of firms to the ecosystem is a vital component in realising the growth strategy for the fintech ecosystem. And, although institutional actors will play a significant role in helping to attract firms, offering financial support and collaborative environments for increased engagement, there needs to be a clear value proposition for enticing large corporate and small fintech SMEs to join the ecosystem. Therefore, the creation of a focal value proposition, one that attracts the right calibre of ecosystem participants, will be essential in developing and cultivating growth in the ecosystem.

In forming the focal value proposition, consideration is given; firstly, to the purpose of the ecosystem, secondly, the historical heritage and infrastructure, and finally the act of formulating the value proposition collectively. The subsequent sections explore each of these segments in further detail, as captured in the fintech ecosystem.

EA4.1 Purpose of the Ecosystem

Fintech Scotland recognised that prior to generating a focal value proposition for the ecosystem, it was critical that they engaged with the participating firms – particularly those early stakeholders involved at the initial stages of ecosystem discussions – alongside the institutional actors (Scottish Government, local Government bodies, universities). In so doing, they were able to build a collective consensus and understanding of what purpose the ecosystem would serve for firms participating in the ecosystem.

In order to gain a holistic understanding of the fintech ecosystem in Scotland, the researcher interviewed stakeholders from across the institutional environment. Their responses were validated through researcher observations of firm interactions in the Fintech Conference and Industry Engagement events coupled with desk research conducted into the Scottish fintech ecosystem.

Interview participants in the study were asked to provide their views on what purpose the fintech ecosystem serves. The following excerpts are taken from interview transcripts with various participants across a range of institutional settings:

> *The fintech ecosystem seeks to overcome the culture of accelerators swallowing the small businesses – commercial value is never realised as the fintech is gobbled up by the large firms running the accelerator programme.* (IV1, Interviews 2020)

Discussing the incumbent culture of corporate accelerator programmes designed to identify and nurture small fintech enterprises, one of the innovation consultants recruited by Scottish Enterprise hailed the purpose of the fintech ecosystem as a mechanism to deter the predatory behaviours of large corporates. To achieve this, an academic from the University of Strathclyde involved in the fintech cluster stated that:

> *So, I mean, you need a bit of healthy competition in the ecosystem. For that you have to push the fintech side of the ecosystem at all levels, you have to encourage more smaller firms to come in, you know, creation of new firms is very important. But equally the firms that have been around for a little while, you do not want that to stagnate either, you want to see growth.* (IUoS2, Interviews 2020)

Strength in numbers seems to be the argument being made here, whereby the purpose of the ecosystem is to nurture the development of new firms (spin-offs emerging from the collaboration and innovation activity between and amongst the participating firms). This sentiment was echoed in the response of a senior member of Glasgow City Council:

> *The second one for me is equally, if not more so, important. And that's about growing our own business base and developing entrepreneurs. And fintech is as an area that has huge opportunity for growing new companies.* (IGCC1, Interviews 2020)

Notwithstanding those innovations, the ecosystem should also serve the purpose of fostering the growth aspirations for the fintech SMEs to enable them to move from start-up to scale-up and beyond. As is demonstrated in the excerpt below:

> *But more importantly, the fintechs which are the ones, which really, we are keen to support the most. How do we help them grow and prosper and help the economy? That is fundamental?* (IV1, Interviews 2020)

There seems to be a common theme across the interview participants that supporting the fintech community was fundamentally the purpose of the ecosystem. Generating growth opportunities for the small fintech SMEs by harnessing the potential of collaborative relations between ecosystem participants.

However, one stakeholder group seemed to take a partisan approach when commenting on the purpose of the fintech ecosystem. The following excerpt being taken from the interview transcript with the project director at GCID:

> *Well, having sat and looked at events, and having spoken to people, you know, they were all saying we have got access to a whole heap of events that we can go to. Why should we come to anything else?* (IGCID1, Interviews 2020)

Stakeholders at GCID seemingly assessing the purpose of the ecosystem through their involvement of the innovation district. There is an underlying inference that the ecosystem serves as a means of information dissemination. To inform participating business enterprises – both corporates and SME – of the opportunities and support mechanisms available to them. This is partially down to the remit of GCID extending beyond just fintech, incorporating the five other clusters seen in Figure 6.4, as is explained by the Strategic Relations Adviser at GCID:

> *I think GCID's is just that bit wider and more open. In terms of, because obviously it being more of an economic development project, I feel rather than something that is very, very specific like you know fintech. We are trying to [identify] what's the goal here, attract financial services businesses into that area, you know bring in the supply chain for financial services.* (IGCID2, Interviews 2020)

Meanwhile, stakeholders at Fintech Scotland were able to articulate the purpose of the ecosystem with clarity and assuredness. The following excerpts are taken from interview transcripts with senior managers and directors in the organisation:

> *What it does mean is that you are doing certain things to bring together innovators, with established market, to entrepreneurs and all the different components that is having an impact both in Scotland UK and worldwide.* (IFS1, Interviews 2020)

> *So those collaborations are very much about driving efficiencies within the financial services sector that allow better outcomes for people.* (IFS2, Interviews 2020)

Fintech Scotland's unique role as the driving force behind establishing the fintech ecosystem meant that stakeholders from the organisation were able to articulate a clear purpose for the ecosystem. From the excerpts above, the significance of fostering a collaborative environment that allows various organisations with an interest in financial technology to come together and innovate is paramount to the success of the ecosystem. Both stakeholders interviewed considered the permutations of advancing fintech activity for external groups – consumers, business and in general, society at large.

Taken collectively, these perspectives on the purpose of the fintech ecosystem demonstrate the various individual and mutual interests of the institutional stakeholder groups. Whilst at a superficial level these interests do seem to converge, there are underlying differences between the stakeholder groups as to what purpose the ecosystem serves.

EA4.2 Building on the Existing Heritage and Infrastructure

Recognising Scotland's strengths and underpinning industry infrastructure are critical for the national Government's agenda on financial technology. First and foremost, Scotland is recognised by multiple stakeholder groups for its history of innovation generally, and also more specifically in the financial services sector. The interview excerpts below, providing a small sample of the responses recorded from various stakeholders:

> *Because of the history of innovation in Scotland not only in the past, but even now, with great tech[nology] companies, and great innovation.*
>
> *Innovation and Scotland have always walked hand-in-hand. Not a lot of people know that the cash machine, the pin number and life insurance, the Bank of England, all those things were invented in Scotland or by Scottish people.* (IFSD3, Interviews 2020)
>
> *One is the heritage of Scotland around financial services, Scotland's always had a reputation for, kind of, being like the founders of some of the key aspects of financial services, the Bank of England, life insurance, investment trusts. Some of the technology used like the PIN you use at cash points, amongst many other things.*
>
> (IFSD1, Interviews 2020)
>
> *You know, innovation isn't new to this particular part of Glasgow.*
>
> (IGCID1, Interviews 2020)

Interview participants were keen to stress Scotland's heritage of innovation throughout different historical periods. In doing so, they were alluding to reasons as to why Scotland can become home to a successful fintech ecosystem. Leveraging the history of innovation in Scotland seemingly legitimised the decision taken at various levels of authority across Government, private sector corporations and institutional organisation to assign fintech as an area of strategic priority. Innovations in the financial services sector were also key talking points for interview participants, as these outlined Scotland's capabilities in delivering successful innovations in finance. As is demonstrated in the extract below:

> *So, I would like to see the financial services heritage within Scotland really strengthened because there is some fruitful collaboration across the fintechs and the established community.* (IFS2, Interviews 2020)

Building on past innovation successes in financial services, through meaningful fintech collaborations and innovations is seen as a natural progression for the growing presence of large financial services firms located in Scotland. The CEO of Fintech Scotland noted:

> *So, there is heritage of financial services here in Scotland, big banks, big institutions home-grown like RBS or international firms like JP Morgan. And also, the history of innovation. So that is number one.*
>
> *And number two point is the environment very much encourages a climate of entrepreneurial innovation through technology.* (IFS1, Interviews 2020)

Combining the presence of large corporate financial services organisations with the historically innate culture of innovation in Scotland, it can be argued that establishing a fintech ecosystem in Scotland could provide successful outcomes for the various stakeholders. As is summarised by the CEO of Fintech Scotland:

> *So, both the heritage and the environment provide an ideal place to create a fintech hub.* (IFS1, Interviews 2020)

Building a narrative around the innovation heritage in Scotland provides the fintech ecosystem with a sense of grounding and positions it at the forefront of a long line of historical innovations in financial services within Scotland. Combining the legacy of innovation in Scotland with the ever-growing presence of large financial services corporations that have established a strong presence along the 'central belt' region offers a unique perspective on the potential for fintech success. Leveraging on this potential, through a holistic value proposition that somehow encapsulates the heritage of innovation and the established financial services infrastructure in the country would appeal to fintech SMEs and large corporates from across the world.

Having considered the purpose of the fintech ecosystem, financial services infrastructure, and the heritage of innovation in Scotland in the sections above, the subsequent section details the significance of creating a value proposition for the ecosystem. Combining what stakeholders interpret as the purpose of the ecosystem with the potential to leverage on Scotland's innovative capabilities and established financial services sector provides a strong foundation to understanding how the value proposition can be developed.

EA4.3 Forming a Value Proposition

Attracting organisations to join the fintech ecosystem is fundamental to expanding the existing stakeholder base and creating opportunities for increased collaborations. Whilst the

fintech ecosystem is at the infancy stage, there is evidence that various institutional stakeholder groups are thinking of what the focal value proposition could be. This section will outline the views of the interview participants on the value proposition of the fintech ecosystem in Scotland.

Firstly, case study participants were in general agreement that the value proposition is still an emerging concept for the fintech ecosystem. As of yet, there doesn't seem to be a shared consensus amongst the various stakeholders of what that focal value proposition will be. This is evidenced in the excerpt below, taken from an interview with a senior member of Glasgow City Council:

> *I think we are developing it. I still think it's in its infancy. It is taking a bit of time for various stakeholders, both in the public and private sectors to get their head around what that value proposition is.* (IGCC1, Interviews 2020)

There is a recognition that forming the value proposition would involve brining in the perspectives of multiple stakeholders to understand what value the ecosystem serves. Each firm may have differing viewpoints on why they joined the ecosystem, and what value they seek to realise from engaging in ecosystem activity. To form an all-encompassing value proposition, which allows external fintech firms and large corporates to understand what the ecosystem can provide, should be the end goal according to an innovation consultant working on behalf of Scottish Enterprise:

> *You've got to give them some reason as to why they want to engage, and I think that just comes through experience through commercially dealing with organization and individuals.* (IV1, Interviews 2020)

An acknowledgment here that the value proposition should emerge from engaging with the different organisations involved in ecosystem activity. Understanding that the commercial interests in financial technology can only be realised through open dialogues with the different organisations and their stakeholders. There is seemingly an inherent recognition here that stakeholders have their own personal agendas for wanting to be part of the fintech ecosystem, a viewpoint noted by the strategic adviser for GCID:

> *The reason I say that is because, well I've given a lot of the examples there when you have the various partners with different agendas. I have not really seen much or anything really that says 'here is the high-level agenda' for the fintech ecosystem or the innovation district as a whole.*

They all might connect in some way if you were mapping it out. But you would get, right now until you agree on this sort of strategic document that sets out the strategic messages, you might get different responses on that. And I think that's part of the challenge. (IGCID2, Interviews 2020)

Significantly though, there is recognition that at the high-level there would be convergence between the different stakeholders as to why they chose to engage in ecosystem activity. However, as per the transcript above, the current lack of consensus on a focal value proposition means that individual firms would likely provide varying responses to what they perceive the value proposition to be.

However, when speaking to stakeholders from Fintech Scotland, there seemed to be a strong sense of agreement – amongst themselves at least – that the focal value proposition was visible to all stakeholders. The following excerpt was taken from an interview with the CEO of Fintech Scotland:

So yes, that sort of value around, here is a place to come. It is a bit like come to this laboratory, because actually what you test out is something that can have an impact in the economy and society. So, that is the value, where we are trying to get people to come here. (IFS1, Interviews 2020)

For him, the fintech ecosystem in Scotland represents an opportunity for financial technology firms – large corporates and SMEs – to experiment on new ideas and innovations. In his view the value proposition is that the ecosystem provides a safe environment for firms to engage in fintech activity and that is clear to all interested parties both internal and external to the ecosystem. However, when later questioned about the value of engaging in ecosystem activity for financial organisations, the CEO's response was slightly different:

So, it is that 'work local but go global' perspective, that is the value proposition around it. That is the key role. There is a journey effect really, and the value proposition is 'come here to work local, go global and then contribute to the digital economy' is the value proposition. (IFS1, Interviews 2020)

Similarly, when the Marketing Director was asked to articulate what the value proposition is for the fintech ecosystem, his response was:

When it comes to building your solution, doing it in Scotland makes a lot more sense because of the talent and the skills available. Because of the history of innovation in the past, but even now, with great tech[nology] companies and great innovation.
(IFS3, Interviews 2020)

This perspective on access to talent and skills was also touched upon by a senior stakeholder from Glasgow City Council who stated that:

> *There is, obviously, an attraction in being located in and around the ecosystem. So, that is the first point in terms of skills, businesses can have access to that.*
>
> (IGCC1, Interviews 2020)

There seems to be a pattern emerging whereby there is a high-level understanding of how participation in the fintech ecosystem can create value. So far, the value proposition has yet to be properly developed and articulated to external stakeholders. Existing perspectives on the value proposition, within the institutional stakeholders' group, cover a range of features from the skills and technological infrastructure to the heritage of innovation in Scotland. Whilst also touching on the purpose of the fintech ecosystem in generating socio-economic benefits across the region. The below interview excerpt, arguably, captures the essence of why the value proposition is important and how the stakeholders have failed to reach consensus on what that should be:

> *We have pulled together a bit of a proposition, but it is about four of five sentences long. So, it's hardly something that naturally rolls off the tongue!*
>
> *Yes, I agree, that people need to know what the proposition is. It is something that we have naval gazed about, because if we can't articulate it, how do you expect our audience to understand what it is that we're talking about?* (IGCID1, Interviews 2020)

Accepting that the current value proposition is a mouthful, an amalgamation of all the perceived benefits combined together, the Project Director for GCID acknowledges that they need to form a collective value proposition that can entice external audiences to join the ecosystem. Her opinion is that if the internal stakeholders cannot come up with a coherent proposition, that is recognised throughout the ecosystem stakeholders' group, then how will external organisations be able to understand the value of joining and engaging in fintech activity.

Reaching consensus, amongst the stakeholders involved, on a focal value proposition seems to be a logical next step for the fintech ecosystem. Fintech Scotland, arguably, should be at the heart of the discussion given their wide-reaching network and connections across various stakeholder groups in the fintech ecosystem. Harnessing the different stakeholder perspectives on the value proposition will allow Fintech Scotland to map out the various interests in and expected benefits of ecosystem engagement. Although this would be a significant undertaking,

Fintech Scotland seems best equipped to spearhead the discussion and engage with the various stakeholders engaged in ecosystem activity.

Nonetheless, a senior lecturer at Strathclyde University cautions that this may be an iterative process that requires constant and open dialogue amongst the stakeholder groups. He notes that:

> *I think that it is a very iterative dynamic process, and I don't think it's about that kind of idea or plan. Where you put this down, have meetings, tick that box. It is a constant iteration of back and forth, where practice informs strategy and strategy informs practice. They go back and forth. It has to be done in a co-ordinated way, that is something I would have to say.*
>
> *Which means you have to define yourself. You may have to redefine what success means and that is a dynamic process, it should not be rigid, that is important to add.*
>
> (IUoS2, Interviews 2020)

The point being made here is that constant dialogue and discussion between the stakeholders would allow for a better-informed value proposition to emerge for the ecosystem. The idea of iterative discussions that encourage stakeholders to consider how the ecosystem is progressing will enable them to provide an informed articulation of the value proposition. The point he is making is that ecosystem activity should guide the value proposition in as much that the proposition itself guides the ecosystem activity.

In summary, this section brought together perspectives on the purpose of the ecosystem and the Scottish innovation heritage and infrastructure in an attempt to understand the value proposition for the fintech ecosystem. From the aforementioned analysis it is evident that there are a multiple of different perspectives on the how the ecosystem adds value for participating firms. Despite the attempts of Fintech Scotland to create a narrative on what that focal value proposition is, it remains ambiguous and ill-defined for a large part of the fintech community. Institutional stakeholders are struggling themselves to create a shared understanding of what this focal value proposition is.

Therefore, to create a focal value proposition that clearly articulates the benefits of participating in the fintech ecosystem it is important to consider what the ecosystem offers the participating firms and stakeholders. The subsequent section explores this further, by providing a detailed insight into the activities that underpin the ecosystem offering.

6.2.5 Current Ecosystem Offering

The previous section outlined the purpose of the fintech ecosystem in enhancing financial technology capabilities in Scotland. Focusing on the national heritage for innovation in financial services combined with the existing infrastructure in place which includes support at the scale of national Government for fintech activity in the region. Nonetheless, there was a sense of vagueness surrounding the focal value proposition, with institutional stakeholders struggling to articulate a comprehensive value proposition that captures the value served by the ecosystem. This section will present the existing ecosystem offering and benefits of participation and engagement in ecosystem activity in an attempt to comprehend a shared focal value proposition for all stakeholders.

This section provides insights into the current state of the ecosystem offering, given the relative infancy of the fintech ecosystem. Moreover, there is an understanding of how resources are organised and deployed within the ecosystem to stimulate further activity and encourage collaborations. The physical and digital infrastructures that facilitate these interactions and provides a space of collaborative working is also investigated.

Subsequently, how ecosystem participants are able to communicate with each other as well as the broader fintech stakeholder base is outlined.

Finally, how the ecosystem responds to unprecedented externalities provides an additional layer of analysis for ecosystem offering. During the empirical investigation phase of this research project, the global economy was impacted by the novel coronavirus (COVID-19) pandemic which shed additional light on the way in which the ecosystem was currently operating. This, rather serendipitous occurrence, offered the researcher an additional point of view on how the ecosystem offering was tailored to cater to the needs of participating firms in the face of one of the largest global pandemics in recent memory.

EA5.1 Current State of the Ecosystem

Having only been established in 2018, it can be argued that the fintech ecosystem is in the infancy phase of its development. The ecosystem has already attracted a number of large corporate organisations and small fintech SMEs (see Figure 4.8 fintech cluster map) to participate and collaborate in fintech activity in Scotland. However, as noted by a senior manager at Fintech Scotland, the focus remains to build the profile and reputation of the Scottish fintech ecosystem:

At this early stage in the development of the ecosystem, the focus is on building the profile and brand of Fintech Scotland and attracting firms to the ecosystem.

(IFS2, Interviews 2020)

As explained earlier in this thesis, the body representing the fintech ecosystem, Fintech Scotland have a critical role to play in the development of the ecosystem. Therefore, it is plausible that the marketing and growth of the ecosystem is contingent on the ability of Fintech Scotland to raise its profile on a global scale and promote the benefits of the fintech ecosystem to organisations across the world. In attempting to raise the profile of the organisation, the CEO for Fintech Scotland stated lofty ambitions for the Scottish fintech ecosystem:

So, Stephen, as our CEO sorry, Stephen Ingledew, very cleverly, was appointed and the first thing he said to the news is 'we're going to be in the top five when it comes to fintech hubs around the world'. A very big statement for Scotland when you have got cities like New York, San Francisco, London, Singapore, Israel. So, you're like 'wow okay!' (IFS3, Interviews 2020)

The CEO himself acknowledged in the case study interview that setting a grand ambition for the ecosystem was a means of raising the profile for the Scottish fintech ecosystem:

So, it was a big ambitious goal, just to make a statement really that we were serious. It wasn't just a… we wanted to be very serious about it. As much that we really to make people within Scotland to think about it, rather than if I had just said top one hundred. So, it was a provocative statement, number one. (IFS1, Interviews 2020)

He then proceeded to discuss how this ambitious statement had been realised since he took office in early 2018:

Number two, in terms of progress. Well, one of the key things we went through is… we are a cluster, developing a fintech cluster. And we went through the process of the European body that really oversees all clusters across all industries, who did an assessment of us last year. And at the beginning of this year, they accredited us as being a Cluster of Excellence, and the first one in the UK and one of only three in Europe.

So, against the measure of being a Cluster of Excellence around fintech, we're already top three I can tell you. And that puts Scotland on the map to form a reputation. Which is important because then it encourages other enterprises to want to come to Scotland to be part of it. (IFS1, Interviews 2020)

Achieving a Bronze Award from the European Secretariat for Cluster Analysis (ESCA) in 2020 is a landmark achievement that symbolises the strength in structure and design of the fintech ecosystem. Being the first to be awarded that accreditation in the United Kingdom, and only the third in the whole of Europe underlines the potential of the Scottish fintech ecosystem

to the wider domestic and international fintech community. A formal recognition from the European body that the fintech ecosystem in Scotland has the necessary ingredients to facilitate collaboration between participating firms and provides a nurturing environment for fintech SMEs to grow their business.

The collaboration between participating firms is seen as a key strength of the ecosystem by stakeholders outside of Fintech Scotland too, with the following excerpt taken from an interview with a senior lecturer at Strathclyde University:

> *And so, collaboration, and this is in the Scotland context to be particular, is to be seen as, I think, a strength. As an under-rated strength. So, there are two things about this ecosystem: (a) it is small and (b) it's actually intensely collaborative.*
>
> (IUoS2, Interviews 2020)

Yet there seems to be a caveat to this ongoing collaboration between ecosystem participants, as is explained in the excerpt below:

> *So, there are bits of the ecosystem that are incredibly collaborative. Typically, if you divide the ecosystem into the smaller players and the bigger players, by and large the smaller players are incredibly collaborative. There is a natural level of competition that has to exist but their natural instinct, from what I have seen, is collaboration.*
>
> (IUoS3, Interviews 2020)

The smaller fintech SMEs are more likely to collaborate with other participating firms in the ecosystem, to innovate on new products collectively and to engage in initiatives and events for ecosystem members. As these organisations tend to be micro-SMEs (1-9 employees), they do not have the resources required to carry out R&D activity by themselves. Hence, the fintech ecosystem provides them with access to both human and capital resources that would otherwise have been out of their reach.

Meanwhile the large corporate players are explained to be less willing to engage in collaborations with the same degree of enthusiasm as their smaller counterparts, as is shown below:

> *But the biggest problem is these very inward-looking financial services institutions… because they operate in an institutional setting, and that imposes lots of constraints.*
>
> (IUoS3, Interviews 2020)

Actors from the large corporate organisations involved in the ecosystem are inclined to behave in line with the institutional norms and controls established by their respective employers. Given that the large corporate players are often competing against each other for

market share in the financial services sector, this element of competitiveness adds an extra layer of complexity to the ecosystem relationships. This is something that will naturally influence the level of commitment by large corporates to engaging in the collaborative efforts of the ecosystem.

Institutional stakeholders are acutely aware that further work is required to consolidate the ecosystem offering and make it an attractive proposition for firms, enticing them into joining. The following excerpts demonstrate some of that sentiment:

> *From what I understand they are still at that stage of stimulating, would probably be the best word, a knowledge and understanding of what we are trying to get done in the ecosystem.* (IGCID2, Interviews 2020)

> *I think in terms of our development as an innovation district, we're not closely enough associated with all the businesses in the area to be able to link them all up in the way that we would do if we were three or four years down the line and, you know, had a better handle on who the businesses are.* (IGCID1, Interviews 2020)

Both stakeholders from Glasgow City Innovation District commented on the current lack of clarity and awareness on what the value proposition is for the fintech ecosystem. Similarly, there is an acknowledgement that across the innovation district – not just restricted to fintech – there is an essential requirement to understand the needs of the businesses involved. Hence the establishment of a focal value proposition that captures the essence of what the fintech ecosystem can provide participants is pivotal in ensuring clarity and understanding across all existing and future stakeholders. A senior stakeholder from Glasgow City Council effectively surmised the position of the local authority:

> *As a city we need to have that offer right.* (IGCC1, Interviews 2020)

Ensuring that the value proposition reflects the benefits of joining the ecosystem, enticing organisations to join will be key to the development of the ecosystem and from the Councils' perspective, the socio-economic regeneration activity in the surrounding areas.

In summary, given the infancy of the ecosystem, the ecosystem has already achieved some notable milestones. Offering an inclusive environment for fintech SMEs to come together and collaborate, something they were not able to do prior to the existence of the ecosystem. Being recognised by the ESCA with a 'Bronze Award' represents the significant early progress made by the Scottish fintech ecosystem and provides an incentive for the stakeholders to strive towards 'Gold' status. Nonetheless, there remains some ambiguity around the value

proposition. This needs to be rectified to ensure that all stakeholders are clear on what value the ecosystem will serve, and what part they will play in contributing to and benefiting from ecosystem activity.

EA5.2 Organising and Deploying Resources

Understanding their role in the ecosystem and what benefits they will be able to derive from ecosystem participation will influence the level of involvement and investment from stakeholders. One of the most critical decisions undertaken by ecosystem participants is the level of commitment and engagement they are willing to afford in the ecosystem. This was captured in an interview with a senior lecturer and stakeholder in the fintech ecosystem from Strathclyde University:

> *We had to put our heads together and think, well, how can we actually get someone to effectively muster resources and make our internal vision that we are the 'place for useful learning'. In other words, that fintech is useful for our ecosystem. How can we internally make that happen? And that, obviously, is a resource question.*
>
> (IUoS1, Interviews 2020)

Relating their fintech ambitions to the University's own vision statement of being the *'place for useful learning'*, there seems to be a recognition that pooling together the University's approach to fintech would be a resource intensive undertaking. In doing so, the University – as an institutional stakeholder in the fintech ecosystem – made a calculated assessment of how it wanted to engage in ecosystem activity through employing additional resources on this project. As fintech became of strategic importance to the University's own internal agenda, there was a need to coordinate the approach across the various faculties involved in the fintech offering. Hence, they recruited people to lead the synchronized approach from the University, both on an internal basis to coordinate the approach and externally with the wider fintech ecosystem.

Similarly, when discussing the relative resource organisation and deployment capabilities of ecosystem participants there were insights provided into how different groups of stakeholders behaved when engaging in ecosystem activity. Firstly, fintech SMEs were explained to have limited resources to expend on ecosystem activity and had to think strategically about how to engage efficiently in the interactions and engagements. The below extract highlights this perspective:

> *And I think the best start-ups do stuff like that, they are very strategic. They understand that they have limited resources, and therefore they must try to deploy these as efficiently as possible.* (IUoS2, Interviews 2020)

There is a recognition that start-ups and fintech SMEs, given their smaller size and budgets, will have limited resources and would therefore need to utilise them as efficiently as possible. When engaging in ecosystem activity, firms need to dedicate human and sometimes even capital resources which are naturally at a premium for small fintech players. There is further pressure on these micro and small fintech SMEs as a result of the ongoing novel coronavirus global pandemic, as mentioned below:

> *We just need to take stock of COVID-19 being around right now and you might go back to the point I made earlier on, that the individual fintechs need to be doing a lot more understanding of the pains they are trying to solve in the marketplace. Similarly, we need to make sure all the support is being given to these young companies. Some of them are running on finite resources, as far as funds available.* (IV1, Interviews 2020)

Naturally, fintech SMEs will face difficult decisions on how to best allocate, organise and deploy their resources when engaging in ecosystem activity. The financial constraints and uncertainty caused by the coronavirus pandemic could provide further obstacles to their ability to participate in ecosystem activity. Hence, their decision to engage in ecosystem activity has to be taken from a strategic perspective, with an understanding of what they want to achieve by participating in ecosystem interactions.

Meanwhile the large corporate stakeholders from the financial services and technology services domains arguably do not face those same constraints as their SME counterparts. These large corporations are able to dedicate greater resources – both human and capital – in their ecosystem engagement activity. This viewpoint is demonstrated below:

> *And, I guess, it is easier for these types of businesses that have the resource, that have the capability and critically the finance to be able to do that.* (IGCC1, Interviews 2020)

Large corporate players have an abundance of resources comparative to the fintech SMEs, and therefore are able to dedicate these resources more ably. Corporate firms tend to have sizable R&D budgets allocated to developing new products and services. Financial technology is very much at the forefront of the digital revolution in consumer and personal banking services. Therefore, the opportunity to participate in the fintech ecosystem with other firms from the wider fintech community in Scotland, the U.K. and abroad would be an attractive proposition for these corporate players. However, this is not always the case as is explained by a senior lecturer from Strathclyde University:

Large organisations, I think, just waste resources because they just… obviously it gives them a sense of power to say we have got teams doing this, we have got teams doing that. (IUoS2, Interviews 2020)

Large corporations want to be seen as being aware of, and working on, the latest trends and technologies in their respective areas. This resonates with the point being made by the senior lecturer at Strathclyde University, that they will dedicate resources and time internally to multiple projects. Those resource could better be utilised by working and collaborating with other firms, including fintech SMEs who often have already developed applications and technologies that can be used to augment the existing product offering at the incumbent banks. Whilst this could be interpreted as a slightly crude assessment of how large corporate organisations may operate, there are underlying forces of competitiveness and secrecy that have a role to play in these interactions. Often, these large corporations are competing against one another for market share. Therefore, the idea of collaborating with your nearest competitors can pose some serious challenges to the way they traditionally operate. Exactly how much knowledge, experience, and innovation they are willing to share openly with the wider ecosystem introduces a unique dimension to the relational interplay between these organisations. Fintech SMEs are more likely to engage fully in the collaboration efforts as the ecosystem affords them access to large organisations that otherwise may not have been possible. However, the large corporations would have some degree of hesitancy in engaging in ecosystem activity, ensuring that they do not share any sensitive information or anything that could give their competitors insight into what the organisation is doing.

In an attempt to circumvent these potential conflicts, Fintech Scotland attempt to moderate the ecosystem interactions through the following intervention, as is explained by their marketing director:

It's been okay actually, because the thing we mobilize them around have been industry or societal issues as opposed to… So, when they come to us, they will have their own personal things they want help with.

So, mobilizing them behind things like that is very good, because it's not a problem that just RBS or just Lloyds will have, it's a problem they all have. And it's not going to give them a competitive advantage really. It is going to help everyone work better and innovate better. (IFS3, Interviews 2020)

By assembling ecosystem participants around collective objectives as opposed to the interests of any one individual group of firms, Fintech Scotland are able to encourage collaboration between participants. Inspiring participants to consider wider societal needs or

objectives fosters the need to collaborate and work together, hence removing the underlying firm-centric approaches that are often the catalysts for firms looking to join the ecosystem.

Therefore, organising and deploying resources is not just a firm-led objective, but can also be understood as an ecosystem wide objective. Whereby, Fintech Scotland have a crucial role to play in mobilizing the participant resources around issues that affect the wider fintech community and society at large. Harnessing the full potential of ecosystem interactions rests upon the effective and efficient organisation and deployment of ecosystem resources. These resources can originate from all types of organisations; both large corporations and small fintech firms, government agencies and bodies, institutional stakeholders like universities etc.

Relatedly then, the fintech ecosystem needs to accommodate the amalgamation of resources from different stakeholder groups. The subsequent section provides an insight into how the ecosystem serves as a hub for all stakeholders engaged in ecosystem activity.

EA5.3 Creating a Hub for different Stakeholders

One of the underpinning rationales for establishing Fintech Scotland was to provide a 'physical hub' facility for inter-firm collaborations and innovations in the existing financial services (FS) and technology sectors. Moreover, to accommodate collaboration between industry and academia, the physical hub was championed as an 'innovation space' to spur fintech development and growth (Gov.Scot, 2018a). However, two years on from its inception, Fintech Scotland has pursued a slightly different path in developing both physical and digital hub infrastructures for ecosystem participants. The Marketing Director for Fintech Scotland elaborates further:

> *And so, it is from the ground up because we did not know at the start when Fintech Scotland was created. There was a lot of opinions. As to what Fintech Scotland should be. And most of those opinions were from government or large FS or large third-party firms, one of the big four. They all had their own opinion as to what we needed to do.*
>
> (IFS3, Interviews 2020)

Recognising that the fintech firms did not necessarily want a central funding pot managed by Fintech Scotland, nor a physical building hosted by the organisation. By listening to the needs and wants of the fintech community, they quickly realised that a platform was required for collaboration between participating firms. In a wide-ranging interview with The Scotsman, the CEO of Fintech Scotland is recorded as having said:

> *So, we refer to those, as I say, as virtual factories and we see that opportunity to help really ensure that innovation and fintech is countrywide. It is not just confined to a few physical locations.* (The Scotsman, 2018)

Evidently, the fintech community preferred to have digital infrastructures that help to connect organisations and firms to one another without the need to consider spatial boundaries imposed by geographical constraints. This idea of 'virtual factories' implies that fintech firms preferred to work with other firms through digital interactions, which is perhaps synonymous with the nature of financial technology. Similarly, when considering the significance of spatial boundaries between ecosystem participants, one of the strategy consultants working on behalf of GCID posed the question:

> *Is co-location a requirement for success?* (IDO'H1, Interviews 2020)

Reflecting on this question, he brought in perspectives from other stakeholders within the ecosystem – namely the university and Glasgow City Council. They are promoting physical infrastructure as environments for innovation and collaboration among ecosystem participants. This is shown in the excerpt below taken from an interview with a senior manager of Glasgow City Council:

> *Which is why, you know, we have invested then in things like Tontine, the accelerator down in Tontine. Why we are, supporting the aspirations of the University of Strathclyde to develop TIC Zone 2, these are really important strategic priorities for us Akwal, in terms of growing not only fintech but other key sectors that have that similar high growth potential.* (IGCC1, Interviews 2020)

Discussing the vested interests of national and local Government, the senior manager listed the strategic significance of building physical facilities. Infrastructure that offered participants in not only the fintech ecosystem, but across the innovation district, access to environments that are conducive to collaboration and innovation. One such example that he highlights is the TIC Zone 2, the University of Strathclyde opened the first TIC building (technology and Innovation Centre) in 2014, with plans now to expand its footprint into an adjacent building next door. This purpose of these facilities is discussed by the strategic relations adviser for GCID:

> *So, obviously TIC 2 being a £150 million investment in more physical, you know the physical sort of centre, but that obviously goes then to create a place where this innovation activity is going to happen.* (IGCID2, Interviews 2020)

Evidently the TIC buildings are being heralded as physical infrastructure that can house the innovations and collaborations that will emerge from participation and engagement in

ecosystem activity. Significantly, the close proximity of Strathclyde University and the university being an anchor tenant provides the added incentive to organisations of access to cutting-edge research being carried out by academics. As is explained in the excerpt below:

> *One of the big things they're trying to create within the GCID is the need to make it like a meeting place not just for students and researchers, but also for businesses and the general public who want to learn more about the work being carried out.*
>
> (IGCID2, Interviews 2020)

Championing the cutting-edge research facilities offered in the innovation district, GCID stakeholders were keen to stress the importance of opening these facilities to larger audiences including business enterprises and the public at large. By doing so, they would be able to create awareness of the research being carried out in the areas of strategic interest to the university – including that of fintech. Through the increased flow of people, it is anticipated that there will be greater opportunities for collaboration between the various stakeholders, like-minded SMEs, researchers, large corporates etc. The project director for GCID shared her thoughts below:

> *The whole point of the innovation district is… this is a place that we want to encourage people to eat, work, live, collaborate, innovate.* (IGCID1, Interviews 2020)

Creating a shared space for various different stakeholders – including the local community – is explained to be an intentional intervention by GCID, which is anticipated to lead to fruitful innovations and collaboration opportunities to emerge. Despite the initial hesitance by fintech Scotland to invest in a physical facility tied to a specific location, by working with universities and local Councils in Scotland they seem to realise there are benefits of physical hubs for fintech stakeholders. The following excerpt comes from an interview conducted by The Scotsman with Fintech Scotland CEO Stephen Ingledew:

> *First of all, is that environment, where one they have the space in order to test and learn. Not every innovation actually leads to a positive result and sometimes actually failure and learning through failure helps you to move onto a much stronger result going through. So, the right environment, the right spaces, the right support is really crucial whether that is support from a legal point of view or regulatory perspective, a financial, but also business mentoring. Experienced people recognising how they can actually help smaller enterprises learn from the mistakes of the past.*
>
> (The Scotsman, 2018)

Taking into consideration the impact of having a 'space' or an environment for organisations, researchers, government agencies and bodies and the general public to engage with each other, Fintech Scotland came on board with establishing these physical hubs for

stakeholders. Overall, the need for both physical and digital infrastructures became apparent throughout the interview schedule. Institutional stakeholders discussed the merits of both types of infrastructures to support engagement and collaboration between ecosystem participants. When analysing the results of the interview data, it became apparent there was a fundamental difference between the benefits of the physical and digital infrastructures. The emergent theme of enhanced communication capabilities and channels offered by digital platforms is discussed in further detail in the subsequent section.

EA5.4 Platform for Sharing Information and Communications

The preceding section discussed the role of physical and digital infrastructures as means of providing an environment or hub for ecosystem stakeholders to collaborate and innovate. Analysing the data collected from stakeholder interviews revealed the significance of online platforms that facilitated the dissemination of information and flow of communication between various parties. The project director for GCID commented on the use of social media and other platform mediums for sharing information:

> *But I think, having said that we are very much using social media and technology to share the information that is coming out from the Government, from the Council, from the Chamber of Commerce.* (IGCID1, Interviews 2020)

Accessibility seems to be key in disseminating information between the organisations and the Government bodies, agencies and other related institutions. Using social media channels enabled the communication and information shared to reach multiple audiences in various formats, for example, text, audio and video. There seemed to be a preference amongst the fintech firms for this information broadcasting to be done through a singular channel as opposed to multiple sources and means of sharing information. As is explained by the marketing director for Fintech Scotland:

> *So, when you are under this, kind of, information wave coming towards you, the distinctive reaction is to block everything out. And what we tried to do for the fintechs there was to say, 'actually if you were to only read one email a day, just read ours'.*
>
> (IFS3, Interviews 2020)

Becoming a primary source of information meant that Fintech Scotland had to stay aloft of what was happening in the wider industry and to raise awareness of various initiatives and events that could benefit the fintech firms. In doing so, Fintech Scotland became a one-stop shop for the small fintech SMEs, who would look to them for information on events and initiatives, as well as the different support options available to them. Beyond the standard

sharing of communication and relevant information, Fintech Scotland are keen to establish platforms for collaborations between the fintech community. As is stated by the organisation's marketing director:

> *So, we're creating a way or platforms for them to collaborate on*.
>
> (IFS3, Interviews 2020)

Given the nature of the business and economic climate during the data collection phase, the impact of the COVID-19 pandemic resulted in multiple restrictions brought into place by national Government. These restrictions prohibited face-to-face interactions between people, with ensuing reprieves still limited gatherings of people. The knock-on effect of these measures meant that collaboration opportunities through networking at events or initiatives held by the various stakeholders were non-existent for the foreseeable. Therefore, Fintech Scotland, together with the Scottish Government and their affiliated bodies, relied heavily on the digital platforms and technologies to encourage engagement and collaboration between the participating organisations. The strategic relations adviser for GCID commented the following:

> *We have also set up our own blog, and we're just about to launch our own series of podcasts and webinars to try and share information. And maybe it will be through giving them the platform that we have with the blog and the podcast, given the circumstances we currently find ourselves in, that we have got a better opportunity to do that than we would have naturally.* (IGCID2, Interview 2020)

The pandemic forced senior members of GCID to accelerate their digital presence, allowing for dissemination of information to a host of different communities – including fintech. The digital infrastructure took precedence during the ongoing pandemic restrictions in place at the end of 2020. Providing the fintech community access to resources and opportunities to engage with like-minded businesses and individuals enabled ongoing opportunities for innovation and collaboration despite the restrictions imposed across the globe.

Nonetheless, there was seemingly consensus amongst the stakeholders that the physical infrastructure had a significant role to play in the long run, especially once the threat from the pandemic is eliminated. The following excerpt was taken from an interview with the CEO of Fintech Scotland:

> *And therefore, whilst we can make use of some of our digital platform and raise awareness within the community of initiatives, sometimes just hearing someone sort of saying what you said there, you need to speak here.* (IFS1, Interviews 2020)

Whilst he acknowledges the benefits of the digital platforms for disseminating knowledge and information amongst the fintech community, there is a recognition that speaking to people in person can be more impactful. Delivering the message in person allows for increased engagement and opportunities to network that are not immediately available via platform-based interactions. Similarly, the projector director at GCID shared the same sentiments:

At the moment it is all being done online but ultimately; we will be back meeting people.

(IGCID1, Interviews 2020)

Evidently, there is a desire to return to 'normality' as soon as possible across the institutional stakeholder base. Whilst online platforms have been instrumental in keeping the fintech community in the loop, allowing for collaborative efforts to continue albeit in the digital sphere. There is a clear commitment from institutional stakeholders to return to the more traditional form of networking and collaborating between ecosystem participants.

The digital infrastructure has served a key role – perhaps more so than Fintech Scotland and other institutional stakeholders would have originally anticipated – with the novel coronavirus pandemic accelerating the adoption of digital platforms for all ecosystem activity. Relatedly, the following section looks at the response of the fintech ecosystem to unprecedented changes to the macro-environment. How the ecosystem adapted to the COVID-19 pandemic will be explored in further detail through insights gathered during the data collection phase.

EA5.5 Responding to Unprecedented Changes in the Environment

Coinciding with the start of the data collection process, the novel coronavirus pandemic brought the global economy to a standstill. Many countries across the world responded to the imminent threat posed by COVID-19 by closing international and domestic borders whilst also imposing restrictions on business operations and the movement of the general public. In the UK, and more specifically in Scotland, the country was brought to a grinding halt in late March 2020. Whilst this disrupted the interview schedule for this research project whereby one research interview had been conducted already in a face-to-face context, the remainder were all carried out via Zoom following a 6-week impasse. However, this serendipitous situation brought additional perspectives for the research project being carried. Ecosystem stakeholders had to make necessary interventions to ensure that momentum in ecosystem activity was not completely diminished. The effects of the pandemic restrictions and the ensuing interventions are discussed in greater detail in this section.

During the data collection phase, the pandemic – in the Western world – was only beginning to take effect. Therefore, the impact and longevity of the virus itself and the resulting restrictions, introduced by Governments across the globe, on economic activity were unknown. The uncertainty posed potential issues for the fintech ecosystem. These are explained by a senior lecturer from Strathclyde University involved in the University's fintech taskforce:

> *And now that you throw COVID into the mix as well, so a disruptor has come into play.*
>
> *So, is it truly a disrupter? Or will it return to business as usual? So, I mean this, obviously COVID has come in and absolutely, kind of, thrown a kind of neutron bomb into the whole thing. So, it is not clear what that is going to do.*
>
> (IUoS2, Interviews 2020)

This underlying sense of uncertainty around when we would return to 'business as usual' also meant that, in some circumstance, fintech firms had to reconsider their product offering and what needs they we relooking to resolve. This point is elucidated by the innovation consultant working on behalf of Fintech Scotland and Scottish Enterprise:

> *I think we just need to take stock of COVID being around right now and you might go back to the point I made earlier on, that the individual fintechs need to be doing a lot more understanding of the pains they are trying to solve in the marketplace.*
>
> (IV1, Interviews 2020)

The fundamental needs of consumers that the fintech enterprises was looking to fulfil is brought into question here. The pandemic may have essentially shifted the target market or in some cases even eroded the original intended target market for the fintech enterprise. According to the innovation consultant above, there may be a requirement for fintech firms to revise their value proposition in line with the evolving needs of consumers in the wake of the pandemic. Speaking to the marketing director at fintech Scotland, it seems that some of the fintech firms have embraced the challenges facing their organisation by revising their product offering. This is explained below:

> *And it's even more true now under COVID, a lot of those companies have either repositioned their existing solutions to help companies with COVID challenges like remote working, security, onboarding customers when working remotely. Or are looking at new solutions, how to help people understand and companies understand all the benefits that they can claim, you know, things like that.* (IFS3, Interviews 2020)

Some of the fintech enterprises have seized the opportunity presented to them by the pandemic, by adapting their product offering in light of the changing consumer needs. Whilst COVID has brought substantial unprecedented changes to the way in which these fintech

enterprises work. Their ability to react to the ongoing economic uncertainty and shift in consumer needs will ensure how well they navigate through these challenging conditions. In order to ensure that they are continuing to support these firms, Fintech Scotland have adapted how they keep up with them too:

> *So, every week right now we have a Skype call or a Zoom call with them to discuss their issues under COVID-19, to make sure that what we do is to help them.*
>
> *Because we would take on that burden, only looking at what is interesting and then feed that back to them on the daily update. And the feedback we got from doing that was very, very good. Very positive. A lot of people came back to say, ' that was my only source of information for everything COVID'.* (IFS3, Interviews 2020)
>
> *We also have some other fintechs who are thinking about, what does digital exclusion look like as we move more digitally, and indeed COVID-19 has given us some really… immediate concerns, we need to address some of those needs, immediately. Because we do not have the physical ability to, kind of, meet in-person or indeed go into a branch or whatever that might look like.* (IFS2, Interviews 2020)

Keeping in constant contact with the fintech firms, including weekly calls with the enterprises and daily email updates, ensured that they were kept abreast of all developments and support channels available to them. Similarly, by considering the needs of disadvantaged groups, or certainly those that were marginalised by the restrictions imposed by the pandemic, the fintech SMEs were seeking to address their needs through tailored product and service offerings. Smaller fintech firms, under the guidance and support of fintech Scotland and other associated bodies, appear to be adaptable and willing to tailor their business solutions to meet the needs of an evolving consumer base. However, the larger financial services firms are explained to be less agile and responsive to these changes:

> *But on the other hand, there are the large FS, where their culture is so entrenched and persistent, you might just have some people who might just go about their business for another couple of years. In which case more difficult things start to happen. So, I think the role of large FS is very important here, because if they fail to rise to this challenge, it is bad for the Scottish fintech ecosystem. Small companies, the small start-ups are too small.*
>
> *And if the if the FS's don't, in my opinion, come in and help out, all these small ones be left to sell themselves up to whoever's willing to buy them. And that will not be good for the overall ecosystem. So, it depends a lot on the quality and the culture of senior FS management.* (IUoS2, Interviews 2020)

A recognition here that large corporates are traditionally slow to react and cannot be as agile and flexible as the smaller fintech firms given the large legacy and cultural constraints

faced by those organisations. Nonetheless, as the senior lecturer explains, these organisations should look to support the fintech SMEs by providing them with support to develop their offerings. Without the necessary resources and financial support, there is an acceptance here that many smaller fintech firms would not be able to survive in the current climate.

Likewise, whilst discussing the need for large corporates to continue to work with SMEs the Project Director to GCID noted that opportunities for these firms to collaborate were lost as a result of the pandemic. The below excerpt demonstrates her perspective:

> *But obviously as a result of COVID that list of events and activities has been put on the backburner.*
>
> *I think this year 'Glasgow Open Doors' is more than likely to take place electronically, which is a bit of a win, because it also means if it is electronic then we will be able to video and showcase some of the facilities that you wouldn't normally open to the public anyway. But because, you know, it will be just one person and a camera we will be able to talk about more than the public would generally have access to otherwise.*
>
> *So, I guess, going forward if we weren't going through COVID then we would have tried to reach out to a number of other businesses to try and identify opportunities to bring them onboard.* (IGCID1, Interviews 2020)

Public events and initiatives scheduled to be held in-person for the Spring and Summer period were subsequently cancelled, with pause in proceedings whilst the business world came to terms with the restrictions imposed. Despite the consequent disruptions to previous plans, this offered an opportunity to accelerate the drive towards digital interactions and collaborations. As mentioned in the excerpt above, there were added benefits to hosting interactive events, including behind-the-scenes access to facilities that would otherwise not be accessible to potential ecosystem participants. Therefore, the pandemic offered different ways of structuring industry engagement events and opportunities to showcase to prospective participants the key benefits of ecosystem involvement.

Finally, the pandemic has offered the ecosystem stakeholders a chance to reflect on the nature of their business. Many different plausible outcomes were offered by the institutional stakeholders when they considered the impact of coronavirus on the long-term outlook for ecosystem participants. The Marketing Director for Fintech Scotland commented:

> *Maybe after COVID, maybe people will realise they need less staff to do what they were doing before.* (IFS3, Interviews 2020)

There is an assumption here that some enterprises will realise that they can afford to streamline their human resources without having a detrimental effect on the business. Referring predominantly to the large corporates, the marketing director to Fintech Scotland was predicting the behaviour of the large corporates who may decide to shed their workforce in light of the structural changes brought about by the pandemic. Meanwhile the Project Director to GCID had her own perspective on lie after the pandemic:

> *And I wonder if through COVID, you know, certainly through the focus group that we had, I could see some of the people that we had around the table. I could see them talking about 'why do I need to go to London to get somebody to do my marketing? Why am I not using you, across the road? I could just nip in and have a chat with you and sort the whole thing out'.* (IGCID1, Interviews 2020)

The argument being made here is that, through the pandemic, large corporates and small fintech firms alike may realise the benefits of engaging with local enterprises. Working with local businesses and forming new relationships and networks with other firms engaged in the ecosystem would help foster stronger relationships too. Invariably then, there are many potential outcomes from the impact of the coronavirus pandemic. The pandemic will no doubt shape the fintech ecosystem for both the short and long-term as organisations begin to adapt to evolving market needs. Nonetheless, the ecosystem seems to have adjusted to accommodate the national and local restrictions imposed by the Government. The ability to respond to these types of unprecedented global events impacting the macro-environment demonstrates the potential for the ecosystem to overcome these challenges and continue to offer engagement opportunities to the fintech community.

In summary, the current ecosystem offering is determined by a range of different factors. Amongst the most critical were the state of the ecosystem at that given point in time. For the fintech ecosystem this was characterised by raising the profile and awareness of the ecosystem by Fintech Scotland, together with the facilitation of early collaborative efforts amongst the initial participating corporates and SME firms. The allocation of resources, including physical, capital and knowledge, is crucial in establishing the direction and path pursued by the ecosystem. The extent to which participating firms and organisations are willing to invest their time and effort will determine the collective benefits to the whole ecosystem. Moreover, the physical and digital infrastructure underpinning ecosystem activity is critical in facilitating collaborations between participants. Given the effects of the unprecedented novel coronavirus pandemic in 2020, the significance of having a supporting digital infrastructure was shown to be paramount. Digital platforms and communication channels ensured that the fintech

community could be kept in the loop on updates from various stakeholders, emergency funding options from the Scottish Government and other associated agencies. Finally, whilst the pandemic was arguably a once-in-a-lifetime event, the ability of the ecosystem to adapt to the unprecedented changes ushered in by the impact on the macro-economic environment demonstrates the strength of the ecosystem offering.

Hence, the current ecosystem offering determines – to a large degree – the success of participant interactions and collaborations whilst simultaneously enticing the wider fintech community to get involved in ecosystem activity. Influencing the ecosystem offering are the levels of engagement in ecosystem activity and decision-making by the participating firms. Ecosystem participants shape the offering through their active and passive involvement, the subsequent section will shed further light on how their involvement contributes to the ecosystem offering.

6.2.6 Engagement in Ecosystem Activity and Decision-Making

Interactions and collaborations between participating firms are fundamental to nurturing ecosystem growth, as has been explored in preceding sections. The involvement of these organisations extends beyond simply collaborating with one another. Instead, through the coalescing efforts of Fintech Scotland, both corporate entities and fintech SMEs play a crucial role in shaping the direction taken by the ecosystem. Their involvement in decision-making ensures that the ecosystem continues to serve the needs of participating firms. Similarly, their involvement in, and hosting of, ecosystem events and initiatives ensures that individual firms are given the opportunity to showcase their products and service offerings to one another.

EA6.1 Including Organisations in Decision-Making

Throughout the interview transcripts, there was a common recurring theme, stakeholder involvement and inclusion in ecosystem decision-making. Institutional stakeholders interviewed for this study emphasized the significance of including both the small fintech firms and large corporate organisations in determining the strategic direction taken by the ecosystem. Considering the innovation district (GCID) more broadly, the Project Director commented:

> *I think we've definitely got to involve the businesses. Otherwise, I am just sitting in an ivory tower, you know, developing something that might not actually work on the ground.*

So, very much the business that are within the district have got to be involved in all of that. Otherwise, it just does not work and it's not an innovation district.

(IGCID1, Interview 2020)

The Project Director recognised that including participating organisations in the decision-making discourse is key to delivering on the potential of the innovation district. She stressed the importance of involving those businesses in the decision-making dialogue to ensure that the enacted strategy reflected the broader needs of the innovation district community. The analogy of the ivory tower concept was an interesting choice of wording. It highlights the potential disconnect between the actual needs and requirements of participating firms and what is known or understood by the Project Director and those in similar positions.

Focusing on the fintech ecosystem more specifically, a senior member of Glasgow City Council provided an example of including organisations in the strategic decision-making dialogue:

On Monday night we had a two-hour call, on Microsoft Teams, with a number of the key players in the city as well as a growing number of small businesses. Because there is a recognition in the city that, from a sectoral strategic position, we need to involve and include many of the smaller fintech businesses and learn from them. I think that is a really important point in all of this. (IGCC1, Interviews 2020)

Increasingly there is a recognition amongst the institutional stakeholders that growing the ecosystem is dependent on the inclusion of participating firms and organisations in the strategic decision-making conversations. As indicated by the Councillor in the interview excerpt above, there is a need to learn from the smaller organisations and understand how their needs can be fulfilled through their engagement in ecosystem activity. The interview was conducted during the first national lockdown in Scotland, hence there was an emphasis placed on technology, Microsoft Teams in this case, as being the enabler for such dialogue to take place.

Moreover, there was evidence of organisations being included in the strategy dialogue at all three phases of strategic decision-making: planning, formulation, and implementation stages. Firstly, looking at the planning phase, the following excerpt is taken from an interview with the Marketing Director at Fintech Scotland:

They [fintech SMEs] have been, you know, at the centre of everything. And that's very easy to say that, but with a little… you know, we can prove it actually.

One of them was sitting on our board for two years. A company called 'Sharing'. So, they are no longer a start-up, they are more like a scale-up now. But at the time they were very much a start-up. And again, you know, going back to inclusion. It's not just

financial inclusion, its diversity, so their CEO Jude Cook was on our board. It's rare to have a female entrepreneur in the fintech space. So, we wanted to make sure. So, as a statement she's representing all the fintechs in Scotland. (IFS3, Interviews 2020)

Demonstrating the importance of including fintech SMEs in the strategic dialogue, the Marketing Director at Fintech Scotland was keen to showcase how they included stakeholders from different types of organisations on their strategic board. Having the CEO of Sharing – a fintech SME firm – on the strategic board highlights the intent to include the voice of participating organisations at the decision-making table. As Fintech Scotland was only established in 2018, it is clear that the voice of fintech firms was prioritised from the beginning as they were included from the start in the strategic planning phases of the fintech ecosystem.

Similarly, the following passage was taken from an interview with the CEO of Fintech Scotland when discussing the planning phase of ecosystem development:

And while there was a core team of us - Fintech Scotland with the University of Edinburgh. In fact, actually what we pulled together was a whole cohort of parts of people; big companies, fintechs, public sector, and others who sort of said 'you know, this would be good'. So that's the most relevant and most prominent example that's been because that's won significant funding to help innovation from central government into that. So, that is the base. (IFS1, Interviews 2020)

There is an acknowledgement here that a variety of ecosystem stakeholders played a crucial role in shaping the trajectory of the fintech ecosystem. The inclusion of a wide range of stakeholders – including representatives from large corporate organisations and small fintech firms – enabled Fintech Scotland to ensure the ecosystem reflected the needs and requirements of multiple stakeholder groups. Critically it seems that inclusion of different stakeholder groups also enabled access to funding from the Government. Particularly in Scotland where one of the key aims of the Scottish Government is to improve social and financial inclusion (Gov.scot, 2018b). Including organisations in the strategy dialogue demonstrated a commitment to delivering an ecosystem that supports the ambitions of firms engaged in fintech activity. Whilst simultaneously providing the Scottish Government with evidence that the fintech ecosystem will fulfil the social and financial inclusion aspirations through tailored innovation and solutions.

Sticking with the planning phase of strategic decision-making. There was further evidence of organisations being involved in the early stages of ecosystem development, as is demonstrated in the excerpt below:

We don't have all the answers, you know, part of our value that we place on initiatives like GEL is that strategic input, and that involvement of the private sector. Because otherwise we wouldn't be able to learn, we wouldn't be able to inform policy decisions, we wouldn't be able to go after various, you know, pots of money or generate ideas that are going to be important to the city. (IGCC1, Interviews 2020)

Referring to the Glasgow Economic Leadership (GEL) forum, the senior Councillor recognises the importance of including private sector organisations on strategic decisions undertaken on investments and projects. The infrastructure for the fintech ecosystem is funded heavily by the Scottish Government and local Council bodies, such as Glasgow City Council, therefore these bodies want to ensure that capital is being invested in areas that will add value for firms engaged in fintech activity. Using the opinions and feedback of organisations to shape policy decisions that in turn will inform the strategic priorities and planning for the various projects undertaken – including the fintech ecosystem.

Shifting the focus towards the strategy formulation phase of the decision-making dialogue. There is evidence to suggest that fintech organisations were included in this stage too, the excerpt below is taken from an interview with the strategic relations advisor for GCID:

You'll be aware that GCID obviously has a steering and not a partnership group, and each of these partners they you know they try and come up with a joint plan on how they try and promote the innovation district you know to businesses or whatever. But I think they've got individual activities as well, so they have a big high-level plan which is joined up. (IGCID2, Interviews 2020)

Extending the discussion beyond the planning phase, the excerpt above highlights the role of each firms' individual activities which contribute to the over-arching strategic plan. There is an insinuation here that fintech organisations, along with other stakeholders, play their part in formulating the strategic actions and activities through their respective areas of focus. This is shown in the below in the extract below:

Now each of the organisations probably has their own part of that. So, the University, in terms of their partner organisations, the strategic partners that we have of organisations that are located within Inovo and within TIC, you know we've been keen to use them as case studies, and speakers and whatever to talk about their experiences. Glasgow City Council were doing similar type events because I mentioned things like they were hosting things in the City Chambers, Scottish Enterprise, again I need to apologise, I'm not as clear on what they're trying to do. And, as I say, it's utilising, I think they've been very, very keen to utilise third parties. So again, going back to your Chamber of Commerce and some of the big support organisations like PWC, people like that, they have almost been keen to involve them. (IGCID2, Interviews 2020)

Institutional stakeholders played a critical role in hosting events and forums to harness feedback and suggestions from fintech stakeholders. These events allowed a larger group of organisations and their representatives to have their voices heard. Collecting feedback on the strategic plans enabled the decision-makers to tailor the strategy formulation to the collective needs and requirements of the wider fintech community. Discussing the influence of including organisations in the decision-making dialogue, the Marketing Director to Fintech Scotland was challenged on the influence of these firms on the strategic decision-making dialogue. His response is shown below:

> *For the first two years, the board as I said earlier was very small, or fairly small. And it was maybe easier for them to influence, or maybe try to influence what we were doing. I have to say the individuals we had around the table were great and they didn't try to push us in any direction. They were here to challenge, in a good way.*
>
> (IFSD3, Interviews 2020)

Discussing the role of the strategic partners board, which is made up of stakeholders from various organisations represented within the ecosystem, the Marketing Director reveals the nature of their role in the decision-making dialogue. He notes that there didn't seem to be an underlying agenda or manipulation of decision-making from the organisations to influence the strategic planning and formulation phases in their favour. Instead, their inclusion challenged some of the assumptions held about the needs and requirements of the fintech community, enabling the decision-making dialogue to incorporate a more accurate reflection of the needs of the fintech firms, as shown in EA1.1. in the preceding sections. As such, the inclusion of both large corporate firms and small fintech firms in the formulation phase of the decision-making dialogue allowed for strategic plans and policies to reflect the requirements of the fintech community.

Finally, the inclusion of organisations in the implementation of strategic decisions was equally crucial to ensuring that strategies were realised in their intended form. The following extracts were taken from an interview with the Marketing Director for Fintech Scotland:

> *Corporate partners are responsible for helping deliver the strategy.*
>
> *They also, in many ways, shape what we do proactively. So, they don't wait for those meetings. They will contact us on an ongoing basis.* (IFS3, Interviews 2020)

Explaining the importance of large corporate partners in implementing the strategies formulates, there is an understanding that these organisations play a crucial role in disseminating the strategic decisions made to the wider ecosystem. These organisations are

engaged in constant ecosystem activity with smaller fintech firms, hence their support and buy-in is vital to the successful implementation of ecosystem strategies. Moreover, as per the excerpt above, corporate firms on the strategic advisory board seem to hold Fintech Scotland and other government bodies and agencies to account. They actively approach them with any concerns and feedback on the strategies implemented, without necessarily waiting for formal meeting times and dates. This further demonstrates their inclusion in the strategic decision-making dialogue.

One such example demonstrating the influence of including organisations in the decision-making dialogue is given by the CEO of Fintech Scotland:

> *I have one other example that I would like to offer. The bit that I would offer on that collective decision-making piece would be the decision for Fintech Scotland to continue. That was certainly in that collective space.* (IFS1, Interviews 2020)

The original plan was for Fintech Scotland to step aside after two years, allowing the ecosystem to govern itself through the interactions between organisations and institutions engaged in fintech activity. However, through the shared decision-making approach, organisations including the corporate players and small fintech firms unanimously decided against allowing Fintech Scotland to disband. They recognised the value added by the organisation in enacting a coalescing mechanism that has overseen the growth of the ecosystem. Evidently, the inclusive decision-making approach by the strategic partners board influenced the decision to remove Fintech Scotland. However, it also raises the questions as to the current development stage of the fintech ecosystem. Perhaps, the ecosystem is not ready to govern itself, and requires a third-party body like Fintech Scotland to mediate where required in ecosystem decisions.

Additionally, fintech firms and corporate organisations are not the only stakeholders that are included in the decision-making dialogue. Institutions like universities and local council bodies have a key role to play in the success of strategic initiatives. As is demonstrated in the below excerpt:

> *And in that respect from the point of view of what we can add value on is how things are implemented, how operations interact with the business models, and how essentially new processes were introduced and how disruption is managed.*
>
> (IUoS1, Interviews 2020)

Here, one of the senior lecturers involved in the fintech movement in Strathclyde University provides insights into how the university has a crucial role in helping facilitate innovative

processes and ways of working. As new solutions emerge from ecosystem interactions, these need to be tested and developed. The university can provide technical knowledge, expertise, research, and facilities that enable innovations to succeed. The disruptive nature of new innovations, technologies and processes means that organisations will be challenged in different ways. Universities can help to mitigate some of these challenges by providing research and insights into developing promising ideas into tangible solutions by working with the fintech community. Hence, the university plays a critical role in the strategic decision-making dialogue, particularly in the success of strategy implementation.

In summation, it is evident that decision-making in the fintech ecosystem includes representatives from various organisations and stakeholder groups. Through the active involvement of these ecosystem participants, the strategic decision-making dialogue allows for multiple voices to be reflected in the strategies developed. There are direct examples given of instances where these organisations have influenced the decisions undertaken through their inclusion in the strategic dialogue. Their involvement ensures that the wider fintech community is represented in the decision-making practices, and decisions are made by considering the interests and needs of the ecosystem participants.

EA6.2 Openness and Closedness in Decision-Making

Having discussed the inclusion of different organisations in the decision-making dialogue in the previous section, the extent to which these stakeholders are included in the strategic discourse is worth exploring further. Commenting on the traditional inward-looking financial services institutions, a senior lecturer at Strathclyde University also heavily involved in the fintech ecosystem commented:

> *The financial services sector is notoriously conservative. So, the large FS* [financial services] *organisations are not particularly outward looking.* (IUoS2, Interviews 2020)

Recognised the bureaucratic red tape often encountered with the established financial services corporates, the lecturer interviewed implied that these organisations would not be inclined to share too much information through the collective decision-making mechanisms. He goes on to elaborate on the evolving culture, with a growing number of stakeholders' keen to deviate from the traditional approach but cautions that:

> *There are, in many cases, individuals within these who are very similarly inclined. But they operate in institutions that work in very different ways.* (IUoS2, Interviews 2020)

In essence there is a shift towards a closed approach being advocated by the large corporate players, who perhaps are keen to avoid sharing too much with organisations, most of whom are their direct competitors.

Similarly, in his reflection on his dealings to date with organisations engaged in the fintech ecosystem, the strategic investor relations advisor at the University of Strathclyde stated:

> *Because we don't know until we start this in earnest, how collaborative the group will be. And then, at what point do we begin to have one-to-one conversations with the partners who are interested either in specific stuff or things that they would prefer not to share or collaborate on.* (IUoS3, Interviews 2020)

There seems to be a pre-emptive sense of fore bearing on how these interactions would unfold. The excerpt above indicates a pivoting point for organisations to shift from an open to closed form of discussion. An indication that collaborative decision-making would involve organisations having to share knowledge, expertise, and potentially valuable intellectual property. Therefore, there will be evident tilts between openness and closedness in firm engagement and inclusion in the shared decision-making dialogue. Whilst the investor relations advisor was speaking from a hypothetical perspective regarding the supposed behaviour of organisations in the strategy dialogue. The Marketing Director for Fintech Scotland was able to reflect on his own experiences of organisations behaviour in the strategic decision-making dialogue.

> *It's moving this, like you said, it's changing all the time. The strategic partners don't want to share everything. For confidential matters they will have one-to-one discussions with us and arrange formal sit-down meetings with potential collaborators. These tend to be governed by contractual agreements and non-disclosure agreements.*
> (IFS3, Interviews 2020)

Discussing the tendency of fintech organisations to shift between being open and transparent in the decision-making dialogue to being reserved in what they share, the Marketing Director noted the use of contract and non-disclosure agreements (NDAs) to restrict access and sharing of valuable information. Hence, it is evident that firms engaged in the fintech ecosystem tended to shift between openness and closedness in their approach to strategic decision-making. Preferring to keep confidential discussions between potential collaborators protected through legal contracts and agreements that prevented any party from exploiting the other. This type of behaviour can deter the collaborative and inclusive ecosystem design advocated by Fintech Scotland and other institutional stakeholders.

EA6.3 Initiatives and Events for Increasing Firm Engagement

To foster collaborative working and to encourage firms to engage in ecosystem activity, there are number of events and initiatives held by Fintech Scotland together with other stakeholders. These are designed to enable like-minded organisations – both large corporates and fintech SMEs – to come together around focal issues impacting the community. As is shown in the excerpt below:

> *You don't put people in the same room just for the sake of having them in the same room, you need to have something for them to kind of congregate around.*
>
> (IFS3, Interviews 2020)

There is a recognition that the firms involved need to be mobilized around issues or interests that impact the fintech community. Otherwise, there seems to be little benefit to any of the stakeholders of participating and engaging with these types of initiatives and events. Instead, these events are intended to encourage organisations to speak to one another and identify the potential collaboration and innovation opportunities can emerge as a result of their attendance and participation. The Project Director to GCID elaborated further:

> *And in the first part of the year, we held a focus group bringing in key businesses from across GCID to find out what they thought we needed going forward, and how we best achieved that.*
>
> *And then we held our first GCID 'Meet the Neighbours' event which took place in March, just after the focus group. And that was a really successful event. We had about seventy registered, thirty-odd people turned up. There was a real buzz in the room. We had a number of different business speaking. So, some of the guys in TIC were speaking, one of the companies in Inovo and one of the companies in Tountine, and another group from South Block. And they all presented and gave a bit of a flavour of the work they did, and the benefit of being within the innovation district.* (IGCID1, Interviews 2020)

Providing organisations already active in the innovation district enables them a platform to showcase the benefits of being involved. Moreover, they are able to share knowledge, awareness, and information on their product offering. Which, in turn, could give rise to potential new collaborations emerging from organisations in attendance at the event.

Similarly, Strathclyde University get involved in hosting these initiatives with the intention of raising the profile of the innovation district and to encourage further engagement between the corporate entities involved in the fintech ecosystem and the wider innovation district. The following extracts reveals more:

> *One of the key focuses on the last senior leadership meeting that took place in December. Jim [Professor Sir Jim MacDonald] was adamant that we were to bring about more activity and the way he saw that happening was through hosting events.* (IGCID1, Interviews 2020)

> *In terms of the intra-cluster or the more corporate activity there are fairly regular meetings with the other cluster teams which are called for by the Principal. So, Sir Jim has a whole series of meetings and typically let's say one a quarter so there's a big get together.* (IGCID2, Interviews 2020)

Hosting more events and initiatives that encouraged increased engagement in the innovation district was seen as a way of helping grow the district. Simultaneously, these events allowed for increased collaborations between like-minded stakeholders, encouraging the development of synergies and innovative thinking between the firms in attendance. Referring to intra-cluster activity, the strategic relations advisor noted that the University's Principal was keen to expand collaborations across the different ecosystems. Bringing together organisations in fintech, regtech, medtech, 5G and quantum to identify opportunities for collaboration and innovation. The following extract provides further insights:

> *There's a number of interesting corporate relationships emerging as well with some of the big banks, and these can be inter-cluster. So, for example, I'm working with the health tech cluster and one of the big banks on a wellness and wearables hub, that would, once established, enable this particular bank to create new insurance and financial products. And so, we see interesting opportunities in the cross-cluster area.*

> *And equally working with, I was just about to do some work with the Quantum cluster, so, we're looking at large scale analytical potential of what quantum could offer. And then some of the other areas like portfolio optimization for financial services businesses and using quantum techniques on things like timestamping.* (IUoS3, Interviews 2020)

From the perspective of the university, who are keen to see all six new clusters under the GCID umbrella grow, cross-cluster collaborations are a welcome opportunity to further develop the innovation taking place within the local region. For the fintech ecosystem and its participating stakeholder, these events and initiatives enable opportunities for identifying synergies and scoping potential collaborations that can progress each parties' respective agendas.

Focusing more specifically on the fintech ecosystem, then Fintech Scotland are shown to have a keen interest in promoting similar events and initiatives that drive collaboration opportunities for participating firms. The following excerpt is taken from an interview with the CEO:

I don't think you can have a blanket approach to 'this is how I'm going to make sure there is collaboration happening, engagement happening'. You can have key things in your strategy, for example, like what we have every year. We have a fintech festival. So, it is an excuse for people to gather, regardless of where they are in their journey. So that is one thing. (IFS1, Interviews 2020)

The fintech festival is the flagship event hosted by Fintech Scotland, whereby multiple different corporate organisations and SMEs from the fintech ecosystem in Scotland hold tradeshows and presentation sessions. These annal festivals are attended by a range of different stakeholders from both the wider fintech community and the general public. The purpose of running the fintech festival events is to enable the fintech ecosystem to attract more participants and increase the potential collaborations and innovations that spin out of these stakeholder interactions. Having ecosystem participants showcase their product offerings and success stories since joining the fintech ecosystem creates an inclusive and transparent culture that manifests itself into forming new networks, relationships, and collaborations between like-minded stakeholders. This perspective is clarified in the interview extract below:

It is really important for us to bring the whole fintech community together for these types of events. I've been to breakfast events, networking events, I've been to, obviously, the conferences that have been put on. And I must say, there is definitely a strong commitment to growing that as we progress. The next stage, really, is to grow that into the city. Creating opportunities for many more people to see the benefits of fintech and how it can shape better outcomes for society.

And for us, ensuring that we support the various events, and support Stephen develop that network of events and activities that take place is of great importance. So, for example, last year, the big conference that they pulled together last year at TIC. You will know the type of thing. We were a key driver behind the funding and supporting that. (IGCC1, Interviews 2020)

The senior Councillor interviewed made reference to a variety of events and initiatives led by Fintech Scotland and key stakeholders in the ecosystem to drive opportunities for engagement and interaction between the fintech community. The nature of these events fosters a collective and collaborative approach to ecosystem growth. By bringing together the wider fintech community and stakeholders who perhaps otherwise would have been omitted from these types of interactions, Fintech Scotland are creating the necessary conditions for developing the ecosystem.

EA6.4 Participation Through Ecosystem Activity

Events and initiatives for engaging the different groups of stakeholders are significant drivers for ecosystem development. However, the opportunities afforded, to those in attendance at these events to participate in the development of the fintech ecosystem is fundamentally crucial to the growth of the ecosystem. This sentiment is demonstrated in the following extract:

> *I also spend a fair bit of time on what we call our inclusive cluster work, which is where we recognize that fintech can touch a real broad breadth of sectors and society, and different types of needs across our economy and across our society. So, I spent a fair bit of time connecting fintech into the likes of consumer groups and consumer organisations.* (IFS2, Interviews 2020)

Recalling her experiences of working with broad business sectors and across society at large, the senior manager at Fintech Scotland acknowledges the significance of enabling the wider stakeholder base to participate in ecosystem development activity. Fintech Scotland were able to create a platform for stakeholder voices to be included through the creation of links and networks between these stakeholder groups and the fintech firms engaged ecosystem activity. In essence, broader groups of stakeholders provided their insights into the issues they were facing in accessing banking and financial services. They participated in focus groups and helped shape fintech innovations that were eventually developed by member firms of the fintech ecosystem. Without the insights, inclusion, and participation of these stakeholder groups in these events and forums fintech firms would not have been able to generate the same level of understanding into how to innovate and resolve the needs of a broad range of customers. By creating platforms for these stakeholder groups to participate in the development of new ideas and technology, Fintech Scotland were creating an environment of open dialogue and between fintech ecosystem participants and the wider community.

Similarly, looking at the wider innovation district that houses some of the fintech activity conducted in Glasgow, there is a similar impetus on involving community stakeholders and groups in the development of new ideas, innovations, and technologies.

> *But what they are also trying to do, they are thinking about what are the different types of events that get out to the people who live in the district, and you know there is a real mix in there. You have got, for instance, the people that live around about the Merchant City and George Square and some of the big apartments, with you know their penthouse balcony overlooking George Square. Going right into the sort of younger people that live in and around Merchant City, the student population. But then you just need to walk a couple of hundred yards, and you start getting into some of the less affluent*

areas if Glasgow. So, they've got to do, probably a different type of 'Meet the Neighbour' event. (IGCID2, Interviews 2020)

In an attempt to engage the local communities and the various different types of stakeholders situated in and around the GCID zones, the strategic relations advisor acknowledges the participation of the local population in the innovation district is key. Perhaps, even more so now given the expansion plans for the district, as is explained below:

I think one of the big, sort of, stipulations for funding for TIC 2 is that they need to come up with a big agenda for the societal impact, so again they have to go out and meet people. (IGCID2, Interviews 2020)

Intriguingly, it seems that one of the policy implications for investing in the development of TIC Zone 2 is the need to improve inclusion and participation opportunities for society in general. Given that this building is due to house the six new clusters for GCID – one of which is fintech – there is a requirement for these organisations to be more inclusive of the local demographic base.

Focusing more specifically on fintech innovations, one of the senior Councillors at Glasgow City council commented:

Because it is vital, you know, we can't have, you can't develop a fantastic fintech app that is going to make managing your finances easy at the end of your hand if you then can't access the internet – or you can't afford to do it.

So, there needs to be, and this is where again we bring that sort of holistic view in terms of the impact that this can have on society. (IGCC1, Interviews 2020)

Recognising the impact of advancing technology and innovations in finance are only beneficial for wider society if consumers have the necessary supporting infrastructure to utilise these services. The Councillor notes the importance of involving consumers in the dialogue as they are the intended end-users for many of ideas, innovations and concepts being developed by fintech organisations. Ensuring that their participation in idea generation and prototype feedback are taken into consideration is paramount to the success of the fintech ecosystem.

The Marketing Director for Fintech Scotland somewhat eloquently surmises the need for involving wider society in the discussion on fintech, when he stated:

We think if you have innovation, but you don't have the inclusion bit, then it's not really fintech. (IFS3, Interviews 2020)

Enabling the wider community to participate in the generation of new ideas allows for innovation to occur. Whereby fintech firms are able to tailor new solutions that meet the needs of a wide range of consumer backgrounds. Essentially, for Fintech Scotland the inclusion and participation of different societal groups is fundamental to generating ideas and innovations that foster the development of the fintech agenda.

EA6.5 Transparency of Information and Communication

Underpinning the participation of various stakeholder and societal groups in the development of the fintech ecosystem is the transparency of information and communication shared with the wider fintech community. In recognising that different groups will require varying degrees of information and insights, the Marketing Director for Fintech Scotland commented on his organisation's commitment to meeting those needs:

> *Every communication we have with them is tailored, first of all, and always relevant, or as much as we can make it anyway. So, they know that if they come to us, they will have an answer around what information was available.* (IFSD3, Interviews 2020)

Providing customised or tailored information that is relevant to the different stakeholder groups is a useful means of filtering irrelevant content that may not add value for particular groups. However, it does raise the question as to how transparent the communications are between the various stakeholders. Could it be that certain stakeholders are not party to particular communications or information that may be of note to them? When challenged on this concept of communication transparency, a senior manager at Fintech Scotland commented:

> *We are taking that message out there and we're targeting those specific locations where we know that our, our domestic fintech population will have something to offer.*
> (IFS2, Interviews 2020)

Defending her organisation's decision to target certain groups of stakeholders based on their location, the senior manager from Fintech Scotland implied that information is shared transparently with affected stakeholder groups. In essence, transparency of information and communication was contingent upon the stakeholder group to which you belonged. Nonetheless, there was a strong sense of transparency and accountability in the information shared with relevant stakeholder groups to ensure they could make informed decisions on their participation in the fintech ecosystem.

Moreover, looking at the institutional stakeholders in particular, then the University of Strathclyde also was keen to ensure that there was transparency across the organisation in their approach to fintech. As is explained in the interview extract below:

> *So, we have a Trello board and we've got all of our projects on that, and now all the project leads and the project teams.* (IUoS3, Interviews 2020)

Given the cross-faculty nature of fintech in the University, as well as the University's engagements with external organisations such as Fintech Scotland, there is a need for transparency in communication across the different stakeholder groups involved. By adopting the Trello board, the different project teams working across the University can see at a glance how their respective projects are progressing. As is explained by a senior lecturer from the University involved in the fintech cluster:

> *So, you can see which projects are getting traction and which ones are not. And that's not a value judgment that is based upon the fact, which is if something is deemed to be important and not getting traction. Then, something has to be done.*
>
> (IUoS2, Interviews 2020)

In other words, the transparent nature of the Trello board captures the progress being made on various fintech projects undertaken across the University's multitude of interested stakeholder groups. The impact of this all-encompassing, high-level overview of the entire organisation's collective approach is discussed below:

> *The Trello and the idea of the projects, in particular the Trello board, have been really almost… It was one of those things was very eye-opening, in that you look at the individual components, you know there is this, and this, and that. And so, you can look at the entirety of the whole thing together in one place.* (IUoS2, Interviews 2020)

Evidently, the visibility of projects undertaken and the accountability of individual projects to separate teams across the University helped to ensure transparency across the whole organisation. Each stakeholder involved in the University's fintech efforts was able to gain the holistic picture on how their efforts at project-level contributed to the overall fintech program. Stakeholders from the University were keen to encourage similar concepts to the Trello board being adopted across the fintech ecosystem, as is shown in the extract below:

> *We have been showing the other parties involved, and they are impressed by what we are doing. The next step would be to implement a similar mechanism across the different groups involved, you know, the large financial services firms and the small fintechs. Letting them see how their involvement can allow the ecosystem to evolve and*

grow. So, there is full, sort of, transparency across the cluster.

(IUoS3, Interviews 2020)

The strategic investor relations adviser to the University expressed his desire to see transparency and accountability introduced across the fintech ecosystem. The use of a mechanism, like the Trello board, that could enable multiple groups of stakeholders to understand how they are contributing to the overall success of the ecosystem.

In summation, the transparency of information and communication shared within the ecosystem and amongst the wider fintech community influences the engagement and participation levels of different stakeholder groups. The intentions of Fintech Scotland to foster a collaborative environment among participating firms and create a socially inclusive fintech community are contingent upon the continuing transparency and accountability of information and communication being shared. Moreover, the quality of output in the decision-making dialogue will be contingent upon the transparency of information and communication shared with different stakeholder groups. As is evidenced in the preceding section, the visibility of the bigger picture enables stakeholders to better understand their role in delivering ecosystem success. Including ecosystem participants and stakeholders, to varying degrees, in the strategic decision-making dialogue is shown to nurture a holistic approach to growing the ecosystem.

6.3 Summary of chapter 6

This chapter presented a large volume of qualitative data collected from the interviews conducted across three institutional stakeholders in the fintech ecosystem. These were augmented by additional insights gathered from external consultants working with Fintech Scotland. Using the techniques of coding and thematic analysis to categorise data (Glaser and Strauss, 1967), commonalities across cases are presented in this chapter. Data analysis is triangulated through coding via the taxonomy, the coding book and through examples presented in the cases. Further triangulation occurs through the inclusion of multiple interviewees and interpreting data from multiple sources together with peer review for external validation (Yin, 2014).

The next chapter summarises the main findings of this research. Explicit answers are provided to the research questions developed from the review of literature in Chapter 2. Subsequently, the research will interpret the data analysis results and discuss the research findings by going back to the literature in order to reach closure.

7. FINDINGS AND RESULTS

This chapter outlines the findings to the research questions, presented in Chapter 2. By undertaking the empirical investigation discussed in the preceding chapters, and through the data analysis completed in Chapter 6, the researcher now offers answers to the research questions set. Following on from this section, the subsequent chapter will present a discussion of the key findings and contributions of this research project for progressing the body of knowledge. Additionally, the researcher also offers insights for practitioners on developing innovation ecosystems through collaborative and open strategies.

7.1 Answers to Research Question One

The first research question established in the literatures review chapter was: *What is the purpose of strategic decision-making in the context of an innovation ecosystem?* In order to answer this question, it is important to consider both the development phase of the ecosystem and the stakeholders involved in strategic decision-making activities (the strategic partners board). Thus, the researcher analysed the ecosystem activities undertaken across the three case study organisations followed by a thematic pattern searching exercise to identify the development phase of the ecosystem. Additionally, in-case analysis offered the researcher with emergent answers to this research question as is presented in this section.

Searching for patterns across the case studies presented some emergent answers to the first research question. These patterns were consistent across all the organisations investigated. Consequently, the researcher can conclude that the purpose of strategic decision-making in innovation ecosystems has a distinct emphasis on the following areas:

- ***Forming a focal value proposition***

Ecosystem stakeholders investigated were mainly concerned with creating a collective value proposition that represented the interests of the wide range of participating firms. This was seen as a critical leverage for attracting organisations to join and participate in the ecosystem. As is evidenced in the example from Fintech Scotland:

> *I think, at one level you could say that it is starting to materialize, .i.e., that reputation as a place where innovation can start, and develop, and grow, and scale. So yes, that sort of*

value around 'here is a place to come'. It's a bit like a laboratory because actually, it's what you test out that can have an impact on society. So, that is the value, where we are trying to get people to come here. Not to be the only place, and not because Scotland is the only place it can be, but because of the way the ecosystem works, it allows you to test things out. Then you can actually use Scotland as a launchpad into the rest of the world, that is the point of it.

Then there is the other side to it which is about fintech being horizontal rather than being vertical. And this is about the impact on having a digital economy, which is more than just fintech. It is about the infrastructure, people having the digital skills, it's about the modern businesses, digital businesses. Essentially, it is all about the digital society.

There is a journey effect really. And the value proposition is 'come here to work local, go global'. And then 'contribute to the digital economy'. That is the value proposition, and that is what the different firms in the ecosystem are here to do. (IFS1, Interviews 2020)

- ***Establishing a purpose for the ecosystem***

The value proposition can help bring large financial services organisations, technology services providers and small fintech firms on board, which is key to driving ecosystem activity. Nonetheless, these firms require a sense of purpose and guidance. This is where the collaborative decision-making efforts from the ecosystem stakeholders contribute to establishing a sense of purpose for the fintech community. As is shown in the example below:

So those collaborations are very much about driving efficiencies within the financial services sector that allow better outcomes for people. And how can they learn from each other and learn from the universities, learn from the SMEs and really help progress the opportunity and so their role very much is coming in, coming up with sort of mindset that they want to be inclusive. (IFS2, Interviews 2020)

- ***Organising and deploying resources***

Considering the relative infancy of the fintech ecosystem in Scotland, there is the need for strategic decision-making to coalesce the resources at the disposal of ecosystem participants. Thus, enabling the participating firms to work towards collective goals and objectives that further the growth and development of the ecosystem. The following excerpt demonstrates this perspective:

The thing is, we mobilize them around things that have been industry issues as opposed to, so, when they come to us, they will have their own personal things they want help with. But when we go to them, it's to speak to them about industry wide opportunities and ways to make a difference. So, for example, that would be around a procurement training program and how to have companies coming together to help procurement get better across the piece.

So, it's not just for them. It's not just for their own benefits. So, Fujitsu, one of our partners, is developing a program with us to engage with the industry. So, all the large financial institutions have been buying into the need, and they all are, that there needs to be some kind of solution for fintech's to sell more easily to large financial institutions.

So, things like helping them get procurement ready is very important. So, mobilizing them behind things like that is very good, because it's not a problem that just RBS or just Lloyds will have, it's a problem they all have. And it is not going to give them a competitive advantage really. It's going to help everyone work better and innovate better.

(IFS3, Interviews 2020)

- ***Setting long-term ecosystem aspirations***

Setting long-term objectives and establishing a vision for the fintech ecosystem was also a fundamental component of the strategic decision-making activity. The strategic partners board are responsible for setting the strategic direction for the ecosystem, and in doing so, to develop a roadmap for achieving the longer-term aspirations for the fintech ecosystem. As is evidenced in the following extract taken from an interview with the CEO of Fintech Scotland who sits on the strategic partners' board:

So top level, that we have from a cluster Centre of Excellence where we're at bronze level, actually, we will have achieved gold level. So, we have the accreditation from the formal European Accreditation body saying that the fintech cluster in Scotland as a cluster excellence of gold level.

What that means, well it's a badge saying we have got to gold, but it means that actually that you have delivered against certain other things in terms of the impact of growing entrepreneurial businesses, number one.

Number two, in terms of that collaboration of small helping big to change. It's helped big to become more successful, the likes of JP Morgan or RBS. Number three is that you have attracted more into Scotland, big companies, not just the ones we have got now but other big companies have moved into Scotland or have grown in Scotland. And also, the fintechs' have been able to expand more internationally. So, that's grown in Scotland but expanded internationally, it's that international dimension.

That the universities are recognised, not just for the skills that they are providing and the people, but also the research and development around what a successful fintech is, and how it impacts society and the economy.

So, there is various sort of criteria against achieving this gold that the badge and the overarching thing is the Centre of Excellence Gold standard, you only get that if you fulfil these certain criteria. So, I guess the flag is, can we get to gold?

And then from that the reputation and delivery that comes from that, is I guess Scotland being recognised as a place to be. Both in the local setting and being globally connected. (IFS1, Interviews 2020)

Resultantly, the answer to research question one is that the purpose of strategic decision-making in an innovation ecosystem is to ***form a focal value proposition***, ***establish a purpose for the ecosystem***, ***organise and deploy resources***, and to ***set longer-term ecosystem aspirations.*** Whilst other strategy activities are also undertaken by the strategic partners' board, these tend to centre around operational-level concerns that feed into the four purposes discussed in the passage above.

7.2 Answers to Research Question Two

The second research question, also based on the literature reviewed in Chapter 2, was: *what are the ecosystem dynamics impacting strategic decision-making?* In order to answer this question, it was important to consider the process of strategy making in the fintech ecosystem together with the structure of the ecosystem. How the ecosystem was being shaped had an impact on the nature of firm engagement in ecosystem activity and the strategic decision-making dialogue. Therefore, the researcher conducted in-case analysis to seek emergent answers to how the intricate dynamics of ecosystem activity impacted on the strategic decision-making dialogue.

From this inductive approach to analysing the data, it can be concluded that the following ecosystem dynamics had a considerable impact on the nature of strategic decision-making within the fintech ecosystem:

- ***Transparency of information and communication***

Underpinning the development of the ecosystem is the value of becoming a participating firm and benefitting from ecosystem membership in a manner that would otherwise not be achievable. In order to ensure that the ecosystem continues to deliver for all participating firms there was a certain degree of consistency and transparency required in ecosystem communication and sharing of information between the firms. However, this exercise was by no means an easy feat. Some of the larger financial services and technology services firms participating in the ecosystem were traditionally, and continue to be, competitors in the market. Hence, managing these relationships meant that transparency of information and communication would be under constant scrutiny. The following extract from Fintech Scotland sheds further light on this perspective:

So, all the partners have at least one meeting a quarter with us, at the very least. It's a lot more usually, but we make sure we always keep a relationship with them because the board meeting is not that the right platform for this type of discussion. It is too big. And because we've got thirteen financial institutions, sometimes competitors, it's not possible to be completely transparent. You know, between themselves they can't always speak their minds. (IFS3, Interviews 2020)

Similarly, the Marketing Director interviewed referred to the content of the email communications in a later extract:

Every communication we have with them is tailored first of all and always relevant, or as much as we can make it anyway. (IFS3, Interviews 2020)

Meanwhile, the following excerpt comes from an interview participant from Glasgow City Innovation District (GCID) discussing the lack of transparency around the strategic objectives:

I don't think I've seen a strategic document first of all, you know there's a couple of brochures floating about and what not, but I haven't really seen anything, that I would say is 'here is the strategy'. (IGCID2, Interviews 2020)

Nonetheless, there seems to be a recognition that progress is being made with plans being drawn to align the communications and ensure clarity and transparency of the message they want to be portrayed to the wider ecosystem. As is showcased in the example below:

So, there is a plan, a communications/ marketing plan to try and get out there and using social media to try and stimulate that, because part of the challenge obviously is to get the message overseas as well. (IGCID2, Interviews 2020)

Despite the limited success evidenced in the empirical investigation, there seems to be an acknowledgement across the ecosystem stakeholders that transparency of information and communication will be critical to growing the ecosystem. How quickly the strategic partners' board can implement those plans will determine the size of growth observed by the fintech ecosystem.

- ***Inclusion of participating firms in decision-making***

Further expanding on the value realised by ecosystem participants, then looking at the role they play in the strategic decision-making dialogue is important. Whilst participation in ecosystem activity can open doors for firms looking to establish new relationships and create new opportunities for collaborative working and generating new innovations. These participating firms can also play a pivotal role in shaping the ecosystem through their inclusion in the decision-making conversation. The following example is taken from Glasgow City Council:

On Monday night we had a two-hour call, on Microsoft Teams, with a number of the key players in the city. As well as a growing number of small businesses because there is a recognition in the city that, from a sectoral strategic position, we need to involve and include many of the smaller fintech businesses and learn from them. I think, that is a really important point in all of this. (IGCC1, Interviews 2020)

Sticking with the theme of involving the small fintech firms in strategic interactions, the following example from Fintech Scotland sheds further light on the nature of their involvement in the decision-making dialogue:

They've been, you know, at the centre of everything. And I know that's very easy to say that, but with a little… you know, we can prove it actually. One of them was sitting on our board for two years. Company called 'Sharing'. So, they are now not a start-up, they are more like a scale-up now. But at the time they were very much a start-up. And again, you know, going back to inclusion. It's not just financial inclusion, its diversity, so their CEO Jude Cook was on our board. It's rare to have a female entrepreneur in the fintech space.

So, that was very important for us. And now, because we've got more strategic partners, we didn't want to have an even bigger board with maybe 10 fintechs. So, what we're going to do is, we're going to have a board with the strategic partners and another board with the fintechs, so they can keep, you know, driving the community.

And in there, you'd have different stage of companies from start-up to scale-ups to large FS (financial services firms) and they're very important to us. (IFS3, Interviews 2020)

Furthermore, there seemed to be an agreement cross all the institutional stakeholders that including ecosystem participants in the strategic decision-making dialogue is important. As is demonstrated in the excerpt from GCID below:

I think we've definitely got to involve the businesses. Otherwise, I am just sitting in an ivory tower, you know, developing something that might not actually work on the ground. (IGCID1, Interviews 2020)

- ***Role and influence of keystone firms***

Keystone firms such as Fintech Scotland – the enabling body behind the fintech ecosystem in Scotland – and organisations such as Strathclyde University that serves as long-standing institutional stakeholder, have a key role to play in the decision-making dialogue. The organisations play a crucial role in facilitating the strategic decision-making dialogue through their positioning in the ecosystem. The interventions made by these organisations help to foster the environment and platform for strategic dialogue between the participating firms. This perspective is elaborated further in the excerpt below:

Fintech Scotland is an independent organisation, not-for-profit body that exists as a 'strategic enabler' for the fintechs in the Scottish economy – providing the platform to catapult the smaller fintechs to reach incumbent banks and other service providers. (IFS2, Interviews 2020)

Fintech Scotland, as a '*strategic enabler*', plays a vital role in coalescing the different component parts of the ecosystem. The following excerpt from the Executive Chairman of Fintech Scotland provides additional insights:

So, we're acting as that kind of glue that helps people sort of connect up because they don't necessarily see it automatically themselves. I mean, we were, if we didn't exist there wouldn't be any kind of framing in bringing some of those parts together.

(IFS1, Interviews 2020)

Similarly, the University of Strathclyde has a key role to play in the fintech ecosystem, not least because of the research being undertaken in the University but also the significance of fintech as an area of strategic priority at the institution. The example below from GCID demonstrates the role of the University:

With the University being the anchor tenant, the University opened the Technology and Innovation Centre five years ago. It's very much a flagship building for the University where industry and academia are working collaboratively. And we saw through the development of the Technology and Innovation Centre, that more and more businesses were looking to co-locate in close proximity to the University to take advantage of the skills and the experience and the research that was being undertaken by the University. And to use that by the businesses to further develop their own business.

(IGCID1, Interviews 2020)

The following excerpt focuses more specifically on the fintech ecosystem:

Can we also at the same time, create with a local financial ecosystem added value that will create and bring jobs to Glasgow, that will justify the support and Scottish Government to the university in a number of other projects? (IUoS1, Interviews 2020)

Recognising the wider socio-economic benefits that can be derived from the development of the fintech ecosystem, as well as opening doors for the University to seek further funding from the Government in the form of research grants. Hence there is an underlying mutual benefits perspective to the approach adopted by Strathclyde University in respect of their involvement in the ecosystem decision-making dialogue.

Thus, the answer to the second research question is the following ecosystem dynamics by increasing firm engagement in ecosystem decision-making through the fostering of an **inclusive environment**, where **communication is transparent** and **keystone firms play an**

influential role in nurturing ecosystem. These aforementioned dynamics create the necessary conditions that allow those firms to **shape the ecosystem**.

7.3 Answers to Research Question Three

The final research question was: *what are the key strategy initiatives undertaken by innovation ecosystem participants in the strategy process?* The emergent answers to this question were formed inductively from the data analysis stage. It can be concluded that the following key strategy initiatives involved the inclusion of ecosystem participants:

- **Building a sense of community**
- **Establishing formal relationships and networks**
- **Developing platforms for sharing information**
- **Responding to unprecedented changes in the environment**

For example, the Fintech Scotland website states:

> *We encourage relationships between large established financial services institutions and fintech firms, as well as facilitating the connections with the universities, technology and services providers, public body agencies and regulators such as the Financial Conduct Authority (FCA).*

Whilst the following example from Strathclyde University provides further insights into the nature of strategic interactions between participating organisations:

> *But you go to these meetings and a lot of these people will say 'but the softer part of the infrastructure, which is the links that exist and the fact that people who can help each other out, is enormously helpful for somebody starting out'.*
>
> (IUoS3, Interviews 2020)

The Chairman for Fintech Scotland also stated:

> *It's not just about those physical buildings, it is important that when looking across Scotland there is an opportunity to plug into what we refer to as virtual platforms or factory environments that allow big companies to share for example their data with smaller companies in order to innovate and generate those new opportunities in which their business operates.* (IFS1, Interviews 2020)

Many such examples from the institutional stakeholders discussing the types of strategy initiatives undertaken by ecosystem participants are summarised in greater detail in the Data Analysis section (chapter 7).

7.4 Answers to the Overall Research Question

In conclusion, to answer the overarching research question: *How do firms strategically align around a focal value proposition in an innovation ecosystem?* This thesis found that the strategic alignment of participating firms in the fintech ecosystem around the focal value proposition is achieved through the **inclusive** and **collaborative decision-making practices**. The strategy process is highly contingent upon the **transparency** of information shared with participating organisations. Whilst the **participation** of these firms in the strategy process is **optional**, the benefits of ecosystem membership are universally **available to all participating firms** should they wish to avail them. Nonetheless, there was some evidence that the alignment of firms around the focal value proposition remains an ongoing concern. This was partly attributed to the evolving nature of the ecosystem as it continues to grow from its infancy stage, as well as the relatively recent expansion of the strategic partner board to thirty participating organisations and Government entities. Finally, the government restrictions imposed as a result of the ongoing COVID-19 pandemic have stagnated the intended growth trajectory of the fintech ecosystem. However, simultaneously, it was found that the pandemic has also accelerated the adoption of online platforms for ecosystem interactions and collaborations. The temporal element of these restrictions and the subsequent behaviour of ecosystem participants would benefit from undertaking a longitudinal investigation, which goes beyond the remit and scope of this doctoral thesis.

Looking through the lens of social constructionism indicates that there is an embedded sense of **purpose** for how the intricate and dynamic interactions between ecosystem participants give rise to the collaborative nature of the strategy making practices in the ecosystem. **Strategy initiatives** are designed to support collaboration amongst participants to enable the ecosystem to grow and adapt to the environmental and contextual environment influencing these interactions. Such interactions are aided by the transparency of information shared amongst participating members, that otherwise would not be afforded to an external, third-party firm not privy to the ecosystem. The focal value proposition emerges through a non-linear web of interactions, which are themselves rather **dynamic** and constantly evolving due to the infancy of the ecosystem and its growth trajectory. The combination of answers provided to RQ1, RQ2, and RQ3 combined help explain the nature decision-making within the ecosystem that contributes to the strategic alignment of participating firms around the focal value proposition. These are represented in Figure 7.1.

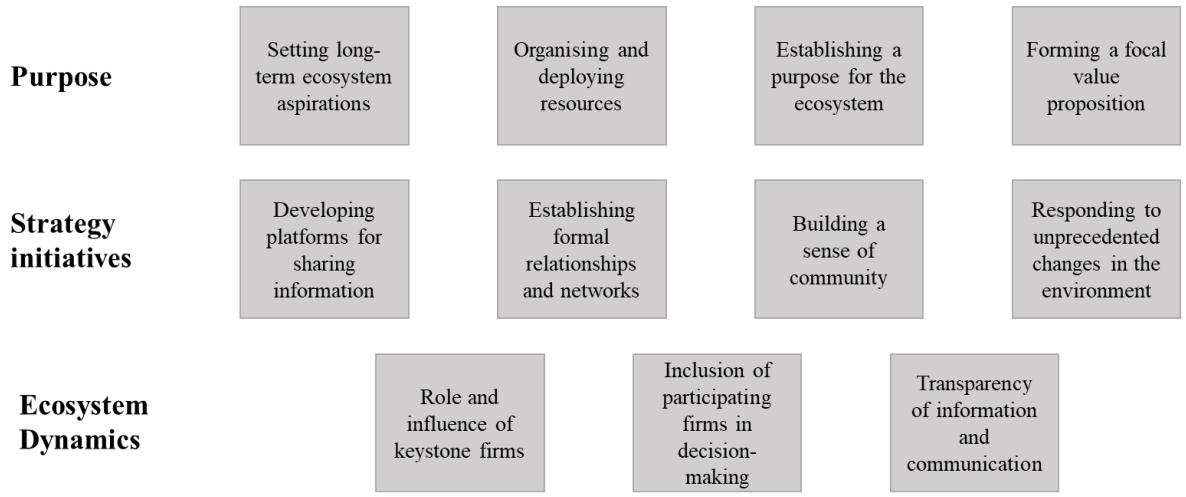


Figure 7.1 Addressing the RQs through the lens of social construction

7.5 Summary of chapter 7

In Chapters 6 and 7 this thesis has provided rich empirical examples grounded in the practice of ecosystem activity that demonstrate how participating firms in the ecosystem engage in the strategic decision-making activity. The strategy process is a dynamic undertaking that oscillates between open, collaborative, and inclusive stages to closed and private interactions. The focal value proposition in the ecosystem is an evolving concept that is shaped through the ongoing interactions and dynamics of ecosystem activity which in turn foster the alignment of participating firms around the shared value proposition. This study has uncovered some original and robust insights into the dynamics of strategic decision-making in an innovation ecosystem context.

8. DISCUSSIONS

The previous chapter addressed the research objectives by providing precise answers to each of the research questions underpinning this study. Next, the research contributions to theory and practice, together with the implications of this study are summarised in this chapter. Finally, this section concludes by outlining some of the retrospective reflections from conducting this extensive doctoral research study and provides suggestions for a future research agenda.

8.1 Review of the Research Objectives

The motivations for carrying out this doctoral research study are to theoretically and empirically contribute to the fields of strategy in innovation ecosystems. Recent calls for both conceptual and empirical clarity on ecosystem strategy have been growing (Adner, 2017; Jacobides, Cennamo & Gawer, 2018). The comprehensive material included in this research contributes to both theory and practice. Enhancing our knowledge of how participating firms in the fintech ecosystem take part in the strategic decision-making dialogue and further provides insights into the strategic alignment of those firms around the focal value proposition in the ecosystem. Lastly, this research study indicates a number of perspectives that should be thought-provoking to consider from a managerial perspective. These original contributions together with their implications are presented in this section.

Revisiting the objective of this research, this study set out to answer the broad research question: *how do firms strategically align around the focal value proposition in an innovation ecosystem?* In order to clarify the strategy process in the innovation ecosystem context, it was necessary to address the following research questions:

1. What is the purpose of strategic decision-making in the early stages of ecosystem establishment?
2. What are the ecosystem dynamics impacting strategic decision-making?
3. What are the key strategy initiatives undertaken in the generative phase of an innovation ecosystem?

In order to answer the above research questions, this research addressed them in two parts. Firstly, through the systematic literature review of strategy in innovation ecosystems and by

reviewing the wider literature on innovation ecosystems and strategy. Secondly, the empirical research project involved researching three institutional stakeholder organisations associated with the emerging fintech ecosystem in Scotland.

In line with the work of Tranfield, Denyer and Smart (2003), the systematic literature review process was complimented by the inclusion of scholarly text publications and journal articles that were omitted by the database search. Meanwhile, the empirical investigation sought to reach an informed understanding on the application of theory in light of the results achieved. The three case study organisations investigated formed part of the institutional stakeholder base, one from the higher education sector, the other represented the Scottish Government, and the final firm was a not-for-profit standalone organisation commissioned by the Scottish Government to oversee the development of the fintech ecosystem.

It is important to mention here that the research was carried out in accordance with the research methodology outlined in Chapter 4. The systematic literature review established the boundaries for this research and subsequently directed the empirical investigation. The qualitative data collected from multiple sources was analysed through the adoption of the Gioia method (See Appendix 8). The analysis presented in the data structure table in Chapter 6 was discussed with multiple researchers and cross-case analysis was conducted to ensure consistency in approach across the case study organisations. This approach ensured triangulation and the findings were further proven to be reliable through internal and external validation processes. Hence, this doctoral research project is thought to be of a good quality. Nonetheless, there are limitations to this research similar to other research projects of this nature, these are disclosed later in this chapter.

8.2 Discussion on Findings

This section will provide a discussion of the key themes observed from the dataset through the provision of case study examples followed by how these relate to the extant literature in the field. The findings presented below are shown to agree or disagree with the literature. Therefore, the ensuing discussion between the empirical findings and literature enable this study to envelop literature. The discussions are centred primarily on the nature of strategy making specific to the context of innovation ecosystems. Consequently, multiple points of convergence between the literature and the data are not seen as the main focus in the proceeding sections. Resultantly, this section will outline the original contributions of this research.

8.2.1 The efficacy of process theory in this study

How the strategy process unfolds in an innovation ecosystem context is a significant question, not least because existing literature has seen calls for both conceptual and empirical inquiries. From the researcher's own observations and interpretations of the emerging fintech ecosystem, there didn't appear to be any direct reference to strategic decision-making processes. Instead, stakeholders from the case study organisations involved in the ecosystem referred to a series of different activities that informed the strategy making process. Beginning with the guiding conceptual framework, derived from the literature, allowed the researcher to deconstruct the strategy process into a set of activities (Table 6.3). Those categories allowed the researcher to interpret the strategy process that was fragmented into multiple activities that interview participants often citied in their responses. The researcher found that despite the lack of a defined process for strategy making, there was evidence that a multitude of ecosystem participants were engaged in the strategic decision-making activity. Therefore, this study indicates that process theory is valid and useful in the context of this research project.

8.3 Revisiting the Research Questions

The previous chapter addressed the set research questions based on the empirical findings of this research project. Here, these same questions are now tackled based on the various themes observed from the data analysis and findings, combined with how these relate to the literature. The findings may agree or disagree with literature, therefore a discussion between the empirical findings and the literature is provided in this section to allow this study to enfold the literature. The key findings discussed centre upon the strategy process unique to the generative phase of ecosystem development. Hence, many perspectives covered in the data analysis chapter that conform to the literature may not be the focus of the discussion in this section. Resultantly, the subsequent section will outline the original contributions made in this research project.

8.3.1 *RQ1: What is the purpose of strategic decision-making in the early stages of ecosystem establishment?*

The previous chapter answered the above research question through the empirical investigation, finding that the purpose of strategic decision-making in an innovation ecosystem is to ***form a focal value proposition***, ***establish a purpose for the ecosystem***, ***organise and deploy resources***, and to ***set longer-term ecosystem aspirations.***

The literature on ecosystem strategy is convoluted with publications in the strategy sphere being increasingly more considerate of the ecosystem approach (Jacobides, Cennamo and Gawer, 2018). Leaning on the work of Adner (2017, p.42) "the ecosystem is defined by the alignment structure of the multilateral set of partners that need to interact in order for a *focal value proposition to materialise*". This research project corroborates the literature on the need for alignment between partner firms, finding that *forming a focal value proposition* is a crucial component of ecosystem strategy at the generative phase of ecosystem development.

Whilst literature mostly discusses the need for modularity and coordination (Baldwin, 2008; Tee, 2019), limited studies have focused on the content of ecosystem strategy. For instance, Teece (2018) focuses on the structure of the ecosystem through the lens of the complementarities, whilst Jacobides, Cennamo and Gawer (2018) suggest that ecosystems emerge through (partially) design-based processes. Adner (2006, p.4) explains strategy formulation to be an iterative process centred upon assessing three specific types of risks - *interdependence*, *initiative*, and *integration*. Meanwhile, other authors have noted the significance of multi-sided platforms (Zhu and Iansiti, 2012; Gawer and Cusumano, 2014; Helfat and Raubitschek, 2018; Mancha and Gordon, 2021) or hub-and-spoke network designs (Ashton, 2009; Overholm, 2015; Furr and Shipilov, 2018).

Similarly, studies exploring ecosystem strategy in the early stages of ecosystem development seem to conform to the structural perspective. For instance, Dedehayir, Makinen and Ortt (2018) investigate ecosystem or network roles held by participating firms, Ryan *et al.* (2021) in a similar vein focus on the role of large corporates (MNEs) in developing entrepreneurial ecosystems. However, these studies have largely ignored the content of the strategic activity, focusing instead on the structure and relationships being formed. Thus, this doctoral research project has addressed a gap in the literature by providing insights into the purpose of strategy making in ecosystems, focusing specifically on the early generative phase of ecosystem development. In doing so, it has also answered the first research question by establishing that, in the context of the Scottish fintech innovation ecosystem, the purpose of strategic decision-making is to ***form a focal value proposition***, ***establish a purpose for the ecosystem***, ***organise and deploy resources***, and to ***set longer-term ecosystem aspirations.***

8.3.2 RQ2: *What are the ecosystem dynamics impacting strategic decision-making?*

The empirical investigation provided insights into this research question, revealing that the following ecosystem dynamics increasing firm engagement in ecosystem decision-making

through the fostering of an **inclusive environment**, where **communication is transparent** and **keystone firms play an influential role** in nurturing ecosystem success. This section positions the findings from the empirical investigation in relation to the key perspectives presented in the literature to provide informed discussions on how the findings from this project may or may not support the literature.

The literature on open innovation ecosystems (Rohrbeck, Holzl and Gemunden, 2009; Chesbrough, Kim and Agogino, 2014; Xie and Wang, 2020) corroborates the significance of establishing an environment conducive to inclusiveness and transparency. For example, Chesbrough, Kim and Agogino (2014) present the case study of the Chez Panisse ecosystem – an open kitchen concept – as being synonymous with creating an open, inclusive, and transparent culture for information-sharing, collaboration, and innovation. Similarly, Luedicke *et al.*, (2017) explain through the Premium Cola case study that transparency and inclusivity both underpin the open strategy approach adopted by the German cola manufacture. The empirical study of the Scottish fintech ecosystem validates the perspectives raised in the open innovation strategy literature. The findings corroborate the need for inclusivity in collaborative decision-making, with transparent communication playing a crucial role in ecosystem growth.

Moreover, Iansiti and Levein (2004a) demonstrate the significance of keystone firms in driving ecosystem growth. Although they seem to explore fully-fledged technology ecosystems in their publication, rather than those at the generative phase of development, their findings are generalised for various ecosystem types and stages of development and growth. Barnett (2006) provided a critique of Iansiti and Levein (2004a), stating that the need for modularity and standardisation in technology ecosystem – where large and powerful corporations like Apple or Microsoft are responsible for orchestrating the whole ecosystem – lend itself to the keystone perspective. Meanwhile, Zahra and Nambisan (2012) offer four different perspectives on the role of keystone entities: (1) the orchestra model, (2) the creative bazaar model, (3) the jam central model, and (4) the MOD station. Here, the keystone perspective is varied dependent on the structure of the ecosystem. For instance, the 'jam central model' advocates the role of "independent entities, such as research centres, collaborating to envision and develop an innovation in an emergent or radically new field" (Zahra and Nambisan, 2012, p.226). This resonates with the findings from this doctoral research project, whereby independent entities such as, the University of Strathclyde were involved in the collaborative efforts to establish and develop the ecosystem. Where more than one organisation is responsible for nurturing

ecosystem development, hence contributing to multiple actors assuming the role of keystone at various stages during ecosystem genesis.

However, the research conducted differs from the existing literature as the limited maturity of the Scottish fintech ecosystem provides unique insights that appear to be overlooked in prevalent literature streams. The investigation of an innovation ecosystem at the generative phase of development – where the ecosystem is yet to truly realise the impact of the birth stage of the ecosystem lifecycle model – provides a specific context which appears not to have been addressed in existing studies. The findings from this empirical project partially support the literature as there was evidence of establishing a collaborative and **inclusive environment**, characterised by **transparent communication**. Where multiple organisations enact the role of the **keystone firm and play a crucial role** in the development of the ecosystem at various junctures in its establishment. Yet, the contextual setting of the Scottish fintech ecosystem, which at the time of investigation could be said to be at the embryonic stage of growth, provides unique insights into the dynamics impacting on ecosystem decision-making.

8.3.3 RQ3: *What are the key strategy initiatives undertaken in the generative phase of an innovation ecosystem?*

The empirical investigation uncovered the key strategic initiatives undertaken in the creation of the Scottish fintech ecosystem. These were revealed to be concentrated on **building a sense of community** by **establishing formal relationships and networks** and **developing platforms for sharing information.** Additionally, perhaps as a direct consequence of the COVID-19 global pandemic, it was discovered that **responding to unprecedented changes in the environment** formed a key part of the strategic discussions undertaken by the ecosystem's strategic partners' board. The proceeding section places the empirical findings alongside the scholarly contributions identified in the literature, identifying how findings from this project may or may not be supported by the literature.

The literature on ecosystem strategy is relatively nascent with recent calls for improved understanding of both the structure and content of strategy making in ecosystems (Adner, 2017; Jacobides, Cennamo and Gawer, 2018; Jacobides, 2019). Traditional perspectives on strategy focus on a firm's competitive environment (Rumelt, 1991; Porter, 1996) where firm performance and competitive advantage perspectives take precedence (Subramaniam, 2020). However, with the ecosystems perspective there is an increasing focus on interlinkages and

interdependencies between firms and their business activities (Subramaniam, Iyer and Venkatraman, 2019).

Strategy scholars have also been grappling with understanding how strategy unfolds in these ecosystem constructs. Gulati, Wohlgezogen and Zhelyazkov (2012) lend on the network and strategic alliances perspective, whilst Adner (2006) and Adner and Kapoor (2010) focus on the innovation and technology viewpoints. Borrowing from existing theoretical perspectives these authors attempt to understand how strategy is enacted – in a nod towards the *structuralist* approach championed by Adner (2017). Yet, understanding the content of strategic decision-making remains a relatively underexplored component in existing literature. Empirical investigations of existing ecosystems (Suresh and Ramraj, 2012; Chesbrough, Kim and Agogino, 2014) tend to converge on the success of the ecosystem based on its progression through the lifecycle model.

Talmar *et al.* (2020) propose the *ecosystem pie model* (EPM) tool which, similar in nature to the business model canvas (Osterwalder *et al.*, 2011), provides a template to frame the discussion on *resources, activities, value addition* and *value capture* mechanisms that underpin ecosystem strategy making. Their empirical investigation into SME organisations across multiple sectors implementing their EPM tool provides insights into the content of strategy-making within the respective ecosystems those organisations belonged to (Talmar *et al*., 2020). However, their study focused on individual organisations as the unit of analyses, with insights provided into how these organisations approach decision-making in ecosystems in an attempt to create and capture collective value for their respective ecosystems.

Relatively little is published on how the content of strategy making differs in an ecosystem, or more specific to this doctoral research, what key strategic initiatives are undertaken at the ecosystem genesis stage. To the best of this researcher's knowledge there are limited studies directly exploring the content of strategic decision-making in innovation ecosystems. This doctoral research has attempted to address this gap by identifying the key content from the strategic decision-making dialogues observed in the Scottish fintech ecosystem. Theoretical perspectives in networks and alliances are useful in understanding the relational interplay between ecosystem participants, however they do little in addressing questions on the content of the strategy being disclosed.

The findings from this empirical project suggest that **building a sense of community** by **establishing formal relationships and networks** and **developing platforms for sharing**

information were the fundamental strategy initiatives undertaken at the generative phase of development of the fintech ecosystem in Scotland. These findings imply that theoretical perspectives on networks and alliances are useful in understanding the relational interplay between ecosystem participants. However, they do little in addressing questions on the content of the strategy being disclosed. Future research may seek to address this directly, perhaps through a multiple case study approach, in order to validate the content of strategic decision-making across multiple innovation ecosystem contexts.

8.4 Contribution to Theory

The previous chapter outlined the contribution of this study in relation to the research questions posed. However, addressing the research questions alone does not necessarily equate to theoretical contributions. The findings of this research corroborate the existing literature in a number of ways. For instance, the function of strategic decision-making in the ecosystem context was seen as being crucial in shaping the growth of the ecosystem and contributing to establishing a focal value proposition. Whilst the aims of this research project were not to understand the nature of how strategy making activity between large corporates and fintech SMEs differs in an ecosystem context. This study has uncovered some significant insights into the dynamic attributes of ecosystem strategic decision-making that differ from the traditional perspectives on strategy. Supporting Adner's (2006, p.40) perspective that the ecosystem "*introduces a new dimension of consideration for traditional strategy"*. There is a need to adjust our thinking to make sense of ecosystem complexities, with Jacobides (2019, p.137) stating that "*we must shift from rigid strategies based on prescriptive frameworks to dynamic experiments based on a process of inquiry*". Through such process of inquiry, this research sheds light on the distinctive features of the strategy process in the generative phases of innovation ecosystem development which should be addressed in future research.

8.4.1 Ecosystem Lifecycle Approach

The general consensus in ecosystem development literature seems to follow the ecosystem lifecycle approach championed by the seminal work of Moore (1993, 1996). Where the development of the ecosystem is broken down into four evolutionary stages akin to the biological ecosystem: *birth*, *expansion*, *leadership* and *self-renewal* or *death* (Moore, 1993). Whilst numerous studies have been conducted into ecosystem expansion and leadership phases (Gawer and Cusumano, 2002; Iansiti and Levien, 2004a; Rong, 2011; Kapoor and Lee, 2013;

Makinen and Dedehayir, 2014), there have been a growing number of calls for further investigation into how ecosystems are brought into existence (Autio and Thomas, 2014; Dedehayir, Makinen and Ortt, 2018).

- ***Ecosystem Genesis***

Only a limited number of empirical examinations on the ecosystem *genesis* process have been conducted to date (Dedehayir, Makinen and Ortt, 2018). Through their investigation of new venture creation in the pharmaceutical sector, Garnsey and Leong (2008) found that public opinion was the significant driver in legitimising the activities of physicians and hospitals. Meanwhile, Thomas and Autio (2013) probed the development of six different digital platform-based ecosystems, concluding that there are four key activities underpinning the emergence of the ecosystem: technological activities, resource activities, institutional activities, and context activities. Lastly, Dedehayir and Seppanen (2015) deduced that the ecosystem birth phase can be split into two distinct sub-phases, the discovery and start-up sub-phases. Dedehayir and Seppanen (2015, p.146) explain that the discovery or invention sub-phase:

> *marks the discovery of a new technique, method, product, or process, in other words a new technology, and also incorporates the technical feasibility assessment of the technology (e.g., through pilot testing). The discovery of a new technology is at times the result of systematic exploration and at other times through mere serendipity.*

However, to the best of this researcher's knowledge there have not been any studies conducted on the strategy activity undertaken within the ecosystem at this early generative phase of ecosystem development. Moore (1993) contends that the volatile nature of the ecosystem during the birth phase requires the ecosystem leader or keystone firm (Iansiti and Levien, 2004b) to assume a central position in order to align the ecosystem and ensure co-operation between providers of complimentary products that when combined can create value for the customer. Nevertheless, this perspective rests uneasy with observations taken from the fintech ecosystem in Scotland, where, to date, there remains no keystone or dominant firm leading the ecosystem. Instead, Fintech Scotland acts as a *coalescing mechanism* that is responsible for overseeing the emergence of the ecosystem at this early generative phase. By maintaining open dialogue with the multitude of stakeholders, as well as facilitating collaborative decision-making, they are helping to pave the way for the birth phase of the ecosystem. At this early generative phase of the Scottish fintech ecosystem, there is no *discovery of a new technique, method, product or process* (Dedehayir and Seppanen, 2015,

p.146). Ecosystem participants are instead concerned primarily with fostering an environment with the necessary conditions and boundaries for the ecosystem to come to be born.

Ecosystem Roles

Ecosystem roles have been discussed widely in nascent literature on ecosystem development (Lafuente, Vaillant and Rialp, 2007; Muegge, 2011; Zahra and Nambisan, 2011; Feldman and Zoller, 2012). In discussing the innovation ecosystem genesis process, Markham *et al.*, (2010) identified three informal roles played in the development of the ecosystem; these were identified to be (i) *champions*; (ii) *sponsors*; and (ii) *gatekeepers*. Dedehayir, Makinen and Ortt (2018) deconstruct these three roles, explaining that: *champions* are responsible for discovering new ideas and concepts that can be developed into potential future products; *sponsors* provide the technical and financial support to the project; and *gatekeepers* set the framework and criteria for acceptance before the ideas can move on to the product development stage. This research did not set out to investigate ecosystem roles directly, however through understanding the roles enacted during the generative phase of ecosystem development, further insights could be offered into how the fertilisation of the environmental conditions for projected ecosystem birth and growth is achieved. Interview participants alluded to certain roles being held by institutional stakeholders, for example Fintech Scotland was often referred to as the *glue* or the *gel* that bonds the ecosystem together, whilst another interviewee described the organisation as a *coalescing mechanism.* While this perspective was considered as being out with the scope of this research, future research may consider the contingencies influencing stakeholder roles in the Scottish fintech ecosystem.

Meanwhile, Zahra and Nambisan (2012) outline four types of ecosystems: (i) *orchestra*; (ii) *creative bazaar*; (iii) *jam central*; and (iv) *mod station*. Of particular significance here is the *jam central* ecosystem type which Zahra and Nambisan (2012, p.226) explain "*involves a collection of independent entities… collaborating to envision and develop an innovation in an emergent or radically new field*". This definition seems to correlate closely with the observations made into the fintech ecosystem in Scotland, as presented in Chapters 6 and 7 of this research. Although Zahra and Nambisan (2012) refer to knowledge ecosystems as the prevalent type demonstrating these characteristics. Their clarification on the nature of collaborative dialogue and discussion as being a precursor for the successful commercialisation of the new idea, concept, and technology bears significant resemblance to the observations made through the empirical investigation undertaken for this doctoral research project.

Leydesdorff and Meyer (2003) explain the relationship between government, industry and universities as being the *triple helix* of innovation that spurs entrepreneurial activity and economic growth. This perspective resonates strongly with the interview excerpt disclosed above, where these three aforementioned groups play a fundamental part in driving forward the mandate for the Scottish fintech ecosystem. In this type of ecosystem, major breakthroughs in innovation tend to be made by the smaller, independent ventures (Zahra and Nambisan, 2012). The large corporates then either take a large stake in the new venture or alternatively buy the firm and technology rights in order to capitalise on the learnings of the independent venture (Zahra and Nambisan, 2012).

Revisiting the ecosystem lifecycle approach introduced at the beginning of this section, the current phase of development being undertaken by the Scottish fintech ecosystem appears to reside in the *birth* phase of ecosystem development (Moore, 1993). With the data analysis and findings presented in this research demonstrating that the ecosystem has not reached the *growth* phase of Moore's (1993) ecosystem lifecycle model. The preceding stage of Moore's (1993) model, covering the *birth* phase of ecosystem development, entails a number of different scholarly perspectives attempting to provide clarity on what activities underpin this stage. As previously discussed, Dedehayir and Seppanen (2015) deconstruct this stage into two sub-phases: start-up and discovery phases. Meanwhile, Sant *et al.*, (2020) building on the work of Gawer (2014) suggest that ecosystems are constructed around the focal node, which can be a technological platform or a specific economic or social condition, that entices key players to join the ecosystem. This gives rise to the core-periphery structure (Su, Zheng and Chen , 2018) where a focal firm and supporting actors come together to comprise the ecosystem.

- ***Ecosystem Birth***

Nonetheless, in appraising the development phases of the ecosystem, authors basing their work on Moore's (1993) ecosystem lifecycle approach have mentioned a tiple-layer approach (Chen, Liu and Hu, 2016*;* Rong *et al.*, 2015; Prefetto and Vargas-Sanchez, 2018). In a nod towards the triple helix perspective discussed previously (Leydesdorff and Meyer, 2003), the introduction of institutional stakeholders such as universities, research centres and government institutions as the third layer of the ecosystem after (i) the focal firm at the first layer, and (ii) partner firms providing complimentary products at the second layer. Yet, whilst the fintech ecosystem in Scotland is observed to be navigating the birth phase of the ecosystem lifecycle approach (Moore, 1993), the characteristics of ecosystem indicate the *jam central model*

proposed by Zahra and Nambisan (2012) correlates with the anticipated development trajectory as revealed by interviewees in this empirical investigation. Nonetheless, as discussed in the preceding section, existing perspectives on the *birth* phase of ecosystem lifecycle model (Moore, 1993) do not appear to account for this fertilisation period observed. During which ecosystem participants – namely the *triple helix* (Leydesdorff and Meyer, 2003) – play a fundamental role in helping foster the environment and establish the necessary conditions for innovation ecosystem birth. Building on the work of Dedehayir and Seppanen (2015), the researcher proposes a third sub-phase at the *birth* stage of ecosystem development, as shown in Figure 8.1 below. Here, the ecosystem genesis stage sits alongside the new innovations or inventions that give rise to the start-up of ecosystem activity. Under the umbrella of ecosystem genesis, there are three stages that enable the foundations of the ecosystems to be established; these are (i) collaboration amongst the triple helix, (ii) fostering the environment for ecosystem birth phase, and (iii) identifying and connecting organisations for synergies and innovations to be realised.

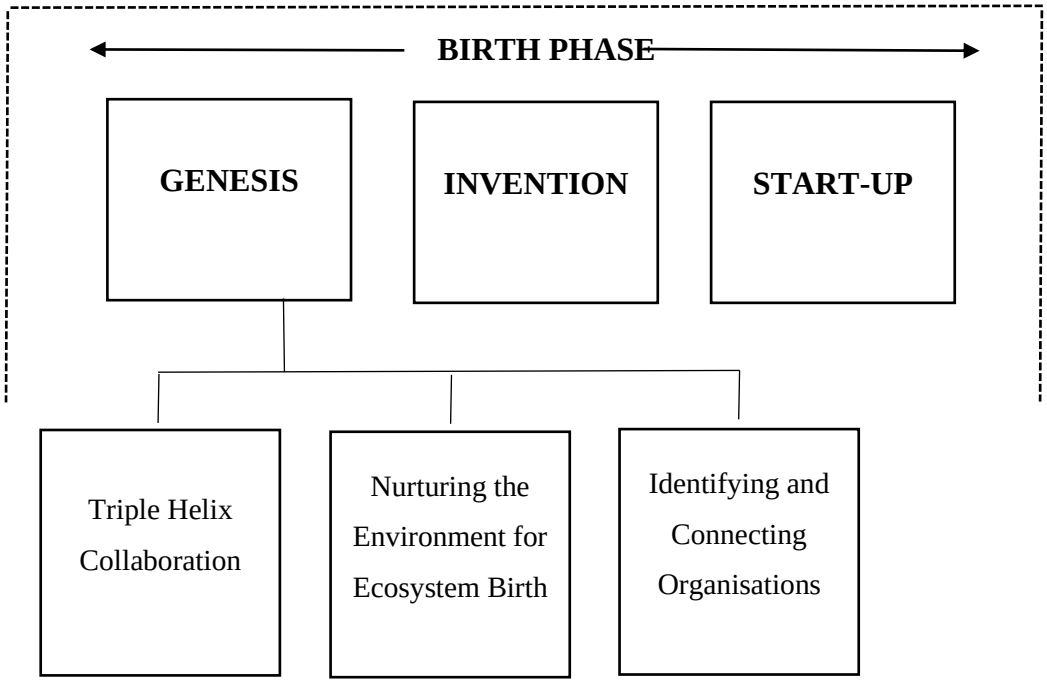


Figure 8.1 *Ecosystem Genesis Sub-Phase*

Deconstructing these three stages further allows for greater understanding of how they contribute to the ecosystem genesis stage of the ecosystem birth phase of the lifecycle model (Moore, 1993).

- *Triple Helix Collaboration*

Collaborations between the government, industry and universities/ research centres serve as a precursor to the establishment of the innovation ecosystem. These stakeholders play a fundamental role throughout the evolution of the ecosystem lifecycle, however, during the genesis phase these organisations are responsible for establishing the blueprint for ecosystem launch. Relating this back to the conceptual framework adapted from the literature (see Figure 2.7) it can be observed that the ecosystem genesis phase maps across to the *protovisioning* and *envisioned blueprint* phase (Dattée, Alexy and Autio, 2018). Here, the strategic activity undertaken in the Scottish fintech ecosystem is geared towards forming *ecosystem aspirations*, developing *network ties and links*, *shaping the ecosystem*, and laying the foundations for *creating a focal value proposition*. Fundamentally, at this stage, the institutional stakeholders such as the Scottish Government or the University of Strathclyde play a critical role driving ecosystem activity through their involvement in the ecosystem. With Fintech Scotland reliant on their involvement to fund and deliver events and initiatives geared towards attracting firms to join the ecosystem. For example, the University of Strathclyde have hosed Fintech events and conferences in the Technology and Innovation Centre and Strathclyde Business School, the Scottish Government and at the local level Glasgow City Council have provided the funding required to support the ecosystem in this generative phase.

- *Nurturing the Environment for Ecosystem Birth*

At this early stage of ecosystem genesis, the dominant activity undertaken in the ecosystem is focused on creating the necessary conditions for the ecosystem to grow. Interview participants in the empirical investigation acknowledged the need to build a profile and to create further awareness of the fintech ecosystem in Scotland. In particular, Fintech Scotland play a significant role in curating the necessary resources, establishing networks and relationships, and raising the profile of the ecosystem both domestically and on an international scale. In the *birth* phase of ecosystem development, fertilising the environment to make it conducive to ecosystem growth is seen as a significant precursor to its establishment and subsequent growth prospects.

- *Identifying and Connecting Organisations*

Fundamental to the generative phase of ecosystem growth is the need to bring the right players together to form the crux of the ecosystem. Not only do these early-stage participants play a vital role in building momentum behind the ecosystem, but they also play a fundamental

role in shaping the growth aspirations of the ecosystem. This was evidenced in the case of the Scottish fintech ecosystems where the seven founding members of the ecosystem were quickly joined by other corporate organisations to form the strategic partners board. These organisations began meeting quarterly as the first real sign of progressing the ecosystem beyond the genesis sub-phase just as the novel coronavirus pandemic began to spread into the Western hemisphere. Fintech Scotland play a leading role in attracting organisations to the ecosystem through their outreach activity, both domestically and across the continent. Through their interactions with a multitude of corporate organisations and small fintech firms, Fintech Scotland are able to *join up the ecosystem* by connecting firms to one another (IFS1, Interviews, 2020).

The combination of these three stages within the ecosystem genesis sub-phase play a fundamental role in the *birth* phase of the ecosystem lifecycle model. The empirical investigation and subsequent data analysis have uncovered this unique feature of ecosystem genesis that is currently not well understood in existing academic scholarship. The nature and scope of collaboration between the triple helix, the capability to nurture the environment for ecosystem birth, and the connectedness of the underlying network of firms combine to shape the success of the birth phase of the ecosystem. By expanding on the existing theoretical perspectives on the generative stages of ecosystem development, this research has made novel contributions to the birth phase of the ecosystem lifecycle model.

What remains lesser understood is the nature of the strategic decision-making process in this early stage of ecosystem genesis. How do ecosystem participants, at both the firm-level and the individual-level, navigate the intricacies of strategic decision-making processes during this generative stage of ecosystem birth? These questions are addressed the subsequent section, where applying the lens of open strategy enables the researcher to comprehend the strategic activity observed and captured during the data collection period (Chapter 6).

8.4.2 Open Strategy

By applying the lens of open strategy (Chesbrough & Appleyard, 2007; Hautz, 2017; Mack & Szulanski, 2017) this research delivers unique insights into ecosystem strategic decision-making activity that contributes to strengthening the strategic alignment of participating firms around the focal value proposition. Through the application of the open strategy approach to the empirical context of innovation ecosystems, which to the best of this author's knowledge remains unexplored in extant literature on open strategy, this study sheds light on the distinctive

features of the strategy process in innovation ecosystems. Prior research in the open innovation paradigm has already established, through empirical findings (Chesbrough and Appleyard, 2007; West and Gallagher, 2006), that Porterian perspectives of business strategy rest uneasy in these open contexts (Appleyard and Chesbrough, 2017).

> *The primary tension between open strategy and traditional business-level strategy rests with the need to secure an economic return in the face of relinquishing control over critical strategic assets and capabilities.* (Appleyard and Chesbrough, 2017, p. 310)

In attempting to address this tension between the two strategic perspectives disclosed by Appleyard and Chesbrough (2017), the subsequent section uses Tavakoli, Schlagwein and Schoder (2015; 2017) three principles of open strategy approach. Together with the fourth dimension of participation proposed thorough the literature review in this research to draw original theoretical contributions. Consequently, these are the areas in which the ecosystem strategy process is observed to differ from the traditional perspectives on strategy.

- ***Inclusivity***

Ecosystem activities undertaken in this early generative phase of ecosystem development were discovered to *include a range of participating firms* when taking into consideration the strategic decision-making process. This could be a distinctive feature of the strategy process in the innovation ecosystem. Existing perspectives on ecosystem strategy concentrate on the role of the keystone firm (Iansiti and Levien, 2004a) as rule makers (Zahra and Nambisan, 2012) in a hub and spoke design (Valkokari *et al.,* 2017) who are responsible for governing the ecosystem (Song *et al.,* 2018) through the creation and sharing of value (Adner and Kapoor, 2010). However, in the early stages of the fintech ecosystem, strategic decision-making is observed to be an inclusive process whereby the commitment and desire of ecosystem members to be involved influences the outcome of the decision-making dialogue.

In the early phase of developing the fintech ecosystem the guiding entity Fintech Scotland, who were tasked with establishing the ecosystem by the Scottish Government, adopted an inclusive approach to under-taking key strategic decisions.

Immediately, this observation rests uneasy with the leading perspectives on ecosystem creation and ecosystem development, where the role of the keystone or founding entity is crucial in establishing the rules (Zahra and Nambisan, 2012) and governance structure to hold participating firms to account (Primmer *et al.,* 2015) For instance, Iansiti and Levein (2004b, p.24), in exemplifying the case of Microsoft's Developer Network, suggest that

"keystones shape what an ecosystem does". Yet, as can be observed in the instance of the fintech ecosystem, the decision is generated from the bottom-up. By including small fintech firms in the decision-making dialogue, Fintech Scotland were able to tailor the ecosystem offering to reflective the collective opinions of the wider fintech community. Under the guise of Iansiti and Levein (2004b) positioning of the keystone entity as king, this observation of the fintech ecosystem seemingly contradicts the supposed role of keystone firms. Whilst the content of both their book (Iansiti and Levein, 2004a) and subsequent journal publication (Iansiti and Levein, 2004b) is primarily concentrated on technology strategy (Barnett, 2006), Iansiti and Levein strive to generate broader implications for ecosystem strategy beyond the technology ecosystem. They seek to influence "business leaders and policymakers" (Iansiti and Levein, 2004a, p.12) in doing so, they extend their contribution to the generic form of the business ecosystem. Yet, as shown in the case of the fintech ecosystem, the role of the keystone firm in the generative phase of ecosystem development could also be interpreted as facilitator of the strategy-making dialogue amongst participating firms.

Meanwhile, Adner and Kapoor (2010) and Chen, Dahlgaard-Park and Yu (2014) attempt to address ecosystem structure and strategies by considering the various stages of ecosystem lifecycle. Though, as Sant *et al.,* (2020) outline in their literature review, these authors do not consider the interactions amongst ecosystem agents and how these contribute to the development of ecosystem strategies. This research makes inroads into understanding the role of ecosystem interactions between participating firms when forming strategies to guide the ecosystem through the generative phases of development. Moreover, Su, Zheng and Chen (2018) suggest that understanding the structure of an ecosystem is a complex undertaking and that existing research has seldom attempted to take apart an innovation ecosystem to investigate its component parts. This research concurs that the complexity of ecosystem constructs means that empirical investigation of the entire construct is a problematic undertaking. Nonetheless, through this study, the empirical focus on institutional stakeholders and subsequent data analysis has demonstrated the significance of inclusivity in the strategic decision-making dialogue.

Understanding the motivations behind participating firms' desire and commitment to participate in the strategic decision-making dialogue would offer informed insights into how this dimension of *inclusivity* is realised. Speculatively, this might be due to each firm's own

individual, firm-level strategic priorities and objectives; however, these contingencies were not investigated in the scope of this study.

- ***Transparency***

There is an important ongoing debate on the organisation of activities within and across organisational boundaries (Kapoor and Lee, 2013). With Adner and Kapoor (2010) contending that multifaceted innovation ecosystems tend to involve a number of network actors that transcend the confines of traditional supply chains. Constructing a suitably open and modular design is therefore crucial to enabling innovation to take place amongst and between ecosystem participants (Pellikka and Ali-Vehmas, 2016). Whilst various studies on technology ecosystems focus on platform-based designs (Gawer and Cusumano, 2002, 2014; Gawer and Henderson, 2007) and modular structures (Wareham, Fox and Cano Giner, 2012; Weill and Woerner, 2018). There are limited studies exploring how this modularity is achieved beyond just the technical specifications required and modularity of platform designs that facilitate the innovation (Seidel, Grisold and Berente, 2020).

Fundamentally, ecosystem strategies to facilitate modularity in design and structure are underexplored in existing literature (Jacobies, Cennamo and Gawer, 2018). In the generative phase of the fintech ecosystem, the need for transparency in communicating and sharing information is made all the more pressing by the nature of the emerging innovation ecosystem. The existing ecosystem lifecycle approach (Moore, 1993) is reflective of the design and structure of existing industries and does not represent the often "*fragmented development communities, major market barriers, and duplication of effort*" (Pombo-Juarez et al., 2017, p. 281) prevalent in emergent ecosystem constructs. Considering the relatively youthful heritage of the fintech communities in Scotland, it is reasonable to classify fintech as an emerging innovation ecosystem.

In the case of the fintech ecosystem, a number of key stakeholders referenced the necessity for clarity in communications and transparency of information sharing to and from ecosystem participants. There seemed to be disparity across the three institutional stakeholders interviewed as to the extent to which transparency in strategic discussions, dialogues, communications, and information sharing is observed within the ecosystem. For example, in the case of Fintech Scotland there are private one-to-one discussions held between the organisation and its board members.

Leaning on the work of Dobusch *et al.*, (2017) who investigate the societal, factual, and temporal elements of open strategy and open innovation as part of their communication-theoretical framework. The example given above from the fintech ecosystem demonstrates the "position-specific perspectives on strategic problems" (Dobusch *et al.*, 2017, p. 19). Discussion on topics such as, intellectual property rights can give rise to issues to do with confidentiality (Whittington, Cailluet and Yakis-Douglas, 2011), as Chesbrough & Appleyard (2007) explain that the value created in the ecosystem would predictably be captured by the firm owning the intellectual property rights. Meanwhile, Matzler *et al.*, (2014, p. 51) argue that these "new ways of communication and collaboration" are cumbersome and require a certain level of technical proficiencies that can enhance the risk of restricted participation and alignment amongst individuals involved. Revisiting the empirical investigation of the fintech ecosystem, the lack of transparency in sharing knowledge and information between Fintech Scotland's strategic board members could inevitably curtail the success of the ecosystem.

Nonetheless, Fintech Scotland attempt to overcome these barriers to open communication and information sharing by "facilitating and encouraging connections" between participating firms (FintechScotland.com, n.d.). The CEO of Fintech Scotland referred to the organisation as the *glue* that allows individuals, small firms, and large organisations to *connect up*. This provides unique insights into how the organisation facilitates interactions between participating firms by fostering the type of environment conducive to sharing of information, communication, and inevitably innovative ideas helping to bridge the distance between them.

Therefore, transparency in communication and information-sharing, particularly at the generative phase of development is a significant precursor for establishing the innovation ecosystem. The involvement of institutional organisations, such as a *strategic enabler* like Fintech Scotland, is fundamental to securing the buy-in of organisations into the purpose of the ecosystem. Despite the preference for strategic partners to seek private one-to-one discussions, there seems to be a commitment from Fintech Scotland to cultivate a culture of openness and transparency in discussion and dialogue between participating firms.

Bogers, Chesbrough and Moedas (2018) argue that ecosystems are at the crux of organisations' efforts in the open innovation space. Research on the process of knowledge sharing in ecosystems is becoming increasingly important (Meng, Li & Rong, 2019; Secundo *et al.*, 2019), where the role of universities and research centres is paramount in understanding

how knowledge creation and dissemination can fuel ecosystem growth (Miller *et al.*, 2016; Bacon, Williams and Davies, 2019, 2020).

The University of Strathclyde is an institutional stakeholder in the Scottish fintech ecosystem and is also the anchor tenant for the Technology and Innovation Centre housing the various clusters under the umbrella of Glasgow City Innovation District (GCID). The presence of the University seemingly provides an attractive proposition for organisations seeking to benefit from being in close proximity to, and accessing the research, skills, and talent being produced. Organisations, such as small fintech firms, joining the GCID will have access to the research and development capabilities synonymous with the University.

According to Bacon, Williams and Davies (2019) there are certain characteristics and conditions associated with universities and research centres that fertilise the necessary environment for successful knowledge transfer. Referring to these characteristics as *peripheral conditions* in their novel study on knowledge transfer in ecosystems, the authors suggest establishing "trust", "type and understanding of knowledge", "tie strength", and "learning intent" as key factors for academic institutions to achieve "knowledge transfer success" (Bacon, Williams and Davies, 2019, p. 383). Fundamentally though, the role of Strathclyde University extends beyond the mere perspective of being a source of knowledge, research, and skills development. The institution has an important role to play in fostering the development of the ecosystem in this early generative phase.

One of the senior lecturers described the University as *an honest broker* that is responsible for *coordinating* the ecosystem carries inferences towards the transparency dimension being discussed. Gegenhuber and Dobusch (2017, p.340) state that "openness is related to honesty, transparency, and trust", Baraibar-Diez, Odriozola, & Fernández Sánchez, (2017, p.485) explain openness in communication to be "associated with higher levels of honesty". In relation to the fintech ecosystem, the transparency dimension can manifest itself through the presence of the University, not only as an *anchor tenant* in the innovation district, but also as a *genuine partner h*elping companies to realise their potential, and through the support that the University can give.

Hence, the University can be said to play a central role in the generative phase of the fintech ecosystem, not least due to the knowledge, research and skills being developed, but also in its capacity as an *honest broker* to enable transparency in

communication and decision-making amongst ecosystem participants. By transferring knowledge and creating a culture of openness in information sharing, the University can play a fundamental role in establishing transparency within the ecosystem during the early generative phases.

Meanwhile, Glasgow City Council and other local and national Scottish Government bodies represent the third institutional actor considered in this doctoral research. Existing research discusses the motivations and influences of public sector bodies on the development of innovation ecosystems (Dawson, Denford & Desouza, 2016; Ma *et al.*, 2019). The dominant perspective in the literature positions the Government as being a support mechanism for establishing and growing the ecosystem (Fukuda, 2020).

Beyond supporting the innovation district, the Government are active stakeholders in the fintech ecosystem. The Council are involved in nurturing a culture of transparency within the ecosystem. Through their involvement in providing funding opportunities to different fintech firms, together with their widespread reach extending to different sizes of businesses across the region. Glasgow City Council are well-positioned to support the growth of the ecosystem in this early generative phase of ecosystem development.

The commitment of the local authority to facilitate the needs of the fintech ecosystem, bodes well for the growth prospects of the ecosystem. The support of the Council will be critical to establishing the ecosystem and enabling a host of fintech and related enterprises to access the benefits of involvement in the ecosystem.

From a strategic development and growth perspective, institutional organisations have a significant role to play in facilitating a culture of transparency and openness in communication and information-sharing to enable informed strategic decision-making. Nonetheless, there is also a substantial onus on the individual enterprises, particularly the large financial services corporations and technology services providers, to engage in transparent dialogue and discussions between one another and the wider ecosystem participants.

Empirical investigations into the willingness of corporate enterprises and fintech firms to engage in open and transparent communication could address the transparency dimension of ecosystem strategy. Inquiries into how information sharing can help make informed strategic decisions would support our understanding over how applicable the dimension of *transparency* is in ecosystem strategy processes. Additional contingencies, such as secrecy (Costas & Grey, 2014), privacy (Popa, Soto-Acosta & Martinez-Conesa, 2017), and confidentiality (Conroy *et*

al., 2019) could be significant variables influencing the likelihood of firms to engage transparently in strategic ecosystem discussions. These contingencies were not explored in this research as they were outside the scope of this study.

- ***IT-Enabledness***

Notwithstanding the impact of the novel COVID-19 global pandemic, the drive towards adopting IT-enabled technologies and digital platforms was observed to be a prominent feature of establishing the fintech ecosystem ex-ante the pandemic. In an interview with The Scotsman (2018), the CEO referred to these online platforms as *'virtual platforms or factory environments'* designed to facilitate increased collaboration and innovation between large corporates and small fintech SMEs.

Expectedly, the focus of IT-enabled ecosystem activity was geared towards creating a collaborative environment for sharing ideas and innovating to create new products and services. Yet, if we are to extend the investigation beyond the collaboration and innovation capabilities afforded by digital technologies, then the strategy process in the fintech ecosystem was observed to increasingly rely on the usage of IT and IT-enabled devices to facilitate communication and collaboration between ecosystem stakeholders. The impact of the ongoing pandemic restrictions on social and business gatherings might have accelerated the adoption of collaborative tools and platforms, such as Zoom, Microsoft Teams, and others.

However, the researcher found that there was a desire to return to the traditional form of strategic dialogue and discussion being conducted face-to-face. Whilst the duration and severity of the pandemic restrictions, both locally and nationally, have arguably outlasted the expectations of most ecosystem stakeholders, the appetite to return to traditional face-to-face strategic dialogues and discussions was seemingly apparent at the beginning of the pandemic. Further empirical investigations may look to test that desire to return to pre-pandemic 'normality'.

In the context of this research, it can be said that adoption of IT-enabled practices to facilitate strategic dialogue and discussion was accelerated by the effects of the COVID-19 pandemic. The interview respondents expressed their preference to return to in-person, face-to-face discussions beyond the anticipatedly temporary restrictions imposed on professional and social activity. It can be concluded that IT-enabledness is a significant component of collaborative activity, where the digital platforms extend ecosystem access to a wider range of participating firms within Scotland and across international borders.

Moreover, whilst the pandemic restrictions have sped up the adoption of digital channels to facilitate strategic discussion, dialogues and decision-making, it was observed that ecosystem participant were reluctant to extend this practice into a permanent feature of the ecosystem strategy process. This finding further supports the argument that openness in the strategy process cannot be interpreted to pendulate between the dichotomy of openness and closedness. Instead, the findings from the empirical investigation on the fintech ecosystem establish the need for increased scholarly attention on the shifts in strategic openness between the opposing perspectives of openness and closedness in decision-making.

- ***Participation***

Stakeholder involvement in ecosystem strategy process extends beyond the degree of inclusivity afforded to stakeholders in the strategy making dialogue. Through the systematic literature review in Chapter 2, this research has shown participation to be different from inclusion. Sunner *et al.*, (2021, p.74) suggest that submerging participation "within the inclusion branch of open strategy literature diminishes its impact on open strategy practices". This viewpoint is supported by the work of Mack and Szulanski (2017) who explore strategy making in centralised and decentralised organisations, explaining that differentiating between inclusivity and participation is fundamental stakeholder engagement in the strategy process.

With the fintech ecosystem, it was observed that the principle of inclusivity alone was insufficient in explaining the involvement of a multitude of stakeholders beyond just the large corporate players and fintech firms. Institutional actors investigated in this study, together with other governmental bodies, enterprises, and academic institutions were observed to be involved in contributing to the formation of strategy in these formative stages of ecosystem development.

By allowing these marginal stakeholders to have their voices heard, Fintech Scotland took a holistic approach to ecosystem development, particularly at this generative phase, involving a wide array of stakeholders in the decision-making dialogue. Their participation in the strategic discussions and dialogue is used to inform the strategic decision-making undertaken by the Fintech Scotland strategic partner's board. Where the presence of members of the Scottish Government and local Council bodies such as Glasgow City Council maintain the interests of society at large in the strategic decision-making dialogue.

Therefore, participation in ecosystem strategy is considered shallower in comparison to inclusion as it is concerned with the gathering of internal and external stakeholders' input in

terms of ideas and information. Whereas, *inclusion* is deeper, entailing the creation and sustaining temporal openness disposition through a community of interacting collectives and these actors are active in decision-making as opposed to merely providing input (Mack & Szulanski, 2017).

To conclude, the above features of ecosystem strategy as observed in the fintech ecosystem may not be generalised across all innovation ecosystem contexts. However, through the lens of the open strategy paradigm, this research provides insights that can guide future research on ecosystem strategy. The strategy process in this early generative phase of ecosystem development does not appear to rely heavily on quantitative or technical strategic analysis. Instead, as pointed out in this study, there are some distinctive features of the fintech ecosystem strategy process that correlate with the principles of the open strategy paradigm. Nonetheless, the conclusions and implications noted above should be further investigated across a larger sample size, or in the context another innovation ecosystem.

8.5 Contribution to Practitioners and Policy Makers

This research also offers useful suggestions for practitioners and policy makers in innovation ecosystem contexts. The understanding of the strategy process outlined in the preceding section can be utilised to inform practice and policy. In the subsequent section, the researcher summarises a number of key issues that may be fruitful for practitioners to consider. The perspectives discussed are enriched with empirical examples from the fintech innovation ecosystem, with the aim of providing valuable guidelines for strategy practitioners and policy makers to consider in the innovation ecosystem context.

The key takeaways for strategy practitioners are summarised below, and later detailed in the proceeding sections:

- *Curating the necessary resources,*
- *Establishing networks and relationships,*
- *Raising the profile of the ecosystem*
- *Identifying and connecting organisations*

Firstly, building on the previous section, the generative stage of ecosystem birth or ecosystem genesis is considered as a crucial component of forming ecosystem strategy. Practitioners and policy makers alike should be aware of the intricacies involved in navigating

this crucial stage that acts as a precursor to the successful birth phase of the ecosystem lifecycle model. To provide useful guidelines to strategy practitioners involved in ecosystem development this section adopts the principles of the design school of thought (Mintzberg, 1990). This is expanded upon in the section below.

- *Design School Principles*

"*Economic strategy will be seen as the match between qualification and opportunity that positions a firm in its environment*" (Christensen *et al.*, 1982, p.164). The basic concepts underpinning the design school of thought resonate with the significance of capturing success by "find[ing] out what you are good at and match[ing] it with what the world wants and needs" (Mintzberg, 1990, p.172). Applying this perspective in the context of innovation ecosystems, the motto of design school thinking can be interpreted to concern the capturing of value through the alignment structure of a multilateral set of firms around the focal value proposition (Adner, 2017).

Additionally, Mintzberg (1990, p.184) argues that the *formulation-implementation dichotomy* is critical to the design school approach, where formulation must by nature precede the implementation phase. With ecosystem strategy, this research adopts a similar logic by demonstrating the significance of ecosystem genesis as being a forerunner of the birth phase of the ecosystem lifecycle approach. In order to implement or establish the ecosystem, there is a need for activity at the generative stage that sets the foundation for the ecosystem to be born. This is discussed in the preceding section, where examples from the Scottish fintech ecosystem aim to offer policies for ecosystem practitioners to consider.

- *Open collaboration amongst the triple helix*

Firstly, the data implies that the fintech ecosystem participants seem to be engaged in open and collaborative dialogue in the early stages of ecosystem formation. This is achieved through regular formal and informal communication with Fintech Scotland, local Government bodies, other corporate banks, smaller fintech firms, and universities in regular meetings. They participate in strategic partner board meetings, fintech conferences, and open doors events that also involve the local community. Networking is seen as being crucial to gaining insights into the different ideas and innovations being developed. Large financial services and technology sector corporates and fintech firms also rely on Fintech Scotland to identify potential synergies and connect organisations to one another during this early generative phase of ecosystem development. For example, Fintech Scotland host group and individual meetings with

ecosystem participants to understand their needs and focus areas before then identifying and connecting organisations based on potential synergies that may be realised through collaboration. Similarly, the GCID regularly host events such as 'Meet the Neighbours' which encourages organisations in the local vicinity to come together and network with one another, identifying where there may be scope for collaboration and innovation going forward. These are just two such examples from the empirical investigation conducted, further examples can be found in the data analysis and findings sections (Chapters 6 and 7).

This finding is consistent with the literature. Ecosystem strategy has been investigated through network perspectives (Ceccagnoli *et al.*, 2012; Song *et al.*, 2018; Wang and Miller, 2020), resource orchestration theory (Pikkarainen *et al.*, 2017; Bittencourt, dos Santos and Migoni, 2021), value creation (Adner and Kapoor, 2010, Van der Borgh *et al*, 2012, Ikävalko, Turkama and Smedlund, 2018) and value capture (Adner, 2017; Adner and Liberman, 2021). These authors all seem to concur that ecosystems require researchers to reconsider the significance of traditional perspectives on strategic decision-making (Adner, 2017; Jacobides, Cennamo and Gawer, 2018). There is a need for collaborative and open dialogue between participating stakeholders in this early generative phase of ecosystem development. Therefore, it is suggested that ecosystem practitioners seek to facilitate open dialogue between existing and prospective ecosystem participants through networking events, conferences, and both formal and informal meetings. These types of activities serve as a substantial precursor to establishing ecosystem strategy. Collaboration between the *triple helix* allows for informed decision-making in ecosystem strategy, where innovation is realised through firm-level synergies and multi-level collaborations amongst ecosystem participants.

As is shown from the above comparison between theory and practice, the researcher concludes that there is a significant body of literature recognising that there is a requirement for academic scholars to explore the nature of ecosystem strategy making. In the investigated Scottish fintech ecosystem the nature of strategy making was characterised by open and collaborative dialogue between industry, government, and universities/ research centres. The empirical finding resonates with the open strategy paradigm, where different stakeholders beyond just the strategy practitioners within and across organisational boundaries are inherently more involved in the strategy making process. In respect to this study, the involvement of the triple helix signifies a collaborative approach to strategy making across industry, government, and university stakeholders.

For policy makers there is a need to consider the implications of establishing open collaborations in strategy-making amongst ecosystem stakeholders that have transcended traditionally distinct industry boundaries. Fundamental to fostering the conditions for this type of open and collaborative dialogue is the need to nurture the necessary conditions and environment for ecosystem birth. The subsequent section will provide further insights into the significance of this generative phase of ecosystem development, where the onus is on creating the necessary conditions to facilitate ecosystem birth.

- *Nurturing the Environment for Ecosystem Birth*

Secondly, the data suggests that implementation of an innovation ecosystem is contingent upon the facilitation of the requisite environmental factors and conditions that can nurture ecosystem growth. This is done to raise the profile and awareness of the innovation ecosystem to be established, as is suggested in the interview excerpt below:

> *I think they are trying to create what you would either call an ecosystem or an environment where companies will see it as the place to be in terms of innovation, development, excitement around about the innovations that emerge from the ecosystem if we call it that.*
>
> (IGCID2, Interviews, 2020)

In the case of the Scottish fintech ecosystem, this was achieved through regular meetings, formal communications such as emails and newsletters, and informal communication through word-of-mouth, which was a commonly used method to raise awareness within the local community and businesses operating within the area. Institutional stakeholders, like those included in the empirical investigation for this study, played a significant role in helping foster the environment for potential ecosystem participants to come together and engage in open and collaborative dialogue. For example, Strathclyde University hosted the annual fintech conference in 2019 where stakeholders from various backgrounds including academia, industry from both the public and private sectors, and the local community were able to participate in the events held. Through this one-day event the university was able to raise awareness of the fintech community in the local area and create opportunities for stakeholders to come together in an open and inclusive environment, helping identify potential synergies and collaborations amongst attending firms.

Meanwhile, the university had both established and early career researchers present at the event to share their perspectives and insights and help to generate an environment conducive to idea exchanges and knowledge transfers. Similarly, the Scottish Chamber of Commerce arm

of the Scottish Government in conjunction with Glasgow City Council hosted a series of tradeshows and exhibitions to support the fintech ecosystem by raising awareness on both a national and international scale. Attracting firms from various backgrounds and international contexts was seen as a significant step in developing the footprint of the Scottish fintech ecosystem. By creating an environment conducive for ecosystem birth and subsequent development, the Scottish Government and its associated agencies played a critical role in creating the necessary conditions during this early ecosystem genesis phase.

The wider literature on ecosystem creation is sprinkled with different perspectives on how to nurture the growth of ecosystems. In exploring how Intel's business ecosystem has matured over recent years, Rong and Shi (2014) identified ecosystem *constructs* and *configurations* such as *diversified resources* and *skill sets* as being crucial. Meanwhile, Leong *et al.*, (2017) studied the role of a start-up fintech firm in contributing to the development of a fintech ecosystem in China where *strategic capabilities* belonging to the firm and *societal inclusion* were the dominant perspectives. Moreover, Jackson (2011) advocates the need for an entrepreneurial culture that stimulates and nurtures growth in the innovation ecosystem. Whilst Rong, Shi and Yu (2013) interviewed practitioners from the mobile computing industry in China finding that *platform-based strategies* combined with *behavioural changes* in the workforce of participating firms were both required to achieve *industry convergence*.

Even though the wider literature on nurturing ecosystem growth is punctuated with different perspectives, there appears to be relatively little understanding of how fostering the environment at the generative phase of ecosystem development can play a fundamental role in setting it up for success. This research contributes through the extension of theory into a new data set from the three institutional stakeholders within the Scottish fintech ecosystem as well as providing theoretical reflections on practice.

- *The importance of curating the necessary resources, establishing networks and relationships, and raising the profile of the ecosystem.*

Firstly, **curating the necessary resources** appears to be a significant strategic activity in the generative phase of ecosystem development. In the Scottish fintech ecosystem context this involved mapping out the financial technology landscape in Scotland, identifying where organisations and their employees can add value to the ecosystem, and earmarking funding to ensure capital resources were made available for scaling the ecosystem. For example, in the case of Fintech Scotland there were multiple objectives being pursued by the organisation to

drive the development of the fintech ecosystem. Holding conversations with a host of different enterprises from the public and private sectors, universities, and research centres allowed Fintech Scotland to build a picture of what was required to build the ecosystem, and to begin curating the requisite resources necessary for ecosystem formation. The Scottish Government together with Glasgow City Council were largely responsible for procuring the land and capital resources required to facilitate the physical infrastructure required to house some of the activity.

Existing research streams exploring resource requirements tend to focus on the ecosystem lifecycle model (Moore, 1993) where the stage of ecosystem development determines the requirement for particular resource bundles (Engler and Kusiak, 2011; Wang *et al.*, 2019; Sant *et al.*, 2020). With further studies exploring the management of these resources through both network (Wulf and Butel, 2017; Rong, Ren and Shi, 2018) and resource orchestration (Betz, Burkhalter and Jung, 2019; Masucci, Brusoni and Cennamo, 2020) perspectives. However, the current literature doesn't seem to extend to the generative phase of ecosystem development where resources are curated for the specific purpose of establishing the ecosystem at a later stage.

Consequently, curating the requisite resource configuration is equally, if not more, important than the resource considerations given to the various phases of ecosystem development. The data collected in this research and the subsequent findings presented here confirm the existing theory by demonstrating the importance of curating resources at various junctures of the ecosystem development journey, whilst also giving specific examples on the fintech ecosystem. These provide further insights into the topic and contribute to the understanding of ecosystem strategy at the early generative phase of ecosystem development.

Secondly, the data analysis section (Chapter 5) has addressed the **establishing of networks and relationships** with regards to identifying opportunities for collaboration, synergies amongst participating firms, and potential innovations that may materialise from newly formed networks and relationships. The data analysis suggests that institutional stakeholders involved in the Scottish fintech ecosystem were keen to maximise these opportunities by hosting a series of events that facilitated open and collaborative dialogue between attendees. For instance, GCID hosted a number of events throughout the year, including the 'Meet the Neighbours' and 'Glasgow Open Doors' events that encouraged attendance from an array of interested stakeholders. They created networking events and opportunities that were intended to spur

innovative thinking that can be realised through collaborative approaches amongst attendees. The intention behind hosting such events was to encourage participants to identify potential synergies and areas of overlap that can stimulate renewed thinking and innovations being born out of the dialogue and discussions being held.

In the innovation ecosystem specific and wider ecosystems literature, the network perspective transcends from the firm or organisation at the local level (Senyo, Liu and Effah, 2019) to regional (Walrave *et al.*, 2018) and subsequently international level (Mishra and Singh, 2019) network viewpoints. Whilst the findings from this research project resonate with the firm or local network level perspective, there is a need to improve our understanding of how networks can serve as a precursor to establishing the ecosystem. The dominant approach in the existing literature explores networks as being products of the ecosystem or emerging from the ecosystem construct. However, through this research it can be argued that networks and relationships can also be antecedents for bringing the ecosystem into fruition by creating connections that help in facilitating ecosystem genesis and the subsequent birth phase. Sloane and O'Reilly (2013) allude to the *social network* perspective in supply network ecosystems where interdependencies are seen as being critical on delivering on ecosystem strategy. The contribution here is emphasising not only the networks that emerge from ecosystem activity, rathe the networks and relationships formed amongst firms at the generative phase of ecosystem development that provide momentum for progression through the ecosystem lifecycle model.

Thirdly, **raising the profile** of the ecosystem in the early generative phase of development is observed to be a key activity in generating awareness of the ecosystem. For example, with Fintech Scotland it was noted that the CEO and other senior directors of the organisation regularly attended domestic and international events and conferences. The intention behind attending such events was to raise the awareness of what Scotland can offer amongst the fintech community and by building a profile for the fintech ecosystem that they were looking to establish. Similarly, the Scottish Government hosted events to encourage foreign investment into the country from international fintech firms and financial and technology services corporates. The data analysis section (Chapter 5) outlined the need to attract firms to the ecosystem as a foundation for establishing the fintech ecosystem.

To conclude, strategy in the generative phase of ecosystem development appears to be thin on the ground, however, there seems to be a developing body of literature on nurturing

ecosystem growth focused on the role of strategy. The findings from this research are intended to contribute to the extension of theory into the generative phase of an innovation ecosystem context. Strategy practitioners involved in establishing innovation ecosystems should consider the significance of *curating the necessary resources*, *establishing networks and relationships*, and *raising the profile of the ecosystem*. In undertaking these steps, it is inferred that, strategy practitioners can position the ecosystem for future success.

- *Identifying and Connecting Firms*

Lastly, ecosystem genesis requires the **identifying and connecting of firms** that can support in creating momentum behind the ecosystem during this generative phase of development. This seems to be a significant activity in establishing the foundations of the ecosystem, as the data shows that both Fintech Scotland and the Scottish Government invested considerable time and resource into identifying and attracting potential ecosystem participants to Scotland. For example, the following excerpt from an interview with a stakeholder from GCID revealed:

> *Obviously, we want to cater for different partners, you want to be attracting the right type of businesses in that space, you know. And if you bring those businesses in, you bring jobs and you bring higher-value jobs as well. So, as I see it, that's the ecosystem we are trying to create.* (IGCID2, Interviews 2020)

Once the charm offensive has paid off and firms are enrolling to be a part of the fintech movement in Scotland, Fintech Scotland immediately move to the next phase. This involves connecting those organisations newly enrolled with existing member firms in the ecosystem in order to encourage collaboration, create synergies, and potentially capitalise on potential innovation opportunities. Whilst the commercial dimension plays a significant role in guiding firm behaviours and should not be ignored, there was a focus placed on socio-economic impacts of fintech developments by Fintech Scotland. The interview excerpt below with the CEO of the firm provides additional context:

> *What it does mean is that you are doing certain things to bring together innovators with established markets to entrepreneurs and all the different components that is having an impact both in Scotland and the UK and also worldwide.*
>
> *But then that they [participating firms] get in the areas of most interest to them. It could be around vulnerable customers, it could be around regulation, it could be around some particular area like payments or vulnerable customers. So then, have their areas of interest that we encourage them to get involved, but also to get involved with each other, with the fintechs, with other large companies, with*

government if appropriate, with other public bodies.

(IFS1, Interviews 2020)

Extending the discussion beyond profit and financials enabled Fintech Scotland to maintain the Scottish Government's mandate on economic regeneration efforts in the local area and social inclusion on a broader scale. Similarly, the University of Strathclyde – the third institutional stakeholder investigated in this research – were working towards their own strategic goal of *transformative innovation and impact*. Looking at ways to progress their research interests and pursue avenues of promising R&D activity, the University were engaged in significant networking activity to facilitate such innovation. In an interview with one of the strategic relations advisors the following was disclosed:

But you know that we are a genuine partner helping companies to realise their potential and through the support that the University can give on the one side through the Skills Institute but equally on the other side through our well-respected research, in areas like business management and leadership, organizational development, some of the technology areas that will be important: AI [artificial learning] and ML [machine learning].

(IUoS3, Interviews 2020)

The below excerpt provides further insights into the University's interests:

So, you know if I'm wearing my university hat, what is it that we're looking for from Glasgow City Innovation District is to create an environment, a space, a working area that has innovation at its heart. In terms of innovation, when I talk about innovation then obviously, I mean research, development, implementation general innovation-type activity and the types of organisations and people in there that you want to be highly innovative as well.

(IGCID2, Interviews 2020)

In literature, the influence of institutional organisations such as Government bodies are represented in research on innovation ecosystems (Oh *et al.*, 2016, Sun *et al.*, 2019) and innovation policy (Tolstykh, Gamidullaeva and Shmeleva, 2020). Whilst Universities are predominantly positioned as a source of research and development activity (Schiuma and Carlucci, 2018; Heaton, Siegel and Teece, 2019) or, as diffusers and integrators (Tolstykh, Gamidullaeva and Shmeleva, 2021) of innovative thinking in knowledge ecosystems scholarship. The wider literature on strategic management in ecosystems tends to focus more on the collaboration between the *triple helix* (Brem and Radziwon, 2017; Pique Berbegal-Mirabent and Etzkowitz, 2018). However, there is limited focus on the role these organisations play in joining up the ecosystem by developing networks and creating opportunities for ecosystem participants to collaborate. In saying that, there a few studies that recognise the importance of networking and fostering ecosystem dynamics (Beliaeva *et al.*, 2019) that

support the growth of the innovation ecosystem. De Vasconcelos Gomes *et al.* (2018) present a research agenda derived from the literature on the innovation ecosystem construct in which they call for better understanding of how this network effect can assist in explaining entrepreneurial actions observed these ecosystem constructs. Also, Sant *et al.* (2020) echo this perspective as they lead calls for greater investigation of network structures not only at ecosystem level, but also in the layers that assemble the ecosystem.

To summarise, extant literature appears to fall short on generating further insights into the significance of networking activity undertaken by institutional stakeholders in the innovation ecosystem context. Particularly where the ecosystem is in the generative phase and there is no one keystone or dominant player to orchestrate ecosystem activity. This research has addressed the gap and contributed to theory by generating insights into practice. It is suggested that both policy makers and strategy practitioners consider the role of institutional actors as significant players involved in **identifying and connecting organisations** to generate momentum behind the ecosystem. Strategy practitioners can better prepare for the *invention* sub-phase of the ecosystem birth stage by engaging with stakeholders such as Universities, local and national Government bodies, and their associated agencies from an early stage of ecosystem development. These institutions have pre-established networks and relationships with public and private sector organisations that can be accessed through early engagement and dialogue.

8.6 Assessing the Research Quality

Thus far, the chapter has presented the reader with the defined research problem before then outlining the original contributions to both theory and practice. To attain a high-quality standard of research it is essential to critically assess the quality of research conducted. The criteria adopted for evaluating the research quality of this research was considered in Chapter 4. The remainder of this section will be used to discuss the assessment of quality in further detail.

This doctoral research ensured research design quality, as is shown in Table 8.1, in a number of ways against the pre-established quality criteria. Additionally, it should be noted that it was not only the empirical research component of this study, but also the literature review and development of the conceptual framework that adhered to robust quality requirements associated with sound management research. Eisenhardt and Graebner (2007) explain that quality empirical research should have robust foundations in relevant and related literature which help identify the research gap and pose research questions that tackle the gap. Similarly,

this research set off with a considered, systematic review (SLR) of ecosystem and open strategy literatures. Further, it reflected on different views and perspectives presented by various influential authors to develop a conceptual framework that was created by combining different views within the literature. This conceptual framework is grounded in the debate around 'ecosystem genesis' and identifies a gap in the literature by bringing together the literature on innovation ecosystems and the principles of open strategy.

In doing so, this research has recognised the lack of comprehensive studies that investigate the strategic decision-making activity undertaken at the generative phases of developing an innovation ecosystem. The context-specific focus on the Scottish fintech ecosystem enabled this study to examine the development of an innovation ecosystem from the early foundational stages of its development. Subsequently, specific research questions were posed that allowed for an investigation of the topic in the context of the fintech ecosystem in Scotland. The conceptual framework derived from the literature review and research questions posed helped guide the empirical investigation undertaken in conducting the field work for this study. This approach allowed for robust constructs that enabled an examination of the strategy processes and ensured reliability in research quality from the early stages of this project.

Criteria	Case study aim	Case study tactic	How this was achieved in this study	Addressed in thesis chapter
Construct Validity	Ensuring correct operational measures are in place for the concepts being studied.	- Using multiple sources of evidence - Key informants reviewed draft coding workbook and - Establish chain of evidence	Multiple sources of evidence/ sources of data consulted (interviews, published media, archived documents, observations). Conceptual framework strongly grounded in literature enabled the researcher to achieve construct validity.	Chapters 2,5,6
Internal Validity	Establishing adequate causal links and relationships in the obtained dataset.	- Explanation-building - Addressing competing explanations	This research is more theory extension and refinement to better understand the theory in relation to the observed results. Hence, only explanation building is provided.	Chapters 4,6
External Validity	Explaining how the phenomena studied can be replicated in other environments.	- Using theory in single-case studies - Using replication logic in multiple-case studies - Feedback from colleagues for outer control	The findings from this study are context specific (Scottish fintech ecosystem) and may not be entirely generalisable. Multiple case study organisations were interviewed and analysed through the same conceptual framework. Pattern-searching was then carried out through the replication logic. Research design and findings were discussed in conferences with a wide range of academics. Furthermore, discussions with colleagues at the University of Strathclyde were also used to ensure outer control.	Chapters 3,4,5,6,7

Reliability	Ensuring other researchers would reach similar observations from the dataset. Avoiding idiosyncrasy by following a clear process to data analysis and findings.	- Using case study protocols - Developing a case study database - Feedback from colleagues for outer control	Early definition of research quality criteria, case study database, case study protocol, and coding. Research supervisors reviewed data structure table and interpretations made by the researcher. Also, research findings were shared with ecosystem stakeholders for review of interpretations made and conclusions drawn.	Chapters 5,6
Contribution to Theory	What is being added to what is already known? What is the theoretical basis? How do the findings enfold literature?	- Extending theory into new areas - Confirming existing theory - Identifying new conjunctions of previously distinct theories or disciplines - Advancing a methodology Grounded theory generation - Disproving null-hypothesis - Generating new insights - Theoretical reflection on practice	Identification and description of key features of the strategy process in the generative phase of ecosystem development. Identification of key strategic activities observed in ecosystem decision-making, through the lens of open strategy. Clarifying the nature of strategic decision-making by identifying links and patterns in the approach taken by the institutional stakeholders investigated. Ultimately developing further knowledge into ecosystem strategy body of literature, Resultantly, this research has achieved a few contributions to theory via the extension of theory into new areas; generation of insights; confirmation of existing theory, and theoretical reflections on practice.	Chapters 2,6,7,8
Contribution to Practice	Do research implications and conclusions acknowledge policy makers or practitioners to assist them in making decisions on business or social issues?		Informed guidelines provided to aid strategy practitioners in their approach to developing innovation ecosystems. Describe the genesis stage during the birth phase of innovation ecosystems to inform strategy practitioners and policy makers.	Chapters 6,7

Data/ Research Evidence	What represents data in this doctoral research project for auditable, multi-sourced research evidence?	- Organisational data - Interview transcripts - Field notes - Artefacts - Archival documents - Observations - Workshop outcomes - Reported perceptions - Created representations (e.g., metaphors, narratives, cognitive maps etc.,)	Electronic recordings of interviews, transcriptions, field notes, research diary, observations, coding and data structure table, archived documents, organisation websites and reports were all used as sources of evidence to build explanations.	Chapters 5,6

Table 8.1. Evaluation of Research Quality Criteria

Therefore, the purpose throughout the doctoral research journey was to seek robust and reliable answers to the research questions posed. Nonetheless, the onus rests on the researcher to ensure that the necessary requirements and conditions are in place to ensure that the research process is carried out thoroughly. This is achieved through the implementation of an appropriate research methodology that also helps to ensure research quality is upheld. The seven research quality criteria outlined in Table 8.1 were derived from the literature (Yin, 2003; Easterby-Smith, Thorpe and Jackson, 2012) alongside other conversations had with leading academics in PhD symposiums, academic conferences, methodology and research training courses. These academics include Prof. David Boje (Aalborg University guest lecture in 2019), Prof. Paula Jarzobkowski (BAM Conference 2019), Prof. Maureen Meadows (BAM paper development workshop 2020), Prof. Harry Sminia, Prof. Barbara Simpson, Prof John Quigley and Dr Kendra Briken at Strathclyde Business School research methodology course 2019. Moreover, academic papers were presented in various prestigious conferences in the UK (BAM 2019) and Europe (EURAM 2020) which further helped the researcher to ensure that the research design is valid and approved by independent reviewers. Conforming to the requirements discussed in research methods courses and obtaining positive comments and approval from senior academics enabled the researcher to achieve a good quality, robust and reliable doctoral research study.

Below is a review received from the BAM 2019 Conference paper submission with examples of some comments made by the anonymous reviewers:

- Sunner, A. & Ates, A., 2019. 'Open Strategy: a systematic literature review and research agenda'. *BAM 2019 Conference Proceedings: Building and Sustaining High Performance Organisations During Uncertain Times.* London, p.22.

Reviewer's comments (as original):

Content - Quality of contribution to the field (20%):	10
Significance for theory or practice (20%):	8
Originality-methodology /research design/knowledge of the field (20%):	8
Relevance for BAM2019 conference theme (20%):	10
Quality of presentation-organisation, structure, and clarity (20%):	8
Total points (out of 100):	**88**

Comments for the Authors

This is an interesting foray into exploring how Open strategy can be further conceptualised in practical terms. The methodology used to isolate relevant research-pieces is rigorous, and the conclusions drawn are riveting. It will be interesting to read the full conference paper.

8.7 Research Limitations

Notwithstanding the best intentions of the researcher to ensure a robust and reliable research design, there are always some boundaries in existence to curtail what a researcher can accomplish during the period of study. Ensuring that these limitations are acknowledged strengthens the validity of the research findings and ensures a greater degree of robustness in the research process. The limitations of this research are noted to relate to the research methodology and results obtained.

Firstly, the findings of the empirical investigation are centred on three case study organisations which may be criticised as being insufficient to generalise the findings made. The fintech ecosystem in Scotland, at the point of writing, is represented by thirty strategic partners who contribute to strategic discussions at board meetings. Hence, this research study investigating only three of them could be seen as being a weak representation of the ecosystem. However, in focusing on three institutional organisations, this research has uncovered robust and impactful context specific insights and dimensions to innovation ecosystem strategy in the early generative phases of ecosystem development. In particular, institutional ecosystem participants were noted to be highly involved and engaged in ecosystem strategic decision-making at this generative phase of development. All data collected was handled objectively with the intention of ensuring that personal interpretations and biases were largely mitigated when analysing the gathered date . Discussing my findings with my supervisors, stakeholders from the Scottish fintech ecosystem and my peers and colleagues at Strathclyde Business School, as well as triangulating data and applying saturation principles.

Even if the institutional organisations investigated in the empirical project were not to be considered as the unit of analysis in this research, the choice of organisations for case study analyses would be a critical step in the research process. When considering the number of organisations to investigate, there is a trade-off between covering a greater number of organisations (casting the net wide to capture more perspectives) versus the willingness to achieve depth (drilling deeper into a concentrated number of sources to extrapolate detail). Significant to deciding on this trade-off is the level of generalisability sought by the researcher with the research output. The aim of this research was not to generalise statistically across all types of ecosystems nor to make a comparative study between the Scottish fintech ecosystem and any other innovation ecosystem. The primary focus was to contribute to theory by shedding light on the strategy process in innovation ecosystems. Hence, there is significant

value in gaining a thorough understanding of the context specific processes and activities observed in the Scottish fintech ecosystem. Observations from three different institutional stakeholders in parallel can help to understand phenomena that may not appear as transparently in each organisation individually. Therefore, observations from different organisations can present questions, confirm, or query assumptions made, and finally inspire reflections or insights when comparing one to another. Consequently, the decision was made to select three case study organisations, all of whom were institutional stakeholders involved in the generative phase of developing the Scottish fintech ecosystem. Focusing on three organisations enabled the research to provide sufficient depth of investigation into each of them. Simultaneously, investigating each case independently provided some variation in the empirical material considered and further enhanced the possibilities for cross-fertilisation across the case study organisations.

However, investigating only three case study organisations restricted the researcher to a narrow view of the Scottish fintech ecosystem. Naturally, had different stakeholders been considered these would have led to some different observations and perhaps partially altered results being achieved. For example, investigating the role of large corporate organisations on the strategic partners board of the fintech ecosystem or even the small fintech firms would have offered potentially divergent results. In hindsight, the researcher would have cast the net wider to include more ecosystem participants in the empirical investigation, therefore, creating a more informed investigation of the fintech ecosystem.

Nevertheless, the findings obtained in this study are perceived to be robust and interesting insights into the dynamics of the innovation ecosystem strategy process during the generative phase of ecosystem development. It is inferred that, on a theoretical level, these findings can be generalised beyond the context of the empirical investigation conducted. The findings from this study are objective, in the eyes of the doctoral researcher at least, as the case study investigation method outlined in Chapter 4 was pursued rigorously.

Secondly, although both the pattern searching and data coding exercises undertaken during the data analysis stage were peer reviewed by research supervisors and colleagues at Strathclyde Business School, the interpretations made remain subjective to the researcher. In order to mitigate the effects of subjectivity in the interpretations formed, the case study protocol was designed to ensure reliability and robustness in the research process. Triangulation of data from multiple sources (archival records, face-to-face interviews, strategy documents,

observations, and field notes) using established data analysis techniques such as pattern-matching, cross-case coding and verification of findings with peers and colleagues with extensive knowledge of the Scottish fintech ecosystem. Further, data analysis techniques assisted the researcher in identifying and categorising both organisational and other substantive classifications to extract abstract dimensions for developing theory (Figure 6.3 in Chapter 6). The findings from this research project should be tested for validation in future studies to test and corroborate the findings presented in Chapters 7 and discussed in Chapter 8.

Lastly, the impact of contingency factors was not considered a key aim in this research project. The effects of the novel COVID-19 pandemic on not just Scotland and the U.K. but also the wider world, my own personal interests and knowledge of the fintech environment in Scotland, serendipity and the concept of 'being in the right place at the right time', leadership within the organisations investigated, existing relationships between and across the ecosystem participants and so on, were not considered as a primary concern in this research. Further still, these contingencies were not considered in the conceptual framework designed for this research project. In retrospect, the researcher concedes that these factors may have had a big impact on how strategy unfolded in the early generative phases of forming the innovation ecosystem. Given the scope of this research, these contingency factors were omitted mainly due to time constraints imposed with completing the doctoral research study. Including these contingencies could have resulted in the research objectives becoming too big to manage within the framework imposed on research within Strathclyde Business School, meaning this would be difficult to achieve in a single doctoral research project. Therefore, considering the impact of such contingency factors is an opportunity for future PhD researchers to consider when investigating the strategy process in ecosystem genesis as a suggested area for future research.

8.8 Future Research Considerations

Towards the end of any doctoral research project, there emerge more questions beyond those originally intended at the start of the PhD journey. New and emerging knowledge often generates fresh questions, and this research is no exception. This section will outline those questions of most interest to this researcher that may be considered in future research. Before going on to make suggestions for future researchers to consider, this doctoral researcher intends to take this research project further beyond the PhD process in the near future by considering future publications. It is the researcher's opinion that there are some interesting and novel

contributions made in this research that merit further investigation and dissemination of knowledge. As further work, the researcher intends to revisit the state of the fintech ecosystem which now consists of over 300 organisations of which 35 corporates sit on the strategic partners board and over 250 are small fintech firms. The researcher intends to further investigate the strategy process as the ecosystem evolves through Moore's (1993) ecosystem lifecycle model to better understand how the strategy process at the generative phase of development can influence the success of the ecosystem as it evolves. Employing the same theoretical framework and similar research design, the researcher aims to also compare how different organisations within the fintech ecosystem contribute to the strategy process. Moreover, as the ecosystem grows and evolve, the influence and efficacy of the open strategy dimensions explored in this present study will be revisited. Lastly, whilst survey research was discarded for this research, the researcher was able to develop a more profound understanding of the phenomenological perspectives on the topic. Hence, future research conducted would likely contain some survey research being done on a larger sample size to allow for a more holistic understanding of the strategy process in the innovation ecosystem.

This thesis uncovers a number of implications for future research. Firstly, further research in this area may seek to explore in further depth the full array of activities underpinning the strategy process in the innovation ecosystem. This can be achieved through longitudinal studies where researchers may wish to observe more closely the relational interplay between members of the ecosystem during strategic meetings, discussions, and dialogues. Additionally, it would be interesting to see if the existing findings of this research differ or not in other innovation ecosystem contexts, with different institutional and industrial organisations involved.

Secondly, future studies may want to examine the effect of contingency factors, such as the impact of the COVID-19 pandemic and the ensuing restrictions imposed on social and professional contact by national Government. Indeed, this unprecedented and distinct global event may continue to have profound impacts and implications for not only organisations considered in this research, but by and large, society itself on a global scale. Further, the size of organisations considered, composition of management and leadership, pre-existing relationships between the organisations play an important role in enabling the distinctive features of strategy in the ecosystem genesis phase to materialise. Future studies should consider these contingency variables to compare outcomes and identify any differences in the strategy process as explained in this research.

Finally, future research could adopt a different lens from open strategy to explore the nature of the strategy process observed in the early generative phase of the fintech ecosystem. Researchers may wish to consider other aspects such as the implementation of strategic decisions within the ecosystem, or the performativity of the strategy process. This type of future research can help in developing normative practice models that explain successful innovation ecosystem procedures in the strategy process when compared to other forms of organisational clusters or networks.

8.9 Personal Reflections and Learnings

After three years of hard work, it would be a great shame and disappointment if the researcher had gone through this entire process so effortlessly so as to not have learnt any lessons along the way whilst completing this research. Or, if the researcher had reached the end of the journey with a feeling of regret that he could have done more to enrich the PhD journey undertaken. Thankfully, neither of the two aforementioned scenarios are applicable. The researcher firmly believes that the work completed in this research study and subsequently presented in this research is highly interesting and serves as a useful extension to the existing body of knowledge on the strategy process in innovation ecosystems. Notwithstanding the positive experience overall, there were some occurrences along the journey that did not go to plan or were difficult to foresee in advance. The following section concludes with some of the personal reflections and learnings of the doctoral researcher.

First of all, the novel coronavirus pandemic fundamentally changed the way in which society carried and conducted itself on a daily basis. In relation to this research, the researcher had to revise the empirical investigation process, conducting all interviews digitally via Zoom meetings as opposed to the traditional face-to-face interview format. Additionally, Government restrictions on social distancing and travel meant that working from home became the norm for a vast majority of people across the country. This presented additional constraints in the research process as the researcher found that interview participants were initially reluctant to offer free time for research purposes when they themselves were contending with the effects of disruption on their personal and private lives. Here the researcher learned how to be patient, adaptable and flexible in his approach to managing expectations of different stakeholders and continuing to make progress in the doctoral studies being undertaken. For instance, being flexible with working hours enabled the researcher to conduct interviews during unsociable

hours. Whilst any downtime in productivity during the initial period following the announcement of the national restrictions was utilised to make progress with writing-up the early chapters of the research.

Secondly, the researcher faced an early conundrum in the research project when deciding on the type and number of organisations to examine for the empirical investigation. Should the investigation extend beyond the three institutional stakeholders interviewed? Perhaps another few organisations could be included? The list of participants in the fintech ecosystem is available via the Fintech Scotland website, and pilot case study interviews had revealed thirty organisations listed as strategic partners who contributed to discussions at board level. However, learning about the organisations is a time-consuming activity, and gaining access to relevant individuals – most of whom were senior manager grade or above – is not an easy exercise. Upon reflection, the researcher believes that increasing the sample size interviewed would not have sufficiently compensated for the loss in depth of analysis that was achieved by conducting interviews with three case study organisations.

Thirdly, the research findings and conclusions were revised from different standpoints as the researcher initially toyed with different interpretations of the data analysis conducted. Different versions of chapters written and stored on the University of Strathclyde's data servers bear witness to the changes in the thought process of the researcher. For instance, in identifying what the key activities were underpinning the ecosystem genesis sub-phase. Initially, the researcher considered the implications of the open strategy perspective on how the enactment of strategy differed from more traditional perspectives on the strategy process in organisational networks or partnerships. The literature on ecosystem strategy is in an embryonic state with limited consensus between established academics on a standard approach for how the strategy process in innovation ecosystems is enacted. As a result, the researcher was not entirely sure about his tentative findings because he could not directly validate these through existing literature. It became a small struggle for the researcher to connect the empirical findings back to the literature as empirical investigations on the nature of strategy activity within innovation ecosystem is largely restricted or non-existent. Inevitably, the researcher drew conclusions from an uncertain and ambiguous picture. Through this experience, he learned the significance of investigating a phenomenon from multiple different perspectives. Given this uncertain backdrop, the research conversations and discussions held with colleagues from Strathclyde Business School and the wider academic community at research conferences and events were

a worthwhile exercise. Reading academic papers, journals, and texts further helped in clarifying the findings presented, despite the time-consuming nature of this task.

Therefore, the researcher can say with some confidence that there are not many regrets he has about the approach taken with this doctoral research project. There have been many useful additional learning experiences undertaken into both theory and practice, for instance by participating in the multidisciplinary research modules at Strathclyde Business School with fellow researchers from marketing, economics, management science, accounting and finance, and human resources management. Discussing the research with doctoral colleagues, learning facilitators, academics at Strathclyde University, the wider academic community during academic conferences (BAM 2019 and EURAM 2020) and also consulting practitioners in the case study companies interviewed further enriched the learning journey. Nonetheless, if the researcher had the opportunity to undertake this research study again, he would likely start collecting data earlier in the process. Whilst the global pandemic was a contingency factor out with anyone's control, the amount of time taken to collect, transcribe and then analyse the data was perhaps underestimated in the earlier stages of the project. Moreover, the researcher believes firmly in having a structure to his work, hence, this was also true in his approach to completing this study. However, one thing he did learn upon reflection was that there is no requirement for one to wait until all preceding sections (literature review, methodology, research design, etc.,) are completed before moving into data collection and analysis. Given the chance to repeat this study, the researcher would perhaps adopt a grounded approach through a solely inductive case study methodology. There are multiple interesting areas in the field that a researcher may want to explore further such as the relational interplay between participating organisations in the generative phase of ecosystem strategy development.

The next chapter will provide the conclusion for this research by weaving together the key findings and discussion points covered. Bringing together the whole research project to complete the research process.

9. CONCLUSION

The previous chapter provided a discussion of the research findings in light of the observed results from the empirical investigation, together with the findings from the literature in a greater depth. This subsequent chapter summarises with the key learning points from completing this research and provides a conclusion to this doctoral thesis.

9.1 Research Conclusions

This research preceded with an acknowledgement that traditional industry boundaries are being distorted by the growth of ecosystem constructs that transcend across multiple sectors. However, as identified in the literature review, our understanding of ecosystem strategy and strategic decision-making requires renewed attention. Traditional perspectives on strategy are centred on competitive behaviours and jostling for market share within industry sectors. However, the ecosystems approach lifts the unit of analysis in strategy making to the network level (De Wit and Meyer, 2017), where co-operation between business entities becomes synonymous with competition (Hannah and Eisenhardt, 2018, Hoffman *et al.*, 2018). Competition is enacted at the network level between and amongst ecosystems, with an inherent need for co-operation and collaboration amongst firms contributing to the same ecosystem. As Mintzberg (1987) famously said "the real challenge in crafting strategy lies in detecting subtle discontinuities that may undermine a business in the future." Ecosystems are disrupting the traditional linear outlook on businesses and their relationships with suppliers, competitors, and customers. Resulting in Adner (2017) and Jacobides, Cennamo and Gawer (2018) leading calls for a better understanding of strategy planning and execution in an ecosystem context, as existing perspectives on strategic decision-making do not adequately reflect the nature of strategy enacted in ecosystems.

As a result, this doctoral research addressed a gap in the literature regarding the need for a better understanding of how strategy is formed in ecosystem constructs. This research gap is addressed through research designs based on the practice of strategy making in the context of the Scottish fintech innovation ecosystem. Adopting the processual theory approach treats strategy as being an emergent outcome of deliberate and purposeful set of activities undertaken to realise the outcomes observed and captured in this research. Whittington (2006) suggests

that this approach to strategy making injects a sense of craft into the planned strategy perspective. Consequently, this doctoral research set out to understand firms strategically align around the focal value proposition in an innovation ecosystem.

In order to make sense of the broad research question it is important to gain an understanding of the activities within the ecosystem strategy process. This research examined the over-arching problem by carrying out case studies focusing on the role of three institutional actors involved in establishing the Scottish fintech ecosystem. Whilst these findings could be critiqued for having a narrow focus on only three case study organisations, adding further case studies would have limited added value as the organisations investigated were observed to be amongst the most actively involved participants in the ecosystem. Moreover, studying each and every organisation involved in the wider empirical context of the fintech ecosystem would have been a complex and time-consuming activity that would be impossible to achieve under the conditions imposed by doctoral research at the University of Strathclyde.

This study discovered that collaboration amongst the 'triple helix' of private sector, academia and government institutions is crucial in the generative phases of ecosystem development. Strategy design and formulation is observed to be inclusive, transparent, and participative with IT playing an essential role in enabling communication amongst various stakeholders. Institutional organisations including the Scottish Government and their associated agencies, Universities, and Fintech Scotland were heavily involved in facilitating the strategic dialogue and discussion amongst ecosystem participants. For instance, Fintech Scotland is explained in the preceding sections to be an *enabler* of ecosystem activity and helps gel the ecosystem together in their role as a *coalescing mechanism*. These organisations were seen as *mediators* or *facilitators* of ecosystem activity through their neutral positions in the ecosystem.

When decomposing the strategy process to activity level, the utility of strategy process theory is observed to be relevant in the context of the innovation ecosystem examined. Resultantly, the following key concluding points summarise this research:

- The strategy process in the fintech ecosystem has a dynamic nature, consisting of a blend of pre-planned and deliberate combined with collaborative, informal, open and emergent strategic initiatives.
- Ecosystem participants engage in the strategy conversations and dialogues to varying degrees. Institutional stakeholders – such as Fintech Scotland and the

University of Strathclyde – are observed to be facilitators of open and collaborative dialogue amongst ecosystem stakeholders.

- Strategy process theory provides a structured method of appraising the progress being made in navigating the ecosystem through the generative phase of the birth stage of the ecosystem lifecycle model.
- Strategy in the innovation ecosystem does not conform to prescribed mainstream competitive strategy perspective, as there is no formally defined and accepted process to strategy design and formation in ecosystems.
- Strategy outcomes are dependent on the ability of strategy practitioners in ecosystems being able to elicit the inclusion and participation of ecosystem stakeholders in the strategic decision-making dialogue. These will heavily influence the alignment of ecosystem participants around the focal value proposition in an ecosystem.

Therefore, the key conclusions of this research are:

Traditional perspectives on competitive strategy are insufficient in evaluating ecosystem strategic decision making, however, strategy process theory can shed some light on how strategy unfolds in innovation ecosystems.

Academic researchers need to understand the significance of open and collaborative forms of strategy formation as being key insights into how strategy-making differs in ecosystem constructs. Similarly, strategy practitioners should acknowledge the importance of the generative phase of ecosystem development in positioning the ecosystem for success.

9.2 Key Learning Points

This section condenses the important research Discussions and Findings as elaborated on in Chapter 8 into a framework that presents the dynamics of ecosystem strategy in the generative phase of innovation ecosystem development. In brief, the nature of the strategy process in the Scottish fintech ecosystem is shown to be a dynamic, interactive, and collaborative process.

In addressing the set research questions, this thesis builds upon the work of Dattée, Alexy, and Autio (2018) in evolving their process model for ecosystem development (Figure 2.6) and further enhancing the conceptual framework (Figure 2.7) for this research. Whilst the iterative nature of ecosystem development is already documented in the Figure 2.7, with the overlay of the open strategy principles, there is no documentation of the types of strategic decision-making activity undertaken during the three phases of ecosystem development. Most notably, there is no consideration of how strategic alignment is achieved within the ecosystem, to enable participating organisations to work towards the same objectives and vision. Figure 9.1 demonstrates how the *purpose*, *strategy initiatives*, and *ecosystem dynamics* covered in Section 8 impact the process model of ecosystem creation championed by Dattée, Alexy, and Autio (2018). Herein, lies the first contribution of this thesis, an insight into the nature of strategic decision-making activity undertaken to enable strategic alignment of firms in the creation of the ecosystem.

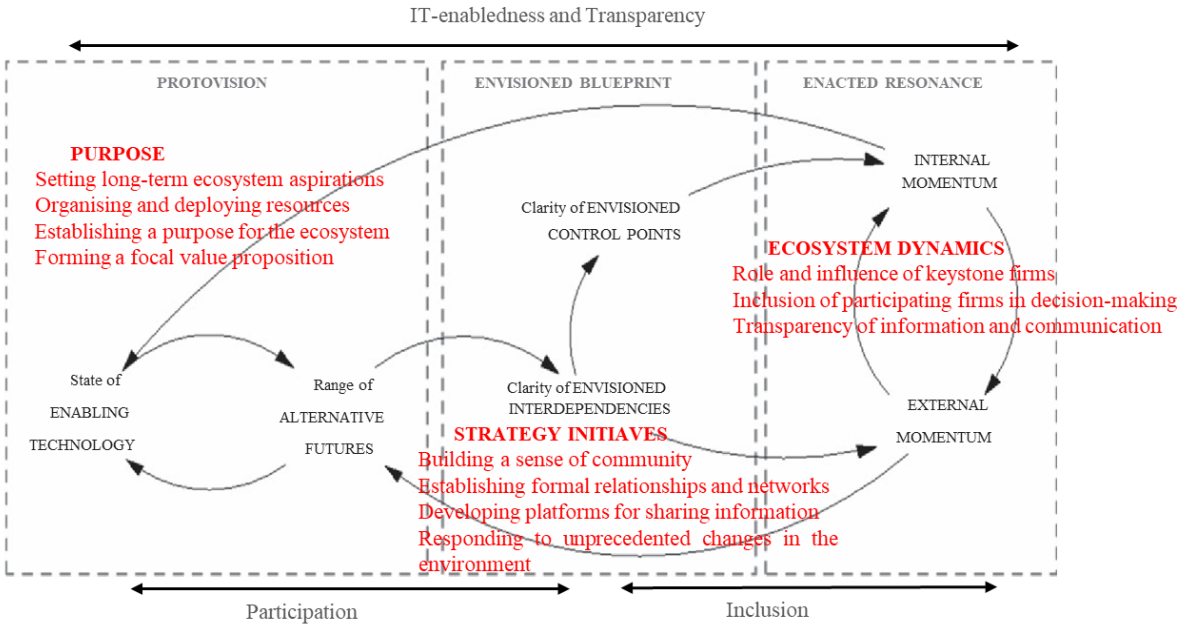
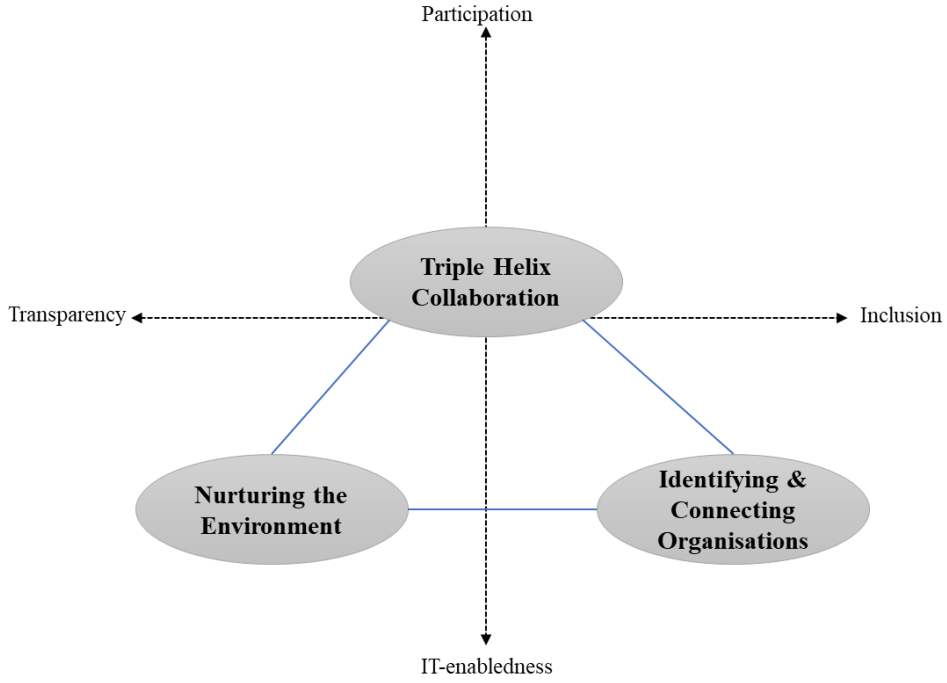


Figure 9.1. Process model of ecosystem creation with insights into strategic decision-making

Although this thesis doesn't necessarily deliver an exhaustive strategic analysis of the fuller ecosystem lifecycle model (Moore, 1993), it does offer unique insights into the generative phase of ecosystem development based on the empirical investigation of the Scottish fintech innovation ecosystem. The strategy process is very much driven by the institutional organisations involved in the ecosystem as they have assumed responsibility for facilitating

and enabling strategic dialogue amongst ecosystem participants. At the ecosystem genesis phase, the core strategy process is characterised by (i) *triple helix collaboration* to enable innovation, (ii) *nurturing the environment for ecosystem birth* to create momentum for ecosystem activity, and (iii) *identifying and connecting organisations* to enable new synergies and collaborations to emerge (see Figure 9.1). These activities are observed to be paramount to ensuring that the ecosystem does not lose sight of the **focal value proposition** as it continues to grow and expand. However, these activities are not linear in nature. They require a pooling of resources, ideas, competencies, and most importantly a collaborative approach to ecosystem development. In other words, these aforementioned high-level activities are not mutually



exclusive of one another. Instead, they are iterative in nature and can be carried out concurrently as there is no antecedent to this ecosystem genesis phase of development (see Figure 9.2).

Figure 9.2. Strategy dynamics in ecosystem genesis

Although the ecosystems literature may be criticised for ignoring the impact of the competition amongst participating members, it could be suggested that ecosystem participants are dependent on one another for the overall success of the ecosystem. They have little choice but to co-operate and collaborate with one another in order to attain successful outcomes for both themselves and the wider ecosystem itself. Perhaps, ecosystems could be better served if academics and researchers explored the paradox or tension between competition and co-operation in ecosystems.

9.2.1 Summary of Implications for Theory

This research has produced findings that both converge and diverge from the conventional literatures on ecosystems and strategy management.

Firstly, the ecosystems literature is beginning to deconstruct the conventional approach on ecosystem development – that of the ecosystem lifecycle model proposed by James Moore (1993, 1996). Different forms of ecosystems i.e., business, innovation, knowledge, entrepreneurial etc., are challenging the conventional one-size fits all approach to ecosystem establishment. This research contributes to the discussion by suggesting that the existence of an ecosystem genesis phase preceding the conventional ecosystem birth phase in Moore's lifecycle model plays a significant role in shaping the development of the innovation ecosystem.

Secondly, the trends in the strategy management literature are shifting from the traditional rational approach towards a practice-based perspective (Jarzobkowski, 2006; Whittington, 2006). The onus moves on to the strategy practitioner. The strategy-as-practice literature from which the more recent open strategy perspective is derived, places the practitioner(s) at the core of strategic decision-making and implementation. This trend is significant to ecosystems literature as resource orchestration and network theory perspectives are being presented in the growing body of research (Purbasari, Muhyi and Sukoco, 2020; Bittencourt, dos Santos and Migoni, 2021). The debate in the ecosystems literature is around the process and content of strategic decision-making. The implications for strategic decision-making pointed out in this research through the application of the open strategy lens to ecosystem strategy making and implementation provide an important insight that merits further investigation. Researching strategic decision-making in more mature and established ecosystems through the lens of open strategy would allow for a more informed understanding of the activities underpinning ecosystem strategy.

Thirdly, another important implication for theory is the role of institutional ecosystem participants in the generative phase of ecosystem development. In mainstream academic literature these organisations are often seen as being the keystone entities (Iansiti and Levein, 2004a, 2004b). However, one significant difference observed in the fintech ecosystem is the lack of a dominant keystone entity to direct the ecosystem. Instead, multiple different institutional stakeholders seeming assume responsibility for guiding the ecosystem during the early formulative stages of ecosystem genesis.

This doctoral research study concluded with insights about the strategy process underpinning the genesis phase of the fintech innovation ecosystem. Intriguingly, some of the strategy dynamics uncovered affecting ecosystem strategy making provoke further research questions to be addressed in future studies. Some examples of these are:

- Whether openness in strategic decision-making is relevant at all stages of the ecosystem life-cycle model? What can longitudinal studies reveal about the nature of strategy making and implementation beyond the ecosystem birth phase?
- What is the role of private enterprises involved in the strategy process of successful innovation ecosystems?
- What are the characteristics of the relationship between and amongst ecosystem participants who collaborate in fulfilling the ecosystem proposition but also compete for market share external to the ecosystem?
- What are some of the determining contextual and contingency factors that influence strategic decision-making in successful innovation ecosystems?
- How does the strategy process in innovation ecosystems influence or affect other management processes i.e., operational processes or support processes?
- What are the key differences in the levels of involvement and engagement in ecosystem strategy between institutional and private enterprise ecosystem participants?

In conclusion, strategy as a process (set of activities) does exist in innovation ecosystems. It provides some structure to the ecosystem genesis phase where there is a fuzzy understanding of how the ecosystem will shape up. The focal value proposition is still emerging during this phase of the ecosystem lifecycle, with institutional participants facilitating and enabling the strategic discussion and dialogue. Further research is required to understand the strategy dynamics as concluded above.

9.2.2 Summary of Implications for Practice

Finally, this doctoral research has some significant implications and recommendations for strategy practitioners and policymakers that can be taken away from this research. These are as listed below:

- Strategy practitioners should seek to create a collaborative and inclusive environment that encourages ecosystem stakeholders to participate in the strategy dialogue and discussion.
- Ecosystem genesis requires practitioners and policymakers to contend with fuzziness and uncertainty in the direction being taken. Therefore, involving ecosystem stakeholders early in the ecosystem genesis phase can allow for a more informed and stable value proposition to be emerge.
- Institutional participants in an innovation ecosystem, such as local and national Government, universities etc., play a significant role in facilitating dialogue and discussion between ecosystem participants. These organisations can play a crucial role in the ecosystem genesis phase and should be consulted and involved in establishing the ecosystem.
- Policymakers will benefit from engaging with SMEs as well as large corporations when designing the ecosystem. This will facilitate better strategic alignment of ecosystem stakeholders at an earlier stage of ecosystem development.
- Strategy practitioners should review their approach to strategy development to accommodate the evolving needs of ecosystem participants. Adopting open forms of strategy making and implementation requires practitioners to recognise where to open up and where to shift towards more closed forms of strategic activity.

9.3 Concluding Remarks

Undertaking a doctoral study immerses the researcher in the phenomena being investigated. In the case of this study, the researcher's experience is no different. By the end of the process, the insights generated provided the researcher with a unique perspective on the theoretical lens used. The definition and interpretation of open strategy given in this thesis (Chapter 2) and elsewhere in academic publications, in the opinion of the researcher, overlap with the concepts of strategy-as-practice and open innovation. Indeed, one could question whether there is any significant variation in the collaborative and inclusive practices championed in all three? The researcher found from his experience of investigating the Scottish fintech ecosystem that strategy management in an ecosystem context is a complex and multi-faceted.

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APPENDICES

APPENDIX 1 – PARTICIPANT INFORMATION SHEET

Participant Information Sheet for PhD Research Study

Name of department: Hunter Centre for Entrepreneurship
Title of the study: An investigation into how strategic alignment can be achieved in innovation ecosystems: A case of the FinTech ecosystem.

Researcher Name: Akwal Sunner
Role: PhD Researcher
Institution: University of Strathclyde
Email: akwal.sunner@strath.ac.uk

Introduction

I would like to invite you to take part in a research study sponsored by the University of Strathclyde. Before you decide, it is important for you to understand why the research is being conducted and what it involves. Please take time to read the information below carefully. Please feel free to ask questions if anything you read is not clear or if you would like more information. Participation in this research is voluntary.

What is the purpose of this research?

The main purpose of this project is to address the under-researched, yet vital, aspect of the literature on how multiple firms achieve strategic alignment in ecosystem constructs. This research aims to explore the impact of more open forms of strategic decision-making that make the strategy conversation more participative for a wider range of stakeholders in innovation ecosystems. This research should enable a more informed understanding of the strategizing practices of organisations engaged within the fintech ecosystem under the wider umbrella of Glasgow City Innovation District (GCID).

Do you have to take part?

Participation in this study is voluntary. I will describe the study and go through the information sheet, which will be given to you. I will then ask you to sign a consent form to show you agree to take part. You are free, at any time, to withdraw from this research without detriment.

What will you do in the project?

The format of this research will incorporate a two-fold approach to participation:

(1) a semi-structured, face-to-face interview lasting approx. 60 mins;
(2) a participant observation approach where the researcher will note his observations on the nature of the strategy making dialogue.

The participation window will fall between the period 01st April 2020 – 31st May 2020.
Due to the ongoing restrictions imposed by COVID-19, the process of collecting data will take place over Skype or alternative VOIP-based platforms. In accordance with the Social Research Association (2003); measures have been taken to ensure respect for your privacy, confidentiality and protection of data, honesty and integrity of information and prevention of harm and risk to yourself and other participants taking part. However, if at any time during the process you feel uncomfortable answering a question you can decline to answer.

Why have you been invited to take part?

You have been chosen to take part because you have been subjected to a varying degree of exposure to the strategic decision-making dialogue in the ecosystem during your period of employment at your organisation. It is the intention of the researcher to gain a more rounded understanding of your experiences of participating in the strategy conversation and contribution to shaping the strategic initiatives being followed in the wider ecosystem environment.

What are the potential risks to you in taking part?

During the research you will not be exposed to any physical, psychological or legal risk or harm. Interview questions have been structured in such a way, so that your privacy will be protected, and no pressure will be put on you to answer sensitive questions. All information pertaining to you as an individual and your organisation will be anonymised and kept confidential. The data you provide will not compromise your position in the organisation at any point in time.

What information is being collected in the project?

The researcher will capture verbal and non-verbal cues and responses from participants during the interview and observation stages of this project. All references to individuals and organisations will be removed or given pseudonyms where data is to be included within the submitted study, unless prior permission has been given.

Who will have access to the information?

All references to individuals and organisations will be removed or given pseudonyms where data is to be included within the submitted study, unless prior permission has been given.

Where will the information be stored and how long will it be kept for?

Primary data gathered from interviews and observations will be kept safe at all times through the use of encrypted hard-drives and will only be shared between the investigators mentioned in this information sheet. Any publications and research output will pseudo-anonymise participant and organisation identities, thus safeguarding against the possibility of identification. All data will be held for as long as required as per the post-graduate research stipulations of the University of Strathclyde, following which all data will be destroyed.

Thank you for reading this information – please ask any questions if you are unsure about what is written here.

Please also read our Privacy Notice for Research Participants for further information.

What happens next?

If you are happy to be involved in this project, please sign the consent form to confirm this. If you do not wish to be involved, thank you very much for taking the time to consider this research.

Chief Investigator details:

Mr Akwal Sunner
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This research was granted ethical approval by the University of Strathclyde Ethics Committee.

If you have any questions/concerns, during or after the research, or wish to contact an independent person to whom any questions may be directed or further information may be sought from, please contact:

Secretary to the University Ethics Committee
Research & Knowledge Exchange Services
University of Strathclyde
Graham Hills Building
50 George Street
Glasgow
G1 1QE

Telephone: 0141 548 3707
Email: ethics@strath.ac.uk

APPENDIX 2 – PARTICIPANT CONSENT FORM

Consent Form for PhD Research Study

Name of department: Hunter Centre for Entrepreneurship
Title of the study: An investigation into how strategic alignment can be achieved in innovation ecosystems: A case of the FinTech ecosystem.

- I confirm that I have read and understood the Participant Information Sheet for the above project and the researcher has answered any queries to my satisfaction.
- I confirm that I have read and understood the Privacy Notice for Participants in Research Projects and understand how my personal information will be used and what will happen to it (i.e., how it will be stored and for how long).
- I understand that my participation is voluntary and that I am free to withdraw from the project at any time, up to the point of completion, without having to give a reason and without any consequences.
- I understand that I can request the withdrawal from the study of some personal information and that whenever possible researchers will comply with my request.
- I understand that anonymised data (i.e., data that do not identify me personally) cannot be withdrawn once they have been included in the study.
- I understand that any information recorded in the research will remain confidential and no information that identifies me will be made publicly available.
- I consent to being a participant in the project.
- I consent to being audio recorded as part of the project.

(PRINT NAME)	
Signature of Participant:	Date:

APPENDIX 3 RESEARCH METHODS & TECHNIQUES

3A Experimental Research

Experimental research strategies find their roots in the natural sciences, laboratory-based approach to research where the meticulousness of conducting research often leads to experimental research being held aloft as the benchmark for other research strategies to be assessed for rigorousness (Thornhill, Lewis and Saunders, 2016). In her doctoral thesis, Ates (2008, p.62) states that "knowledge can be achieved through observation of nature, reflection and experimentation. Observation collects facts, reflection combines them, and experimentation verifies the results of that combination". Whilst the social sciences domain has attempted to bridge the traditional divide between internal and external validity of the experimental approach to research, there remains scepticism about how suitable experimental research is to management and organisational studies research.

Thornhill, Lewis and Saunders (2016) outline the different types of experiments as follows:

Classical Experiment – samples of research participants are selected and randomly assigned to an experimental group or a control group (Figure 3.4). The experimental group contains the independent variables; those that can be manipulated or changed by the researcher in order to record the impact on the dependent variable. Whilst in the control group no such interventions are made, and therefore is held constant.

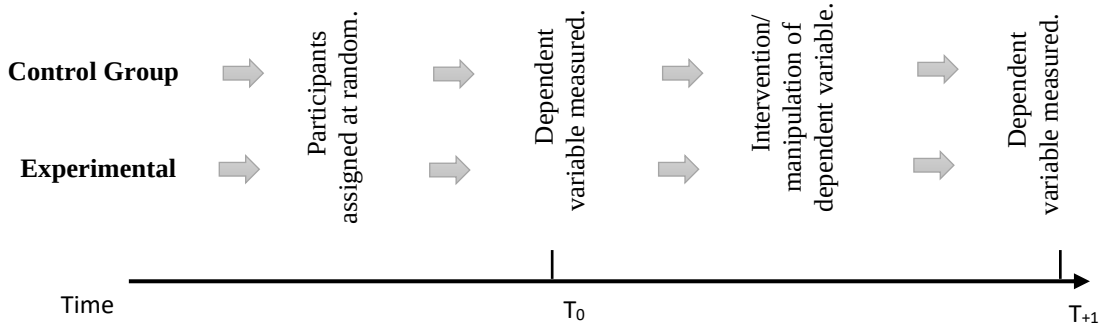


Figure 3A.1 Classical Experiment strategy (adaption from Thornhill, Lewis and Saunders, 2016, p.180)

- Quasi-Experiment – similar to the classical approach, however in this instance the researcher does not randomly assign participants to either the experimental or the control groups.
- Passive Experiment

- Natural Experiment – the underlying conditions and experimental contexts emerge naturally without any direct intervention from the researcher.
- Retrospective Experiment – observations into an existing condition with backwards inspection for explanation of what has happened.

3B Survey Research

Predominantly employed when conducting exploratory or descriptive research, survey-based designs are often linked with the deductive research approach. Hence, the survey research method can be understood as a means of gathering insights and information from multiple participants on issues relevant to the organisational context. According to Fink (2015) survey research incorporates more than just questionnaires, but also a wider range of methods including interviews and focus groups. Accordingly, data collected through the use of survey methods can enable quantitative analysis through the use of "descriptive and inferential statistics" (Thornhill, Lewis and Saunders, 2016, p.182). Nonetheless, researchers are able to identify relationships between the different variables under investigation and produce models based on these relational interplays identified. Cooper, Schindler and Sun (2006) summarise survey research as a way of achieving standardisation and consistency through the utilisation of pre-defined questionnaire and survey questions, as well as participant observations that largely reside under the broader umbrella of the positivist research paradigm.

Where a researcher seeks control over the process and wishes to attract high rate of participation then the survey design is also an appropriate choice as Thornhill, Lewis and Saunders (2016) state that the statistically representative nature of survey research makes the associated findings more generalisable. Moreover Yin (2011) indicates that survey-based case study research is becoming popular in management and organisation studies, particularly where research seeks to address questions related to the 'what', 'who', 'where' and 'how' of the phenomenon under investigation. Generally, there are two key distinctions to be made between the types of survey research designs:

- Analytical Surveys – allow the researcher to identify relationships by exploring the correlation between two variables in an explanatory manner. Within the realm of analytical surveys, the experimental approach enables the manipulation of one or more of the variables in order for the researcher to increase their control over the process. Alternatively, the casual comparative approach allows for the researcher to establish the existence of cause-effect relationships.

- Descriptive Surveys – provide informed insights into the existing state of play regarding a given situation. Whilst this can be by means of a historical account or a contemporary evaluation, it provides little value for deep analytical studies and therefore needs to be triangulated with alternative methods in order to create a steadfast argument.

In summation of the survey method, data collected is not likely to be as holistic as that which can be collected sing alternative research strategies. Thornhill, Lewis and Saunders (2016) imply that there is a limit to the number of questions that voluntary participants will respond to out of goodwill, and further still the most significant drawback is often the poor design of the questionnaire.

According to Fink (2015) and Thornhill, Lewis and Saunders (2016) the reliability and response rate to survey research methods can be maximised by:

- Carefully designing individual questions in order that the essential purpose and scope of the survey method accurately reflects the research questions or hypotheses formed.
- Pilot testing the survey by designing an effective sampling strategy and identifying key groups of participants.
- Transparent explanation of what is involved for participants partaking in the survey research.
- Carefully administering the survey and related data collection strategy to ensure all completed questionnaires are returned and safely stored.

3C Multivariate Research Design

The use of multivariate research design in organisation studies is most commonly associated with the positivist paradigm (Meyers, Gamst and Guarino, 2013). The objective of such research design is to verify that propositions can be accepted or rejected based on the resultant dataset. Multivariate analysis is thus interpreted to provide "procedures which permit fairly rigorous testing of propositions" (Price, 1968, p.121).

In simple terms, multivariate research is essentially a means of analysing statistical data using multiple measurements for each individual experimental unit (Olkin and Sampson, 2001).

This approach allows researchers to choose from various sampling techniques (e.g., random sampling, snowball sampling, quota sampling, etc.) and measurement instruments (e.g., long vs. short questionnaires, interviews vs. questionnaires, etc.).

Multivariate data analysis can include analysis techniques such as regression analysis. With regression analysis, the researcher is able to study the relationship between a dependent

variable versus two or more independent variables with the aim of providing predictions and building theory.

Generally, this approach is not common in organisational research given the need for highly controlled experiments and collection of data from a multitude of organisations. Price (1968) effectively surmises the issues encountered by management scholars, explaining that:

> "*the practical problems involved in using experiments and multivariate analysis are so formidable that these procedures for dealing with designs of proof have been relatively neglected*". (Price, 1968, p.122)

Verification studies serve a purpose in validating propositions, particularly in hypothesis-driven, experimental research, which Price (1968) believes is less popular amongst organisational researchers. Exploratory and descriptive case studies are still required to continue providing suggestive propositions that describe more complex, multi-faceted phenomena in organisational and management studies research.

3D Action Research

Coined by Lewin in 1946, action research has subsequently been interpreted in management and organisation studies research in various different ways. Action research is fundamentally an iterative process of inquiry designed to nurture solutions to real-time organisational problems through a collaborative approach that immerses the researcher within the context of what is being researched (Coghlan, 2011; Thornhill, Lewis and Saunders, 2016) (See Figure 3D.1).

Huxham (2003) states that the aims of action research extend to establishing tools and methods, develop theory that addresses the practice-element of a phenomena being enacted in real-time. In some respects, action research is seen to be a paradigm or positioning due to the philosophical debate that rests around the creation of knowledge in real-time.

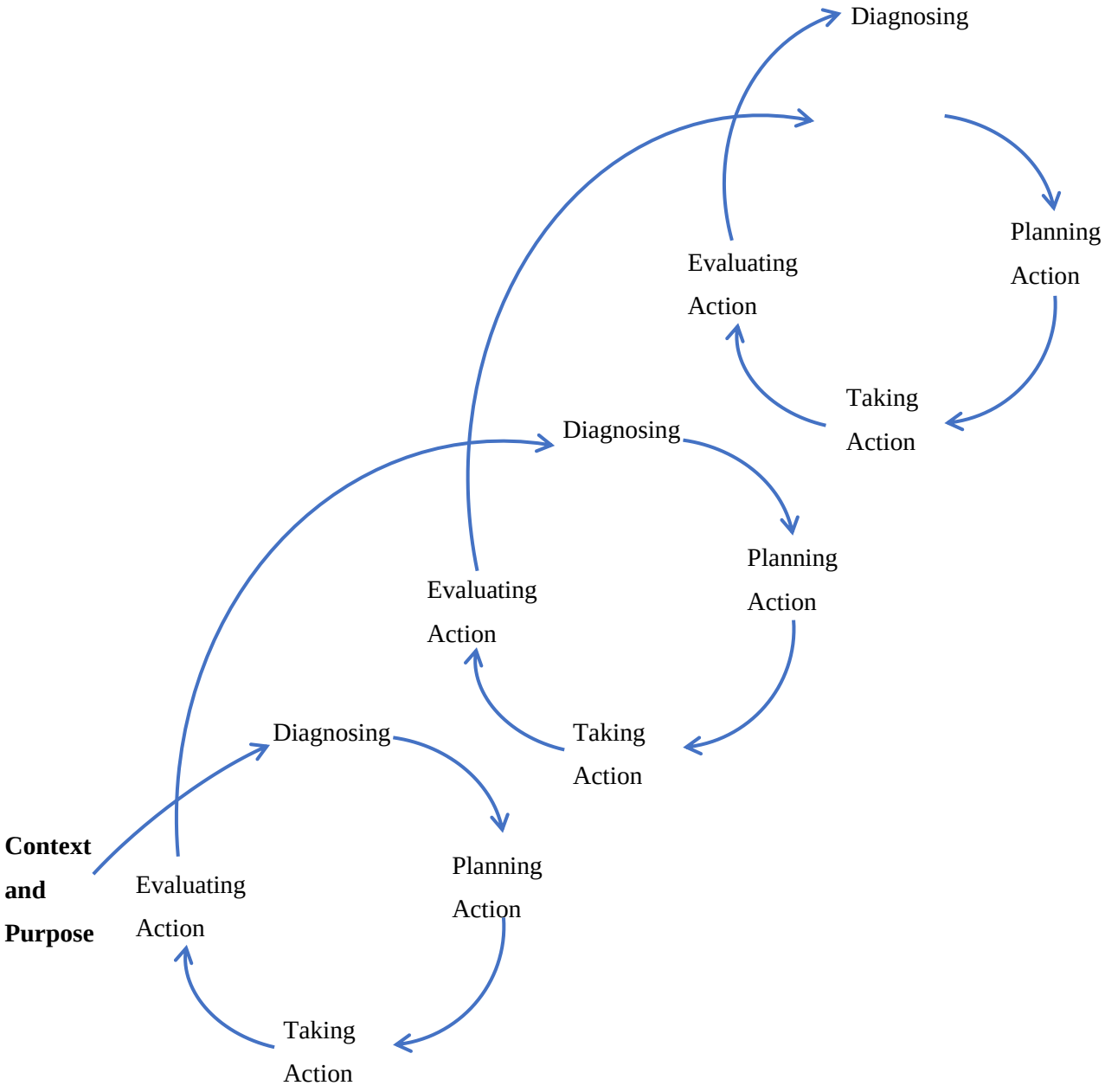


Figure 3D.1 Three cycles Action Research spiral (Thornhill, Lewis and Saunders, 2016, p.191)

3E Ethnographic Research

The significance of employing an ethnographic research approach over and beyond the more traditional method of standalone interviews or case studies is well documented (Lee, 1999; Watson, 2011). Lindlof (2002, p.16) describe this approach as "a holistic description of cultural membership" where the research is centred upon the immersive study of the humanistic behaviours of people through deep-rooted investigations conducted within their own cultural sphere (Singer, 2009). In essence, an ethnographic research design encapsulates a deeply engaging insight of the phenomena under examination, going beyond the more traditional methods of interviews, participant observations, surveys, and questionnaires.

Herein resides the key anthropological critique of the ethnographic approach, the perceived ability of the researcher to reliably capture the multi-faceted dynamics of 'foreign' cultures. That though isn't the only criticism afforded to ethnographic studies, the fundamental inability of ethnographic research in so far as it "falls short because findings cannot be generalised" (Brewer, 1994, p.233) whereby the proposed empirical rationale is theoretically naive and redundant of even the very basic scientific rigour. Atkinson, Coffey and Delamont (1999) attempt to make up for those perceived shortcomings in ethnographic enquiry by crediting the researcher's skill in constructing integrity through authenticity of direct participation in data gathering and interpretation. This is further compounded by Brewer (1994, p.232), who states, "so long as the ethnographer is reflexive, by establishing his or her integrity and critically confronting the data" ethnography can be systematic and rigorous in design.

> *"[lacking] methodological rigour, orthodox and rigid reporting templates, a spare and flat (and boring) writing style of no style, and a set of relentlessly fixed and focused analytic interests that can be more or less articulated before a study begins"*
>
> (Van Maanen, 2011, p.226)

Another proprietary critique of the ethnographic approach infers that the method is fundamentally weak whereby the analytical stance adopted by the researcher is largely predictable, often qualified as journalistic scholarship (Singer, 2009). The inclusion of field-based interviews and observations, together with the absence of numbers – or as Woolgar (1988) depicts 'scientific rigour' – makes it easy to see just why this approach may be habitually appealing in journalistic scholar. Whilst ethnographic research cannot offer the statistical validity afforded to quantitative or even the lesser interpretive accounts of qualitative

research design, Brewer (1994, p.235) contends that the "evaluations of the ethnographer's integrity and good practice" provide the basis for dependability.

The success harvested from embracing an ethnographic research design is in a large part contingent upon the 'substantive contribution' of the complex social phenomena under investigation (Singer, 2009). To provide scholarly rigour and establish integrity by embracing the complexity of the dataset rather than merely assuming a linear relationship between the social constructs being investigated and the ethnographic illustration of it (Brewer, 1994). This perceived lack of academic rigour is widely perceived to be one of the key explanations for the comparatively restrained adoption of ethnography as opposed to the more traditional interview or case-study based approaches.

3F Model Building

Model building can be understood as a means of representing what reality constitutes. According to Eden and Ackermann (1998) there are a multitude of modelling technique that can be used, including influence diagrams, cognitive maps and Bayesian event trees. In social sciences research, the art of constructing models and model-thinking is a decisive form of communicating and explaining reality (Wacker, 1998). Generally, researchers develop conceptual models in order to address research questions and objectives. In doing so, the links and connections between the relevant variables can be made visible. The step involved in developing a conceptual framework are outlined below:

- Use of illustrative graphic representations,
- Review and enhance the existing framework,
- Demonstrate all significant relationships,
- Theorising.

Whilst these points are not exhaustive, they capture the key tasks associated with model building, in accordance with extant literature. Building conceptual models in academic research enable the researcher to improve the understanding of a phenomenon by enabling the system of relationships to be viewed form multiple perspectives and allows the researcher to highlight cause and effect relationships.

3G Grounded Theory

According to Corbin and Strauss (1990) the term 'grounded theory' is used in reference to both the methodological approach along with the method of inquiry. In drawing a distinction between the two, Thornhill, Lewis and Saunders (2016) explain the methodology to be the researcher's choice of the grounded theory approach to conducting the research, whereby the belief is that the theory would be discovered from the data (Cresswell, 2007). Whilst the grounded theory method relates to the techniques and analytical procedures involved in collecting and analysing the data (Thornhill, Lewis and Saunders, 2016). In essence, grounded theory can be understood as the ability to construct new concepts and ideas from the data set and in turn relate these in accordance with the standard theoretical models already in existence. A large part of the grounded theory method is contingent upon the abilities of the researcher to make sense of and construct meaning from the data that has been collected and analysed.

One of the fundamental differences between the truly grounded theory methodological approach and the vast majority of other qualitative research methodologies is the starting point for the research project. As Cresswell (2007) discusses, the truly grounded approach to theory development entails the researcher immersing themselves into field without first consulting the existing literature concentrating on the field of study. The underpinning ideology behind this method is concerned with avoiding the formation of preconceptions and assumptions made by the researcher prior to engage with dataset. Advocates of the grounded theory methodology often herald this approach as the purest form of research, where the role of the researcher is not only to gather and extrapolate meaning from the data, but to subsequently then structure this into a meaningful dialogue.

3H Discourse Analysis

> *"The term "discourse" has been defined as sets of statements that bring social objects into being (Parker 1992). In using the term "organizational discourse", we refer to the structured collections of texts embodied in the practices of talking and writing ... that bring organizationally related objects into being as those texts are produced, disseminated, and consumed ... Consequently, texts can be considered to be a manifestation of discourse and the distinctive unit ... on which the researcher focuses. Accordingly, discourse analysis is the systematic study of texts."*
>
> Grant and Hardy (2004, p. 6)

Discourse analysis concerns itself with studying the relationship of language with the context in which it is being used (McCarthy, Matthieson and Slade, 2013). Incorporating work done across the disciplines of sociology (Hymes, 1964; Searle, 1969)), linguistics (Harris, 1952), psychology (Grice, 1975) and anthropology (Levinson, 1996), discourse analysts study language in application.

The British academic approach to discourse analysis centres around Halliday's (1973) framework which finds its foundations in the social functions of linguistics alongside the structure of human speech and interaction (McCarthy, 1992). Following the structural-linguistic criteria which emphasise the rules and sequences that define well-formed patterns of discourse.

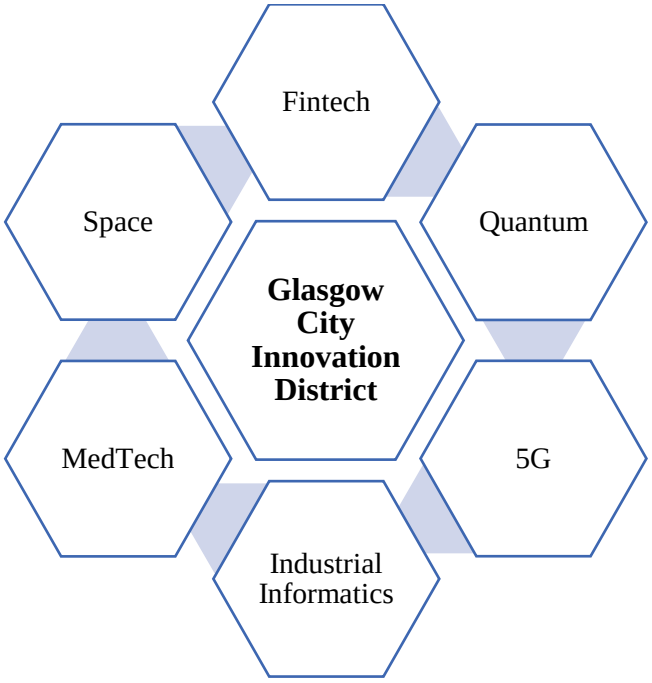
According to (Potter and Edwards, 1996) the dominant approach to discourse analysis, at least in the context of the social sciences domain, resonates with the following three fundamental principles:

- *action-orientation* - where the purpose of analysis is to explore what the discourse is doing.
- *situational* - looks at the construction of the discourse that enables the situational enactment.
- *construction* - concerns itself with the resources that allow the performative effects of discourse analysis to be realised.

This naturalistic form of analysis allows researchers to examine phenomena in-practice without the need to, for example, extrapolate data from a rich interview or experiment dataset. Moreover, the focus of the research can be placed on the situated practices as opposed to the role of individuals or institutions involved thus avoiding the "structural reification" of institutional or structural effects (Potter and Edwards, 1996).

Furthermore, critical discourse analysis (CSA) studies have been more transparent in their adoption of a critical approach. These are founded on the Foucauldian perspective of power relations (Fairclough, 1995; Wodak, 1996).

APPENDIX 4 – GCID CLUSTERS



Six new Glasgow City Innovation District (GCID) clusters as of April 2020.

APPENDIX 5 – FINTECH SCOTLAND BUSINESS PLAN

Fintech Scotland		
Vision		**To become a global leader in Fintech innovation and development**
Mission		**To create an integrated Fintech ecosystem in Scotland through provision of funding, support, infrastructure, and talent that recognises and responds to the needs of each stakeholder and connects Scotland to other global Fintech centres.**
Strategic Goals	Profile 	**- Raise international awareness of the Scottish Fintech industry by championing differentiators as a Fintech hub.** **- Raise awareness of Fintech as an opportunity for business creation and growth.** **- Raise awareness of Fintech as an excellent career opportunity.**
	Infrastructure 	**- Promote collaborative innovation across the Fintech ecosystem.** **- Development and implementation of a physical hub.**
	Talent 	**- Attraction of high value, skilled workers into Fintech and from abroad.** **- Promotion of technology as a career throughout the school system.** **- Retention of existing Financial Services talent via ongoing training.**
	Finance & Support 	**- Improve availability of equity funding to Scottish based Fintech firms.** **- Finance readiness and business support to Fintech firms.**

APPENDIX 6 – FINTECH SCOTLAND ADVISORY BOARD MEMBERS

David Fergusson (Chair) - Chief Executive, Nucleus Financial

Jude Cook - Co-Founder and CEO, ShareIn

Hugh Edmiston - Corporate Services Director, University of Edinburgh

Louise Smith – Head of Design, RBS

Linda Hanna – Managing Director, Scottish Enterprise

Kent Mackenzie – Partner and Global Head of fintech in Scotland, Deloitte

Anneli Ritari-Stewart - Managing Director, iProspect, Dentsu Aegis Network

Melba Foggo – Managing Director, UK Consulting, Sopra Steria

Yvonne Dunn – Partner, Pinsent Masons

Neil Cunningham - Partnerships Director, Equifax UK

Paul Ryan - Director of Watson Artificial Intelligence & Data, IBM

In addition, the following will attend board meetings in an observer role:

- Maggie Craig – Head of Scotland, Financial Conduct Authority
- Karen Rodger – Head of Financial Services and fintech Policy, Scottish Government

**Advisory Board structure in 2017, prior to the launch of Fintech Scotland and the appointment of Stephen Ingledew as CEO*

APPENDIX 7A – FINTECH SCOTLAND CASE STUDY REPORT

Head quartered in Edinburgh, Fintech Scotland serves the whole of Scotland by bringing together *"entrepreneurs, the established financial sector, the public sector, accelerators, investors, consumer groups, technology and service firms, universities and skills agencies"* (Anon, 2020). Established in 2018, the organisation seeks to provide Scotland with the necessary framework to catapult opportunities in the area of financial services and technology. Fintech Scotland was founded by a partnership consisting of the Scottish Government, Scottish Enterprise, University of Edinburgh, HSBC, Avaloq and Lloyds Banking Group. And is tasked to be a "strategic enabler focused on leveraging the potential economic and social benefits arising from … fintech innovation" (McGee, 2020). Termed as a 'strategic enabler' as opposed to a trade body, Fintech Scotland is an independent, not-for-profit organisation established to nurture the growth of the fintech community in Scotland. At present, the organisation has ten employees.

Fintech Scotland's strategic management direction and decision-making can be split into two separate time frames: pre-launch (before 2018) and post-launch (Jan 2018 onwards). Interviewees expressed a change in approach to the strategic decision-making, namely in how the strategy was shaped post-launch, coinciding with the appointment of the organisation's first CEO.

Following a Scottish Government led task force initiative, consisting of participants from industry, public sector, and academia. The consultancy firm Deloitte were recruited to construct a business plan for the establishment of Fintech Scotland. The following snippet is taken from the 'Fintech Scotland Business Plan' document submitted to the Scottish Government in June 2017:

The ambition and hallmarks of the business plan

At the highest level, the ambition is to propel Scotland into the top 10 Fintech hubs globally and build a supporting ecosystem that serves all stakeholders. Over the last 9 months it has become clear that the components to be successful in this space are there, and the timing is right. Scotland benefits from some distinct and unique features through its deep talent networks, its legacy and concentration in FS experience, and its proven strength in the established technology sector that will fuel this initiative and give the greatest opportunity for success. Scotland's size also plays as an advantage and will allow Fintech Scotland to network efficiently and take action quickly. The 'size of the prize' here is also significant – with job creation of an estimated 15k FTE and a further 14k jobs estimated to be 'protected' it is easy to see why supporting and encouraging the emerging Fintech industry is important at national level.

There was a recognition that Scotland fostered the right environment for the development of a fintech cluster given the country's steep history in both financial services and innovation. A number of interview participants referred to Scotland's 'heritage' and 'culture of innovation' when discussing the potential growth opportunities for fintech activity in both the United Kingdom and Europe.

Further information provided in the 'Business Plan' document outlines the vision and the mission statement for Fintech Scotland demonstrating that:

> *To become a global top 10 Fintech hub location that serves all aspects of the Fintech ecosystem & aspires to showcase Scotland's Fintech expertise on a global scale through international conferences & events. Talent must be at Fintech Scotland's core with innovation events, dedicated Fintech courses & challenges that will help future Fintech innovation to thrive in Scotland.*

Evidently there was a clear aspiration to establish a fintech ecosystem in Scotland, to not only nurture the existing activity in the domestic economy but to also encourage inward investment through international exposure of the Scottish fintech cluster. Innovation and collaboration are two of the major themes that are evident throughout the business plan and were referenced extensively during the empirical data collection process.

One of the underpinning rationales for establishing Fintech Scotland was to provide a 'physical hub' facility for inter-firm collaborations and innovations in the existing financial services (FS) and technology sectors. And, to accommodate collaboration between industry and academia, the physical hub was championed as an 'innovation space' to spur fintech development and growth. Figure 6A.1 below highlights the importance of the 'physical hub' in the development of the fintech ecosystem, and the central role it was anticipated to play in fostering the environment necessary for the different organisations involved in the cluster. Whilst Figure 6A.2 outlines the priority given to developing a physical hub for the fintech community, and the associated benefit that was anticipated to be derived from establishing a physical infrastructure. Evidently then, it can be concluded that developing a physical hub was a key element of the strategic plan for Fintech Scotland prior to the launch of the organisation in early 2018.

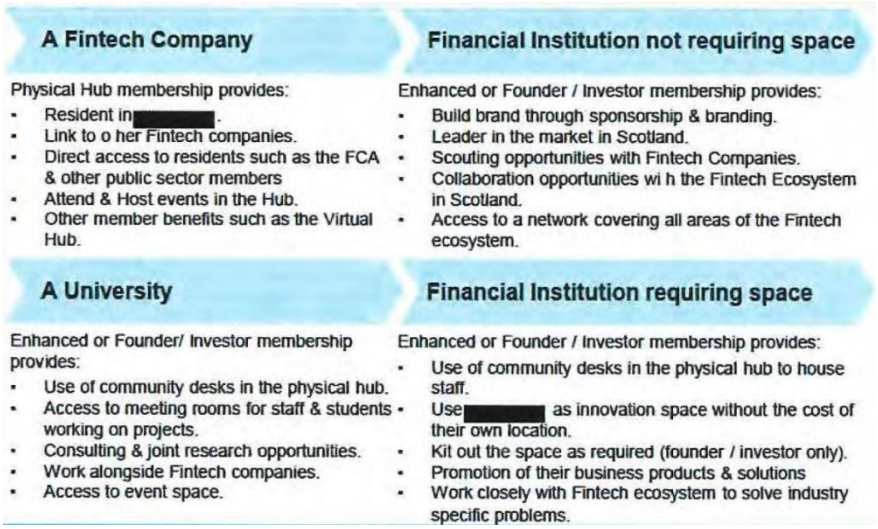


Figure 6A.1. 'The user journeys – what's in it for different parts of the ecosystem'. Adopted from Scottish Government FOI-18-00864, p.2

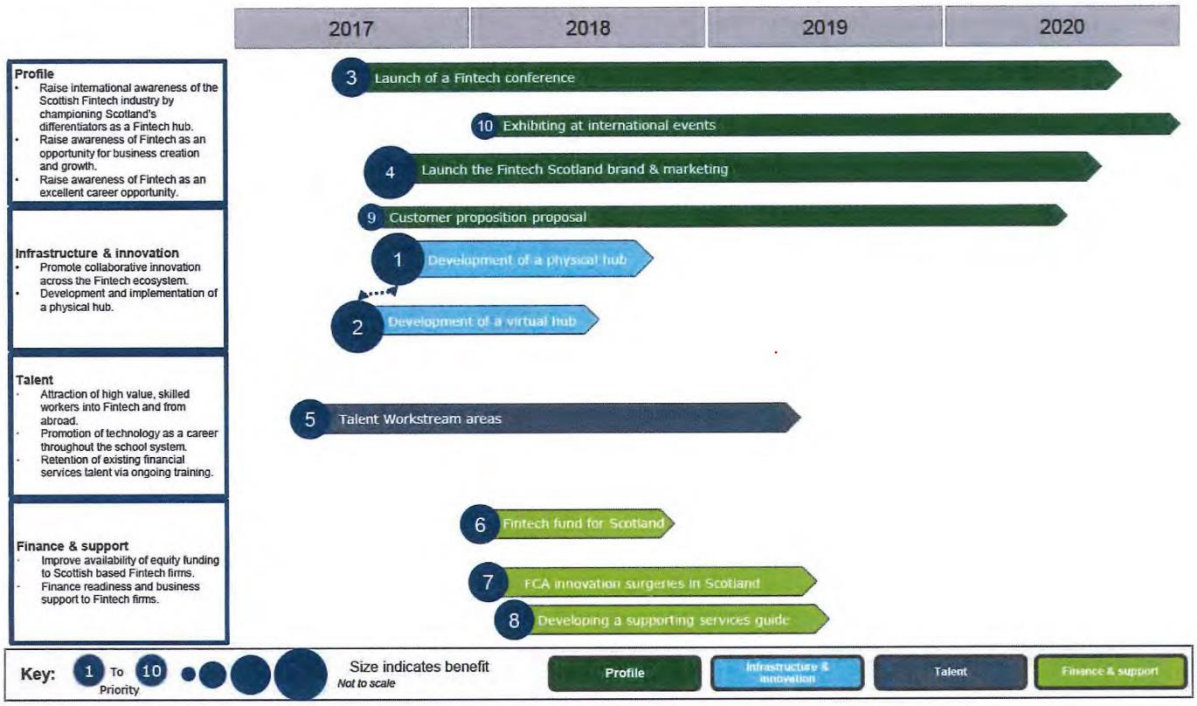


Figure 6A.2. 'Fintech Scotland Business Plan Activity Roadmap'. Adopted from Scottish Government FOI-18-00864, p.22

A second key consideration was the proposed tiered membership structure that would enable Fintech Scotland to financially sustain itself within four years of operations. Although the organisation operates in a not-for profit capacity, the original blueprint for Fintech Scotland

outlined in the Deloitte 'Fintech Scotland Business Plan' forecasted profitability by year four and for the organisation to *"be in a position to re-invest"* into the fintech ecosystem. In order to meet that objective, it appears that there were plans in place to charge membership

fees for participating firms to contribute towards the cost of running the ecosystem and subsequently to its future development. Figures 4A.3 and 4A.4 below highlight the relevant sections of the original business plan.

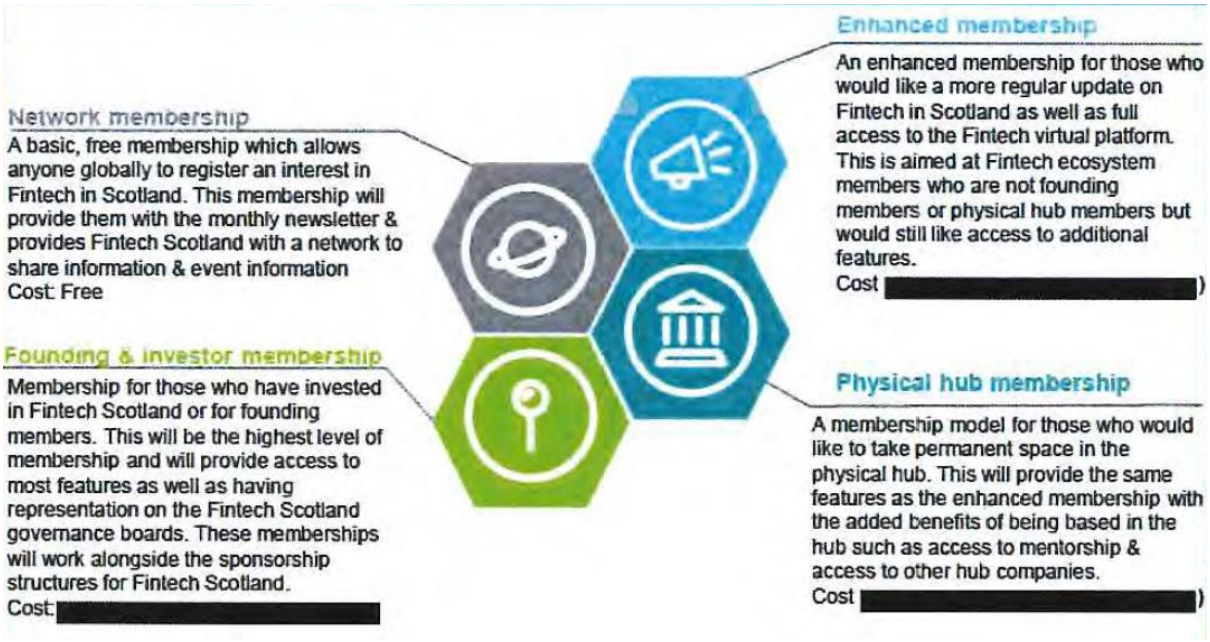


Figure 6.6. 'The membership structure'. Adopted from Scottish Government FOI-18-00864, p.2

Membership name	Description	Target Customer	Membership Tiers
Network membership	• A **basic, free** membership which allows anyone globally to register an interest in Fintech in Scotland. This membership will provide them with the monthly newsletter & provides Fintech Scotland with a network to share information & event information.	• Those with an interest in what is happening in Fintech in Scotland • Those who are working in Fintech globally.	One tier only – Free of charge
Enhanced membership	• An **enhanced** membership for those who would like a more regular update on Fintech in Scotland as well as full access to the Fintech virtual platform. This is aimed at Fintech ecosystem members who are not founding members or physical hub members but would still like access to additional features.	• Those working in Fintech in Scotland • Those with an interest in Fintech in Scotland.	This will include 3 tiers: • Fintech companies • Public sector & individuals • Private sector & individuals
Founding & investor membership	• Membership for those who have invested in Fintech Scotland or for founding members. This will be the highest level of membership and will provide access to most features as well as having representation on the Fintech Scotland governance boards. These memberships will work alongside the sponsorship structures for Fintech Scotland.	• Those who are working in Fintech in Scotland & have either invested in or helped to found Fintech Scotland.	This will include 3 tiers: • Fintech companies • Public sector & individuals • Private sector & individuals
Physical hub membership	• A membership model for those who would like to take permanent space in the physical hub. This will provide the same features as the enhanced membership with the added benefits of being based in the hub such as access to mentorship & access to other hub companies.	• Those working in Fintech in Scotland & who would like to be based in the physical hub.	This will include 4 packages, each with additional services & benefits: • Package 1 • Package 2 • Package 3 • Package 4

Figure 6.7. Fintech Scotland membership structure. Adopted from Scottish Government FOI-18-00864, p.29

It is evident from the content of the original business plan, that the inception, early growth and evolution of Fintech Scotland and the wider ecosystem was designed from a top-down

initiative driven by recommendations made through the consulting firm Deloitte. Certainly, up until the point of inception, the blueprint for Fintech Scotland was propelled through the recommendations of the Deloitte business plan. Scanning the dossier reveals that only large financial services firms and public sector bodies were consulted when forming the recommendations contained within the business plan, with the document being founded upon a number of conclusions made by Deloitte when comparing other successful fintech ecosystems across the globe.

The next phase of Fintech Scotland's development was pivotal, launching the organisation and appoint a new CEO meant that the original blueprint came under the limelight, whereby the enacted resonance took a divergence from the initial intended business plan.

In January 2018 Fintech Scotland appointed their new Chief Executive Officer (CEO), Stephen Ingledew, who assumed his position just as the organisation was launched. Following his appointment there was a demonstratable shift in approach from the original business plan, particularly in how the strategy for growth was realised over the proceeding twenty-four months. In one of the very first media interviews, he gave after only eight weeks in the role, there was a recognition that virtual platforms and hubs may be of better value and use to the fintech community:

> *It's not just about those physical buildings, it is important that when looking across Scotland there is an opportunity to plug into what we refer to as virtual platforms or factory environments that allow big companies to share, for example, their data with smaller companies in order to innovate and generate those new opportunities in which their business operates. So, we refer to those, as I say, as virtual factories and we see that opportunity to help really ensure that innovation and FinTech is countrywide. It isn't just confined to a few physical locations.* (The Scotsman, 2018)

Other interviewees also referred to a departure from the top-down decision-making approach that was guided predominantly by industry standards and the recommendations of the Deloitte business plan document. Instead, Fintech Scotland adopted a collaborative and inclusive approach to developing the ecosystem. Engaging with not only the large corporate organisations in the financial services sector, IT service providers, academia, the Scottish Government and their affiliated organisations, but also the small fintech organisations in Scotland. A significant component of this approach was the requirement to "understand the needs of the small fintechs" (Interviews, 2020). The follow excerpt is taken from an interview conducted with a senior director at Fintech Scotland:

And so, it is from the ground up because we didn't know at the start, when Fintech Scotland was created. There was a lot of opinions. As to what Fintech Scotland should be. And most of those opinions were from government or large FS or large third-party firms, one of the big four. They all had their own opinion as to what we needed to do.

But we, we didn't go with that. We basically looked to the fintechs and asked them what they needed? And it was very easy for us to prove that 'no they didn't need a fintech fund managed by Fintech Scotland, they didn't need a Fintech Scotland building'. All those things that we were told we needed to put in place, no. What they needed was; collaboration opportunities, funding opportunities, profiling opportunities, and all those opportunities that we have been focusing on for the past two years.

Interviews, 2020

Evidently there was a recognition within the organisation that growing the ecosystem would be dependent on the collaborative efforts of the wider fintech community as opposed to the more materialistic objectives conceived from the original business plan. Instead, by engaging with the wider fintech community and listening to the organisations directly involved in the ecosystem, Fintech Scotland was able to tailor their approach to best meet the needs of those firms.

In order to understand this change in approach, the following section explains the changes in strategic initiatives undertaken by Fintech Scotland, since its inception in 2018.

The strategic initiatives identified below as units of analysis represent the period in time immediately after the launch of Fintech Scotland in January 2018. Each of the strategic initiatives listed below summarises what the organisation has sought to achieve since inception, and these will be taken as the unit of analysis for this study. The dominant strategic initiatives are concerned with developing collaboration across the ecosystem, enabling strategic connections, fuelling innovation in financial services and to facilitate the development of future skills and talent. Fintech Scotland's strategic initiatives and key decisions are identified as the following:

- Appointing a new CEO in January 2018 and establishing a *strategic direction* for the organisation.
- Forming the *grand strategy* and setting *goals and objectives* for the organisation to achieve (i.e., goal of establishing Scotland as top five global fintech hub).
- Making useful strategic connections between fintech stakeholders (*strategy execution*), for example, the small fintech firms and the large corporate organisations.

- Fostering the right environment to fuel innovation, by offering support at all stages of product or service development by *engaging with fintech stakeholders* and ensuring that they are *involved in strategic decision-making* activities.
- Preparing for the future by *analysing the external environment* (i.e., supporting the development of skills and talents amongst students and people who are looking to reskill or upskill)

Considering the above strategic initiatives, representing what Fintech Scotland is striving to achieve in order to grow the fintech community into an ecosystem in Scotland. The researcher derived summary statements about the actions undertaken by the organisation to realise those objectives and initiatives. To achieve this, the practices of the organisation – concerned specifically with the ecosystem strategy initiatives identified above – were mapped relative to the conceptual model and coding taxonomy.

By carrying out a content analysis of the summary statements in Fintech Scotland's coding table, the researcher was able to derive the most commonly mentioned strategic activities (as per the units of analysis identified above). Table 6A.1 provides a detailed breakdown of the coding table, with all 27 summary statements categorised against the conceptual framework for this study.

Firstly, twenty-seven summary statements were derived from the case study interviews and associated reports and publications. These were then interpreted into emergent main themes, for example:

> *So, Stephen as our CEO sorry, Stephen Ingledew very cleverly was appointed and the first thing he said to the news is 'we're going to be in the top five when it comes to fintech hubs around the world'. A very big statement for Scotland when you've got, you know, cities like New York, San Francisco, London, Singapore, Israel. So, you're like 'wow ok!'*
>
> Interviews, 2020

Secondly, this was then interpreted into the broader theme within the case study, which resonated which was the *strategic direction*. Subsequently, these summary statements were coded taking into consideration the emergent themes in accordance with the coding taxonomy. All twenty-seven summary statements were mapped out across the three phases of ecosystem development strategy and the key strategic activities were identified from these summary statements.

Summary Statements - Fintech Scotland	Main Themes	Ecosystem Development Phase	Strategic Activity	Open Strategy Dimension
Post-launch: after January 2018	N/A	N/A	N/A	
The CEO, Stephen Ingledew was appointed.	Leadership	Protovisioning	Strategic Direction	
Developing a renewed vision and mission for Fintech Scotland	Vision and Mission	Protovisioning	Strategic Direction	Inclusiveness
Established business plans for objectives and milestones to be achieved in the short, medium, and long terms based on vision and mission.	Vision and Mission	Protovisioning	Setting goals and objectives	
Ambition to become top five global fintech hub in two years.	Vision and Mission	Protovisioning	Setting goals and objectives	Transparent
The management team focused on building the brand and promoting the profile of the ecosystem.	Brand Awareness	Envisioned Blueprint	Strategy Execution	
CEO acquired a seat on the FISAD board, allowing for exposure at Government policy level as well as access to the network of leading financial services firms.	Brand Awareness	Envisioned Blueprint	Strategy Execution	
Attracted new strategic partners including large finance and technology service providers, government enterprise and academic institutions.	Networking and Ecosystem Growth	Envisioned Blueprint	Strategy Execution	Participation
Market research conducted to understand the needs of the fintech SME community.	Analysing the Environment	Envisioned Blueprint	Analysing external environment	IT-enabledness
Interpretation of market research data to make decisions i.e., whether or not a physical hub is required for fintech activity, or whether an organisation or body is required to centrally manage funds for the fintech community.	Expansion Strategy	Envisioned Blueprint	Strategic Direction	Inclusiveness and Participation
Launched the Fintech Consumer Advisory Panel, which consists of enterprises representing consumers from diverse range of backgrounds and upbringings, to allow the creation of solutions that meet the needs of the market.	Understanding Consumers	Enacted Resonance	Analysing external environment	Inclusiveness
CEO and senior management team travel to international fintech events to raise the profile of fintech in Scotland and encourage fintech firms to grow their business in Scotland.	Brand Awareness	Envisioned Blueprint	Strategy Execution	

Awarded the Bronze award from the European Secretia for Cluster Analysis in recognition of the development and growth of the fintech ecosystem. Fintech Scotland became the first in the UK to be awarded this recognition.	Ecosystem Achievement	Enacted Resonance	Strategy Execution	
Running events including 'Fintech Fortnight' to provide opportunities for collaboration between organisations in the ecosystem.	Trade Shows and Exhibitions	Enacted Resonance	Strategy Execution	Inclusiveness and Transparency
Fintech Scotland has helped to develop and nurture the fintech SME community which has been growing in numbers every year since inception, and now sits at over 130 fintechs.	Networking and Ecosystem Growth	Enacted Resonance	Strategy Execution	
Fintech Scotland has coordinated the annual Scotland Fintech Festival for the last three years, growing from an impromptu community driven event in 2018 to a fully fledging festival of activity in 2019. The 2020 festival has been delayed to early Autumn due to the ongoing COVID-19 pandemic and will be held virtually.	Trade Shows and Exhibitions	Enacted Resonance	Strategy Execution	Inclusiveness and IT-enabledness
Fintech Scotland employees spend a lot of time with fintech firms to understand their business operations and what challenges they are facing. And also, with large corporate entities to identify opportunities for collaboration between them.	Networking and Ecosystem Growth	Enacted Resonance	Analysing external environment	Inclusiveness
Working closely with academia to encourage and progress research in financial technologies, and to identify opportunities for industry and academia engagement.	Research and Collaboration	Envisioned Blueprint	Stakeholder Engagement	Transparency
By not adopting a tiered membership model, Fintech Scotland has been able to welcome organisations of all shapes and sizes to the fintech ecosystem.	Expansion Strategy	Envisioned Blueprint	Strategic Direction	
Connecting up the fintech community in Scotland became a significant objective for Fintech Scotland as there was a recognition that fintech firms in remote location didn't always have the necessary access to resources and opportunities for collaboration and expansion.	Networking and Ecosystem Growth	Enacted Resonance	Analysing external environment	
The fintech SME community was afforded the opportunity and the platform to have their voices heard in the development of the fintech ecosystem in Scotland as a result of Fintech Scotland's work.	Collective Decision-Making	Enacted Resonance	Stakeholder Involvement in Decision-Making	Inclusiveness

Jude Cook CEO of small fintech SME 'Sharing' holds a seat on the board of Fintech Scotland, where she represents the fintech firms in the ecosystem and provides them with a voice in the strategic dialogue.	Collective Decision-Making	Enacted Resonance	Stakeholder Involvement in Decision-Making	Inclusiveness
By mobilising ecosystem participants around issues and challenges facing the development of fintech (i.e., procurement), the organisation is able to manoeuvre away from individual firm interests and towards collective goals and interests.	Collaboration and Innovation	Enacted Resonance	Strategy Execution	Inclusiveness and Transparency
Providing support with and insights into the regulatory framework associated with the financial services for fintech SMEs who don't necessarily have direct experience of working within the financial services industry.	Regulatory Support	Enacted Resonance	Strategy Execution	
Financial inclusion is a major component of Fintech Scotland's approach to developing the fintech cluster. Through continued engagement, dialogue and discussion with consumer advisory groups and organisations, they seek to improve understanding of what consumer needs fintech should be addressing.	Financial Inclusion and Stakeholder Engagement	Enacted Resonance	Analysing external environment	Inclusiveness
Leveraging on the opportunities afforded by the Open Banking initiative in the UK, fintech SMEs are able to have greater access to data. Fintech Scotland continues to support SMEs in this space to allow for new innovation opportunities.	Collaboration and Innovation	Enacted Resonance	Strategy Execution	Transparency
CEO has acquired a seat on the Glasgow Economic Leadership (GEL) board, representing the fintech community as a whole in the conversation around economic development in the Greater Glasgow region.	Networking and Ecosystem Growth	Envisioned Blueprint	Analysing external environment	Transparency
Established with the intention to wind up the firm after two years, Finech Scotland has won the unanimous backing of the fintech ecosystem to continue operating beyond this deadline and providing innovation and collaboration opportunities and support across the Scottish fintech ecosystem.	Vision and Mission	Protovisioning	Strategic Renewal	Inclusiveness

Table 7A.1 Fintech Scotland Coding Table

Overall, the coding table (Table 6A.1) reveals that the four dimensions of 'open strategy;' *inclusiveness*, *transparency*, *participation and IT-enabledness* were observed across the twenty-seven occasions when analysing Fintech Scotland's role in ecosystem development. Furthermore, looking at the phases of ecosystem development, the within-case analysis conducted revealed that at:

- **Protovisioning** phase, nineteen percent of summary statements resonated with the early stages of ecosystem development activity. During this phase, there was evidence that strategic activities were conducted by *including* the perspectives of ecosystem participants. Furthermore, strategic decisions undertaken at this stage were completely *transparent* to the various stakeholders in the fintech ecosystem.
- **Envisioned Blueprint** phase, thirty-three percent of summary statements were associated with establishing the ecosystem and developing the necessary structures and processes. It was documented that during this phase, that all four dimensions of open strategy were evidenced through the various strategic activities undertaken. Ecosystem members were both *included* and *participated*, to various degrees, in enacting the ecosystem development strategies. Information technology (*IT-enablendess*) played a key role in facilitating some of the strategic activities identified, as well as allowing decisions undertaken to be communicated *transparently* across the wider fintech ecosystem.
- **Enacted Resonance** phase, forty-eight percent of summary statements correlated with the third phase of ecosystem development activity. In this phase the ecosystem becomes a hive of activity with multiple member firms interacting with each other, representing a series of interconnected networks that make up the overall ecosystem. During this phase, all four principles of open strategy were documented in analysing the numerous strategic activities undertaken in the ecosystem by Fintech Scotland.

Moreover, there are number of key themes that emerged from the case study and the corresponding summary statements, these were documented as follows:

Greater than 10% - Setting the vision and mission to establish goals and objectives, raising the profile and brand awareness of Fintech Scotland and the wider fintech ecosystem in Scotland, and thirdly, networking and growing the fintech ecosystem. These emerged predominantly due to the nature of the activity undertaken by Fintech Scotland; the

organisation is focused on establishing a purpose for fintech activity conducted in Scotland, as well as, building the profile, size, and scope of fintech in Scotland.

Greater than 5% - Strategies for expanding the ecosystem, hosting, and attending tradeshows and fintech exhibitions were also common themes emerging from the summary statements given the desire of the organisation to grow the profile of fintech activity in Scotland. Furthermore, collaboration and innovation together with collective decision-making emerged as important themes from the enacted resonance phase of ecosystem development. In order to build momentum in the ecosystem, and to encourage potential members to join the fintech movement in Scotland, it is critical for the ecosystem to demonstrate its success. Therefore, by fostering the right environment that encourages collaboration between ecosystem participants, Fintech Scotland can harbour further innovation and increase the appeal of the fintech ecosystem.

Activity number	Item	Frequency	Percentage of Total
SA1	Strategy Execution	11	41%
SA2	Analysing the External Environment	6	22%
SA3	Strategic Direction Setting	4	15%
SA4	Stakeholder Involvement in Decision-Making	2	7%
SA5	Setting Goals and Objectives	2	7%
SA6	Stakeholder Engagement	1	4%
SA7	Strategic Renewal	1	4%

**Note: SA represents Strategic Activity*

Table 7A.2 Emphasis on Strategic Activities (Fintech Scotland)

APPENDIX 7B – UNIVERSITY OF STRATHCLYDE CASE STUDY REPORT

The University of Strathclyde, Glasgow is a leading technological university in Scotland. Having been awarded the Time Higher Education University of the Year Award in 2019, the only university to achieve the accolade on two occasions, the institution is globally recognised by its strapline of being 'the place of useful learning'(Why Strathclyde, n.d.). Established in 1796 the university welcomed over 200,000 students in 2017 including both undergraduate and postgraduate populations (Strathclyde University, 2017), across its four faculty areas.

In launching the university's vision for the future - 'Vision 2025' - in the early part of 2020, the Principal's message resonated the values and purpose of the institution:

> *Established as the place of useful learning – with a mission to make the world better-educated, prosperous, healthy, fair and secure – we continue to live by our socially progressive values today, putting sustainability at the heart of our strategy through our commitment to deliver against the United Nations Sustainable Development Goals.*
>
> *Our Plan is owned by the whole Strathclyde community and each individual has a contribution to make to ensure we achieve our objectives and continue to live our values of being bold, ambitious, innovative, collaborative and people oriented.*
>
> Principal's Introduction (n.d.)

Exploring the 'Vision 2025' strategic plan reveals the significance of innovation to the university's future plans, so much so, that the terms 'innovate', 'innovative' and 'innovation' appear no less than sixty times throughout the thirty-page document. In fact, innovation is a key component of the university's strategy, with the organisation allocating it as one of its five strategic goals (as seen in Figure 6B.1). The university prides itself on its steadfast reputation for driving innovation and entrepreneurship, two themes that reverberate throughout the plan for 'Vision 2025'.

Moreover, the strategic plan reveals the importance of continuing to develop the university's wide-ranging innovation ecosystem. This incorporates existing innovation activity across the university's in-house estate and collaborative developments in the form of the Advanced Forming Research Centre (AFRC), National Manufacturing Institute for Scotland (NMIS) and Continuous Manufacturing and Crystallization (CMAC) (McDonald, 2018). Together with the relatively more recent development of the Technology and Innovation Centre (TIC) and proposed expansion of the area to incorporate TIC Zone 2, which will house the Glasgow City Innovation District (GCID).

Figure 7B.1. Vision 2025, Strathclyde University Strategic Plan 2020-2025

The subsequent section will explore the latter in more detail, providing insights into the development of GCID and outline each of the clusters that form a part of the district. Before then delving deeper into the 'Fintech' component, which is strongly affiliated with the fintech ecosystem in Scotland.

> *The concept of innovation districts has emerged in recent years as innovation clusters have begun to emerge in city centres away from traditional out-of-town business parks.*
>
> Aitken (2019)

Officially launched on 01st February 2019 by the Scottish Government's Cabinet Secretary for Finance Derek McKay, Glasgow City Innovation District (GCID) is Scotland's first innovation district. GCID provides a transformative platform that brings together industry, academia, and local businesses in an effort to improve collaboration and boost Scotland's competitive advantage. Discussing the significance of GCID to the Scottish economy, Andrew (2019) of Scottish Enterprise states that:

> *The model – which is recognised for improving productivity, creating jobs, and attracting inward investment in several cities around the globe – brings together researchers and high-growth firms with technology and creative start-ups, to work side-by-side in vibrant, walkable innovation communities.*

As to be expected, innovation forms a key component of the purpose of establishing GCID, to provide a platform for organisations to collaborate and develop new products and services that help to meet the needs of consumers and businesses alike. According to the Brookings Institution, referenced in Aitken (2019), innovation districts are defined as "*geographic areas where leading edge anchor institutions and companies cluster and connect with start-ups, business incubators and accelerators*." Whilst the purpose of the innovation district is also to "*provide the capacity to support the Scottish Government Economic Strategy's ambitions of stimulating innovation and internationalisation and the creation of high value, innovative jobs is central to the city's ambition to increase productivity"* (Aitken, 2019).

What then is the role of the University of Strathclyde in the development of GCID? The Scottish Finance Minister stated during the opening ceremony of the innovation district that:

> *"This innovation district has the potential to transform the opportunities for businesses in the area, whilst attracting new investment and boosting Glasgow's established reputation as a city of innovation, in which the University of Strathclyde plays a key role."*
>
> Aitken (2019)

The role of Strathclyde University as a key component of the innovation district was further endorsed by the institution's principal, Sir Jim McDonald, who explained at the opening ceremony that:

"The University of Strathclyde is proud to sit at the heart of Glasgow City Innovation District and has a proven successful model of industrial engagement. The district will further accelerate the development of new technologies to help a wide range of sectors, as well as informing a new generation of highly-skilled graduates who know what is required to help businesses thrive."

Aitken (2019)

This perspective was echoed in the data collection phase, with the following excerpt being taken from interviews conducted with a senior innovation consultant involved in the development of GCID:

> *Key also is the role of the anchor tenant – the University of Strathclyde in fostering the environment for R&D, innovation, and research.*
>
> Interviews (2020)

A recent white paper publication by CESAER (2018) references the role of Strathclyde University as an 'innovation system integrator' responsible for orchestrating different components of the ecosystem. The following excerpt taken from the paper, shows the significant role of the University in ecosystem management:

> *"They* [universities] *act as anchor institutions by collaborating with the actors of their ecosystem, sponsoring innovation, sharing resources, knowledge, competences and RII (Research and Industrial Infrastructures)"*
>
> CESAER (2018, p. 6)

Undoubtedly then, GCID is a significant component of Strathclyde University's innovation strategy, with the expansion of TIC Zone 2 to accommodate the six new clusters (see Appendix 3) alongside the three current clusters that are facilitated in the existing TIC and Tontine buildings (Tontine Glasgow, 2020). One of the six new clusters is Financial Technologies, or fintech as it is more commonly known, which is arguably the most developed out of the six of them given the size of the fintech ecosystem and the degree of national exposure at the level of the Scottish Government. The subsequent section explores the role of Strathclyde University in the fintech ecosystem in greater detail, looking specifically at how the organisation plays an important role in the development of the fintech ecosystem in Scotland.

> *What is the core mission of the university, other than to educate? It's to push the boundaries of knowledge.*
> *And that is the research agenda and Strathclyde is very much a practical, research-led University. And in that respect what is pushing the body of knowledge in a practical*

sense isn't anything other than innovation. It is the definition of innovation. So that's pretty much at the core of what we aim to do.
So, why should we put the innovation at core what we're doing in Fintech? So, Fintech is new, its innovative and effectively the change is coming from the application of data science to finance, and we've got that skill set. If we're creating a cluster, it makes sense that we do that.

(Interviews, 2020)

Evidently there is an underlying objective for the university in pursuing opportunities in the fintech landscape, namely the potential to advance research and development in that area and to build a curriculum that will cater for the evolving needs of organisations operating in the fintech arena. As outlined by one of the interview participants from the university, innovation is at the heart of the institution's approach to fintech. Indeed, the Business School at the University of Strathclyde became the first in the United Kingdom to offer a dedicated MSc qualification in Financial Technology in September 2017 (Scottish Financial Enterprise, n.d.). And subsequently, the university became a pioneer by launching the first dedicated fintech qualification in the Middle East at its Bahrain research centre (Burley, 2019).

So, we introduced the first MSc in Fintech on the back of that, in other words, to address the fact that people just were not properly skilled.

(Interviews, 2020)

Somewhat unsurprisingly, the Business School at Strathclyde University is leading the university's interests in fintech, where the department of Accounting and Finance together with Management Science have combined their capabilities to create a dedicated MSc offering in Financial Technologies. Nonetheless, there are overlaps with offerings across the university, as indicated in one interview excerpt with a prominent member of faculty in the Business School:

So, in many ways you are dealing with issues with Business School issues through Management Science and Accounting and Finance, you're dealing with Computer Science and Data Science through CIS and Triple E who do a lot of stuff in IOT – on the Internet of Things – and cyber. You're dealing, with because of the socially progressive nature of the University and the promise for FinTech working with HASS colleagues on questions in areas such as financial inclusion and financial literacy.

(Interviews, 2020)

The University of Strathclyde's interests in fintech extend beyond simply having permutations for the Business School. Other schools including Humanities and Social Sciences (HaSS), Computer Sciences and the Law School have a vested interest in fintech, with the latter

perhaps more interested in the regulatory side of things – with the more recent development of regulatory technology (Regtech).

> *I would say that once we upgraded fintech to a cluster basis, then you are talking about multi-disciplines and multi-faculty.*
>
> (Interviews, 2020)

In essence, it could be argued that fintech extends across teaching curriculums and faculties and therefore requires a collaborative effort within the university to coordinate both the teaching and learning offer as well as the research and development opportunities. Nonetheless, the business school plays a pivotal role in co-ordinating the university's role in the wider fintech ecosystem, liaising with fellow partners of Fintech Scotland's strategic partners board, fintech SME's and large corporate organisations in the financial services sector and I.T. service providers.

> *Potential exists for the Business School to be the mediator – not just for spin-off's emerging from the ecosystem and any knowledge spill over activity. But to drive the innovation and exploit any research opportunities in this space.*
>
> (Interviews, 2020)

Given the significance of the Business School in co-ordinating the university's contribution and engagement with the fintech ecosystem, for the purposes for this doctoral thesis priority is given to the actions undertaken by members of the Business faculty as opposed to the wider university environment.

By carrying out a content analysis of the summary statements in the University of Strathclyde's coding table, the researcher was able to derive the most commonly mentioned strategic activities (as per the units of analysis identified above). Table 6B.1 provides a detailed breakdown of the coding table, with the summary statements categorised against the conceptual framework for this study.

Firstly, eleven summary statements were derived from the case study interviews and associated reports and publications. These were then interpreted into emergent main themes, for example:

> *And then really the insight, the research and the development coming from our universities, which is giving a different complexion, another way in which the world could work and helping deliver better consumer outcomes going forward.*
>
> (Interviews, 2020)

Secondly, this was then interpreted into the broader theme within the case study, which resonated which was the *strategy execution*. Subsequently, these summary statements were

Summary Statements - University of Strathclyde	Main Themes	Ecosystem Development Phase	Strategic Activity	Open Strategy Dimension
Strathclyde establishes Centre for Financial Regulation and Innovation in 2016	Vision and Mission	Protovisioing	Strategic Direction	Inclusiveness & Transparency
Strathclyde launches UK's fintech MSc course in September 2017	Leadership	Enacted Resonance	Strategy Execution	Participation
Expansion plans for TIC Zone 2 are announced with the formation of six new clusters forming the GCID.	Expansion Strategy & Vision and Mission	Protovisioing	Strategic Direction	
Strathclyde hosts the 2018 fintech conference in the TIC building.	Networking and Ecosystem Growth	Enacted Resonance	Strategy Execution	Inclusiveness & Participation
Appointment of Martin Hughes as Strategic Relations Advisor alongside Prof. Eleanor Shaw to spearhead the University's offering to the fintech ecosystem.	Leadership	Protovisioing	Strategic Direction	
Strathclyde hosts the 2019 fintech conference in the business school.	Networking and Ecosystem Growth	Enacted Resonance	Strategy Execution	Inclusiveness & Participation
The inclusive nature of fintech and the mission of Fintech Scotland to increase financial inclusion aligns with the university's aspiration to be 'socially progressive'.	Vision and Mission	Envisioned Blueprint	Strategic Alignment	Inclusiveness
Involvement in the fintech ecosystem aligns with the university's aspirations of being a 'leading international technological university'.	Expansion Strategy	Envisioned Blueprint	Strategic Alignment	Transparency
The university tackles fintech through a multi-disciplinary approach managed through an internal cluster that is coordinated by the business school.	Collective Decision-Making	Enacted Resonance	Strategy Execution	Inclusiveness
Launch of Vision 2025 - the University's strategic goals and objectives for amongst other things, the expansion of the GCID region.	Expansion Strategy	Envisioned Blueprint	Strategic Direction	Transparency
Strathclyde has over fifteen active PG researchers conducting doctoral studies in the fintech space.	Expansion Strategy	Enacted Resonance	Strategy Execution	Transparency

Table 7B.1 Fintech Scotland Coding Table

coded taking into consideration the emergent themes in accordance with the coding taxonomy. All eleven summary statements were mapped out across the three phases of ecosystem development strategy.

Overall, the coding table (Table 6B.1) reveals that three of the four dimensions of 'open strategy;' *inclusiveness, transparency,* and *participation* were observed across the eleven statements when analysing the University of Strathclyde's role in ecosystem development. Furthermore, looking at the phases of ecosystem development, the within-case analysis conducted revealed that at:

- **Protovisioning** phase, twenty-seven percent of summary statements resonated with the early stages of ecosystem development activity. During this phase, there was evidence that strategic activities were conducted by *including* the perspectives of ecosystem participants. Furthermore, strategic decisions undertaken at this stage were *transparent* to the various stakeholders in the fintech ecosystem.
- **Envisioned Blueprint** phase, twenty-seven percent of summary statements were associated with establishing the ecosystem and developing the necessary structures and processes. It was documented that during this phase, that three dimensions of open strategy were evidenced through the various strategic activities undertaken. Ecosystem members were both *included* and *participated*, to various degrees, in enacting the ecosystem development strategies. With decisions undertaken being communicated *transparently* across the wider fintech ecosystem.
- **Enacted Resonance** phase, forty-six percent of summary statements correlated with the third phase of ecosystem development activity. In this phase the ecosystem becomes a hive of activity with multiple member firms interacting with each other, representing a series of interconnected networks that make up the overall ecosystem. During this phase, three principles of open strategy were documented in analysing the numerous strategic activities undertaken in the ecosystem by Fintech Scotland.

Moreover, there are number of key themes that emerged from the case study and the corresponding summary statements, these were documented as follows:

Activity number	Item	Frequency	Percentage of Total
SA1	Strategy Execution	5	45%
SA2	Strategic Direction Setting	4	36%
SA3	Strategic Alignment	2	18%

APPENDIX 8 – GIOIA TABLE WITH CODED DATE FOR EACH RQ

RQ1. What is the purpose of strategic decision-making in the context of an innovation ecosystem?

Dimension	Representative Data
A. *Establishing foundations for ecosystem success*	A1. I think, at one level you could say that it is starting to materialize, .i.e., that reputation as a place where innovation can start, and develop, and grow, and scale. So yes, that sort of value around 'here is a place to come'. It's a bit like a laboratory because actually, it's what you test out that can have an impact on society. So, that is the value, where we are trying to get people to come here. Not to be the only place, and not because Scotland is the only place it can be, but because of the way the ecosystem works, it allows you to test things out. Then you can actually use Scotland as a launchpad into the rest of the world, that is the point of it. A2. There is a journey effect really. And the value proposition is 'come here to work local, go global'. And then 'contribute to the digital economy'. That is the value proposition, and that is what the different firms in the ecosystem are here to do.
B. *Establishing a purpose for the ecosystem*	B1. So those collaborations are very much about driving efficiencies within the financial services sector that allow better outcomes for people. And how can they learn from each other and learn from the universities, learn from the SMEs, and really help progress the opportunity and so their role very much is coming in, coming up with sort of mindset that they want to be inclusive. B2. So, really again the bringing together of the right space, the environment, supporting people provide an environment that allows entrepreneurs not only to want to set up business in Scotland but also potentially come from elsewhere in the world to Scotland to develop their enterprise.
C. *Organising and deploying resources*	C1. The thing is, we mobilize them around things that have been industry issues as opposed to, so, when they come to us, they will have their own personal things they want help with. But when we go to them, it's to speak to them about industry wide opportunities and ways to make a difference. So, for example, that would be around a procurement training program and how to have companies coming together to help procurement get better across the piece. C2. Things like helping them get procurement ready is very important. So, mobilizing them behind things like that is very good, because it's not a problem that just RBS or just Lloyds will have, it's a problem they all have. And it is not going to give them a competitive advantage really. It's going to help everyone work better and innovate better.
D. *Setting long-term ecosystem aspirations*	D1. So top level, that we have from a cluster Centre of Excellence where we're at bronze level, actually, we will have achieved gold level. So, we have the accreditation from the formal European Accreditation body saying that the fintech cluster in Scotland as a cluster excellence of gold level. What that means, well it's a badge saying we have got to gold, but it means that actually that you have delivered against certain other things in terms of the impact of growing entrepreneurial businesses, number one. D2. Number two, in terms of that collaboration of small helping big to change. It's helped big to become more successful, the likes of JP Morgan or RBS. Number three is that you have attracted more into Scotland, big companies, not just the ones we have got now but other big companies have moved into Scotland or have grown in Scotland. And also, the fintechs' have been able to expand more internationally. So, that's grown in Scotland but expanded internationally, it's that international dimension.

RQ2. What are the ecosystem dynamics impacting strategic decision-making?

Dimension	Representative Data
E. *Transparency of information and communication*	E1. So, all the partners have at least one meeting a quarter with us, at the very least. It's a lot more usually, but we make sure we always keep a relationship with them because the board meeting is not that the right platform for this type of discussion. It is too big. And because we've got thirteen financial institutions, sometimes competitors, it's not possible to be completely transparent. You know, between themselves they can't always speak their minds. E2. Every communication we have with them is tailored first of all and always relevant, or as much as we can make it anyway.
F. *Inclusion of participating firms in decision-making*	F1. On Monday night we had a two-hour call, on Microsoft Teams, with a number of the key players in the city. As well as a growing number of small businesses because there is a recognition in the city that, from a sectoral strategic position, we need to involve and include many of the smaller fintech businesses and learn from them. I think, that is a really important point in all of this. F2. They've been, you know, at the centre of everything. And I know that's very easy to say that, but with a little… you know, we can prove it actually. One of them was sitting on our board for two years. Company called 'Sharing'. So, they are now not a start-up, they are more like a scale-up now. But at the time they were very much a start-up. And again, you know, going back to inclusion. It's not just financial inclusion, its diversity, so their CEO Jude Cook was on our board. It's rare to have a female entrepreneur in the fintech space.
G. *Role and influence of keystone firms*	G1. Fintech Scotland is an independent organisation, not-for-profit body that exists as a 'strategic enabler' for the fintechs in the Scottish economy – providing the platform to catapult the smaller fintechs to reach incumbent banks and other service providers. G2. So, we're acting as that kind of glue that helps people sort of connect up because they don't necessarily see it automatically themselves. I mean, we were, if we didn't exist there wouldn't be any kind of framing in bringing some of those parts together.

RQ3. What are the key strategy initiatives undertaken in the generative phase of an innovation ecosystem?

Dimension	Representative Data
H. *Building a sense of community*	H1. But you go to these meetings and a lot of these people will say 'but the softer part of the infrastructure, which is the links that exist and the fact that people who can help each other out, is enormously helpful for somebody starting out'. H2. And now, because we've got more strategic partners, we didn't want to have an even bigger board with maybe 10 fintechs. So, what we're going to do is, we're going to have a board with the strategic partners and another board with the fintechs, so they can keep, you know, driving the community.
I. *Establishing formal relationships and networks*	I1. So, we are making connections between different people on a daily basis. We think that people require rather than trying to do on their own. I2. So, we've created an environment that is welcoming because FinTech Scotland is able to connect those organizations or those new businesses who want to settle in Scotland. We're able to connect them with large financial services organizations, with investors, Scottish Development International and others. And with large financial services players and professional services who work in finance the financial services industry.
J. *Developing platforms for sharing information*	J1. It's not just about those physical buildings; it is important that, when looking across Scotland, there is an opportunity to plug into what we refer to as virtual platforms or factory environments that allow big companies to share for example their data with smaller companies in order to innovate and generate those new opportunities in which their business operates. J2. So, we've created an environment that is welcoming because FinTech Scotland is able to connect those organizations or those new businesses who want to settle in Scotland. We're able to connect them with large financial services organizations, with investors, Scottish Development International and others. And with large financial services players and professional services who work in finance the financial services industry.
K. *Responding to unprecedented changes in the environment*	K1. And so, they are all trying to do great things. And it's even more true now under COVID, a lot of those companies have either repositioned their existing solutions to help companies with COVID challenges like remote working, security, onboarding customers when working remotely. Or are looking at new solutions, how to help people understand and companies understand all the benefits that can claim, you know, things like that. K2. We also have some other fintechs who are thinking about, what does digital exclusion look like as we move more digitally, and indeed COVID 19 has given us some really… immediate concerns, we need to address some of those needs, immediately, because we don't have the physical ability to kind of meet in person or indeed go into a branch or whatever that might look like.