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Gordon Institute of Business Science
University of Pretoria

Unicorns and Fortresses:

The barriers and enablers to effective fintech start-up collaboration with South African Banks

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Master of Business Administration

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ABSTRACT

South Africa faces a crisis of entrepreneurship – there are too few small businesses, and not enough skilled entrepreneurs to start more. Yet at the same time, the country has one of the best banking systems in the world. Recently, the interaction between technology entrepreneurs and the financial sector has come under the spotlight, and these two formerly isolated sectors have become the focus of much consideration in the thriving fintech space. Increasingly, financial services organisations, especially banks, and financial technology entrepreneurs, are recognising the importance of strengthening relations. This exploratory study uses findings from interviews with bank executives and fintech entrepreneurs to explore the growing role that collaboration plays. Banks employ a variety of means to drive innovation, and some of these factors affect the relationship with external collaboration partners. Similarly, fintech entrepreneurs are motivated to partner with established firms in order to bring their business to market and access the resources and funding they need to scale. This study explores the process of collaboration between fintech entrepreneurs and banks in South Africa, as a means of understanding which factors contribute to, and which undermine, the likelihood of effective collaboration.

Drawing on established theory on innovation and collaboration, as well as scrutinising the entrepreneurial ecosystem that influences these collaborations, the study presents a framework for engagement between banks and fintech entrepreneurs looking at four key factors: innovation capability within banks, collaboration characteristics of fintech entrepreneurs, the modes of collaboration, and the macro-economic conditions that affect fintech ecosystems.

Primary data collected from both a focus group and individual interviews was interpreted via qualitative analysis. The study found that ecosystem factors are less important than effective fintech-bank collaboration in South Africa, despite evidence to the contrary in the literature. Furthermore, the innovation dynamics within banks have a greater impact on collaboration than the behaviour of fintech entrepreneurs alone, and clear rules of engagement in cooperative arrangements between these two former foes can vastly improve success.

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KEYWORDS

Fintech, banks, financial services, innovation, business incubator, entrepreneurship, collaboration, macro-economic conditions.

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DECLARATION

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

CLAIRE RUTH THWAITS

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7 NOVEMBER 2016

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LIST OF ABBREVIATIONS

BAU	Business As Usual
CB	Corporate Bank
FE	Fintech Entrepreneur
IMF	International Monetary Fund
IP	Intellectual Property
KPI	Key Performance Indicators
GEMS	Global Entrepreneurship Monitor Report
NDA	Non-disclosure Agreement
P&L	Profit and Loss
PoC	Proof of Concept
OECD	Organisation for Economic Co-operation and Development
M&A	Mergers and Acquisitions
R&D	Research and Development
SMME	Small Medium and Micro Enterprises
TEA	Total Early-stage Entrepreneurial Activity
VC	Venture Capital
WB	World Bank
WEF	World Economic Forum

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CHAPTER 1: PROBLEM DEFINITION AND PURPOSE

1.1 Introduction

More than twenty years ago, technology billionaire Bill Gates argued that the world needed banking services but not necessarily banks, and described banks as “dinosaurs” (Iain Smith, 2016, n.p.). Two decades later, the growth of the Internet and the smartphone revolution have created a perfect storm of opportunities and risks for the banking industry. According to the *Accenture Technology Vision for Banking 2016* report, 85% of bankers expect the pace of technology change to increase rapidly or at an unprecedented rate in the banking sector before 2019.

The financial services industry, and in particular the banking industry, is seeing more of this technological progress than others through the accelerating field of financial technology (fintech). As Jamie Dimon, CEO of JPMorgan noted: “Silicon Valley is coming. There are hundreds of start-ups with lots of brains and money working on various alternatives to traditional banking” (Iain Smith, 2016, pp. 7). Google, Amazon, Apple and Alibaba all provide non-traditional financial services from online payments to savings vehicles, investments, and commercial loans through digital innovations that compete aggressively with the banking value-chain. In Africa in particular, where a historically under-serviced market is fertile ground for new fintech services, entrepreneurs are leveraging the power of financial inclusion and social media to make financial services more relevant, while using data to deliver more meaningful financial services on an ongoing basis (Collett, 2016).

Many reports show how the rapid development of African fintech, which exploded in the years following the 2008 global meltdown, is threatening established players in the mainstream financial services sector. Established banks are faced with an increasingly volatile, unpredictable, chaotic and ambiguous competitive environment (Marous, 2016). In particular, there is wide-ranging speculation about banks facing extinction in the face of more progressive start-up financial models in the fintech space (Marous, 2016). The banking customer has not only a wide range of choices, but also a transparent, increasingly affordable and globally accessible financial services regime to choose from.

Future-ready financial institutions cannot ignore the innovative potential in fintech start-ups for re-engineering their business processes, grasping un-tapped investment models or adding value in the customer service chain.

However, whilst the impact of fintech is expected to rise significantly due to some of the advantages fintech companies have over traditional banks – such as a higher risk appetite, stronger digital focus and more agile market responses – incumbent organisations still have the benefits of an established base of customers, trust, capital and knowledge of regulatory and compliance requirements (Marous, 2016). At the same time, financial services are very market specific, and what works in Silicon Valley may never take-off in South Africa. With a youthful population, increasingly affordable mobile technology (via the ubiquitous smart-phone), South African fintech start-ups have much to gain from successful collaboration with corporate partners. This collaboration is both in terms of new product or service development and new business development, and by accessing the established, trusted service offering of the World's second most competitive banking sector (Schwab & Sala-i-Martin, 2016). Accordingly, the big banks offer consumers trust, dependability and safe-havens in a market where uncertainty has damaged the pockets of both local – the African Bank demise – and international – the 2008 financial crisis - banking customers.

An emerging trend in new product or service development is corporate start-up collaboration. These collaborative relationships have been under the spotlight recently because of the increasing rate of change within the digital technology industry and the opportunities presented to companies by this technological advancement (KPMG, 2015; Pike, 2015; Skan, Dickerson, & Masood, 2015). However, conflict among partners with an inconsistent evaluation of a shared project may result in a collaborative partnership failing, and could slow progress or even decrease the quality of the outcome for partners. Identifying and resolving conflicts early may lead to better results for both parties, and this provides a good business case for maintaining positive collaborative relationships. Organisations like the World Economic Forum (WEF) and International Monetary Fund (IMF) are calling on start-ups, regulators and industry incumbents alike to embark on collaboration projects to ensure the stability of the financial market (Noonan, 2016).

As JP Rangaswami, Chief Data Officer at Deutsche Bank said last year, "It's not the institution versus the start-up anymore; it's *how* to partner [author's emphasis added].

There will always be people smarter than you. You have to learn how to engage: None of us can scale without partnering" (Rangaswami in Kite, 2015, p.37).

With the business case for collaboration in mind, this study focussed on collaborations between corporate banking institutions and start-up fintech companies and how these partners engage, the barriers and enablers are to these relationships, and a description of the antecedents of these collaborations in South Africa.

1.2 Purpose of the Study

The 2016 WEF report on *The Role of Financial Services in Society* questions how technology-enabled innovation in the financial services sector can lead to increased financial stability and greater business opportunities for partners (World Economic Forum, 2016). The report suggests that research exploring the recommendations that can be made to collaboration partners, to maximise benefits and mitigate risks associated with technology-enabled innovation, will provide clear, practical steps for corporate start-up collaboration. Based on this request for greater clarity into modes of corporate start-up collaboration, the study aimed to investigate the precursors to effective collaborative relationships between established financial services organisations and fintech start-ups.

The fact that corporate start-up collaboration in the fintech space is beneficial, in fact essential, is not in question. There are a number of examples of the broad range of academic and business literature which reinforce this fact. For example, Henry Chesbrough's extensive work on open innovation which is a process of innovation that involves previously competing entities, especially entrepreneurs and corporates. working collaboratively to define new business models (Chesbrough, 2010, 2012; Weiblen & Chesbrough, 2015). Further examples are the concept of collaborative networks that enhance organisational value (Lee, Olson, & Trimi, 2012), the reduction of transaction costs through effective collaboration (Stein & Ginevicius, 2010) and even the urgent need for innovation in the financial system called for by global financial leaders at the 2016 World Economic Forum in Davos (Noonan, 2016).

A review of literature has shown that a body of work has been extensively published on the benefits of collaboration between small and large enterprises; the environment where presumed competitors have become partners is tense but positive, with both parties

recognising the inseparability of banking from fintech (Kite, 2015). And whilst new forms of crypto-currency, big data analysis and a reimagined value chain become ever-present, the relationship between two formerly acrimonious parties has become an even more important focus point. The precursors of this collaboration and the barriers and enablers to effective collaboration were explored in this study.

The research focussed specifically on the relationships; both the formal collaborations between South African fintech start-ups and their corporate partners, or hosts; and informal relationships within their respective ecosystems, in the financial services industry.

By studying the results of interviews, focus group discussions and the latest literature on corporate start-up collaboration, this study aimed to identify the antecedents to successful fintech start-up and corporate financial organisation collaboration.

1.3 Problem Statement

This study attempted to identify and analyse the factors that determine effective collaboration between financial services firms and fintech start-ups engaging in innovative business, technology or process model innovation. Conversely, the study aimed to identify the key barriers to collaboration and how innovation could be hampered in the financial services industry by ineffective collaborative relationships.

1.4 Significance of the Study

The relationship between entrepreneurs and their investors is determined by a situation of substantial uncertainty. Understanding this relationship is an important task for the entrepreneurship community, which is interested in a vigorous and profitable collaboration between the two distinct parties that bring venture ideas and venture resources to one table. They can only really thrive through mutual cooperation, through a productive collaborative relationship, where they are not only shareholders in the same company but also peers in making the company a successful investment (Middelhoff, Mauer, & Brettel, 2014).

Collaborative partnerships have been extensively researched (Chesbrough, 2012; Gray, 1985; Huxham & Vangen, 2000; Seedat, 2012) and a growing number of scholars have

identified cooperation between entrepreneurs and investors as an important condition for the success of new ventures (Middelhoff et al., 2014).. However, to achieve this the collaborating parties need to understand that the success of that relationship is based on overcoming a range of different controllable and uncontrollable factors, which include the compatibility of members' business interests (Besanko, Dranove, Shanley, & Schaefer, 2013; Stein & Ginevicius, 2010), the operating context of entrepreneurs in a particular market, and even the internal innovation style of the corporate partner (Brigi, Hong, Roos, Schmieg, & Wu, 2016; Chiloane-tsoka, 2013; Kuratko, Hornsby, & Covin, 2014). Add the complexity of technology adoption to an already highly complicated financial services industry, and the barriers to effective collaboration seem insurmountable.

Similarly, most of the research on innovation (Choi & Moon, 2013; Hamel, 2015; Kuratko et al., 2014; Markides, 2006; Nagano, Stefanovitz, & Vick, 2014) focusses on the various factors necessary within formal organisations to stimulate innovation. As such, many studies include approaches to organisational models and formats for intra-company innovation or better collaboration between peers.

However there has been recent attention on the business case for fintech start-up collaboration in both academic and business publications (KPMG, 2015, 2016; Ringel, Taylor, & Zablit, 2015; Scanlan, 2015; Willmott & Scanlan, 2016; Yoon & Hughes, 2016) and there is consequently a need for guidance on how to navigate these complicated relationships.

Accordingly, this study aimed to investigate the factors that enable collaborative partnerships to succeed between corporates and fintech start-ups, by addressing the need to explore the intersection of inter-organisational collaboration, corporate start-up collaboration and fintech innovation.

The findings from this research are anticipated to be of use to the development of a more robust ecosystem for fintech and banking innovation.

This research may have broad application for management science beyond financial technology firms because of the nature of collaboration between established firms and start-ups. This study may also be beneficial to organisations that look to drive growth through external collaborative partnerships predominantly focussing on fintech. The

research should also appeal to business practitioners and scholars alike interested in testing the propositions made in the findings of the research, and formulating quantitative findings to support the exploratory study.

1.5 Scope of the Study and Methodology

The research was limited in scope to the following:

- The study explored the perceptions of participants in a chosen ecosystem, and was not concerned with the definition of success (only that it had or had not occurred) or the comparison of outcomes between relationships.
- A ranking of importance or intensity of factors for collaboration between corporates and fintech was not possible within this study due to the exploratory nature of the proposed research method. Accordingly, a quantitative study to test these factors was not conducted.
- The sample was limited to company participants that were accessible and available during the data gathering phase.
- The researcher was present during the collection of data and that may have influenced the responses of research participants. However, all attempts were made to minimise any potential impacts of this on the quality of the data attained.
- The research process was qualitative and thus subject to biases characteristic of social science research. Whilst the results of the exploratory interviews and focus group was solely dependent on the responses from participants, the research was enhanced with additional multi-source data to enhance the objectivity of the results.

The research was conducted in the form of semi-structured interviews with participants from both the fintech and banking sectors in South Africa over a two-month period in 2016. Interviews were coded and analysed the results thereof reviewed in line with current academic theory.

1.6 Conclusion and Outline of Dissertation

Chapter 1 presents the context of the research and current business literature on fintech, business innovation and the banking industry. The challenge for the banking industry and their start-up peers was reviewed in light of this literature. The business case for exploring collaboration between established corporate banks and fintech start-ups has

been presented, and reasons for further analysis of the factors enabling collaboration explored. Objectives for the research study were developed from the overview of the research problem. The scope of, and methodology for, research was discussed, and the model for analysis presented.

This research aims to assess the antecedents for collaboration between established banks and fintech start-up firms in the context of a particular ecosystem, in this case South Africa. The rest of this study is outlined as follows:

Chapter 2 will contain a review of the main theories, primary models and recent academic literature on inter-organisational collaboration, innovation, entrepreneurship and the macroeconomic factors prevalent in the market studied, as well as a statement on the research questions that have been developed from the literature.

Chapter 3 will detail the research questions aligned to the objectives of this study and revealed in the academic theory. Findings and conclusions from the literature review will result in the development of the study's research questions. The research questions will be addressed by utilising methodologies discussed in Chapter 4.

Chapter 4 will review the research methodology employed in the study. The chapter will describe the approach taken to gather data from interview sources, the limitations of this method, and the method for data presentation and analysis.

Chapter 5 will present the research results from the empirical study conducted along the major themes developed from the interviews.

Chapter 6 will discuss the results from the study by answering the research questions outlined in Chapter 3.

Chapter 7 will explain the conclusions drawn from the study, and present recommendations for practitioners, as well as suggestions for future research.

1.7 Summary of Chapter 1

The first chapter provided an introduction to the research, discussed the need for research into this topic and the potential outcomes for the research. The research problem and objective was stated, the importance of the research was discussed, the

scope of the research defined, and an overview of the methodology applied was given. The importance of collaboration between fintech and banking was also discussed. The following chapter will introduce the academic literature on the subject and explore the research into collaboration.

2 CHAPTER 2: LITERATURE REVIEW

Chapter 2 discusses the financial services sector, and more specifically, the banking sector in South Africa, and describes the importance of technology innovation to bankers. The fintech industry is described and the need for collaborative relationships between fintech start-ups and banks is developed. Chapter 2 also discusses the two entrepreneurship frameworks for ecosystem success which are used in the study to develop a framework for fintech-bank collaboration. Collaboration methods and innovation drivers are introduced as the main body of knowledge and the foundation for this dissertation. The unique combination of ecosystem forces are introduced in order to understand the relationship method of analysis.

2.1 Introduction

Whilst venture capital investments and attractiveness increases in the fintech sector, banking incumbents face an onslaught of innovative and competitive finance solutions, affordable and accessible technology and a democratised, global banking system with few of the barriers to entry faced by established enterprises. However, established companies and start-ups would both improve success rates if they collaborated instead of competed (Yoon & Hughes, 2016). Each party contributes a unique and equally integral skill to the collaboration environment; start-ups excel at proving successful concepts, whilst established companies are much more effective at successfully scaling proof of concepts (Yoon & Hughes, 2016).

> *"Start-ups are better at detecting and unlocking emerging and latent demand. But they often stumble at scaling their proof of concept, not only because they're often doing it for the first time, but also because the skills necessary for creating are not the same as scaling. Start-ups must be agile and adapt their value proposition several times until they get it right… In contrast, big companies often end up launching things they can make, not what people want. Successful established companies are focused on increasing scale and are often better at scaling proof of concepts than creating new products from scratch. They have huge advantages in procurement, distribution, and manufacturing, as well as sales and*

> *marketing advantages. But they have a challenge not only creating a proof of concept, but leaving it alone until it is ready to scale"* (Yoon & Hughes, 2016, pp. 2).

Corporates will collaborate with start-ups, particularly those that are pushing the boundaries of their industry's operational practices, in order to harness the energy of their operational speed, unconventional approach and the way they apply creativity to business problems (KPMG, 2015). Yet, whilst much literature has focussed on the business case for collaboration between corporates and start-ups, very little attention has been paid to the criteria for successful collaborations between fintech firms and established financial services businesses.

In order to understand the environment of collaboration, the collaborative relationship itself, and the actors within that environment, this chapter is structured as follows: an overview of the financial services industry, a discussion of different models of innovation, the nature of innovation in the financial services industry, the nature of fintech entrepreneurship, modes of collaboration and the macro-economic environment.

2.2 Financial Services Sector Players

2.2.1 Financial technology start-ups

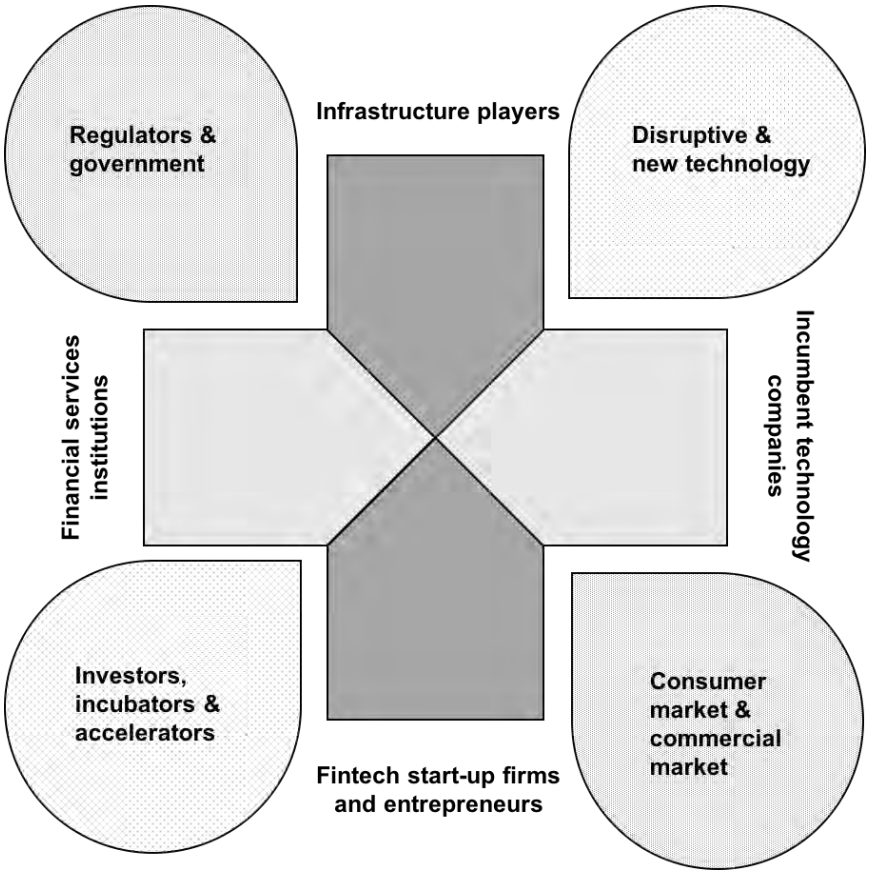
"Fintech" is a portmanteau used to describe financial technology companies that are generally in the start-up phase and founded with the purpose of disrupting incumbent financial systems and corporations (KPMG, 2015). However, there are multiple types of technology-enabled entrepreneurship models including meditech (a combination of medical innovation and either chemical or biological, and technology), healthtech (healthcare, as opposed to medical science, and technology), biotech (covering the technology of living organisms) and edutech (education and technology), amongst others. This study focussed on fintech and the associated business management practices of fintech entrepreneurs.

The fintech industry is massive and growing exponentially, attracting new entrants, new financiers, and, increasingly, corporate partners looking to muscle-in on an industry that is defining the future of financial services. According to PWC, there are four major *players* in the fintech industry: fintech start-up firms and entrepreneurs, incumbent technology

players, financial services institutions, and infrastructure players (PWC, 2016). This ecosystem is represented in Figure 1, which shows four *environmental forces* affecting the players in the ecosystem, namely disruptive and new technology, consumer and commercial markets; investors; incubators and accelerators; and finally regulators and government.

Figure 1. The fintech ecosystem

Adapted from PWC *Global Fintech Report*. *Blurred lines: How FinTech is shaping Financial Services* (PWC, 2016).



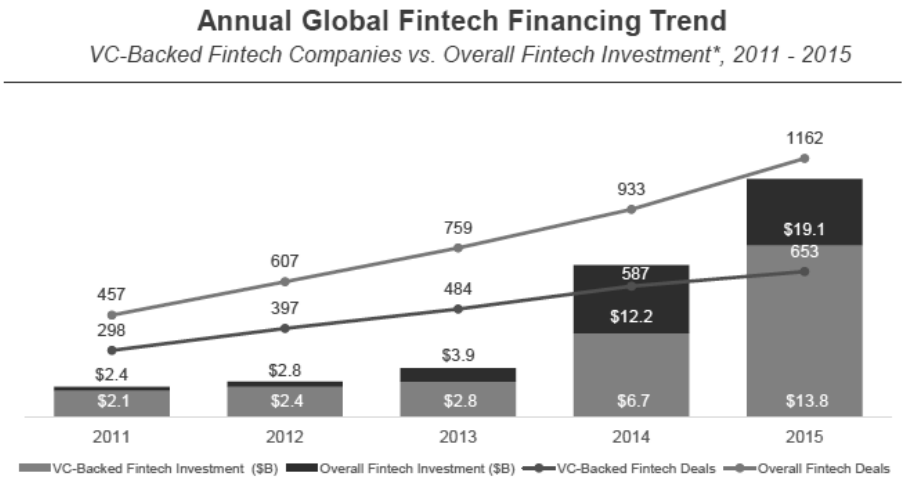
This representation of the ecosystem is interesting to any new entrant looking to establish a presence in the financial services sector through technology. Similarly, it mas the spectrum of players identified by PWC in the global, and therefore generalised,

fintech ecosystem. Unfortunately, it fails to isolate the specific relationship dynamics between the banking sector and fintech entrepreneurs, and generalises the four environmental factors to apply to all ecosystems. Given the different macro-economic conditions in each region of fintech activity, the model is too superficial to understand any of the unique dynamics of a specific region. Similarly, it is impossible to isolate the players in any bilateral collaboration.

The fintech market has also received significant media and investor attention. In 2015, corporate entities participated in over 25% of global fintech deals, with a distinct trend away from the traditional competitive stance taken by banks, and towards emerging partnerships and collaborations between start-ups and large corporate banks (KPMG, 2016). This is partly due to the increased threat to banks from major tech giants like Apple and Google – who have pushed banks to work with start-up fintechs in order to stay ahead of the threat of their disruptive payment technologies – and partly due to consumer pressure to keep up with advancements in smart-device technology.

Between 2010 and 2015, the fintech industry attracted global investments of approximately US$49,7 billion, with the market expected to increase exponentially as digital start-ups grow by almost 50% per annum (Fintech Finance, 2016). Accordingly, investment in the industry has grown considerably, as illustrated by Figure 2.

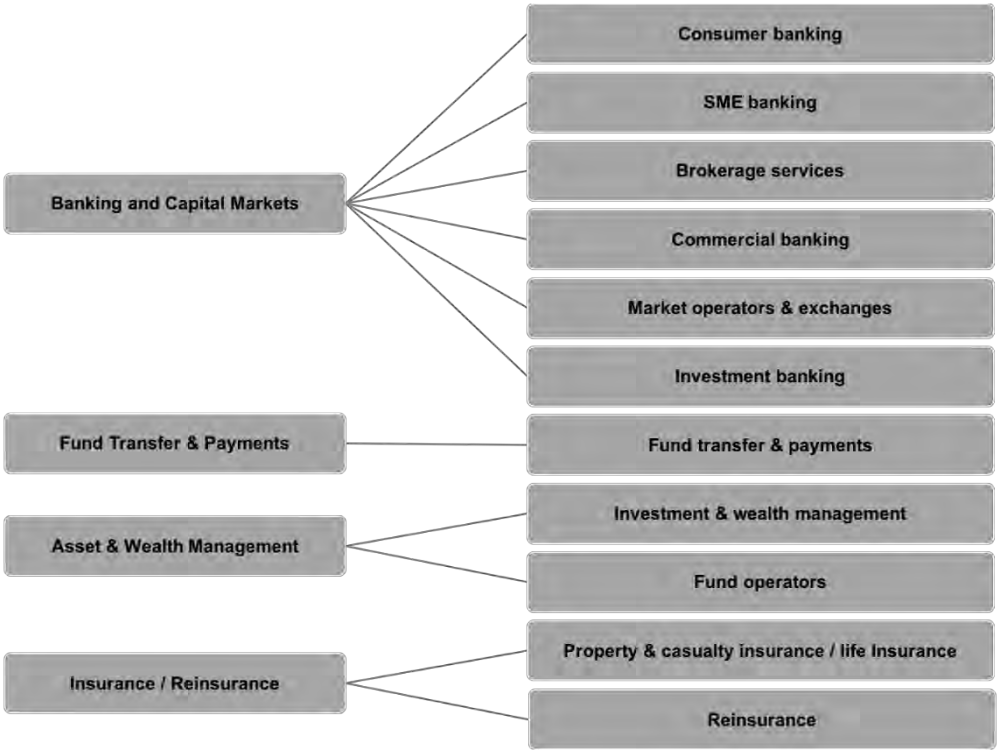
Figure 2. Annual Global Fintech Financing Trend (KPMG, 2016)



According to PWC research, consumer banking, Small and Medium Enterprises (SME) banking, fund-transfer and payments and investment and wealth management will be the most disrupted financial services in the next five years (PWC, 2016). The spectrum of financial services disruption by fintech is show in Figure 3.

Figure 3: Areas of Digital Disruption in the Financial Services Sector

Adapted from *PWC Global Fintech Report: Blurred lines: How FinTech is shaping Financial Services* (PWC, 2016).



In the United States of America (USA), fintech investment has been mainly in the consumer and SME sectors, the areas that are traditionally more profitable for banks, because of the impact of smartphones in being able to deliver an improved customer experience (Marous, 2016). The USA also leads in fintech investment, with Israel, India and the United Kingdom following suit as - with attractive ecosystems for fintech start-ups and the leading number of fintech start-ups (Fintech Finance, 2016).

Asset management, insurance, investment and corporate banking are more complex banking services that present more difficult service or product disruption opportunities.

Consequently, the more complex banking services have attracted considerably less global investment than the consumer or SME sectors (Marous, 2016)

Whilst the fintech market is small in comparison with services in the traditional financial sector, unprecedented rates of technology adoption demonstrate the potential for growth as well as increased risk to the stability of the entire financial system (World Economic Forum, 2016). One key to the growth of the fintech industry is the diversity of interests considered fintech. This is as almost every major process within banking and insurance is being targeted by fintech companies globally, either to disrupt the incumbents or, increasingly, to enable them to serve their customers better or reduce costs (KPMG, 2016). Recently, there has been a tremendous acceleration of activity between the alternative finance industry and banks, whereas before there were high levels of protectionism and distrust (Marous, 2016). Whilst incumbents are mired in complicated regulation and shareholder pressure to maintain market share, innovative start-ups are eating away at their value proposition by focussing on customer value and mobile technology. Disruption in the financial industry by digital players has the potential to decrease the relevance of traditional banking structures, whilst simultaneously increasing the importance of collaborations with innovative start-ups that make better, faster and cheaper banking services an essential part of everyday life for institutions and individuals (KPMG, 2015).

The disruption of the financial services industry has been met with both excitement and caution, and the corporate literature on the topic has proliferated in recent years. The big consulting firms such as The Boston Consulting Group, KPMG, McKinsey, Bain, EY and Accenture have all recently published thought-leadership and reports on the digital financial services industry. These reports cover the opportunities, threats, costs, and of course value to be gained from collaboration (EY, 2015; Fleming & Fielding, 2015; Grebe, Döschl, Schmid, & Koopmans, 2016; Skan et al., 2015; Willmott, 2013).

There is also a sense of trepidation in the response by local and national regulators alike when they appeal to the recommendations by the WEF to “fully think through new businesses”, whilst regulators at the Financial Stability Board have flagged fintech as something that “needs close attention” (Noonan, 2016, pg 2). With proposed international regulations documented in the 2016 WEF report *The Role of Financial Services in Society - Understanding the Impact of Technology-enabled Innovation on Financial*

Stability, and an increasing rate of attention on fintech, newcomers to the fintech industry may soon see raised barriers to entry. These barriers may inhibit growth prospects, and the recommendations by the report for greater collaboration between established and start-up players may come under question.

Like all new business innovations, the fintech industry offers those that embrace it an unprecedented opportunity. The industry is ripe with new product and service offerings, novel customer interfaces and most importantly, attractive returns to owners of capital. Venture capitalists and private investors have already seen windfalls from their foresight. Some have even gone so far as to nickname the tech start-up phenomenon, in so doing creating an almost cult-like sub-culture in an already hyped industry.

The term ‘'Unicorn' refers to a technology start-up that does not have an established performance record, with an estimated valuation or stock market capitalisation of more than US$1 billion. The term was first popularised by the American venture capitalist Aileen Lee in her article *Welcome to The Unicorn Club: Learning From Billion-Dollar Startups* (Lee, 2013). Lee estimated that only .07% of technology start-ups ever reach US$1 billion valuation, and are effectively so rare that finding one is as difficult as finding a unicorn.

Since the publication of Lee's article, the term has become widely used to refer to startups in the technology sector with very high valuations, sometimes questionably supported by their fundamental finances or commercial viability, and has been used metaphorically in this study to describe the fintech entrepreneur.

Having described the fintech industry, the following section depicts the state of the established financial industry and the corporate players that make up the industry being disrupted by the fintech start-ups discussed above.

2.2.2 Banks in the Digital Age

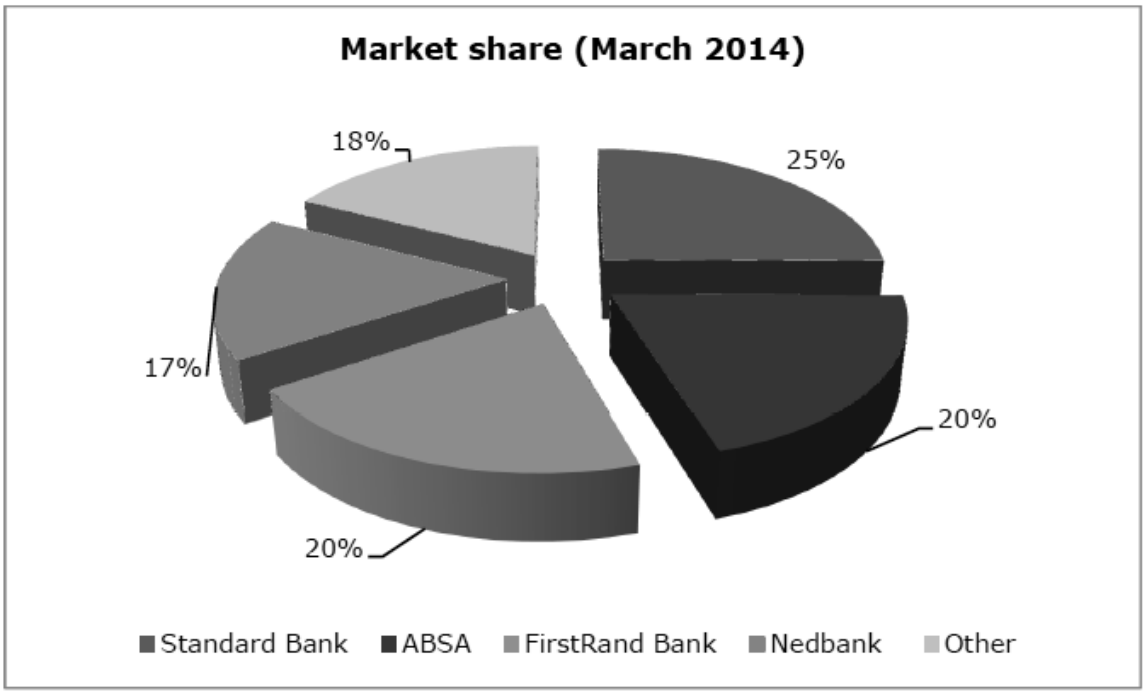
With banking profits under pressure from a sluggish economy, decreased share of wallet, and increasingly pervasive technology, corporate banks are cautiously entering the fintech industry.

The global banking and financial system, made up of retail banking, life insurance, and property and casual insurance, generates approximately US$6,6 trillion in annual

revenue and has tended to grow at a 6% compound annual growth rate over the period 20015 to 2015 (Ross, 2015). The Organization for Economic Co-operation and Development (OECD) suggests that financial services typically make up 20-30% of total service market revenue and about 20% of the total Gross Domestic Product (GDP) in developed economies (OECD, 2016), with retail banking, life insurance, and property and causality insurance comprising approximately 60% of total financial services sector sales. If the OECD's suggestion that financial services are between 20% and 30% of the total service market, then financial services would comprise between 12% and 19.5% of the total global economy (Ross, 2015). Little wonder that the WEF is recommending regulation of the fintech industry, and that venture capitalists and banking incumbents alike are looking to fintech as the next big pay-ticket.

Locally, the highly competitive South African banking sector – ranked second in the world for its soundness of banks by the most recent WEF *Global Competitiveness Report* (Schwab & Sala-i-Martin, 2016) - is dominated by four major full service banking players: Standard Bank, Nedbank, Barclays Group Africa/ABSA, and First National Bank, with the notable addition of Capitec dominating the balance of small banks. Figure 4 shows the market share of the largest banks in South Africa.

Figure 4: Market Share of South African Banks (Matoti, 2014)



South African banks are subject to strict regulations including, but not limited to:

- The Banks Act, 1990 (Act No. 94 of 1990);
- The National Payment System Act, 1998 (Act No. 78 of 1998);
- The Financial Intelligence Centre Act (FICA), 2001 (Act No. 38 of 2001) which came into effect in 2003;
- The Financial Intermediary and Advisory Services Act (FAIS), 2002 (Act No. 37 of 2002);
- The National Credit Act, 2005 (Act No. 35 of 2005);
- The Consumer Protection Act, 2008 (Act No. 68 of 2008);
- The Home Loan and Mortgage Disclosure Act, 2000 (Act No. 63 of 2000);
- The Prevention and Combating of Corrupt Activities Act, 2004 (Act No. 12 of 2004);
- The Competition Act, 1998 (Act No. 89 of 1998); and
- The Financial Markets Act, 2012 (Act No. 19 of 2012)

(Source: Competition Commission South Africa, 2016; Matoti, 2014; South African Government, 2016; South African Reserve Bank, 2016)

The above list illustrates the complexity of the South African banking sector and the level of regulation applied in the market. This is important in considering how banks approach

innovation when there appears to be very little room for operating outside the bounds of the myriad regulations and compliance requirement expected of the banks.

Further, banks have to comply with the King Code on Corporate Governance and Basel III, and will also have to comply with Treasury's proposed Twin Peaks regulatory system to ensure a safer banking system (South African Reserve Bank, 2016). The industry has for some years been ranked amongst the most competitive in the world by the annual World Economic Forum Global Competitiveness Report (Schwab, Sala-i-Martin, & Brende, 2015) and is considered an exemplar of financial prudence in the economy. Together these codes and regulations, though onerous, have created a safe, trusted and complex, financial services sector, with a vigorous adherence to the rule of law and a strong compliance track-record. Much like the allegorical "fortress" in the study's title, the South African banking system is generally viewed as bastion of prudence and respect for rules, with adequate capital resources, stable technology and infrastructure, and a strong regulatory and supervisory environment (Matoti, 2014). In keeping with the title of the research, banks have developed a fortress-like reputation – safe, trusted, secure and impenetrable.

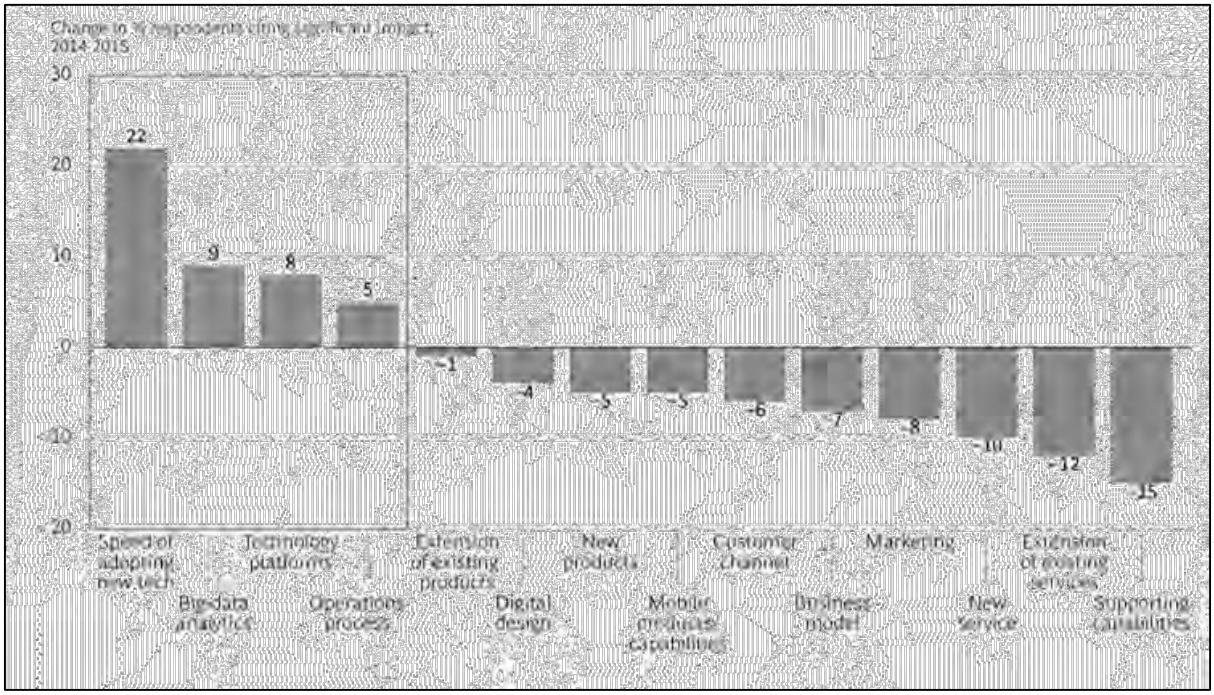
Within this context, banks and other financial services institutions – locally and internationally – are facing disruption in their ability to serve customers as expensive legacy banking systems age and lag behind new technology. Customers have greater access to new technology, mobile services, and alternative financial services, like peer-to-peer lending and mobile transaction services, and the opportunities to embrace these new services outside of the banking domain are ever more present.

A wider ranging and longer period of technological change and system convergence is being experienced than ever before in economic history. Unlike previous technological upgrades in banking – such as the 'Big-Bang' when trading-floors upgraded to modern computerised systems – the value proposition of disrupted computing is "defined less by the technology itself and more by an organisation's ability to integrate its internal systems with the external world" (Walker, 2014, pp. 71). Banks have been "forced" to invest billions of Rands in digital technology to keep pace with consumer demand for digital financial services (Ndzamela, 2016). Rising customer expectations and intensifying competition are spurring financial services institutions to overhaul their digital capabilities through innovation projects. Banks are facing their own "Google moment" with more than

700 million people gaining access to mobile money via disruptive digital technology, leap-frogging the traditional banking and payments systems (Vara, 2015).

Unfortunately, established financial services players are not all keeping up with the surge in new innovation investment. Nor are they able to implement new technology quickly enough, with an alarming 40% of senior executives in an Accenture study reporting their organisations' deployment of new technology was either "negatively impacting its value, or providing no net benefit at all" (Skan et al., 2015, pp. 4). Figure 5 from the Boston Consulting Group's *Global Innovation Survey* shows just how important the speed of new technology adoption was to respondents in a 2014 survey, with implementation speed almost three-times as important as the next area of impact. Interestingly, one of the biggest obstacles faced by respondents when it came to generating a return on investment from innovation projects, was that development took too long (Ringel et al., 2015).

Figure 5: Most Important Areas of Impact on the Financial Industry (Ringel et al., 2015)



The ability to integrate digital technology is evidenced in the behaviour of banking organisations that have chosen to embrace fintech companies in their corporate ecosystem. According to Peter Schlebusch, Chief Executive for Personal and Business Banking at Standard Bank, "Change this big requires a cultural shift, and while we remain

true to our core values and principles, which have served us and our clients well for more than 154 years, we need to think and act like a 154-year old start-up. We essentially have had to disrupt ourselves from within" (Schlebusch, 2016, pp. 1). However, Schlebusch fails to identify the incentive structures designed to remunerate and reward bank employees for certain behaviours, and how these structures might incentivise innovative behaviour. In fact, it has been shown that performance measures can lead to dysfunctional behaviour, and thus need to be designed with care in order to align individual (or manager) decisions with the organisation's goals (Heesen, 2012). If the organisation's strategy is to pursue a customer centric digital strategy, their management remuneration and rewards incentives need to closely track this goal.

For those pursuing an active relationship with fintech actors, the ability to overcome resistance to external influence presents an opportunity to understand those internal systems and how they are (or might be) integrated with the external fintech world. Financial institutions, internationally and in South Africa, have followed a similar innovation approach by either choosing to: develop, collaborate, partner, co-innovate, or straight-out acquire the innovative capacity required in the market. There is some debate around the need for a centralised innovation hub or incubator, or whether decentralised innovation leads to better results. However most corporate innovators agree that dedicated capacity within the incumbent corporate partner allows innovation collaboration projects to reach market sooner and with more efficacy (Ringel et al., 2015). However, the fortress-like reputation of banks presents challenges to new entrants and partners. Entering the banking market, partnering with banks, or – metaphorically – penetrating the fortress walls, may seem as rare an occasion as the success of fintech businesses. In short, banks and fintechs need each other; banks are under pressure from customers and shareholders alike to innovate, improve service and slash costs, and fintechs offer the means of achieving this, but lack scale, market access and credibility.

This research focussed specifically on those organisations that chose to collaborate or partner with innovative fintech firms, whether through self-driven innovation hubs and incubators, or directly through accelerator projects or partnerships. For the purposes of brevity, the terms *bank* and *corporate bank* and *corporate* have been used interchangeably in the study.

The mode of relationship between the corporate and fintech partner will be discussed further, but it is evident from the above that the financial services industry faces enormous pressure, and opportunity, to collaborate with fintech start-ups, and that the industry as a whole is increasingly affected by the rate of technological change and the demand from consumers to adopt innovate services and products that are technological in nature.

2.3 The Corporate Firm and Innovation

2.3.1 Creative destruction and entrepreneurship

Open innovation is the idea that firms should use both external and internal ideas, and internal and external paths to market (Kohler, 2016) . Open innovation is being used by established financial organisations to build structured development programmes in the form of business accelerators to harness entrepreneurial power (Kohler, 2016). Recognising the value each party brings to the relationship is important, but understanding how to negotiate the differences between the parties could ensure success.

Joseph Schumpeter saw capitalism and the modern economy as a “restless, crisis-prone system” and he opined that innovation is a “realisation of new combinations” driven by entrepreneurial innovation (Kurz, 2012, pp. 875). Schumpeter’s entrepreneur does not have the financial means to realise his innovation, but brings to the free market new ideas, new goods and new methods of production. The owner of capital thus provides the entrepreneur with a mandate to execute this plans (Kurz, 2012). For Schumpeter the banker is a provider of credit, but the narrow creditor profile can be extended to any corporate entity with the financial means to support the entrepreneur’s capital requirements (Kurz, 2012). Through the creation of new means of production via the innovation process, the old means are destroyed and replaced through the entrepreneurial venture. Consequently, Schumpeter’s creative destruction.

Schumpeter’s *Theory of Economic Development* addresses three essential elements: the creative potential of the pioneering entrepreneur, innovations which are the vehicles for creative destruction, and bank credit as the prerequisite for the foundation of new enterprise and innovative investment (Hagemann, 2015). Coupled with the disruptiveness of entrepreneurial agents is the cautious nature of the banker. The banker

is well-advised to carefully scrutinise the innovative plans presented to him, in order to balance expert knowledge with a long-run orientation (Kurz, 2012). Hence the concept of corporate venturing is introduced as a relationship between an established owner of capital and an innovative start-up venture.

Technologically sophisticated settings have been shown to be conducive to developing and implementing a corporate entrepreneurial strategy, and are characterised by factors including: significant R&D investments, frequent product and / or process technology changes, and a reliance on superior technical personnel as key sources of competitive advantage (Kuratko et al., 2014). Kuratko, Hornsby and Covin (2014) define five specific dimensions that determine an environment conducive to developing entrepreneurial behaviour in their *Corporate Entrepreneurship Assessment Instrument.* However, Kuratko, et al (2014) do not explore the factors that contribute to corporate entrepreneurship through partnerships with start-ups, and completely ignore the potential for externally focussed corporate venturing. Similarly, whilst the organisational antecedents for entrepreneurial behaviour within established firms are presented in detail in their study, actual entrepreneurial traits in start-up organisations are not discussed, nor are the factors for any relationship between these two organisational types explored.

Therefore, this study will explore which of the 'controllable factors within the internal work environment', namely: management support, work discretion / autonomy, rewards / reinforcement, time availability and organisational boundaries, are recognised as barriers or enablers in the corporate start-up relationship, and which, if any, are relevant in the fintech industry (Kuratko et al., 2014).

"Corporate entrepreneurship – a significant form of corporate innovation – is envisioned to be a process that can facilitate firms' efforts to innovate constantly and cope effectively with the competitive realities companies encounter when competing in world markets" (Kuratko et al., 2014, pp. 38). Large organisations have, for a long time, sought ways to be more innovative, creative and entrepreneurial, embarking on a range of mechanisms from corporate venture capital, internal incubators, strategic alliances and joint ventures to varying degrees of success (Weiblen & Chesbrough, 2015). The imperative for corporate innovation stems not just from Schumpeter's creative destruction of existing strategic advantage through entrepreneurial ventures, but also from the pervasively

disruptive technological forces that have compelled incumbent firms to develop more imaginative, agile, and much more rapid innovation, in service and product offering.

Schumpeter believed that entrepreneurship was the ability to act on an opportunity that innovations and discoveries create, where actors in a market can sustain advantage by creating and exploiting fundamental shocks that destroy old sources of advantage and replace them with new ones (Besanko et al., 2013). For Schumpeter, market actors were not limited in his definition to start-ups alone; his work embraced entrepreneurial firms – a characteristic, rather than a title (Besanko et al., 2013). He called the evolutionary process *creative destruction* and this concept has underpinned most entrepreneurial theory since his *Theory of Economic Development* was published more than one hundred years ago (Kurz, 2012).

The list of new technologies that 'creatively destroyed' established markets and their dominant firms grows with each generation: from the first steam engine invented in 1712 by British iron-maker Thomas Newcomen, which powered the beginning of the Industrial Revolution; through to the modern-smart phone, technology has always played an important role in entrepreneurship and the evolution of business (The Startup Guide, 2016). Researchers could go back to the start of the Industrial Age two hundred years ago to understand just how shocking machinery was to traditional, mercantile business models, or to more recent entrepreneurs like Steve Jobs' and Steve Wozniak's personal computer revolution; the common theme is that entrepreneurship thrives when technology is introduced.

The utilisation of digital technologies defines the modern entrepreneur; but, they are still an innovator, a business person who grasps the opportunities available in a world of transforming technology, and overcomes traditional or stagnant business models to invent new sources of economic value. In the spirit of Schumpeter, the entrepreneur can exist both within an organisation and without, and it is therefore the entrepreneurial characteristic that is important to this research. The entrepreneurial characteristic is evident in both the fintech start-up and the established corporate enterprise, and the propensity to embrace innovation, as well as the barriers to that process are explored below.

2.3.2 The innovator's dilemma

Clayton Christensen's popular work on disruptive innovation and change defined three factors – resources, processes and values – that affect an organisation's capacity to change and what sort of innovations they will be able to embrace (Christensen & Overdorf, 2000). In *The Innovators Dilemma*, Christensen explains that disruptive innovations occur so irregularly that "no company has a routine process for handling them" and that companies should rather create a separate unit to exploit innovation(Christensen & Overdorf, 2000, pp. 7). The concept of the innovators dilemma raises a fundamental question about business sustainability: are large firms doomed to be less innovative than smaller rivals?

There are four factors that weigh on this question and how large firms compete with, interact with, and are affected by the entrance of innovative new-entrants: (1) the productivity effect, (2) the sunk cost effect, (3) the replacement effect, and (4) the efficiency effect (Besanko et al., 2013). A brief summary of each follows:

- *The productivity effect:* in a winner-take-all innovation race, even with the advantage of scope economies, a large firm may not explore all possible research directions, which hampers its efforts to be the first innovator. Statistically, a winner of a patent-race is most likely to be one of any number of the large firm's competitors. The only way to counter this effect is to make internal research and development labs completely independent of the larger firm; a near impossible task when lab managers are influenced by corporate culture, or research philosophy, and even more tellingly, when corporate culture dissuades risk taking (Mocker, Biellie, & Haley, 2015). The bureaucratic effects and corporate (dis)incentive norms in vertically integrated firms also weigh on large firms seeking to motivate internal innovation laboratories; it is very difficult for a large organisation to provide a financial incentive for innovation that rivals the potential rewards earned by the innovative entrepreneur (Besanko et al., 2013). Similarly, investors or corporate sponsors within large firms often have very little understanding of the underlying science or technology offered by the innovation project, and cannot easily evaluate progress – giving rise to an agency problem in innovation projects. Conversely, the managers of small fintech start-ups are also their founders, who may be better at evaluating progress but are also subject to the pitfalls of emotional connections to their work and by virtue of their enthusiasm or myopia, may overstate the success of ongoing projects (Besanko et al., 2013).

- *The sunk cost effect:* has to do with the asymmetry between a firm that has already made large financial and organisational commitments to a particular technology or product offering, and one that is just about to embark on such a project. The former has already invested in resources and capabilities that are likely specific to that technology and are thus less valuable if the firm switches to another technology. This is often seen in the resistance to change in enterprise resource programmes (ERPs) such as SAP or Oracle, because of the massive capability training and financial investment into these systems. Although for an established firm the costs associated with these investments are sunk and should be ignored, behaviour in firms evidences an inertia that favours sticking with the current technology (Besanko et al., 2013). Unfortunately, people tend to escalate commitment to a course of action in which they have made substantial prior investments of time, money, or other resources, even if that course of action has an apparent better, more efficient alternative. By contrast, a new entrant or another firm that has not yet invested in a technology, decision or resource can compare costs of all the alternative technologies without bias in favour of one technology over another. This was evidenced in the innovative entry of Capitec into the South African banking market who were able to offer cheaper products to the market because of their leap-frogging the legacy banking technology of the top four banks - who are burdened with expensive system maintenance and bloated management structures to serve these systems (Francis, 2015).
- *The replacement effect:* developed by economist Kenneth Arrow, the replacement effect is experienced where a market entrant can replace a monopolist through the exploitation of a cost-reducing innovation, but the monopolist can only replace itself. Assuming equal innovation capabilities, the new entrant would be willing to spend more on the innovation than the incumbent because a successful innovation for a new entrant would lead it to becoming the new low cost monopolist, whilst a successful innovation by an established firm would maintain its monopoly, albeit at a lower cost (Besanko et al., 2013). Thus, new firms with cost-reducing innovations attempting to enter a monopolistic, or even a highly concentrated, market like the South African banking industry (The Banking Association South Africa, 2016), would be more likely to gain from the innovation, dis-incentivising the incumbent firms to innovate, and potentially even dis-incentivising collaboration with new-entrants.
- *The efficiency effect:* is experienced when a new innovative entrant drives down prices in a concentrated market, forcing an incumbent to not only lose market share,

but also margins as prices drop. The incumbent firm has more to lose from another firm's entry than that firm has to gain from entering the market, making the incumbent firm's incentive to innovate stronger than that of a potential entrant (Besanko et al., 2013).

It can thus be seen that incumbent firms are confronted with a number of factors when evaluating innovation in order to compete sustainably, and face different forces from new-entrants in the decision-making process.

2.3.3 Organisational structures and innovation

Organisational structure plays an important role in the innovation outlook of a firm. The internal corporate environment needs to be conducive to entrepreneurial behaviour, and some of the established determinants include: (1) top management support for the behaviour, managers and relationships, (2) work discretion and autonomy, meaning independent choice of projects and innovation partners, (3) clear and transparent rewards and reinforcement of the aforementioned support and autonomy, (4) time availability of dedicated personnel to the innovation projects or partnerships, and (5) clearly delineated organisational boundaries (Kuratko et al., 2014).

These five factors are controllable by managers, whilst the behaviour of partners, and the macro-economic environment are uncontrollable. This extends to the relationship between investors and entrepreneurs, for example when a corporate bank or incubator takes equity in a fintech, and moves from partner to funder. Despite their equity power, investors have only limited means to influence the day-to-day operational decisions of the entrepreneur, who is charged with exploiting the opportunity to the best of his knowledge (Middelhoff et al., 2014).

According to Peter Schlebusch, Chief Executive for Personal and Business Banking at Standard Bank, "Change this big requires a cultural shift, and while we remain true to our core values and principles, which have served us and our clients well for more than 154 years, we need to think and act like a 154-year old start-up. We essentially have had to disrupt ourselves from within" (Schlebusch, 2016, pp. 1). Interestingly, Schlebusch does not discuss *how* the bank planned to disrupt itself from within, although that may have been a means of protecting the bank's competitive advantage. For this study, the incentive structures designed to remunerate and reward bank employees for certain

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behaviours, and how these structures incentivise innovative behaviour, were studied. According to the literature on performance incentives, human resource practices such as performance appraisal processes can signal promised benefits and required contributions (Rousseau, 2004). In particular, these socialisation events can have pervasive effects over time on the beliefs that a worker holds about the employment relationship and how the employer rewards behaviour. If the evidence of reward is linked to a particular behaviour, then employees are likely to increase that behaviour. Similarly, if there is evidence of other employees being punished (through ostracisation, lack of performance bonuses, or worse, termination), then employees are likely to decrease certain behaviours. This is the socialisation of behaviour in firms described by Rousseau as a psychological contract between the employee and the organisation.

Whilst corporate responsibility is used often to justify this behaviour, it has created a perversion of the principal of corporate governance, the protection of stakeholder (principal) interests from the selfish interests of the manager (agent). Whereas before bank executives had an unduly high personal stake in reporting good news – as seen in the Enron and WorldCom scandals – now executives have an unduly high personal stake in failure, and perversely would rather do nothing.

However, the nature of financial markets also plays into the impact of manager incentives. Financial markets trade in services and products with uncertain returns. Managers have to distinguish themselves by generating a higher return than competitors, but in an ironic twist of fate, bank executives, who have been under the spotlight since 2008 financial crisis for taking foolish risks, are now afraid to take even calculated risks in innovation. Unfortunately, management's efforts to increase profit often hurts the interests of others related to the industry, sometimes referred to as antisocial decisions (Sanyal, 2016). When rewards for behaviour are significantly higher than the market average, the manager is further incentivised for the action that attracted that reward. In effect, by doing nothing – or more formally, maintaining the status quo – managers can still receive large financial rewards, and avoid punishment.

Finally, the "innovation value chain" offers a framework breaking corporate innovation down into three phases (idea generation, conversion, and diffusion) and six critical activities of attention (internal, cross-unit, external sourcing, idea selection, idea development; and spread of the idea) performed across those phases (Birkinshaw &

Hansen, 2007, pp. 121). Unfortunately, the innovation value chain presents the process from the corporate perspective only, even though it recognises the opportunities for collaboration and external sourcing of ideas.

Like the factors determined by Weibhlen and Chesbrough (Weiblen & Chesbrough, 2015), these determinants are from the corporation's perspective, leaving the question of how start-up firms can engage with corporations and which factors to consider from each party's position in the relationship.

Ultimately, whilst the internal structures of the bank and the fintech entrepreneur are within their realm of control, the partner's behaviour (that of the fintech or the bank) and the macro environment are not, and form an important part of the analysis of collaborative behaviour between these actors.

2.4 The Nature of Entrepreneurs

Whilst the Global Entrepreneurship Monitor (GEMS) report (Herrington & Kew, 2016) finds that the level of entrepreneurial activity varied significantly among countries, the general attributes of entrepreneurs remain the same: entrepreneurs have a particular nature that differentiates them from employees of firms, they have high networking inclinations, tend to value relationships more than corporate workers and are subject to financial uncertainty. Each internal and controllable factor is expanded upon further below. A comparison of the microeconomic conditions affecting corporate innovation is introduced as a complementary factor for entrepreneurs.

2.4.1 The risk-taking nature of entrepreneurs

An entrepreneur is defined as someone who organises and manages any enterprise, especially a business, usually with considerable initiative and risk. A technology entrepreneur would therefore be one who focusses their business on the novel use of technology to pursue their business initiative. As Allan Knot-Craig said in Finweek, "To me, an entrepreneur is anyone who risks everything to follow his or her passion" (Knott-Craig, 2011, pp.53). Knott-Craig identified this risk-taking behaviour as the most important prerequisite to entrepreneurship, the ability to risk everything, even when: "society frowns upon risk-takers" (Knott-Craig, 2011, pp.53).

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Wharton Fintech describes fintech as “an economic industry composed of companies that use technology to make financial systems more efficient” (McManus, 2016, pp.1). Therefore, a financial technology or fintech entrepreneur is one who uses leading technology in the financial services industry, overcomes considerable risk (often financial itself in nature), and creates a business that they direct through personal initiative. These factors – risk, the ability to leverage technology in financial innovation, and personal direction – are investigated as traits of entrepreneurs in the collaborative relationships investigated in this study.

2.4.2 Networking behaviour

Past studies have shown that networks are important in providing actors with access to crucial resources and opportunities, yet networking behaviour between entrepreneurs in a business incubator is not a precursor to formal contracting partnerships between those entrepreneurs, nor is it a predictor of successful relationships post incubation (Ebbers, 2014). This is unusual given the previous literature where networking is expected to assist with access and contracting. However, Ebbers’ (2014) study did find that entrepreneurs that spend more time on networking activities (outside of the incubator relationships) are more likely to identify potential alliance partners and actively facilitate alliance formation between other firms. According to Ebbers, “prospective or new alliance partners that benefitted from selfless brokering behaviour by entrepreneurs could be returning the favour by connecting them to potentially valuable alliance partners in their own network” (Ebbers, 2014).

In addition to the entrepreneurial characteristics described by Schumpeter in Kurz (2012), the technology entrepreneur has the additional traits of technological astuteness. Tajeddini and Mueller (Tajeddini & Mueller, 2009) identify the motivational characteristics and variables associated with techno-entrepreneurship in a study of Swiss and UK start-up firms, describing autonomy, propensity for risk, and locus of control, achievement need, and tolerance for ambiguity, innovativeness, and confidence as the main characteristics of tech entrepreneurs. By extension, these characteristics could be applied to fintech entrepreneurs because they are considered a sub-set of tech-entrepreneurs.

2.4.3 Financial constraints

A study found that financial and personal engagements were major obstacles for entrepreneurs (Tajeddini & Mueller, 2009). In other words, the capital constraints on entrepreneurs prevented some entrepreneurs from succeeding, however the lack of funding is not due to the availability of finance in the industry, but rather due to the lack of a credible deal pipeline in entrepreneurial ventures (Makinane, 2015). Economic viability is more attractive to the providers of capital than the creative ideas entrepreneurs present at funding pitches. Whilst the lack of funding is self-evident in any new venture, it is not disputed in the literature, and as such has not been extensively addressed in this study. What has been explored is how the funding is utilised, the level of maturity in the funding market, and what criteria venture capitalists apply when considering collaboration with entrepreneurs. For instance recent reports on market maturity and the development of technology ecosystems (see section 2.5 Ecosystem factors) describe the impact macroeconomic factors have on entrepreneur funding.

2.4.4 Relationships

Entrepreneurs have only limited means to control the corporate partner or their institutional partner, as official exchanges between entrepreneurs and investors on operations and performance typically take place in board meetings, which serve as a form of control (Middelhoff et al., 2014). This could also link to Kohler's assertion that entrepreneurs are constrained by their newness and lack of experience (Kohler, 2016). However, it is evident from the academic literature that entrepreneurs value and focus on relationships more than their peers in corporate institutions. This may be because entrepreneurs are motivated by personal reasons to embark on their ventures, that they rely heavily on personal relationships to succeed, or that they have personal preferences and private interests over that of the firm, where collective interests are meant to prevail. Nevertheless, the fact that entrepreneurs place a high premium on relationships is important to this study because of the nature of relations between entrepreneurs and banks.

Finally, there is a difference between the stage of the relationship between the two parties, which could change the power dynamics and interaction between the parties. For instance, a corporate bank investor or banking project manager may behave more informally when soliciting a fintech entrepreneur prior to contracting or joint ventures, but

then may be subject to more formal behavioural constraints after an investment is formalised and becomes subject to regulatory, compliance or even organisational performance considerations. Whilst this is difficult to measure it is relevant in the study as the nature of relations between parties change over time.

2.4.5 Corporate versus start-up innovation

As presented by Schumpeter, entrepreneurs are not necessarily located in a start-up, they can also be found in established firms (Kurz, 2012). Similarly, innovation does not require new entrants as “incumbents will and frequently do innovate whenever they can” (Stringham, Miller, & Clark, 2015, pp. 86). However, new entrants offer a different perspective on the industry and often bring essential skills into an industry that may have low internal innovation because of high barriers to entry; incumbents tend to avoid innovation and dissuade new entrants when their fixed costs are particularly high. As discussed earlier, the sustainability of firms and their ability to overcome the innovators dilemma (Christensen & Overdorf, 2000) plays a role in their innovation behaviour. The incumbent firm is faced with various forces affecting her decision to innovate, and similarly, the new entrant is subjected to and influenced by the same factors.

Following from the earlier description of the barriers to corporate innovation, start-ups are in fact motivated to enter a market when incumbents face productivity, sunk-cost, replacement and efficiency effects. Where an incumbent is dissuaded from innovation by the productivity effect, the start-up is persuaded to innovate and potentially capture a market because of the statistical chance of success in a winner-takes-all race (Besanko et al., 2013). The sunk-cost effect puts the entrepreneur at an advantage, whilst the replacement effect ensures new firms have cheaper innovation costs (Besanko et al., 2013). Finally, the start-up can capture both market share and erode an incumbent’s margins through the efficiency effect, effectively disrupting an industry at low cost if their technological innovation has commercial viability (Besanko et al., 2013).

These contrasting forces for incumbent firms and new entrants are theoretical in nature, but well documented in transaction cost economics. The study is thus concerned with how these effects can enable or prevent effective collaboration between fintechs and banks.

2.5 Factors and Structures of Collaboration

In this study, the theory of collaboration and associated factors for success is complemented by the various forms of collaborative structure between corporate firms and entrepreneurs. The study aimed to present both a factor and structure view to determine the antecedents of collaboration.

2.5.1 Theories of collaboration

The term 'collaboration' has been described in the academic literature for several decades, and much effort has been devoted to its various forms. Barbara Gray's seminal work on collaboration provides the following definition:

> *Collaboration is a process through which parties who see different aspects of a problem can constructively explore their differences and search for solutions that go beyond their own limited vision of what is possible (Gray, 1985, pp. 915).*

Competitive advantage used to stem from first-mover advantage and the development of unique internal competencies that were jealously guarded, then carefully commercialised and scaled through 'closed innovation' tactics like trademarks and R&D claw-backs. The global market place has gone through tremendous changes, with the traditional approach to self-reliance or self-sufficiency for global competition a virtually impossible goal (Lee et al., 2012). Even global leaders have found it necessary to find collaborative partners to redesign the value-chain, with many new forms of partnerships, strategic alliances, joint-ventures and technology / patent-sharing arrangements emerging to put credence to the business case for collaboration between corporates and start-ups. Open-innovation, refers to collaborative innovative efforts for value creation, and has come to define this new inside-out and outside-in world (Chesbrough, 2012).

Described as the "antithesis of vertical integration through internally developed products and services", Chesbrough defines open-innovation as "the use of purposive inflows and outflows of knowledge to accelerate internal innovation and expand the markets for external use of innovation" and has become a new paradigm for organising innovation (Chesbrough, 2012, pp. 21). Open-innovation processes combine internal and external ideas together into platforms, architectures and systems, utilising business models that access those ideas in a value-creating mechanism to claim some portion of that value

(Chesbrough, 2012). Chesbrough falls short of describing the interdependencies that enable open-innovation processes to occur between role-players in different forms of innovative partnership, particularly the corporate fintech start-up relationship.

Gray notes that "organising such collaborative efforts requires focusing on a set of interdependencies which link various stakeholders rather than on the actions of any single organisation" (Gray, 1985, pp. 918). Her 1985 article on inter-organisational collaboration explains that effective collaboration typically entails shared goals and values, voluntary participation, combined resources, and situations in which no party has the power to command the behaviour of others (Gray, 1985).

McNamara goes on to add that collaboration includes participants who work together to pursue complex goals based on shared interested and collective responsibility for interconnected tasks which *cannot be accomplished individually* (McNamara, 2012). Importantly, the relationship between fintech start-ups and corporate banks is premised on an innovative product or service offering that cannot be accomplished individually, and where the actors in the relationship not only benefit from the collaboration, but cannot realise the success of the project independently.

The most common elements of collaboration, as summarised by Williams (2015) are noted below:

- Everyone contributes their assets: Participants in a collaboration all contribute resources to the joint effort. They do not necessarily bring assets of equal value, but they must contribute something.
- Trust: Collaboration is voluntary, and thus participants must be convinced that the other participants are acting in good faith, and are trust-worthy partners in the collaborative effort. Trust is also a central component of social capital, an important enabler of networked relationships. Social capital is the idea that networks of relationships between people, organisations, institutions and groups constitute a valuable resource for the conduct of social affairs, providing members with "collectively-owned capital… embedded within networks of mutual acquaintance and recognition" (Nahapiet & Ghoshal, 1998, pp. 243).
- Common goals: Collaboration works when the participants have a common goal in mind.

- Assumptions of shared risk: Working with others is an inherently risky business, and a failed collaboration can mean loss of time, resources, relationships, and even reputation. It can also mean that an important goal – like a pilot project or proof concept – goes unrealised. Risk must be distributed among all participants, and not fall on just one or two members of a collaboration.
- Voluntary participation: Participants in a collaborative effort are there by choice. Coercion is very different from collaboration.
- Mutual benefit: Voluntary participation means that all participants expect to receive some positive benefit from their efforts. Solutions that reward some at the expense of others are unlikely to succeed; all participants should feel as though they gain some clear benefit from the participation.
- Interdependence: Because collaboration involves the creation of a new kind of organisational structure (whether this is formal or informal is not discussed by Morris, but both are implied), the participants in the structure exhibit high levels of interdependence – they cannot accomplish the tasks of the group without the contributions of their fellow participants.
- Flat, not hierarchical, organisation: Collaboration entails a very flat organisational form. All participants are equal in stature within the organisation, and formal authority arrangements are not found in these structures.
- Social capital: A willingness to work with others in a community in order to accomplish a common goal. Social capital is also seen as a motivation for collaboration, given the reputation, relationships, and surrounding networks (or benefits of developing a network) around that relationship.

  For Williams, social capital i.e. the presence of trusting relationships and a measure of their value, is also identified as the major component of successful collaborative relationships (Williams, 2015). Collaboration also occurs as a dynamic process in complex organisational and institutional settings, with many variables and factors for success to consider, especially hierarchical structure and the distribution of authority within an organisation (Williams, 2015). Williams also concludes that collaboration is paradoxically aggregative and integrative. It is aggregative as collaboration translates private preferences into collective choices, via a mechanism of rational utility maximisation (Williams, 2015).; And collaboration is integrative, as it creates new shared understandings and consensus over compromise (Williams, 2015). In other words, the

process of collaboration transforms private self-interest into an approach where the best interests of the collective are paramount to the original self-interest, which is ironic given the motivations of the parties entering the relationship.

Lee (Lee et al., 2012) define collaboration as a creative process of cooperation, whereby there is a congruence of goals between actors, and co-destiny exists, thus the actors jointly identify new market opportunities, and creative solutions to problems. These are typically longer term relationships which result from mutual goals, and involve open sharing of information.

A converse explanation in the literature is the discussion of barriers to collaboration. Huxham and Vangen identify the following factors of collaborative inertia which face the practitioners involved (Huxham & Vangen, 2000):

- Difficulties in negotiating joint purpose because of the diversity of organisational and individual aims which the parties bring to the collaboration;
- Communication difficulties related to differences in professional, organisational, or ethnic cultures;
- Differences in joint modes of operating related to internal procedures;
- Managing perceived power imbalances between partners and the associated challenge of building trust; and
- Difficulties of managing accountability of the collaborative venture whilst maintaining a sufficient degree of autonomy to allow the collaborative work to proceed.

Unfortunately, whilst the literature defines the factors of collaboration for innovation, those particular to the financial technology industry, a relatively new area of technology innovation, are not explored. Similarly, while factors affecting corporate entities are extensively discussed in recent literature, those affecting entrepreneurs engaging this sector are poorly documented. Accordingly, there is limited literature to define or guide the success of these relationships and very few best practice examples to learn from in the market due to the relative newness of the industry.

2.5.2 Collaboration structures

Markides (2006) presents a view that established companies should aim to create, sustain, and nurture a network of young, entrepreneurial firms by colonising new niches.

By doing so large incumbents "should concentrate on what they are good at – consolidating young markets into big, mass markets" (Markides, 2006, pp. 24). Instead of viewing start-ups as simply agents of disruption, firms appear to be actively seeking out collaborative relationships with start-ups to transform them into engines of corporate innovation (Weiblen & Chesbrough, 2015).

At this point it is important to note the differences between the innovation outlook of established firms and start-ups. The WEF's report *Collaborative Innovation: Transforming Business, Driving Growth* (World Economic Forum, 2015) details the different capabilities and challenges faced by young, dynamic firms and their more experienced corporate peers. Table 5 is extracted from the report.

Table 1: The Innovation Capabilities and Challenges of a Start-up Firm versus an Established Firm (World Economic Forum, 2015)

	Start-up Firms	**Established Firms**
CAPABILITIES	Closer to sources of technological knowledge, such as universities and research centres. Higher degree of flexibility Nimbler response to market signals Proficiency in a specific niche	Resources, experience and knowledge to successfully commercialise new offerings Spread of Research and Development (R&D) costs over an extensive and diversified sales base Sophisticated Intellectual Property (IP) protection and management due to experience and resources Less threatened by litigation Regulatory and compliance expertise Market reach
CHALLENGES	Scarcity of resources, few physical assets (that banks can use as collateral), and limited record of success Lack expertise outside of core offerings Lack of scale, distribution channels, and marketing know-how Competition, market entry problems, and poor infrastructure Insufficient understanding of innovation's full applicability and potential	Possible bureaucracy and inertia, leading to slower information flow, less flexibility and less creative thinking Less access to new technologies and state-of-the-art engineering Risk-averse culture

With these challenges and capabilities in mind, each party in a collaborative relationship would be seeking to maximise their own and their peer's strengths whilst avoiding or down-playing their corresponding strengths and weaknesses. In particular, established firms are facing what Christensen calls the disruption of the market by young, start-up firms in an environment of heightened innovation (Christensen, 2006). Weiblen and Chesbrough (2015) describe three consequences of this changed situation:

1. Corporations may be faced with a larger and more disparate start-up ecosystem, meaning a requirement for better or more rigorous screening, vetting and monitoring efforts, as well as faster decision-making on the part of the corporate. The increased need for due diligence in the system could be a barrier to collaboration between a corporate and a start-up;

2. Corporations may need to evaluate their value proposition to the start-up who may already have access to independent support institutions (such as incubators, venture capital, or angel investors) – this increases competition between corporates and other capital providers, and could create uncertainty, but also increase the likelihood of more corporate start-up collaboration as internal corporate barriers are lowered to enable collaboration under threat of competition for the innovation; and

3. Corporations may need to establish a clear objective before partnering with the start-up, determined by the firm's own strategic goals, which could in turn stimulate better innovation strategy (Weiblen & Chesbrough, 2015).

Whilst Weiblen and Chesbrough (2015) detail four different engagement models for the corporate to work with start-ups, they do not describe how those start-up companies themselves might engage in successful collaborative relationships with the corporation. As has been seen above, the parties to the relationship are faced with different, sometimes competing factors in the decision-making process, and consequently would have different contexts from which to negotiate the terms of the collaboration. Nonetheless, the model presented by Weiblen and Chesbrough (2015) listing the success factors specific to their four models of engaging with start-ups is presented in Table 2, as this provides a meaningful perspective from one side of the collaborative relationship.

Table 2: Types of Corporate Engagement with Start-ups and Their Key Goals.
(Weiblen & Chesbrough, 2015)

Corporate Venturing Clarity about strategic mission (purely financial or strategic). Clear positioning (independent or parent-bound) towards the start-up world. Financial returns, insights and influence.	**Corporate Incubation** Provide a viable path to market for promising corporate non-core innovations. Commercialisation of non-core technologies, financial returns.
Start-up Programme (Outside-in) Procedures in place to ensure intake of programme-created innovations at parent. Precautions taken to handle IP issues of co-developed innovations. Product innovation, first mover advantage.	**Start-up Programme (Platform)** Spur complementary external innovation to push an existing corporate innovation (the platform). Platform establishment, future customers.

However, large corporations and start-ups are polar opposites in their structure, business model and economic outlook, yet each has what the other wants. Start-ups are growth-orientated, innovative businesses in search of a repeatable, scalable business model. They are formed from innovative ideas, driven by passionate and talented founders, and new technology or processes, they are organisationally agile and responsive to change (Kohler, 2016) and possess both the willingness to take risk and the aspirations of rapid growth (Weiblen & Chesbrough, 2015). Their newness and inexperience can make execution of these innovative ideas difficult. By contrast, established corporate firms are best positioned to execute a scalable, repeatable business model with optimised processes for resource allocation (Kohler, 2016). Corporations have resources, scale, power, established brands, and the proven business routines needed to run a business model efficiently (Weiblen & Chesbrough, 2015).

There are a variety of engagement models for corporate start-up collaboration, ranging from the internally-driven “Corporate Hackathon” to the more direct “Mergers and Acquisition” model. The engagement spectrum presented in Table 3 covers both the corporation’s perspective and the start-up’s perspective and builds on the engagement model detailed in Table 2.

Table 3: The Spectrum of Corporate Start-up Engagement in Fintech.

Adapted from *Corporate Accelerators: Building bridges between corporations and start-ups* (Kohler, 2016)

Engagement Method	Description
Corporate Hackathon	Intense collaboration of diverse teams within a restricted time limit to solve a corporate innovation challenge. Ownership of ideas by the corporate sponsor.
Corporate Incubators	Provides a path to market for corporate non-core innovations by internal entrepreneurs, may not access external innovations.
Business Incubators	Company-supported flexible working environment for external entrepreneurs with additional value-added services such as legal, network or marketing support. Often competitive and cyclical, with limited or no-equity stake.
Corporate Accelerators	Provide a small amount of seed-funding or investment money in exchange for a minor equity stake in start-ups participating in a short-term programme with networking and advice from the experienced sponsor.
Corporate Venturing	Permits corporates to participate in the success of external innovation and helps to gain insights into non-core markets and access to capabilities. Focus on innovation and business development rather than predominantly pursuing financial investments in external companies. Engagement with a larger number of start-ups is possible thanks to a more standardised approach than a single engagement. Involves some form of equity stake, financial investment or venture-capital model.
Mergers and Acquisitions	Quick and impactful way of buying complementary technologies or capabilities that solve specific business problems and allows incumbent to enter new markets.

2.6 Macroeconomic Factors in Collaboration

Almost all entrepreneurs face the same economic barriers, namely technology and initial capital (Miller et al, 2015). Whilst there are rare exceptions – Elon Musk, Richard Branson, or Bill Gates – most entrepreneurs are subject to financial constraints and will pursue a range of options to resource their firms - from bank loans, venture capital, angel investors, forward contracts with potential clients, and even savings.

In addition to the typical constraints faced by fintech entrepreneurs globally, South Africa's fintech entrepreneurs are also faced with a number of unique macroeconomic

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factors that both help and hinder their success. Whilst entrepreneurs in Silicon Valley in the USA may be concerned with government policy or links to international software developer, entrepreneurs in South Africa are burdened with the additional challenges of skills shortages, poverty and economic inequality, in addition to the funding needs and market access requirements characteristically associated with start-ups.

Similarly, the South African banking sector is affected by these same economic forces, albeit at different levels and stages, as they attempt to partner or source talent and innovative projects in the market. Whilst this study is concerned with those factors affecting technology-driven entrepreneurs and financial services organisations in South Africa, the literature on global entrepreneurship factors (via the GEMs study, 2016) and the macroeconomic environment for small business ecosystems (via the WEF study, 2015) is relevant in the analysis. The following section outlines the uncontrollable forces found in the macro-economy and entrepreneurial ecosystem that influence partnering decisions in fintech bank collaborations.

2.6.1 South Africa's state of entrepreneurship

South Africa's working population, and most especially the youngest entrants to the job market, face an increasingly unpredictable economy. Those best placed to survive the chaos of political interference, credit-rating downgrades, and massive socio-economic imbalances, are those fortunate enough to have gained a basic education and some access to the business sector.

Unfortunately, the entrepreneurial situation in South Africa is dire: whilst the 2015/2016 GEMS Report found that South Africa's rate of entrepreneurship has improved slightly since 2014 from 53rd to 38th in 2015 out of 70 countries, it is still well below the median for all participating countries in the sample (Herrington & Kew, 2016). The GEMS report also showed a backwards trend in growth of the economy versus growth of the population, both as a result of slow international economic growth rates, and a decrease in South Africa's Total early-stage Entrepreneurial Activity (TEA) (Herrington & Kew, 2016). Table 4 from the 2015/2016 GEMs reports outlines the entrepreneurial framework conditions in the South African economy and shows how, on average, South Africa underperforms compared to the other 69 countries surveyed.

The macroeconomic conditions outlined in the GEMS report are important to this study because they have play an important shaping role and illustrate the uncontrollable factors of collaboration between fintechs and banks.

Table 4: Entrepreneurial Framework Conditions Scores, 2015

Extract from the *Global Entrepreneurship Monitor – South Africa Report 2015/2016* (Herrington & Kew, 2016)

EFC	South Africa	Africa	Efficiency driven economies	GEM average
Financial environment and support	4.0	3.8	3.9	4.2
Concrete Government policies: entrepreneurship priority and support	4.1	3.9	3.9	4.2
Government policies: taxes, bureaucracy	3.1	3.7	3.6	3.9
Government entrepreneurship programmes	3.0	3.8	4.1	4.3
Entrepreneurship education: primary and secondary level	3.1	2.4	2.8	3.1
entrepreneurship education: vocational, professional & tertiary-level	4.2	4.0	4.5	3.6
R&D transfer	3.4	3.1	3.6	3.8
Access to professional & commercial infrastructure	4.9	4.9	4.8	4.9
Internal market dynamics	4.5	4.7	5.0	5.1
Internal market burdens	3.9	3.7	3.9	4.1
Access to physical infrastructure/services	5.9	3.4	6.3	6.3
Cultural and social norms	3.4	4.1	4.5	4.7

(Weighted average, 1 = highly insufficient, 9 = highly sufficient)

2.6.2 Funding bias

In addition to the typical lack of funding experiences by entrepreneurs, local lending institutions are heavily biased against young entrepreneurs (Makinane, 2015). Access to finance was cited as one of the three main areas of concern for experts in the 2015/2016 GEMS Report (Herrington & Kew, 2016), in addition to restrictive government policy and poor education and training.

Banks and organisations such as the National Empowerment Fund (NEF) and Industrial Development Corporation (IDC) consider individuals' personal assets and financial management skills before considering granting a loan (Makinane, 2015). In South Africa, an entrepreneur's personal financial status is as important as their company proposition. This situation is dissimilar to other fintech markets where skill, potential, networks and even national interests trump personal financial status.

2.6.3 Risk aversion

As discussed by Knott-Craig above, a high propensity for risk is an essential trait of entrepreneurs and yet South Africa is very risk-averse society (Makinane, 2015). This risk-aversion plays out in both consumer and investor behaviour, as confidence in local innovation remains low and investment in local businesses grows slowly. This factor is also covered extensively by the GEMS report and WEF report on collaboration (2014; 2016).

2.6.4 Policy and regulation

There are barriers to entry for the entrepreneur in South Africa that are not experienced in other economies, such as the Public Finance Management Act (PFMA), the Broad-Based Black Economic Empowerment Codes (BB-BEE Codes), and even registration of companies through the Companies and Intellectual Property Commission (CIPC). Whilst the WEF recognises South Africa as a leading economy in terms of financial regulation, banking and auditing (Schwab & Sala-i-Martin, 2016) the country's government departments and state-run enterprises can frustrate a small-business trying to introduce an innovative idea into the market, especially when time is crucial (Makinane, 2015).

As presented in Table 5, South Africa's dismal government policy scores show that instead of being a contributor to SME development in the country, government policy is actually an impediment. The WEF found that some entrepreneurs believe that government and regulatory policies aimed at supporting economic growth – such as those in South Africa - can actually be counterproductive to the growth of their early-stage company (World Economic Forum, 2014).

The Ease of Doing Business ranking in South Africa has actually worsened in recent years, with the country slumping to 120th out of 190 in the *World Bank Doing Business in South Africa* 2015 Report (World Bank, 2015). This is partly as the number of

procedures required to start a business has increased from five to six, and significantly, the number of days needed to start a business increased from 19 to 46, between 2015 and 2016 (Herrington & Kew, 2016).

The increasingly bureaucratic operating context is important in understanding the external environmental factors that are driving entrepreneurial behaviour in South Africa, and consequently what uncontrollable forces fintech firms have to consider - in addition to dealing with the somewhat controllable factors in collaborative partnerships with banks.

Table 5: Average Expert Ratings of Government Policies for Entrepreneurship in South Africa, 2015 (Herrington & Kew, 2016)

Factors impacting entrepreneurship	Mean score, 2015
Government policies (e.g. public procurement) consistently favour new firms	3.5
Support for new and growing businesses is a high priority for policy at national government level	4.6
Support for new and growing businesses is a high priority for policy at local government level	4.2
New firms can get the most of the required permits and licences in about a week	1.9
The amount of taxes is NOT a burden for new growing firms	3.3
Taxes and other government regulations are applied to new and growing businesses in a predictable and consistent way	4.7
Coping with government bureaucracy, regulations and licencing requirements is not unduly difficult for new and growing firms	2.4

(Weighted average, 1 = highly insufficient, 9 = highly sufficient)

2.6.5 Entrepreneurial ecosystems in the macro economy

According to the World Economic Forum's 2014 report on entrepreneurial ecosystems, there are three pivotal areas of importance to entrepreneurs: accessible markets, human capital or workforce, and funding and finance (World Economic Forum, 2014). There are definitive differences between regional experiences of entrepreneurs, and these factors contribute to the overall success of entrepreneurs and their partners in the economy. The WEF report outlines eight pillars of entrepreneurial ecosystems, as explained in Table 6. Understanding these pillars allowed the researcher to identify the factors which

affect an entrepreneur in the fintech ecosystem in South Africa, and to establish whether these factors play a role in their successful collaboration with banks.

Similarly, the banker's experience of the ecosystem may play a role in their engagement with fintech entrepreneurs and thus were an important factor for consideration in the study. Whilst the need for funding and finance is a given, accessible markets and human capital are both lacking in the South African ecosystem. In addition, rural entrepreneurs in South Africa also face language barriers, lack of access to start-up resources and information, and a basic lack of funding to access urban areas because of high transportation costs (Makinane, 2015). When considering the barriers to entry posed by government regulations in the country, and the financial evaluation of entrepreneurs based on personal finances, the ecosystem leaves much to be desired.

Meanwhile, in the USA, Europe and Israel, entrepreneur's ideas and economic viability are considered paramount to the investment decision (Robinson, 2016). In fact in Israel, the government fosters soft skills, such as creativity and out-of-the-box thinking from a young age (Robinson, 2016). Similarly, Israel has more start-ups per capita than any other country, attracts more venture capital per person (Mitzner, 2015). Israel has also created a conducive ecosystem of technology entrepreneurs, military, academics, supportive incumbent businesses, and financiers around a small population that is constrained by a lack of natural resources and a national culture of self-reliance.

Table 6: Components of Entrepreneurial Ecosystem: 8 Pillars

Extract from *Entrepreneurial Ecosystems around the Globe and Company Growth Dynamics* (World Economic Forum, 2014).

Accessible markets	Domestic market Large companies as customers Small/medium-sized companies as customers Governments as customers Foreign markets Large companies as customers Small/medium-sized companies as customers Governments as customers
Funding & finance	Friends and family Angel investors Private equity Venture capital Access to debt
Government & regulatory framework	Ease of starting a business Tax incentives Business-friendly legislation/policies Access to basic infrastructure Access to telecommunications/broadband Access to transport
Major universities as catalysts	Promoting a culture of respect for entrepreneurship Playing key role in idea-formation for new companies Playing key role in providing graduates for new companies
Human capital/workforce	Managing talent Technical talent Entrepreneurial company experience Outsourcing availability Access to immigrant workforce
Support systems/mentors	Mentors/advisors Professional services Incubators/accelerators Network of entrepreneurial peers
Education & training	Available workforce with pre-university education Available workforce with university education Entrepreneur-specific training
Cultural support	Tolerance of risk and failure Preference for self-employment Success stories/role models Research culture Positive image of entrepreneurship Celebration of innovation

Silicon Valley in the USA boasts dozens of billion dollar tech companies, which feeds a growing and self-supporting ecosystem of new entrepreneurs. When they go public, these founders start and invest in other billion dollar companies. Silicon Valley is characterised by the presence of ultra-rich entrepreneurs, the headquarters of giant tech companies, thousands of highly-paid engineers, designers, and managers, an adjacent economy that provides local services and amenities and creates additional spill over jobs, and massive tax revenues to finance better public services

A recent article by CNBC describes Silicon Valley as the “capital of technology” because it is intensively competitive, highly innovative and embraces start-ups and entrepreneurialism through its ecosystem of engineers, venture capitalists, law firms and even real estate (Robinson, 2016).

Africa and the Middle East fare badly against developed regions, evident in Table 7, which quantifies the strength of entrepreneurial ecosystems and compares these across key continental regions. For entrepreneurs and investors alike, the environment for business is hardly as welcoming as Silicon Valley or the Bay Area in the USA.

Table 7: Average Percentages for Ready Availability across the Eight Ecosystem Pillars
(World Economic Forum, 2014)

Ready Availability of Eight Pillars	
By Continent/Region	***Average***
US-Silicone Valley/Bay Area	86%
US-Other Cities	71%
North America	77%
Europe	58%
Australia/New Zealand	56%
Asia	44%
Africa/Middle East (South Africa included)	***45%***
South/Central America with Mexico	41%

In this study, the issue of entrepreneurial ecosystems was important in terms of the antecedents to fintech bank collaboration. Whilst the macroeconomic environment is mostly beyond the control of each party, their responses to and experiences of that environment may play and important role in their collaboration behaviour and decisions.

Similarly, because the fintech offering is intrinsically transferable, negative ecosystem experiences may in fact drive entrepreneurs and banks alike to seek collaborative partners in other regions, to the detriment of the South African economy.

2.7 Research questions

The literature review has presented the various schools of thought on entrepreneurship, innovation and corporate innovation. The benefits of innovation, an entrepreneurial mind-set, and an organisational inclination have all been presented. Similarly, the business case for collaboration between corporates and start-ups through a myriad different engagement models has been extensively published by the consulting industry.

The theoretical framework presented by Christensen's disruptive innovations model is insufficient to explain the process of collaboration between parties, although the academic literature is abundant on the topic of the benefits of corporate start-up collaboration, as presented in Markides (Markides, 2006), Chesbrough (Chesbrough, 2012) and Mocker, Biellie and Haley (Mocker et al., 2015) but the empirical evidence for how these relationships work has not been explored. Meanwhile, Wieblan and Chesbrough's engagement model for corporate start-up collaboration takes a one-dimensional view of the relationship, and ignores the binary nature of collaboration (Weiblen & Chesbrough, 2015).

Finally, the macro-economic environment, with specific reference to the factors affecting entrepreneurship, the banking industry and the fintech industry, has been discussed and the uncontrollable environmental factors that influence collaboration in fintech-bank collaborations have been outlined.

The unique combination of macro-economic and ecosystem factors, internal dynamics and relationships dynamics are the focus of the study. Consequently, the research questions addressed in this study were drawn from the literature which discussed these three forces, which included a lack of understanding of the factors that enable a successful relationship disposition in financial technology, a failure to understand the unique attributes of the fintech corporate start-up collaboration model, as well as how macroeconomic factors, particularly in South Africa, affect these relationships.

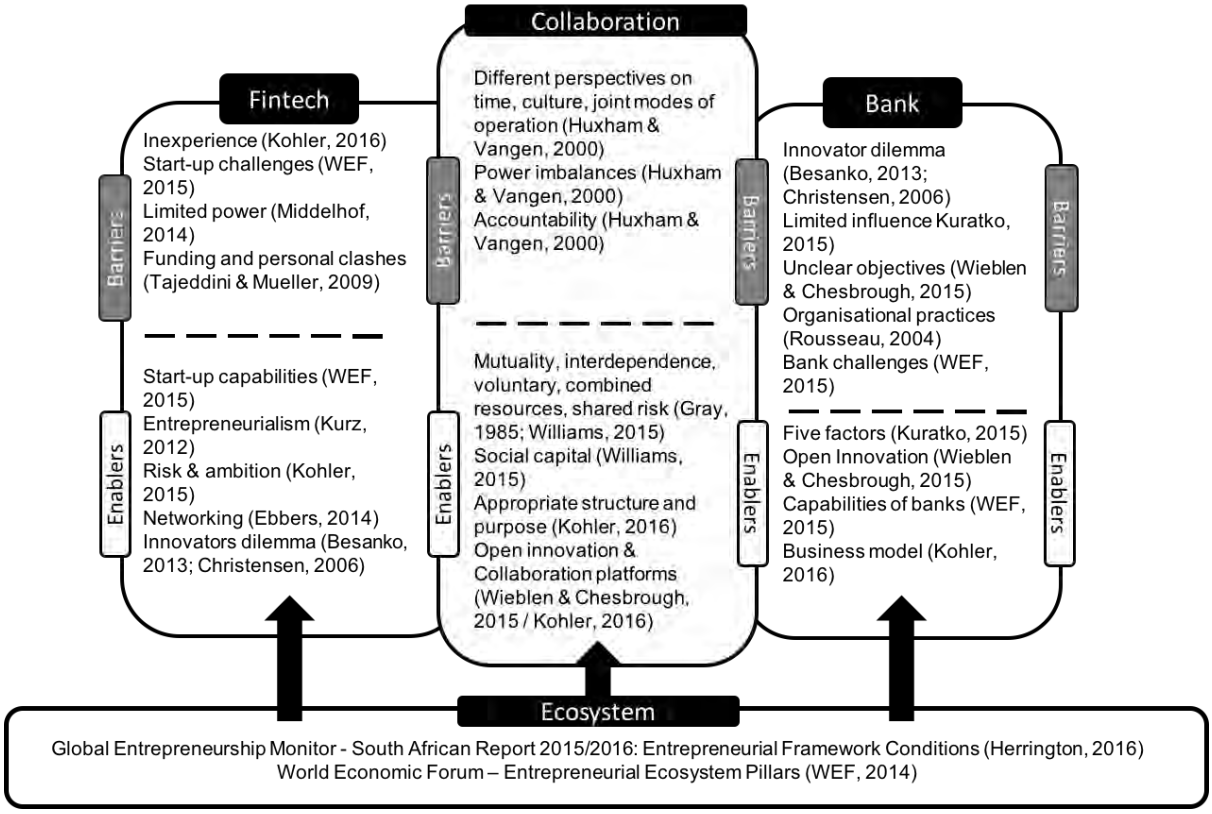
2.8 Framework for research

A framework for the research study has been developed from the research, as presented in Figure 8. The model was developed from the four research questions and associated literature and summarises the key themes and factors under investigation in the study. Major themes are denoted by key words or themes. Areas for research were plotted against the framework of collaboration antecedents as established in the academic and business literature, and further explored in the data analysis phase.

The full literature consistency matrix is presented in Appendices
Appendix A: Literature Framework.

Figure 6: A Framework for Research into Corporate Fintech Start-up Collaborations.

(Source: Author's own. The figure below was devised by the author as a model for analysing the engagement of fintech startups with banks within an ecosystem, all terms draw from the literature have been referenced within the model).



2.9 Conclusion

The literature review provided a theoretical foundation for further research into corporate start-up collaboration in fintech, highlighting important elements relating to open, closed and disruptive innovation. The literature further examined corporate venturing and entrepreneurship, modes of corporate start-up collaboration and theories on interorganisational collaboration. The literature also outlined the macro-economic environment for entrepreneurship, fintech and corporate collaboration in South Africa and detailed which macro-economic factors affect the respective parties to collaboration between fintech entrepreneurs and corporate banks. There are significant studies into both disruptive innovation and corporate venturing, as well as interorganisational collaboration, however research gaps remain to be explored, particularly in the identification and analysis of the factors that contribute to effective collaboration between established financial firms and fintech start-ups, and whether these relationships are subject to the macro-economic context.

The business case for fintech corporate collaboration has been established, and the academic literature reviewed according to the established themes. The Chapter established a need for the study from the literature and outlined the four thematic areas of investigation.

The following chapters detail the four research questions addressed in the study (Chapter Three) and the research methodology employed in the collection, analysis and interpretation of data (Chapter Four). The results and findings are discussed in Chapters Five and Six respectively, where data collected in the interview process was compared to the established literature and theoretical foundation of the study.

3 CHAPTER 3: RESEARCH QUESTIONS

This section of the research details the questions that were pursued in the fulfilment of this study. The research questions, drawn from the literature, serve to understand the propensity for innovation within banking organisations, identify the attributes of fintech entrepreneurs, ascertain the successful modes of collaboration between the aforementioned firms, and to understand which macro-economic factors impact this relationship.

The objective of the study therefore is to explore the nature of fintech-bank collaboration. In particular, the study sought to identify and analyse of the factors that contribute to effective collaboration between established banks and fintech start-up firms, and how these relationships are subject to the macro-economic context of entrepreneurial ecosystems. The following research questions will be addressed in the study by utilising methodologies discussed in Chapter 4.

3.1 Question 1. How does the innovation outlook of the corporate bank affect its ability to collaborate with fintech start-up firms?

3.2 Question 2. Which entrepreneurial attributes of fintech start-up firms are relevant in assessing collaborative relationships with corporates?

3.3 Question 3. What are the successful modes of collaboration between fintech start-up firms and established corporate banks?

3.4 Question 4. Which macroeconomic factors influence collaboration between fintech start-up firms and corporate banks in South Africa?

3.5 Summary of Chapter 3

Chapter Three outlines the four research questions developed from the literature review, namely (1) how does the innovation outlook of a bank affect its ability to collaborate with fintech start-ups, (2) what are the entrepreneurial characteristics of fintech entrepreneurs in collaborative relationships, (3) what are the successful modes of collaboration

between these players, and (4) how does the macro-economic environment affect the collaboration between banks and fintechs.

In summary, study looks at the antecedents of effective collaboration between fintech start-up firms and established corporate banks in South Africa. These four questions formed the basis for the data collection and analysis of the study.

The following Chapter will present the research methodology and justification for the approach taken in the study. The sample, research design and manner of analysis will be discussed in light of the established literature and purpose of the study.

4 CHAPTER 4: RESEARCH METHODOLOGY

In the preceding chapter the literature review revealed the four research questions explored in the ensuing study. In this chapter the research methodology used to address these research questions is outlined with reference to reputable methodological guidance and best practice.

4.1 Research Design

This research followed a qualitative approach with data collected via a series of informal, semi-structured interviews and focus groups. Whereas the topic of innovation itself has been extensively studied, the current literature on fintech collaborations between corporate and start-up players is limited. Therefore, open-ended research questions into the various aspects of collaboration were used to develop an understanding of the phenomenon, whilst broad semi-structured interview questions, drawn from current literature, were useful in identifying critical variables within the relationships. These semi-structured interviews also assisted in the identification of the factors that moderate and mediate the relationships in the study (Edmondson & McManus, 2007).

According to Creswell, a qualitative study should contain the voices of participants, the reflexivity of the researcher; a complex description and interpretation of the problem and its contribution to the literature (Creswell, 2013). Correspondingly, qualitative methodologies can address people's experiences and document different perspectives (Patton & Cochran, 2007). The research design took a narrative approach to collecting respondent's experiences and perspectives by employing a conversational, open-ended interview approach with minimal guiding questions. Semi-structured interviews were selected as the research instrument most suitable to qualitative data collection because of the nature of the research question and the ability of the researcher to collect data from open-ended questions defining the area to be explored (Edmondson & McManus, 2007; Saunders & Lewis, 2012)

The narrative method was appropriate because the research questions involved the pursuit of an explanation of the barriers and enablers to the successful collaborative relationships between two parties. Semi-structured interviews therefore allowed the participants to communicate their personal and professional perspectives and

experiences on the topic freely, whilst reducing the influence of the interviewer or researcher (Saunders & Lewis, 2012). Importantly, semi-structured interviewed conducted for the purpose of collecting narrative data assist researchers in gaining a deeper understanding of the research questions, a high participation rate and the opportunity for feedback between the participants(Creswell, 2013).

This research used a qualitative research methodology to explore the precursors to effective collaboration between corporate entities and start-up fintech firms. qualitative research is used when a problem or issue needs to be explored before it is tested (Creswell, 2013). Exploration is needed when it is necessary to identify variables that cannot be easily measured, and when research is needed to establish a complex, detailed understanding of an issue. In the study, the documentation of the experiences of each party in a corporate start-up collaboration will help explain the mechanisms or linkages in models of interorganisational collaboration effectiveness.

The report aimed to present a narrative study which described a real-life, contemporary bounded system through detailed, in-depth data collection involving multiple sources of information (Creswell, 2013).

4.2 Population

The population consisted of parties from both sides of the collaborative relationship identified in the literature, namely entrepreneurs in fintech companies and decision-makers from corporate financial institutions. The population was limited to firms operating within South Africa in order to understand the particular macro-economic factors prevalent in the South African fintech market. This also limited the selection of a sample to a single, accessible geographic region, enabling face-to-face interviews to be conducted within a reasonable time scale and with a minimal data-collection cost.

The relevant population for analysis included:

- South African established banks and financial institutions that have reached a credible geographic footprint and substantial scale in the market (in order to limit the scope of the research);
- South African fintech start-up companies or organisations (again, to limit the scope of the research); and

- Collaboration models, networks, incubators or hubs that exist between the above populations.

Accordingly, the scope of the research was limited to the above population and this constraint is discussed further in the limitations section.

4.3 Sampling Method and Data Saturation

A non-probability purposive sampling method was used because participants were identified according to preselected criteria relevant to the particular research question (Mack, Woodsong, MacQueen, Guest, & Namey, 2005). A purposeful sampling approach allowed different perspectives on the same research problem to be explored, and was considered appropriate due to the data review and analysis completed in conjunction with the data collection.

A sample size was not determined in advance as the nature of the research interviews was exploratory. According to Baker and Edwards, determining the number of qualitative exploratory interviews depends on the identification of commonalities between respondents and the researcher's ability to draw out the implications of these commonalities to a point of data saturation (Baker & Edwards, 2012). In other words, the guidelines on sample size indicate that once the researcher begins to document and analyse *repetitive* evidence from interviews, then data saturation has occurred. This added a level of uncertainty to the research at the outset. Researching until a point of saturation is achieved is a challenging approach when the researcher is required to combine sampling, data collection and data analysis, rather than treating them as separate stages in a linear process (Baker & Edwards, 2012).

Failure to reach data saturation can have a negative impact on the quality of the research, and could affect the content validity of findings (Fusch & Ness, 2015). Accordingly, the data collection was deemed sufficient when there was enough information documented through the interviews to replicate the study, and when the depth of information gathered began to produce overlapping codes and therefore themes (Fusch & Ness, 2015).

In this study, the saturation point was reached after 14 interviews – which led to clear themes emerging in line with the literature that had been reviewed.

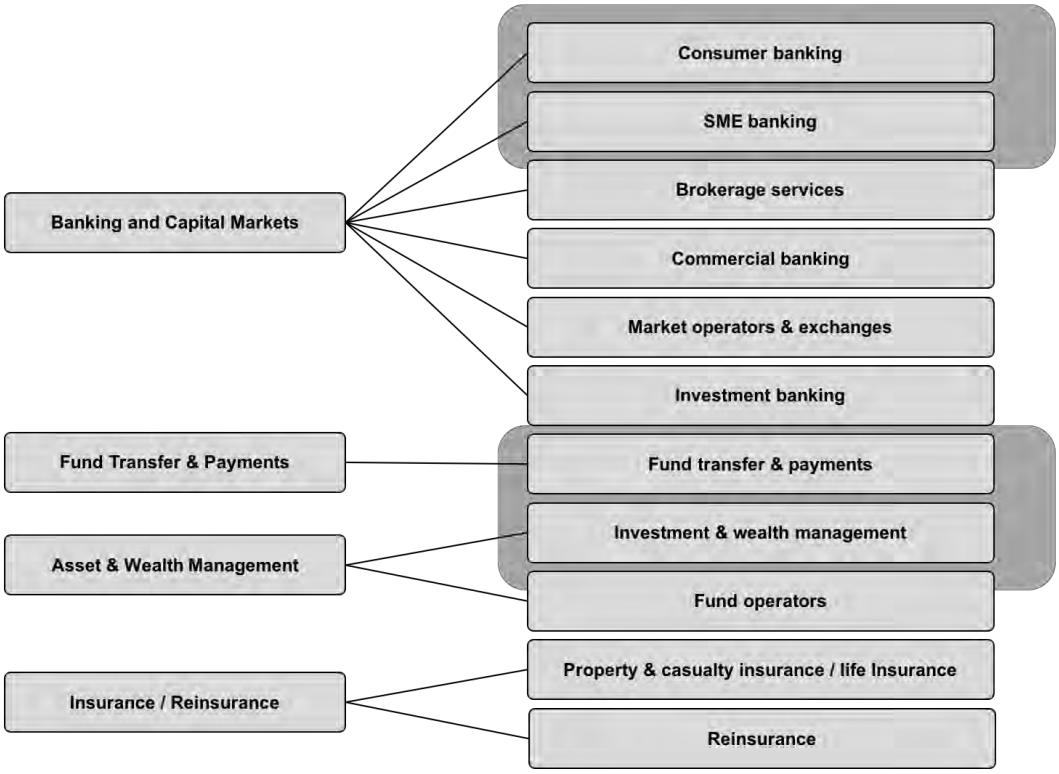
The sample was selected from the population of financial services likely to be disrupted by fintech, as suggested in the PWC Global Fintech Report, published in March 2016: *Blurred lines: How FinTech is shaping Financial Services* (PWC, 2016). According to their research, consumer banking, SME banking, fund-transfer & payments and investment & wealth management will be the most disrupted financial services in the next five years. The study would therefore have reliable inferences for the financial services industry if the sample was chosen from these four areas of the financial services sector.

The sample was selected from the fintech industry, as described in Chapter 2, and participants had involvement in the areas of banking and financial services most affected by digital disruption. The most affected areas of digital disruption by fintech-startups includes Consumer Banking, SME Banking, Fund-transfer and Payments, and Investment and Wealth Management.

Figure 6 illustrates this in the context of the financial services sector. South Africa's top four banks are all full-service banks, meaning they offer services to both retail customers, such as individuals and businesses, and large corporations and institutions (The Banking Association South Africa, 2016). Accordingly, all of the banking participants in the study offered services in Banking and Capital Markets, Fund Transfer and Payments, and Asset and Wealth Management, and therefore the figure below was considered an appropriate tool for sample selection.

Figure 7: The Financial Services Sector Population and Sample Selected

(PWC, 2016)



As a process of triangulation was chosen to test the validity of findings, an interview with a senior bank manager from a top South African bank that did not have an incubator programme was also conducted. This was done to ascertain whether the findings on corporate innovation dynamics were unique to organisations that had already pursued an innovation incubator programme, or whether the findings could be generalised to banks in South Africa. The responses were included in the results and analysed in the findings. The limitations of this approach and notes on generalisation are discussed in the analysis and Chapter 7.

Potential interviewees in the target population were approached via personal and professional networks and all consented to be contacted for later interviews. Participants had current or past experience with collaborative relationships with the opposite party, were based in South Africa, and accessible for research. Consequently, all participants were considered high quality respondents in that they understood and had experience in the particular collaboration being investigated.

4.4 Interview Format

Semi-structured interviews were conducted either face-to-face or via Skype calls over the period July through September 2016. The purpose of the research and the proposed research questions were explained prior to the interviews and consent forms were completed and signed by the interviewees.

4.5 Data Collection

Yin recommends using multiple sources of information in the data collection process, including documents, archival records, interviews, direct observations, participant observation, and physical artefacts (Yin, 2009). Although the research focussed on semi-structured interviews as the primary source of data for analysis, secondary data was accessed to assist in providing background information on the research participants prior to interviews (this added to the interviewer's rapport with participants and efficiency in the interview process). The secondary data complemented the development of research questions, and ensured robust data collection and analysis.

The chronological data collection method exposed themes and new constructs of association and collaboration between corporate start-up partners.

Qualitative data was collected using field research via interviews; field research is defined as the systematic study of original data collected in real organisations (Edmondson & McManus, 2007). The units of analysis were the relationships, innovation programmes and joint fintech collaborations that formed the topic of investigation; again, an analytical unit best suited to qualitative research (Creswell, 2013).

The data collection was conducted in the following stages:

- Stage 1: Informal focus group / Dinner for senior executives hosted by the Gordon Institute of Business Science's Programme in Digital Disruption. The researcher was invited to attend, and conducted informal discussions with guests, including senior executives, senior managers and decision-makers in corporate start-up collaborations. These discussions were exploratory and enabled the collection of preliminary qualitative data. This was complemented, post-event, by a review of the relevant literature (including both current and archived documents) and online media footage to determine the suitability and application of the proposed research problem. Furthermore, this provided

background for the chosen participants identified in the sample. Direct observations made by the researcher were captured as part of the research question development.

- Stage 2: Semi-structured interviews with senior executives, senior managers and decision-makers in the fintech population described above. Conversation and discussion topics were drawn from current academic and business literature (including white papers and reports). The discussions were transcribed, coded and analysed post discussion. Again, direct observations by the researcher, as well as personal observations by the research participants themselves, were recorded for inclusion in the data findings.

- Stage 3: Outstanding data collection, including filling any gaps in the participant descriptions, was conducted. At this stage the researcher began to report the meaning and learnings derived from the interviews.

Table 7 summarises the approach taken in the study.

Table 8: Data Collection

Stage	Description	Type of information	Source of information
1	Pre-data collection	Documents, academic journal articles, books, publically available academic, corporate and consultant reports.	Academic literature, Chapter 2 White papers and corporate reports, Chapter 2
1	Secondary data collection	Archival records and online multimedia recordings. (Secondary data).	Interviewee company websites, discussed in interviews with participants, documented in transcripts where relevant Media articles, podcasts and videos of participants, discussed in Chapter 5 and 6
2	Primary data collection	Interviews	Exploratory semi-structured interviews, discussed in Chapter 5 and 6
2	Primary data collection	Direct observations	Researcher's own, discussed in Chapter 5 and 6
2	Primary data collection	Participant observations	Interview subjects feedback, discussed in Chapter 5 and 6
3	Post-interview data collection	Documents, academic journal articles, books, publically available academic, corporate and consultant reports.	Academic literature, Chapter 2 White papers and corporate reports, Chapter 2

4.6 Data Analysis

The research analysis aimed to present a description of each participant's perspectives which were then analysed for similarities and differences, with general lessons derived and discussed in the findings. Due to the combination of both nascent and intermediate theory, the study combined pattern identification with preliminary proposition testing. The goal of data analysis in the nascent stage of research was to identify patterns in the data, whereupon intermediate research projects can test preliminary propositions and constructs (Edmondson & McManus, 2007).

As discussed above, data was collected from a series of informal, exploratory and semi-structured interviews, as well as secondary sources such as archival records relevant to each interviewee. Data from each interaction was recorded, transcribed and coded for analysis using ATLAS.ti. ATLAS.ti was chosen because of the unstructured material collected in the research process which required a tool to assemble, re-work, visualise emerging ideas and themes, analyse and evaluate data, and finally capture, visualise and share findings (Friese, 2012).

Due to the data collection, coding and analysis taking place in tandem, the following steps were taken at each stage in the data collection process, as mentioned in the Chapter 4: Research Methodology:

Step 1: Semi and unstructured data, collected from interview notes and transcripts, was reviewed and codes were assigned to words and phrases that were deemed relevant because of repetition, novelty or surprise. Codes were also assigned when the interviewee explicitly stated the issue or example was important, if it was similar to the issues raised in scientific journals or recently published reports, or if the issue was reminiscent of a theory or concept explicitly discussed in the literature.

Phrases and words were coded that described a situation or experience as described by the interviewees, as well as underlying patterns that may have corresponded with the research questions. The codes were therefore either illustrative or interpretive, allowing later analysis of the interviews.

The full list of codes is presented in: Appendix C: Coding Used to Analyse Interviews

Step 2: Codes were grouped together to create categories or themes, which were both general and abstract.

Step 3: Categories were labelled and connections described – these formed the basis of the results.

Step 4: An illustrative figure was developed to represent the results. No interpretation was done at this stage.

Step 5: Results were analysed and presented in Chapter 6.

4.7 Ethical Considerations

Various ethical considerations were taken into account in the research methodology, especially in the gathering and analysis of data, as outlined in the *Code of Human Research Ethics* (British Psychological Society, 2014) as follows:

- Respect for the autonomy and dignity of persons, which entails explaining the purpose of the research to participants, respecting their privacy and giving them the option to opt out of participation in the study (pp. 8);
- Scientific value, which ensures that research is designed, reviewed and conducted in a way that ensures quality, integrity, validity and a contribution to the development of knowledge and an understanding of the topic (pp. 9);
- Social responsibility, in that data collected and presented must contribute to the common good (pp. 10); and
- Maximising benefit and minimising harm, whereby robust risk assessment and management protocols should be developed and complied with, where human participants are protected from any undue effect to their person, reputation or company (pp. 11).

In addition, the competitive nature of the banking industry and the confidential nature of research and development were considered in the questioning of participants, collection of data and direct quotations, and storage of the data and interview notes. Every effort was made to protect the sanctity of the interviews granted and to prevent the sharing of information between competitor banks during interviews. This was important to both the integrity of the research and to respect the conditions established by the participants in the collection of the data. For this purpose, quotes used in the presentation of the data were not attributed to speakers.

4.8 Limitations of Research Method

The research made use of non-probabilistic methods and therefore results may not be generalised to the overall population of entrepreneurs in South Africa, nor internationally. Sampling from a network of known participants and referred respondents meant that the research excluded other fintech and financial organisations involved in collaborative relationships. However, every effort was made to contact at least two parties from each

fintech incubator programme from each of the top four banks in South Africa, to ensure an equal spread of participants and diversity in the findings.

Whilst the research attempts to analyse the three levels of relationship interaction, the study takes place within the context of South Africa and may not lend itself to other markets.

Accordingly, a recognized boundary to the research was the identification of the fintech population and the selection of a sample to investigate that would provide varied and valued input into the proposed theoretical model. Finally, it was necessary to determine the boundaries of investigation into the relationships, such as the collection of personal data, the recording of quotes attributed to speakers, and the importance of focussing on the exploratory nature of the research.

Researcher bias may have influenced the collection of data particularly in the interview stages, as objective data collection is nearly impossible within semi-structured, informal and exploratory conversations. However, every effort was made to minimise this effect during the interviews.

To overcome the limitation on data collection and sample identification, the data collection was designed to specify which information was likely to be collected about each interview participant and how suitable that content was for the purposes of research. The data collection table was referred to in order to ensure continuity of the process.

4.9 Validity and Reliability of Research

Validity refers to the truthfulness of research results, whilst reliability refers to the replicability of the results (Cooper & Schindler, 2008). Bryman and Bell note that the application of the quantitative concepts of reliability and validity to the practice of qualitative research are inappropriate to the method of research (Bryman & Bell, 2015). They propose instead that the studies should be judged or evaluated according to different criteria from those used in quantitative research because of the dissimilar nature of the research data, although each aspect of trustworthiness has a parallel with the quantitative research criteria (Bryman & Bell, 2015), as follows:

- Credibility - which parallels internal validity, i.e. how believable are the findings?
- Transferability - which parallels external validity, i.e. do the findings apply to other contexts; and
- Dependability - which parallels reliability, i.e. how consistent or repeatable are the findings?

In order to ensure the credibility of findings, the interviews were thoroughly recorded and where audio-recording was possible, transcribed, and the details of the participants included in the study. Participants' own words and comments in the form of quotations are included in the findings. Whether or not the findings are transferable to other contexts is dependent on the assumptions of another study. These are discussed in the recommendations for future research in Chapter Seven.

Similarly, dependability has been safeguarded by rigorous documentation of process, interviewee details, and data. Dependability was further addressed in the study through the thorough documentation of research interviews, including by recording interviews and transcribing results and through providing a clear explanation of the purpose of the research to participants. This clarity was so that data collected was relevant and repeatable, and to ensure transparency regarding the limitations of the research with the research subjects, administrators and supervisors.

Despite the relatively unstructured format in which qualitative data is collected, Patton and Cochran state that it remains important to ensure that analysis is reliable and its validity safeguarded (Patton & Cochran, 2007). Two of the recommended strategies to ensure credibility and transferability of findings are employed in this study, namely triangulation and member checking.

Triangulation, the process of deliberately seeking evidence from a wide range of sources (Cooper & Schindler, 2008), was evidenced in the staged-approach of data collection, with both primary and secondary data sources gathered for analysis.

The second strategy of member checking, which involves feeding findings of the analysis back to participants and assessing their reflection of the categorised issues, was employed in the later interviews as initial findings and themes emerged. This was particularly helpful in developing the interview approach over time and improving the meaningfulness of the data collection over the period.

5 CHAPTER 5: RESULTS

The research methodology was discussed in the previous chapter. The objective of this chapter is to present the data collected as outlined in Stage 1 and 2 in Chapter 4. The study then goes on to describe the primary participants in the study and provide a demographic profile of the interviewees, present the results of the study along the major themes, and introduces a brief overview of the findings in connection to the theory. A detailed discussion of the findings is covered in Chapter 6.

5.1 Introduction

The results from both fintech entrepreneurs and banking participants provided rich qualitative findings for analysis. All participants were enthusiastic in their contribution to the research and there was a genuine sense of community spirit in sharing their personal experiences and knowledge during the data collection. Most participants expressed a desire to contribute to a greater ecosystem of fintech entrepreneurs and a stronger, more innovative banking system in South Africa. The results presented in Chapter 5 form the basis of analysis for Chapter 6, and are compared against the literature framework presented in Chapter 2.

5.2 Description of the Sample

South Africa has both a variety of banks and a myriad different incubator-style organisations and facilities. The unit of analysis for this study was the relationship between the parties in a bank-fintech collaboration. Therefore, the top tier banks with incubators, and senior representatives from each partner, were selected as the population of potential participants, and a sample of respondents was approached to participate in the interview process.

The list of banks identified in the population is listed in Table 10 below, with their associated incubator programmes.

Table 9: Banks and Entrepreneur Incubators in South Africa

Bank	Fintech Incubator / Accelerator	Location
Barclays Africa	Barclays Rise Accelerator: Tech Stars Programme	Cape Town
Standard Bank	The Standard Bank Incubator	Johannesburg
Rand Merchant Bank	AlphaCode	Johannesburg
Rand Merchant Bank	The Foundery	Johannesburg
Nedbank	Launchlab	Stellenbosch

5.2.1 Description of the focus group participants

The informal focus group participants were all directly involved in fintech collaboration. Contributors were either fintech entrepreneurs that worked within corporate incubators or with banks, or were executives from corporate incubators or banks working with fintech entrepreneurs. Collaboration and interaction with their corresponding peers in the industry was a significant aspect of their job. The focus group was conducted during a dinner hosted by the business school, and was introduced as a public event, with the intention of the Gordon Institute of Business Science was to facilitate and record discussions between participants, in order to contribute to the development of academic literature on digital disruption in the financial services.

The full list of guests is listed in Appendix D: Focus group dinner participant list.

5.2.2 Description of Interview Participants

The research participants are detailed in the following table.

Table 10: Interviewed participants

Interviewee / Source	Company	Role	Gender	Location	Relevance
Alexandra Fraser	Fraser Consulting	Founder	F	Cape Town	Fintech Entrepreneur
Andrew Wilson	Standard Bank SA	Head of Mobile	M	Johannesburg	Corporate (Bank)
Annabelle Dallamore	StockShop	CEO	F	Johannesburg	Fintech Entrepreneur
Dave Glass	Electrum Payments	CEO	M	Cape Town	Fintech Entrepreneur
Dewald Thiart	IntergreatMe	Founder	M	Johannesburg	Fintech Entrepreneur
Dominique Collett	Alphacode / RMI Holdings	Senior Investment Executive	F	Johannesburg	Corporate (Bank)
Dov Girnun	Merchant Capital	CEO	M	Johannesburg	Fintech Entrepreneur
Ewald Beukes	Capitec	Senior Manager	M	Johannesburg	Corporate (Bank)
Ferzam Ehrsani	The Foundry, Rand Merchant Bank	Co-Director of The Foundry	M	Johannesburg	Corporate (Bank)
Kobus Ehlers	Snapscan	Founder	M	Cape Town	Fintech Entrepreneur
Liesl Babb-Mackay	The Foundry, Rand Merchant Bank	Co-Director of The Foundry	F	Johannesburg	Corporate (Bank)
Luke Warner	IntergreatMe	Founder	M	Johannesburg	Fintech Entrepreneur
Paige Robertson	Alphacode / RMI Holdings	Operations and Marketing Manager	F	Johannesburg	Corporate (Bank)
Warren Bond	Innovation Switch	CEO & Founder	M	Johannesburg	Fintech Entrepreneur

The interviewees came from a variety of different career backgrounds, and had various levels of experience and qualifications. Five of the interviewees were female and nine were male, the ages of the participants were not collected.

Each interviewee was allocated a numbered code which represents their role in the collaborative relationships being studied, as follows: CB – Corporate Bank, FE – Fintech Entrepreneur. A number of quotes from the interviewee are presented per theme in the results to illustrate the emerging themes.

5.3 Stage 1: Results from the Focus Group

The major themes that emerged from the discussion between the focus group were: the innovation dynamics within corporate banks and broader financial services industry, the various modes of collaboration between the parties, the characteristics of the fintech entrepreneur, and the South African macro-economic impact on the industry as a whole. Each of these major themes is discussed below, as well as the key issues raised by the group.

5.3.1 Innovation dynamics within corporate banks

The focus group discussed the various factors that affected innovation within banks. The participants believed that the following issues are of importance to bankers in considering which innovation dynamics to address or focus on: (1) the financial needs of customers don't change, but the means of delivering the service does, (2) banks looking to fintech need to return to financial first principles, (3) technology grows to satisfy dissatisfied customers, (4) corporate banks have to create an environment for introspection, they need space to think in order to be innovative, (5) businesses have to experience some failure in order to learn, and they have to test organisational and cultural boundaries within the firm, and (6) innovative action must be intentional, in other words the energy and effort to overcome inertia in a corporate environment is deliberate, mandated, resourced and managed for performance.

All of the executives mentioned 'fear of change' as a motivator for the protection of internal interests within banks, which included a fear by senior executives that the industry will become marginalised and commoditised. 'Failure', 'fail-forward' and 'agile' were all discussed as important to the innovation process, but difficult to accept within

corporate environments where senior executives never accept failure. One participant suggested making failure, and the learnings from experimentation, a key performance indicator, in other words creating an environment where corporates could celebrate both failure (which created learnings) and success.

The phrase ‘organisational antibodies’ was used to define the culture of fear and inertia within corporate environments, and the resistance to innovation or entrepreneurial projects. Some of the participants also felt that ownership of ideas and projects created territory wars and turf-protection in banks. Interestingly, the more experienced participants recognised the massive sunk-costs banks had in legacy technology and banking systems, and believed the attachment to these systems (and memory of the procurement burden) drove ‘not-invented here’ behaviour. In other words, the reason many bankers adopt a stance that avoids using or buying innovative technology is because that technology has an external origin.

Relatedly, participants felt that ‘organisational antibodies’ were perpetuated by incentives that didn’t align with experimentation, which then created disengagement and complacency in corporate culture. One participant also mentioned that messages could be diluted up to the corporate board in order to protect internal interests, and that what board members read and heard from executives may be convoluted in order to protect turf or inflate performance. Focus group members agreed that neither of these attitudes were conducive to an innovative culture within the organisation, nor to successful collaboration with fintechs.

One of the entrepreneurs lamented the contradiction of innovation in corporate environments - that people in the process need to be agile and adaptable - but that cultural barriers, regulatory and compliance requirements, and formal rules and policies within corporates prevented this from happening. However, another entrepreneur mentioned that even when you have compliance driven decisions, the professional background of the executive matters. If the exec has a background in entrepreneurship or technology, then they were often more open to the fintech offering. Conversely, the boards of banks were identified as significant barriers to technology innovation. They were considered too old and too disconnected from the millennial generation and consumer needs. According to participants, boards are driven by profit maximisation and

quarterly accounting metrics, and this short-termism killed innovation potential within the organisation.

This implies that the innovative orientation of an organisation can be analysed at the level of the individuals involved in the relationship, and that it could be possible to have more successful collaborations if there was individual or personal alignment to the relationship or cause. It also talks to succession planning and diversity of senior executives, as meaningful barriers or enablers to innovation within corporate banks.

5.3.2 Modes of collaboration

Several of the executives and entrepreneurs discussed the different types of engagement models for collaboration, and agreed on the following corporate innovation approaches: (1) banks could build their own innovation capabilities through internal competitions or experimental programmes, (2) banks could partner with existing innovators or fintechs in formalised or structured bilateral relationships, (3) they could invest directly in fintech companies through equity deals and venture capital models, and (4) they could incubate potential fintech entrepreneurs.

The participants also discussed the forms of relationships that were not conducive to innovative partnerships with fintechs, and mentioned the following barriers to successful collaboration: (1) heavily restrictive contracts with detailed divorce clauses imposed by banks (sometimes before a pilot has even begun), (2) using a procurement mind-set to approach innovation, (3) a misunderstanding of compliance and regulatory laws, (4) short-termism and fear-driven behaviour, and (5) a failure to appoint a business owner within the corporate partner, i.e. someone responsible for the collaboration and accountable for its success. This point was raised again in the characteristics of fintechs, where those that failed to identify the correct business owner or director at the onset of collaboration negotiations, could ultimately fail in their endeavour because of the time wasted in identifying that person.

5.3.3 Characteristics of the fintech entrepreneur

Both entrepreneurs and banking representatives felt that the successful fintech collaborator should have industry experience, good business and social networks, experience as entrepreneurs, a long-term outlook to their business and most importantly, patience in the collaboration.

One of the entrepreneurs mentioned that unlike in Europe or the United States, fintech entrepreneurs are not competing with banks but looking for collaboration opportunities. This was both due to the control of banking licences in South Africa by the Reserve Bank, as well as the lack of experience and scalability of the local fintech market which created a need for banking partners to bring their solutions to market.

Another participant mentioned the importance of entrepreneurial processes, and that those fintechs which were most likely to succeed, understood the needs of banking customers (both retail and corporate), the banking environment and associated pressures, and were able to adapt their innovations and outlook as the needs of the customer or partner changed.

Similarly, those startups that offered only innovation products, as opposed to solutions, were unlikely to succeed. Respondents believed that the type of relationships, and the projects pursued in those relationships, needed to focus on the particular needs of the bank, as opposed to the opportunity in the market. One participant described banks as an ‘onion of need’: At the core of the onion was (1) compliance, risk, and regulatory requirements, which Banks have to invest in regularly to remain current on, and improve upon, changing and regular requirements. The participant suggested that the ideal collaborations took place where fintechs have something that can improve compliance with regulations. The second layer (2) consists of credit, which is highly interesting to fintechs because the core business of banking is credit, and finally (3) the value-added services, these are the least interesting and value-adding to banks in South Africa because innovation-spend will dry up in tough times. Consequently, regulatory projects take precedence, and. participants felt that fintechs should focus on serving the compliance requirements (and challenges) of banks.

The self-valuation of entrepreneurs was also raised, with a contradictory stance taken by participants. Some felt that entrepreneurs over-sold themselves and were unable to dissociate themselves from the valuation process; while others felt that entrepreneurs that were reassuringly expensive were more likely to succeed as their price points became an indicator to the banking partner of quality.

5.3.4 Macro-economic impact

The international market for fintech entrepreneurs was discussed in terms of market maturity, appetite for financial technology, consumer sophistication and market connectedness. Examples discussed included incubators in the United Kingdom (UK), like Level 39, and the network of banks, government, academic institutions and entrepreneurs in Israel. These ecosystems were compared to the South African state of entrepreneurship and the lack of education, experience, networks, and government support. Participants felt that developed markets like the UK, the United States of America (USA) and Israel were more open to entrepreneurial networks and ecosystems, because they provided a social-security net to protect entrepreneurs which attracts fintechs into the market.

The developed markets were also contrasted to South Africa's market where entrepreneurs not only lacked the financial and technical skills, but also industry experience and business sophistication of their peers in developed markets.

One entrepreneur said that a barrier to eco-system development was the fact that banks didn't know how to work together, let alone with fintech. This also linked to the earlier discussion about successful ecosystems of banks, regulators, governments, academics and entrepreneurs working cooperatively.

5.4 Stage 2: Results from the Research Interviews

The following section presents the results of the semi-structured interviews conducted with fourteen different participants. The results have been grouped according to the major themes which emerged in the research as per the research questions put to interviewees.

Themes that emerged from the interviews included the internal dynamics within each actor's organisation, the relationships experienced between the actors and the structures established to facilitate collaboration, as well as individual perspectives and experiences of the fintech ecosystem and the macro-economic environment.

Whilst there was an almost equal spread of interview participants (57% of respondents were fintech entrepreneurs and 43% were corporate bank respondents), 40% of the conversation content focussed on the innovation dynamics within banks, 30% on fintech

entrepreneurs, 23% on the collaboration between the two parties, and only 7% on the macroeconomic conditions surrounding the collaboration and industry. This appeared to show that respondents had more insights to offer on the banking sector's antecedents for collaboration, including the barriers and enablers to their behaviour, than on the fintechs, collaboration modes or macroeconomic factors affecting these collaborations.

A sample size was not determined in advance as the nature of the research interviews was exploratory. Data saturation occurred when the researcher began to document and analyse *repetitive* evidence from interviews. In this study, the saturation point was reached after 14 interviews – which led to clear themes emerging in line with the literature that had been reviewed. As indicated in the Research Methodology, a word frequency result was extracted from *Atlas.ti* indicating the frequency of code words applied within the analysis of the results. The size of the word in following figure correlates with the frequency of the code-word utilised in the analysis.

The word-cloud is presented in Figure 8.

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Figure 8: Word-cloud of codes used in the study

5.4.1 Innovation dynamics within corporate banks

The interview feedback covered the characteristics of banks in general and then those that were relevant to collaboration. Consequently, the following section adds only to those characteristics that affect collaboration and what traits a bank might exhibit in collaboration endeavours.

The respondents from both the fintech entrepreneurs and the corporate banks were overwhelmingly in favour of innovation in the financial services sector which involved a strategic partnership, collaboration or incubation-type relationship with an external party. That said, most recognised the necessity of technology innovation to drive the banking industry forward. One respondent said, “Corporate innovation is becoming more urgent, there’s more start-up pressure, the more desperate the corporates become, as the fintechs eat their lunch. The ones that succeed are the ones that operate at the edges” (FE4). This implied that those organisations that were able to recognise the need to collaboration with fintechs, and were benefitting from the collaboration, were operating at the peripheral of main stream business practice.

Similarly, the majority of the conversations focussed on the innovation behaviours within banks and the modes of innovation most (or least) successful for South Africa’s finance industry. Respondents almost universally had strong opinions on the successes and failures of the industry, with most offering ideas and suggestions for successful interaction between the subjects of the study. It was interesting to note how many of the respondents had experienced negative interactions with the banking industry, either as employees themselves or as entrepreneurs attempting to collaborate with the banks.

The barriers to successful innovation projects within banks were extensively discussed, and covered a wide range of topics. Many of the barriers to the success of innovation were identified by both types of respondent. Whilst the results presented a lot of criticism for the innovation potential within banks, many of the enablers for successful corporate innovation, were also freely shared and widely agreed upon. Respondents were positive in their description of the dynamics at play within corporate banks that contributed to a successful innovation culture or approach. The banks’ engagement models for managing fintech relationships were also explained. Many of the enablers were drawn from the same conversations with respondents on the barriers to innovation, but were identified

as positive factors in innovation because of the respondent's optimistic tone, suggestive language and positive emphasis on the themes during the interviews.

The dynamics for successful corporate innovation were defined as follows:

5.4.1.1 Decision making speed

The speed at which banks made decisions was most commonly cited as a barrier to innovation, with one respondent saying: "Banks are too slow, there are too many committees, too many decision making bodies, too many processes. Very few Fintechs can stay in business long enough for a bank to make a decision" (FE1). This was considered a major barrier to the collaboration between the banks and the fintech entrepreneurs, because the long decision timelines had such an adverse effect on the start-up; but is also an issue in terms of innovation within banks.

5.4.1.2 Innovation resistance

The banking industry as a whole was considered anti-innovation, with respondents' answers highly critical of the apathy towards innovation:

> "One of the real barriers – and I see it even in my own boss here – is people learn and are reinforced to stay in their box, and are very scared to jump out of that box. And disruptors and people that want to get shit done inherently are not comfortable doing that; they actually want to jump out of that box." (CB2).

However some respondents had an explicit recognition of the innovator's dilemma: "Big companies [banks] have existing product sets – start-ups don't thrive in big corps, because of the uncertain margins, and outcomes. It's the Innovator's Dilemma" (FE3).

Another respondent recognised that the different ranks within banks have different outlooks on innovation, "The corporate executives get it, they think like entrepreneurs, but the people in the lower levels are not incentivised to do it." (FE7). Respondents noted that even when the banks had the capability and skills to be innovative, they didn't: "All the really good, true fintech sits in the banks. Our banks sit with amazing talent that they don't use" (CB1). Partly, respondents felt, this was to do with the concentration in the market and size of each banking incumbent, "Banks are too big – but if they are

successfully broken up or made smaller, you will see a game change. But in the meantime, digital disruption could actually floor big banks" (CB6).

Linked to the general apathy towards innovation, was the idea that if there was innovation, it was done in house. One banking executive explained;

> "So we've got strong advocates and sponsors in those other areas, other than our team, and then we started… we decided at the time that there was no real vendor that was going to cater for the kind of competency that we wanted to create, so we decided to build our own" (CB2).

Respondents felt that the refrain "Not-invented-here" had relevance in describing the innovation inertia in banks, "[There is no] open innovation – you have to deal with the perception that everything has to be done in-house" (FE7). A further example of this is "Most of the innovation has been closed, in-house. Argument has been control over content, no competition in media, we wanted to understand product and grow organically" (CB6). Some of the closed innovation approaches taken by the banks were therefore strategic and intentional, whilst others were an extension of the general innovation resistance described above.

5.4.1.3 Compliance culture and fear of reputational damage

The issue of compliance and regulation was raised as both an enabler and a barrier. Respondents felt that fear of the regulator, the consequences of non-compliance, the high cost of compliance, and the culture of blindly implementing compliance protocol (without questioning the underlying intention) tended to 'kill innovation'. One respondent explained that compliance projects don't even need business cases or to follow procurement procedures, they are just implemented by the compliance teams within banks. He said, "I think that compliance culture could be part of the major hurdle to innovation" (CB2) when explaining how banking executives defaulted to the 'safe', compliance-driven position before considering innovative ideas, sometimes without applying any consideration for the principals of regulation. Finally, differences in organisational culture were blamed for failing to recognise innovation opportunities: "Cultural inflections, sometimes someone is genuinely excited by something, but the institution holds them back because of culture" (FE1). This was an important observation, because the norms within the organisation prevented an internal manager from

promoting an idea. In other words, behaviours and practices in the organisation were barriers to internal managers partnering with external fintech firms.

Respondents' answers were similar to the compliance-driven culture results, where respondents believed behaviour was motivated by fear. The fear of reputation damage was found to be a motivator in decision-making and barrier to innovative thinking and projects. The need to protect the status quo, to avoid any publicised failures or embarrassing public relations disasters was a strong motivator for preventing innovation;

> "when Capitec was smaller in scale, yes – they could fail forward fast. When you are low cost, you can try something and learn quickly and move on if it doesn't work. The external "perceived" [respondent's emphasis] reputation may be more important the bigger you get" (CB6).

Both fintech entrepreneurs and corporate executives in banks were unanimous in their opinion that fear of failure, and the associated reputation damage that could undermine a bank's credibility as a safe and soundly managed financial institution, was one of the strongest inhibitors to risk-taking and experimentation. Respondents felt that fear had become a major obstacle to innovation, and that the larger the organisation, the larger the culture of fear, "The bigger you grow, the more your risk of reputation damage grows. You move away from what made you successful, in order for the (perceived) trust to be maintained" (CB6).

5.4.1.4 Servicing legacy technology over innovation

Not surprisingly almost all fintech respondents diagnosed the banking industry with a problem of sunk-costs. Whilst it was recognised that fintech entrepreneurs were commercially motivated by this very diagnosis, the extent of the legacy technology problem was identified as a barrier to innovation within banks. One of the entrepreneurs asserted that the bank business model was changing in the face of technology redundancy, and that "Banks are facing massive organic challenges, it's becoming a software industry, with massive legacy expenses sitting on balance sheet" (FE7). Another linked the legacy technology issue to cultural barriers, risk aversion and even corporate politics, saying:

> "Most often they've bought enterprise software at very high rates, so they have a strict mandate to use the enterprise software. They are locked in to legacy systems. You have job security, legacy staff, whole business units, key knowledge and insights at risk" (FE4).

This limits the ability of the banks to operate in an agile fashion.

Similarly, a respondent recognised that banks were self-interested and self-serving, embarking on one-dimensional innovation projects:

> "I mean basically the way I articulated it to the CEO was 'Okay, you are running around, you want to be Africa's leading digital bank that is your mantra. You know what, imagine if we had Africa's leading digital academy that we powered next to it, and we worked collaboratively with corporates all over and what have you and we were right at the heart of that?' That seemed like quite a logical thing you know? But they couldn't see that, they wanted it for the bank. So we have done it for the bank" (CB2).

Whether job protection and corporate politics caused the "lock-in" to legacy technology was not discussed, but is worth mentioning, given that the following barrier to innovation is the effect of internal politics on innovation. Finally, fintech respondents postulated that banks spent a disproportionate amount of their annual budget on servicing and maintaining the legacy systems, with one saying, "A little bit of money is going into innovation; the bulk of money is going into servicing existing legacy systems" (FE7). Few of the banking respondents complained about financial resources however, although most recognised the legacy banking systems are problematic in the decision-making process, and a major factor in stifling innovation projects.

5.4.1.5 Internal corporate politics and conflicting interests

Corporate politics and conflicting personal interests were identified frequently in the interviews, and both entrepreneurs and banking respondents alike recognised the destructive effect of bureaucracy on innovation. The use of power and the distorting effects of social networking were common themes in the interviews, with one respondent explaining: "The industry is characterised by heavy bureaucracy. Not a single firm, medium or large doesn't have layers of bureaucracy, it could be the boys-club nature of

business. It's inherent in culture" (CB6), and "there is (sic) informal and formal networks wherever you go. By its very nature, retail banking is a lot more political than commercial banking" (CB3), and "I mean the whole pack mentality, that is just what is going on in the organisation and that really is restrictive" (CB2). "There is an emerging new old boys' club in corporate in SA" (CB2). This insight was an important illustration of the corporate politics faced by respondents. The interviewees felt that groups of senior executives had emerged to replace the previous Apartheid regime cliques and had now developed a network of associates that they favoured above other members of their organisation. In short, the effect of corporate politics was still strongly evident in large banks.

One respondent pointed out that innovative ideas were often "shot down" by competing departments or colleagues:

> "So the problem with big organisations like the Bank, they take a long time for something to become embedded that is not kind of 'business as usual'. You actually have to break rules, so the 'business unusual' stuff, first of all to get it in you almost have to be a rebel inside the organisation. You actually have to break rules, you actually have to go out there and there will always be somebody behind a pot plant with a machine gun, trying to fire any idea down. I have had lots of them. So wherever you go, you have the greatest idea, you go into head office, there will be somebody from some department – compliance or whatever it is – behind a pot plant and they will be ready to fire at you" (CB2).

Respondents added that the process of bringing new ideas into their organisation was both tedious and dangerous: new ideas took a long time to gain traction, and due to the above mentioned corporate politics, were often obstructed by colleagues with conflicting self-interests.

Conversely, where innovation teams took measures to leverage social networks and alliances within their organisations, they experienced a measure of success, as one respondent explained:

> "You know for us a massive enabler was actually the fact that one we had sponsorship right from the top and two we were given money right from the top. And three we were incubated outside of the organisation. And four we made bloody sure that we built an alliance back into the organisation. Because if we

didn't do that we would never be able to work with the organisation. And then five coming back into land, into the organisation was very, very difficult and it is one of the reasons why I have moved on because it is just so difficult" (CB2).

Unfortunately, as one respondent explained, there were always "the corporate antibodies… too many politics" (CB1). This again reflected the strong sense of self-interest and elite group protectionism as described by the respondents above. The elevation of interests of a small clique of managers over the organisations' interests was a strong theme in the data.

5.4.1.6 Perverse incentives

The incentive structure for managers within banks was identified as "perverse" because of the contradictory effect of corporate performance incentives. Respondents believed the antithetic reward systems within banks was directly responsible for dissuading innovation. Respondents described KPIs as "Perverse, because if you do nothing, you still get paid. If you fail, you get fired" (FE7). The risk averse culture of the corporate bank was blamed for creating an environment where "The middle layer of management has conflict with KPIs, performance. There is a misalignment between big corporate middle management. There are personal incentives conflicts. The incentivising structures measure input (time, hours, keeping manager happy), rather than output" (FE7).

Respondents shared experiences where managers were tasked with innovation as an outcome of their role, but were then pilloried for experimental projects that failed to meet expectations. The effect was a culture where managers were too afraid to try anything new, but simultaneously paid lip-service to an "innovative" strategy within the organisation. Managers who maintained the status quo but never experimented, were rewarded with bonuses, advances and favour, whilst those that pursued innovation projects, but were not granted permission to fail were punished. The punishments ranged from withdrawal of favour from senior leadership, loss of social networks and support within the institution, removal of budgets and supporting resources, being ostracised from the organisation, and ultimately career failure.

Just as perverse incentives were perceived as barriers to innovation within banks, Key Performance Indicators (KPIs) aligned to innovation outcomes were commonly mentioned by respondents as antecedents for successful innovation. Those

organisations that measured the performance success of their innovation projects by the market receptiveness to those projects, created an environment where employees involved in innovation were motivated to satisfy customer demand and were able to connect that success directly to the success of the project. Regardless of the size of the project or its importance in the organisation, banking staff felt a direct connection to the customer's happiness and were incentivised to satisfy the customer through their use of innovative technology. CB2 described their need to fill in annual performance reviews as a procedural requirement, when he said:

> "Well I mean basically I mean the way we have operated here is we have never had KPAs. It is just a bit of admin that we have to do, but the reality is in this space we actually…. The true measure is actually an external measure, of our performance. It is an external measure of how much customers love what we are putting in their hands" (CB2).

This displayed both the commitment by the employee to the end-user's needs, and a recognition that traditional organisational metrics were not necessarily appropriate to innovation projects.

5.4.1.7 Open Innovation

The idea that banks could disrupt themselves was raised by respondents. Those organisations that embraced a position of learning and exploration were recognised as innovative companies, and the innovation outlook was deemed open when the incumbent sought ideas, inspiration and partnership outside of their organisational confines, "We were a passive investment holding company – we looked at passive investments like Discovery and Outsurance, but we were looking at the next big thing. How do we modernise, diversify, get the next big thing, become active investors?" (CB1). Respondents that felt their organisations, or the organisations they'd collaborated with, displayed a propensity to open innovation when opportunities that would normally be outside of the bank's scope were explored, "There was an opportunity to do something at a group level around the mobile device. And so they decided to build a vision prototype" (CB2). Similarly, participants associated the incubator programmes that they were aware of within the industry, including knowledge of competitor banks and peer fintech startups that had participated in these endeavours, as positive enablers to innovation. As one fintech entrepreneur described their experience with banks, "Some

customers want to go ahead immediately, even though they aren't ready. It's important to have an early adopter, get them in on the beta-testing environment" (FE6).

One banker talked about tapping into the opportunity of open innovation: "There is an accelerating information trend, integration. There is a new paradigm. Historically companies have been so private. There has been an introduction of transparency. Now we open up and we find opportunities and collaborate" (CB5). Open innovation was referred to as an opportunity for collective solutions to banking challenges, and a means of developing new products and services in the digital economy. However, respondents were cautionary about the approach to open innovation: "If you want to survive, you have to collaborate with humility. You can't defy gravity. You have to believe in possibility and embrace collective genius" (CB4).

According to one corporate bank interviewee there are four things that new technology brings into the financial industry: (1) transparency (for example the WikiLeaks release of the Panama Papers), as "consumers have demanded more and more transparency" from financial institutions, (2) efficiency at lower costs, (3) access to the new technology, via smarter devices, and (4) "peer to peer reciprocity and collaboration" (CB4). Whilst new technology factors are not necessarily unique to the financial industry, what is important in this comment is that the industry itself has traditionally been closed, private and fairly secretive. The disruption of financial services has come from the ubiquity of technology and the power it grants banking customers.

5.4.1.8 Diverse leadership

The lack of diversity in leadership, in other words a lack of demographic diversity, and diversity in thinking-styles and behavioural styles, was identified as a barrier to innovation in banks. The lack of diversity in South Africa's corporate sector was discussed, which included a recognition that a disproportionate number of white, middle-aged males still held leadership positions in banks, as one respondent asked;

> "Why are our boards still looking the way they do? How can you expect the board of a bank when the average age of a board is 60, white male, they don't have any young people who understand tech on the board to help drive decisions? That is TRUE disruption" (CB1).

Similarly, respondents felt that leaders with conservative, narrow thinking-styles surround themselves with similar thinkers at the expense of more liberal minded, or open-minded managers who may contribute at the leadership level. There is also a perception that most leaders are fairly bullish or extroverted and associate themselves with other charismatic leaders, and that managers with more introverted leadership styles don't make it into leadership positions.

Respondents discussed the effect on innovation communication within their organisations, "Whatever is happening at the technology innovation level, is embedded in the EXCO, it's not shared with senior management. It's the Stellenbosch mafia effect. They're close to the chest about any new developments" (CB6). Respondents also highlighted the way many of the board members couldn't connect with the millennial generations that drove technological innovation, for example, "On the boards, the old guys are still there" (FE3). One (young, female) banking respondent made an active effort to disrupt the conversations at executive levels by introducing contrary views at meetings. Similarly, another respondent discussed an initiative (that was ultimately rejected by the board) she had proposed to include a millennial on the corporate board of the bank in order to better understand the market, needs and thinking-styles of the youth generation. Unfortunately, the very lack of diversity at leadership levels was blamed for a failure to recognise that lack of diversity, and many of the respondents were pessimistic about the competence of senior decision-makers within banks, "there is a lack of leadership" (CB3), and "one of the problems that we have, is that there is not a lot of decisive leadership" (CB2).

Whilst a lack of diversity was identified as a barrier to innovation, respondents felt that where innovation campaigners held senior leadership positions, the bank's innovation potential increased. One respondent explained that in her bank, executives were hired or promoted specifically to disrupt the status quo: "Champion challengers must exist" (CB1). A fintech entrepreneur explained that for innovation to succeed in a bank, "You need to have a younger representation in leadership, plus more technical representation. Is there a millennial on the Board? Has anyone on the board actually built a business or run a tech company" (FE4). The conversation was both about the structural inequalities in South Africa's banking sector, and the Apartheid legacy experienced at the board level, but also about the lack of entrepreneurial spirit and empathy at the board level, which if corrected, could open up new sources of innovation within banks. The

respondent felt this was a key area for intervention by banking executives and a "low-hanging fruit" in driving innovation projects within banks. Similarly, CB4 described herself as a "disruptor activist", who jumped at the opportunity to build a new bank where she would be allowed to think differently. As a senior executive within the bank, mandated to work with fintech entrepreneurs and build new banking products and services, this was evidence of the change in thinking the organisation had embraced to drive innovation.

5.4.1.9 Internal disruptors

Related to the idea of open innovation was the appetite for change within the organisation. changes in banking are occurring, highlighted by CB5 who indicted- "We feel everything is changing; not just the needs, but the way we service those needs" (CB5) and those banking respondents who felt that change in the industry was a positive force for innovation, expressed an appetite for embracing change,;

> "[Financial] needs never change; everything around the shareholder and the customer is changing. There's change about how a need gets delivered. What about the way we deliver on servicing that need? The technology of today to the needs of the world" (CB4).

They used their platform for innovation within the bank to drive that innovation, "The [incubator] is part of the change, we have a mandate to protect our shareholders, our customers and our entrepreneurs … there is stakeholder tension, but we also consider customer value proposition versus shareholder value creation" (CB4). This showed that the respondents considered a multitude of different stakeholders in their decision-making process, including their shareholders. Also, that organisations that embraced disruptive thinking and had a strong appetite for change and creative ideas, were more likely to embrace working with fintech firms.

5.4.1.10 Independent laboratories

Another positive enabler of corporate innovation was the ability for managers of innovation projects to operate independently of the firm's organisational rules and processes. One respondent explained:

> "Ring-fenced innovation – you should be able to have the ambidexterity to have the innovation testing, experiment, test-kitchen… on the side, try things, see if

they work, if they work they don't work, etc. Then it fails within a ring-fenced environment" (CB6).

The ability to explore ideas and new technology independently of the organisation was viewed as a positive by both fintech entrepreneurs and banking respondents.

5.4.2 Characteristics of the fintech entrepreneur

There were characteristics of the fintech entrepreneur in general, and then those that were relevant to collaboration. Consequently, the following section adds only to those characteristics that affect collaboration and what traits a fintech might exhibit in collaboration endeavours.

5.4.2.1 Experience

Newness, inexperience, youth and lack of exposure to the corporate milieu were all found to be barriers to fintech entrepreneurship. One respondent explained:

> "The fintech sales approach: Not enough transparency - fintechs can be a bit "cloak-and-dagger" – they don't reveal their entire proposition, they're trying to sell a bit beyond and above what they actually have. They need more frankness, more openness with the client. They might genuinely think that their invention is the greatest thing ever" (FE1).

This quote was illustrative of the immaturity of the fintech partners that their newness and inexperience counted against them. Respondents felt that fintech entrepreneurs had not done sufficient market research to establish demand for their product or services, and had relied solely on their own personal valuations to promote their business. Bankers also found that inexperience and even immaturity created barriers for the entrepreneurs:

> "Entrepreneurs don't really know what they're selling. They're arrogant. They don't sell well. They don't' know what problem they are solving. They are very complicated; they don't really understand their own businesses. Very unhealthy understanding of where they sit in the value chain – they think they have the best solution, or the only one" (CB1).

Fintech entrepreneurs agreed:

> "You have to know what your tech does, how it's differentiating, how it makes your customers lives better – if you can't do this, then you don't have a company. You've got to know the market, what are the benefits to the customers" (FE2).

Again, the belief by entrepreneurs that their product solved all problems and was the only one on the market, counted against them in collaboration. Those entrepreneurs that had conducted extensive market research, in-house testing, and had a full understanding of their potential product or service, were better off than those that had very little experience or had conducted very little research into the market. The respondents believed that good ideas didn't necessarily make good companies, but that those fintech firms that actually had a viable business proposition were in a better position to negotiate lucrative terms with banking partners.

When asked about the entrepreneurial traits most suitable to collaboration, success and understanding the industry, interviewee FE5 said that "Being an engineer, I have an understanding of systems and processes". He and his business partner, FE6 also had direct banking experience. He further explained that they knew how the banking industry works, understood the regulatory environment and especially the "pain" of compliance, and this made them better able to collaborate with banks because they shared the same goals and experiences.

Mentors, the incubator model, coaching and tenure in the industry were all mentioned by respondents as means to address inexperience. In addition to candid conversations on performance:

> "Entrepreneurs need to hear the hard messages upfront. If they can hear the difficult message and come back to us. Overinflated value expectations – dangerous to get into a valuation argument with tech entrepreneurs. We don't over-pay. There are no fixed formulas, no set value processes. We make fundamental financial decisions" (CB1).

Related to the inexperience of fintech entrepreneurs, respondents felt early-stage fintech entrepreneurs displayed a high degree of arrogance and over-confidence, "Nothing is ever new, it just hasn't been executed" (FE1). And also that "People attribute expertise to experience" (FE4). This was an important issue in the data because many of the entrepreneurs offered the banks expertise that the banks lacked in the form of technology

solutions. However, many of those entrepreneurs lacked the experienced to back expertise up with rigorous commercial testing or a sustainable business model.

Suggestions for addressing these traits included: “Don’t build your idea in a vacuum. Don’t be in love with your idea.” (FE2) and for fintech entrepreneurs to “Eat your ego” (FE6).

5.4.2.2 Risk taking

In addition to the aforementioned criteria for innovation in banks, entrepreneurs are characterised by a high propensity for risk. However, an experienced entrepreneur explained that unnecessary risks go beyond the learning aspect of experimentation and into outright failure. He explained that “There is a mantra: Failure is something we value. You should fail fast, and take risks and iterate. But failure is actually not okay, it’s painful and bad and should be avoided at all costs” (FE7).

Taking calculated risks and learning from mistakes were both seen as important traits for entrepreneurs who were engaging in collaboration because these two traits were often lacking in a corporate partner, “There is a mantra: Failure is something we value. You should fail fast, and take risks and iterate. But failure is actually not okay, it’s painful and bad and should be avoided at all costs” (FE7). It was important for the fintech entrepreneur to ensure they took the right type of risks, in order to learn and move on, and that entrepreneurs who made irrational mistakes sent negative signals to corporate partners about their maturity of decision making.

5.4.3 Collaboration between fintech entrepreneurs and banks

In addition to the experiences of respondents of the internal dynamics of banking innovation, the following antecedents to collaboration between the parties were evident in the sample interviews.

5.4.3.1 Joint purpose

Respondents felt that both entrepreneurs and banks failed to agree on their joint purpose, and the goals of the relationship. Sometimes, the misalignment was related to the difference between the corporate partner’s needs and the start-up partner’s expertise. An example of this is when one respondent said: “Fintechs pitch product but the banks want a problem solved, they ideally need to work with the entrepreneur on a

capability they have to solve the Bank's problems, rather than buy a product" (FE1). Similarly, there is a lack of transparency within corporate organisations as they struggle to align internal projects with external relationships, "There are four or five different solutions being developed within and between the banks that don't really meet any real needs, or have a clear value proposition. There is still a lot of wastage" (FE2).

Respondents felt that where fintech entrepreneurs and banking partners had shared goals in the relationship the collaboration was more positive and beneficial to the parties. Similarly, those fintech entrepreneurs that had first-hand experience of the banking sector were better collaboration partners than those without: "Better to have a financial services person understanding the solution and challenge, rather than a developer approach. They understand the pain point… because they come from financial services" (CB1).

5.4.3.2 Combined resources and mutual interdependence

There was a common acceptance that the assets and resources brought into the relationships between fintechs and banks were necessary for successful collaboration. Each party was recognised to bring different, but mutually interdependent, resources: "The entrepreneur brings to market new ideas, new products, and new processes. And banks or financiers bring capital to realise it" (FE8).

Those that accepted the business case for collaboration believed that: "Fintechs are better at starting than scaling" (CB6) and that "Entrepreneurship is very lonely, myopic – therefore you need community, need mentorship, need connections to networks. We bring a Rolodex. If we think your business is successful, it's worth investing more than the start-up capital, it's a growth business. These are not capital light models; these are capital-intensive models. Acquiring customers, building brands, you need a growth partner and long term support" (CB1). Where a party had something to offer, they were willing to accept the idea that their and their partner's goals could not be achieved independently, "In order to scale, we needed a more sophisticated banking partner or shareholder to invest. We needed to de-risk, we needed a partner with deep-pockets" (FE8). Similarly, "This was a mutually beneficial transaction, we're developing relationships. The proof of concept was free but the pilot is paid for. We also have permission to use their logo for marketing" (FE5).

However, what banks are providing through the incubators and what fintechs actually need are misaligned, according to interviewee FE2. She felt that incubators should provide: (1) A full time business mentor, (2) participation on a development programme, (3) access to a lawyer to negotiate commercial contracts, or at least legal services, "there's a conflict of interest with the banks, we need to get the law firms in at ground zero",(FE2) (4) a consultant to assist with business cases and marketing plans, and (5) the ability for the fintech entrepreneur to live, work, commute and focus on the business full time.

Another respondent described what they felt were the determining factors to developing future partnerships between technology entrepreneurs and corporates, as (1) Good, fully-fledged understanding of the bank, that they should "get good individuals" (FE5), (2) have exposure to multiple different ways of solving problems, (3) ensure the bank representative is "tech-savvy" (FE5), (4) get senior support from credible people [referring to their sourcing an senior, well-known mentor in the finance industry to take a minority interest in their company], but also "trust in reliable technical experience" (FE5), and (5) accept help from networks, "if someone experienced is offering you advice, mentorship, comments on your operating model. Get the right people in to help us set up the company. Get personal contacts to do the work" (FE5). This was an important finding in the data because the respondents detailed exactly which combined resources were important to collaboration. This may have implications for the way the bank provides assistance to fintechs in incubator or business development programmes, because it illustrates that fintechs are less concerned about tangible asset sharing – like hot-desks – than intangible IP sharing, like mentors, internal support access to networks.

When asked what would enable more effective collaboration, one interviewee believed that banks should be paying for "less glamorous stuff, the practical, day-to-day running of their businesses. Why not buy them a bus or delivery van, and brand that, instead of spending their money on marketing their incubators?" (FE2).

5.4.3.3 A sense of urgency

The lack of sense of urgency in corporate partners was raised repeatedly by fintech entrepreneurs. They deplored the long lead times for decision-making and the costly process of relationship building and negotiation with incumbent banks: "The [fintech] is the little guy with a small team, they're urgent, living on the edge. The big guy in a

corporate is salaried, he can be relaxed about the process, there's no sense of urgency" (FE1).

When asked about interacting with banks an interviewee complained about the long decision-making processes in the banks, "three months is too far away. The problem isn't the tech, it's the processes" (FE3). The respondent believed that the internal bureaucracy within the bank, and their complete lack of urgency to facilitate negotiations, was a major impediment to partnership. This they believed was due to a different perspective on time – banks had long processes, entrepreneurs have short ones – and the bank's lack of empathy for the partner's opportunity costs in the negotiation:

> "The biggest problem is risk avoidance and complete disregard for opportunity costs, if you are in a small company, it's about time, you actively cost in your time. If you do nothing in a large company, you still get your salary – if it works well, you get almost nothing. But if it fails, there is massive personal risk. People are massively personally risk averse" (FE7).

The lack of a sense of urgency was again related to the lack of ownership of responsibility within the bank, "In large banks it takes about 16 – 18 months for development, it's hard to work with them. Responsibility is not owned" (FE7). In addition to the long lead times - "The time horizons are too long for returns" (FE3) - the lack of ownership of innovation projects within the banks was an important barrier to fintechs in the partnership who shared experiences of several different bank project owners during the period of the collaboration, which undermined the success of the relationship and project, and created unnecessary reworking and backtracking, "In large banks it takes about 16 – 18 months for development, it's hard to work with them. Responsibility is not owned" (FE7). Fintech entrepreneurs also felt that receiving quick feedback was important, even negative feedback was preferable to delays and run-arounds, for example, "A quick No is much better than a slow decision, a slow "maybe" (FE1). Some bank partners were considered better than others: "Internal decision making process: some banks have much better aptitude for getting to decisions quickly, PoCs [Proof of Concept], others take a long time with lots of committees. They don't have decentralised decision making" (FE1).

Fintechs were also expected to bear the full cost of business development, "You need a minimum full year to build a business and sell it [the service or solution] to the bank. This

is all at risk" (FE2). Similarly, banking partners don't experience the opportunity costs fintech partners experience.

Personal risk was established as an important barrier to action, where individuals in banks would have disproportionally higher risk aversion than their fintech partners due to inertia, but also ignorance of the start-up party's opportunity costs.

5.4.3.4 Rules of engagement

The topic that attracted the most discussion was the rules of engagement for collaboration. The rules of engagement were identified as a clear delegation of authority (as mentioned in the lack of urgency barrier), and a single point of contact and accountability within the bank, as mentioned by respondent CB1:

> "Banks don't have clear delegation of responsibility or authority and clear problem solving. Banks don't define the rules of engagement. However, there's no innovation RFP [request for proposals], there's no measure of success, no delegation of authority, no proof of concept, no clear process."

Similarly, "Everyone in the Bank is a 'Head' – but the entrepreneurs get stuck with talking to someone with no authority, no incentive to actually get the entrepreneurs idea into the bank" (CB3). And, "Things go wrong when you have multiple parties and no clear mandate, then leadership changes on projects" (FE4).

Certainly, this was evident within the banking respondents, who bemoaned the reputational damage banks have endured because of the unclear rules of engagement. The respondents explained that many entrepreneurs would waste time in resolving their understanding of the bank and its internal processes and structures, and all this was done at their expense and their own risk, as CB2 said:

> "I mean just engaging with the bank is very difficult; you would probably run out of money before you get to any conversion point."

This respondent even went so far as to refer entrepreneurs to competitors knowing the complexity and red-tape they would have to face if they dealt with his organisation. The support for entrepreneurs by banking respodents was evident in their sympathy for the entrepreneurs' frustration with bank processes an wastage. In a reverse of the internal

corporate politics and self interest discussed above, those banking respondents that had first-hand experience of the fintech 'pain' actually risked their own personal reputation, and social capital, to assist the entrepreneurs succeed.

> "I have probably for the last few years, I have probably seen about three fintechs or three vendors a week, like vendors trying to knock the doors down in the bank. And many of them are basically closed down … I then go and make an introduction elsewhere" (CB2).

Another banking respondent mentioned the unnecessarily complicated bureaucracy in banks, "For a start-up to directly approach a bank – it's incredibly difficult to jump through hoops to setup meetings, it's so hard to get into a big bank, for something that would be relatively small product or solution" (CB6).

For this reason, respondents suggested greater transparency in the process: The rules of engagement from banks need to be clearer. Entrepreneurs need transparency. Cooperation won't work unless corporates house innovation projects properly …. You cannot have line-management running innovation. You cannot disrupt yourself if you have a P&L, and wear two hats" (CB3). The data showed that respondents were in favour of better, more transparent rules of engagement for all parties. Similarly, a clear line of responsibility and clearly delegated authority was preferable, as illustrated by the following quote:

> "So pitfalls, talking to the wrong person in the bank is the most common mistake. It takes a year or two to get to the right person in the bank. How can you get to that right person as quickly as you can?" (FE1).

Taking time to find the right person within the bank was costly and delayed the entrepreneurs' efforts. This could have a negative impact on the collaboration and the reputation of the entrepreneurs,

> "When starts ups aren't aware of the key decisions makers or strategy of the company. When they don't know who the key decision makers are, don't understand agendas, or they realise key decision makers too late – and have potentially tainted their reputations" (FE4).

Whilst many interviewees had complained about the lack of clear rules of engagement there were some examples of when the rules were clear, and how this enabled effective collaboration. One banker explained:

> "We don't have to check against RMB, Discovery, FNB – we don't have to look at synergy with the business. We don't have to look at "synergy" with our existing stuff. We look at the value of the company in and of itself. Our entrepreneurs know who they are dealing with, who makes the decisions, and how long it's going to take" (CB3).

Another interviewee offered advice to prospective partners in collaboration: "Be nice to me and my people, play by my rules. Think about my financial well-being" (FE3).

5.4.3.5 Power discrepancy

Strongly related to the unclear rules of engagement is the concession by respondents that power discrepancy was a significant barrier to successful collaboration. Sources of power included brand strength and company reputation, credibility as a financial service institution – critical in the industry – scale of the banking partner, and access to funds and resources like legal services to enforce contracts. The respondents mentioned that, "If you're a known entity, then you have more credibility and credentials. It's incredibly difficult for a brand new start-up to work with a bank" (CB6), which illustrated the power of the banking partner's credibility. In answer to a question about bringing in a senior mentor as a minority shareholder, an entrepreneur said that they had "No customer recognition. No one knows the brand" (FE6). This implied that entrepreneurs were actively seeking means of improving their credibility and brand power.

The size of banks, and their ability to access resources was described by one respondent: "The scale and intimidation factor, banks are not approachable" (CB6). One respondent suggested that the relationships between fintechs and banks were less partnerships than collaborations;

> "There isn't really such a thing as a partnership, only collaborations. The banks hold all the power, the mental model is supplier, vendor… there are individuals that get the partnership approach, but the big player (the bank), doesn't want to negotiate on equal terms, they're used to dictating the terms. We have no

> negotiation skills. The start-up company has no power. As soon as you want to execute, the compliance, legal, etc. big machine starts working – all risk gets passed onto supplier" (FE7).

Another quantified the power imbalance, "All the fintechs want to work with banks, but power rests with Banks. There is 90:10 power" (FE1).

Unfortunately, the bank's access to resources and exploitation of power was raised as a significant barrier to collaboration, and the most alarming examples were in the enforcement of contracts and non-disclosure agreements (NDAs). One entrepreneur said: "Signed contracts mean very little. Do you have the time and resources to enforce an NDA, or a contract?" (FE4). Another mentioned that banks actively steal ideas and resources from fintechs;

> "A lot of banks do poach. But my personal experience is it's not worth being cagey, rather be open about it, don't bother with an NDA – the Fintech is not that special, it's not in the entrepreneur's best interest" (FE1).

This implied that some banks were less interested in collaboration than head-hunting talent through an unusual recruitment mechanism. Finally, the bank's experience in managing regulatory and compliance procedures was seen as another form of power in the relationship:

> "The risk and compliance requirements for big banks are more hectic than any VC due-diligence. You have no position of negotiation because you have given them everything, but you have no traction, no power, no reputation to fall back on" (FE2).

Huxham and Vangen recognised this tension when they discussed the importance of independence and autonomy in their work on the barriers to collaboration (Huxham & Vangen, 2000). This corresponds with Middelhof's work on the exchange of power in relationships, as the entrepreneur is constantly managing the tension between investor interests and their decision making autonomy (Middelhoff et al., 2014).

5.4.3.6 Structures and programmes

Interviewees discussed their various experiences with formal collaboration structures, and some viewed the incubator, accelerator or corporate start-up programme structures as problematic to development. Some felt that the structures were inappropriately exclusive, “There is a bit of discrimination between bank-run incubators, there are exclusivity deals. For example, FNB wanting exclusivity relationships” (FE2).

This was important in defining which of the incubator or accelerator programmes were attractive and supportive of the partner, and which programmes were destructive and created barriers to success in the ecosystem. As one respondent said, “The eco-system model is a waste of time and money for everyone, it’s a competitive thing… [Between entrepreneurs within the incubator]” (EF1).

EF1 further explained that fintech couldn’t be supported by the ecosystem when they were “stuck in the incubator model” because of the non-disclosure agreements, competitive boundaries imposed on the entrepreneurs and because the banks themselves don’t collaborate (EF1). This was an important contribution in the data to establish how ecosystems could facilitate collaboration: where banks cooperated between themselves, and where entrepreneurs were free to move between programmes or partners, the ecosystem was stronger and more conducive to collaboration.

The intention of banks developing incubator structures was discussed, and some felt that start-up programmes and incubators were marketing veneer, with no real commitment behind the initiatives. The most vocal participant felt that “The programmes are just the next wave of marketing – we’re looking at innovation and entrepreneurship as a circus – lights, camera, action – launch! PR activity, there’s no real commitment” (FE2). furthermore FE2 stated that;

> “The incubator spent more money on one day [the demo day] than the entire programme. So over the top! Some of the entrepreneurs are struggling to find funding, to pay their staff. A demo day is an insult to them. Incubators are making interior decorators rich” (FE2).

This sentiment was expressed by the more experienced entrepreneurs, both through personal experience of incubators and sadly, personal failed collaboration efforts with

banks. One fintech entrepreneur disparaged the type of participant typically found in start-up programmes;

> "The kind of person that applies to join a start-up incubator is not the kind of person that is really a disruptive incubator type person, you cannot really control it. You have to go scout, go head-hunt for that kind of top-tier talent" (FE7).

This was also significant in the findings, because it illustrated how the entrepreneurs had ranked themselves in the system, and that the purpose of collaboration – sourcing external innovation – was undermined by the potential destructive nature of incubation programmes.

Another felt that banks didn't really understand how to run small businesses, and the process of incubation was destructive, "So many bankers are in the innovation space, but they've never run a business themselves. They have no idea how to actually run an innovation programme. Corporates kill small businesses" (FE2).

The self-professed less experienced entrepreneurs were more naïve in their outlook, and mostly viewed the incubators as positive enablers to collaboration, and beneficial to their business development. Ironically, one fintech entrepreneur enthusiastically mentioned their recent contract negotiations with a large bank, "We're going through the supplier procurement process, and we're not vetted yet" (FE6), even though they had just come through the bank's incubator. Those interviewees that had experienced incubators and had benefited from them, had positive reflections on the structures and processes. The bank participants felt they had achieved their goals through the programmes, "We applied best practice thinking from internationally – we wanted to understand how the start-up world and the corporate world talk to each other. We looked at Fusion Labs. Do we accelerate them? Bring them in? A combination" (CB1). Similarly, she granted that the structure had its limitations in terms of organisational boundaries, management control and investor interference, and these needed to be respected in order to succeed: "We are growing independent businesses, which can transform in their own right – versus developing suppliers within their own business, for example pushing them into FNB, or Outsurance or Discovery (CB1)". She felt that the incubator couldn't interfere with the creative process in the fintech as this would undermine the purpose of the collaboration, whereas in a supplier relationship the organisation would feel entitled to

interfere with organisational decisions or exert control over the partnership. This was important in the data as it illustrated the balance of interests between the partners in the collaboration, as opposed to vendor-relations where the client held most of the power.

Another corporate contributor explained that they investigated the different engagement models for collaboration with fintechs, and found that a combination of the incubator model with an active investment model worked best for their objectives, “We’re an incubator of ideas and applications. We believe in collaboration. We connect ideas – there’s serendipity. We connect to the partnership network, we can be faster than slow, traditional models” (CB4). This position correlated with the entrepreneurs who felt that, “You should be looking to build new companies. The focus should be on building business, to actually make money, not just starting companies” (FE7). Where the structures and incentives for success were aligned, incubator programmes appeared to enable successful collaboration and outcomes for both parties.

Interviewees believed that the incubator or accelerator models were contributing positively to the collaboration environment and that their existence – regardless of form – was good for the promotion of fintech innovation. One respondent stated: “We’ve had a very positive experience with AlphaCode, the PR opportunities, the space to network” (FE4) and another clarifying, “VCs are enabling the market, for example Alphacode, we share ideas. There’s an ecosystem” (FE3). The interviewee described the financing models for fintech entrepreneurs as follows, “There’s [1] the venture capital route, for example AlphaCode, Knife Capital, 4DI, [2] enterprise development funding, such as the Industrial Development Corporation (IDC), [3] partnering with banks, [4] traditional business loans, or [5] organic self-funded growth” (FE3). He felt that these were all dependent on the type of engagement the parties were looking to develop, but also felt that the VC market was quite immature in South Africa. His preference was for self-funded growth as he felt this offered the most sustainable means to grow. Other fintech entrepreneurs were happy to take the business development funding from the incubators as they felt scale was impossible without this assistance.

According to another interviewee, the bank’s incubator assisted with their patent application by directing them to legal expertise, so that instead they were “spending time on customer and product development” (FE5). This showed that banks were not only providing capital through the incubators, but also advice, guidance and expertise,

illustrating Gray's original proposition of collaboration between parties as being more than sharing costs (1985).

Correspondingly, entrepreneurs felt that incubators are "Good for building the ecosystem, giving enterprise development, giving support, providing access to resources, contacts … (FE7)" but explained that the "terms of the incubator are not appealing to entrepreneurs" (FE7). This may have been because of the immaturity of collaboration structures in South Africa, a personal negative experience, or shared experience in the entrepreneur network. He also felt that it was easy to establish commitment within the banking partner by checking where the cost centre for the incubator was hosted within the organisation, "to see if the relationship is going to be successful, check one thing – does it sit in a business unit's P&L, or is it hard core M&A" (FE7). As one entrepreneur described incubators: "The successful ones meet in the middle with the entrepreneurs" (FE4).

5.4.3.7 Social capital

Destruction of trust, and the resultant loss in social capital, was also evident in the interviewees' experiences. A major barrier to collaboration was previous failed relationships between fintechs and banks, for instance interviewee FE2 related a story of a failed pilot project between a fintech and an insurance provider;

> "No one wants a rejected company – its negative signalling to the market. The company has been red-flagged by other investors. Even if they decide to walk away, they will still have that incomplete project or pilot on their records that they can never escape" (FE2).

Similarly, banking respondents who had experienced a deterioration of trust felt despondent about the future of the collaborative relationships with fintech, "The sad thing about it is that the signal to the fintech and external community was bad" (CB2).

One entrepreneur explained that she was not only "Very gun shy of dealing with Corporates" (FE4) but that in their experience the only way to collaborate was when there was a high level of integrity in the relationship. FE4 further stated that;

> "Some of the accelerators have very little trust – Fintechs feel like their IP is being taken away from them. The ones that work, are the ones that have integrity,

resources lent to the entrepreneurs, the follow-up, the leveraging tools. The trust element is very important – IP is just so important" (FE4)

5.4.3.8 Relationships, culture and networks

Interviewees felt that where partners in a collaboration had similar cultural backgrounds - which included ethnic, national, and organisational cultures – they were better positioned for successful engagement. This is strongly related to the factor of diverse leadership within banks leading to better innovation capabilities as discussed above. One said;

> "We have an alignment with culture, vision, and values. We have frank discussions up front. We're asking 'What do you want, how do you want to be portrayed in the market'. We look at track-record, references, we've become quite intuitive – street smart and can suss people out quickly. Of course we do our research and due diligence. But, we get to know people personally" (FE8).

Another entrepreneur discussed their relationships with corporates:

> "They must share the same world view – we won't' work with a company if we don't have the same world view, it must be similar, otherwise impossible. A lot of it boils down to who the individual is and the contact. A lot of energy is spent just maintaining the relationship" (FE7).

The social networks and support systems between entrepreneurs was critical to developing a strong ecosystem of entrepreneurs and most were willing to share their experiences with other entrepreneurs particularly where they shared a cultural, ethnic or religious background. The participants exhibited a strong sense of community development in their willingness to pay their experience forward to young or inexperienced entrepreneurs. Similarly, those entrepreneurs that recognised a similar social or cultural inflection in their partners or fellow entrepreneurs, were more likely to share and collaborate, as they felt a strong similarity to the person.

5.4.4 Macro-economic impact on collaboration between fintech entrepreneurs and banks

The macro-economic impact on fintech entrepreneurs and banks, and the collaboration structures and programmes they created, was discussed by all respondents in answer to the researcher questions. However, it's important to note that aside from the following findings, the interviewees gave a general feeling of indifference to the South African economic situation, and commented mainly on the funding market and skills. Most communicated a sense of dispiritedness about the macro-economic impact on business in South Africa. This was both because it is so uncertain and unpredictable, but also because they felt powerless to impact anything in their ecosystem. The lack of strong opinions and feedback on the ecosystem was itself an indicator of the ecosystem impact: that entrepreneurs and banks were 'just getting on with it'.

5.4.4.1 Markets

Most respondents recognised that the South African consumer market had a lot of potential but was underdeveloped. The consumer attitude to new technology was seen as a positive enabler to the ecosystem, "We adopt new tech fairly rapidly in the market, look at MPESA, cryptocurrencies. Running businesses in Africa will be more agile, because of the adverse operating conditions" (FE4). This also spoke to the potential consumer market in South Africa: "There is a very large unbanked and financially excluded population, the fintech market will have a huge impact on the way our people access finance" (FE4).

As one respondent explained about the South African technology market:

> "There is enormous hype and activity. There have been some huge successes and we need to celebrate them more. The potential is good, but massively over-hyped. The future market size is massive, but current expendable cash market is very small. For the more basic services there is a massive gap – for example interbank clearing, international border transactions. In rest of Africa the incumbents have an advantage, because there isn't a very well developed ecosystem in the other markets, and they have relationships with the regulator, branches, experience, a contacts list" (FE7).

Another banking respondent agreed:

> "I believe that if you are going to win the battle in Africa, you need to build the biggest bank with the biggest float and you need to take the dependence out of transactional. You obviously don't turn it off but you can get ahead by basically being competitive." (CB2)

Unfortunately, there was a general agreement that the South African fintech ecosystem - which includes technology companies, banks, entrepreneurs and the supporting legal and professional services industries (see PWC Fintech Ecosystem – Chapter 2) - was very underdeveloped compared to its peers. As one entrepreneur put it, "There isn't a very sophisticated ecosystem in South Africa. In other markets, large organisations are scouting for talent" (FE7).

Similarly, the South African fintech ecosystem was compared to other economies, which were considered to have more sophisticated systems, fintech participants, funders, academic contributors and consumers: "The [Israeli] ecosystem is better – banks and fintechs get things done" (FE1).

Finally the market maturity, or sophistication of the various collaboration opportunities, was considered fairly undeveloped. Whilst the ecosystems and supporting institutions needed to mature, those fintech companies that had already done well were moving to other markets quickly. "On the flipside, these companies that want to acquire these companies are naïve, they don't understand the fintech Motivation. There is a maturity gap" (FE7).This had a negative effect on the entire ecosystem as the country lost talent and revenues.

5.4.4.2 Financial environment and funding structures

A key determinant of entrepreneurship is availability of funding. The fintech industry in international markets was described by the interviewees who saw a difference between South Africa's funding market and that of its international peers. Many of the incubators and accelerator programmes were established to develop a pipeline of fintech talent and innovation. These incubators also aimed to provide access to development funding where possible, and venture capital (VC) where relevant. This funding system was considered in the early stages of maturity as the market for VC was is small, as FE8 states, "the South African market is partly just too small; the incubator VC market is very small". The South African market also had a low appetite for risk. There didn't appear to

be numerous examples of VC success, nor a culture of VC in the banks or within the fintech communities. Most fintechs are required to look internationally for VC finance, for example:

> "All the banks are working on venturing models. But the terms offered by international VCs, versus the terms offered by local banks… Most of the good ones [fintechs], find funding in the US, then move the IP as soon as they can" (FE7).

This was a disappointing finding because it illustrated both the potential of the market to develop, but also the 'brain-drain' that still affects South Africa's economy. Those that had secured local funding did so through local incubator programmes or in collaboration with banks. As one entrepreneur put it, "In developed markets, you can fund yourself differently – in Silicon Valley… the system functions very well, therefore you know who your partners are in the value chain" (CB1). This was important because it touched on some of the earlier findings regarding the rules for engagement, but also because the VC market appears to be in its infancy in South Africa.

Both banking and fintech respondents alike compared the South African funding market to the US fintech ecosystem:

> "The South African banks are investing in companies that have very high expectations, the top tier fintechs are actually going overseas for funding. They are getting the bottom of the barrel in SA, because the top ones have gone overseas. If you're not in Silicon Valley, you cannot build a Silicon-style start-up, you won't build up a 5000 PAX company and selling for a Billion US dollars. In South Africa business valuation is often a multiple of revenue. Which is completely the opposite of the US approach, where they acquire teams, future value, assets. There just isn't a market for that kind of business in SA. There isn't a massive market." (FE7).

In other words the US market was more advanced because they were looking at developing and investing in the future potential of the business, its expert team-members and future value, whereas in South Africa the banks are looking at past performance and personal financial status. This was important because it identified how some US tech companies had become 'Unicorns' and what was missing from the South African market.

It also clearly outlined the barriers to collaboration between banks and fintechs, with banks treating fintechs like loan-applicants instead of business partners.

> Another illustration of the difference between the markets was our market maturity and sophistication in the technology sector"In SA, you have a lot of Angel Funders. It's easy to find R5 million. Then we have VC, and no Series A, Series B, Series C funders… we just don't have the ecosystem. We have a lot of private equity for good established assets, but not for tech, not for start-ups. Brait, Ethos, Steinhoff, they understand particular industries, but not financial services" (CB1).

5.4.4.3 Skills

The education and training of entrepreneurs and the available workforce was discussed by the participants. In line with the current discourse on education in South Africa, respondents alluded to the lack of tertiary education, poor access to technology skills, and a brain-drain evident in the areas of success. Most recognised and affirmed the strength of South Africa's banking sector, but bemoaned the lack of experience, education, skills and business acumen in the fintech industry. One explained;

> "Top sector is Financial Services: Tech skills are not so good – there are pockets of excellence, but we don't have the depth. We just don't have depth of tech talent – It can be a very important part of nation-building, but we need more tech talent" (CB3).

In terms of the brain-drain, one entrepreneur explained that as soon as local developer talent is recognised, they are head-hunted by the likes of Google and Amazon, both of which have local offices in South Africa. As a fintech entrepreneur in Cape Town said,

> "Our biggest competition in terms of talent is Google and Amazon, who are poaching talent – offering R150k to top developers (and our little incubators spend R10k on an event). They recruit a lot of people in CT, and move them overseas. So how do you compete with a R20k a month offer from a local bank?" (FE7).

The brain drain of talented technology entrepreneurs was considerably disturbing given the number of government SME development programmes in South Africa. The lack of information to refute this statement by the respondents didn't muster any confidence in

the researcher. One entrepreneur suggested, “Just look at the visa-applications for highly skilled people who immigrate” (FE7).

Finally, the development of a new set of skills and offering to the job market was essential to developing the consumer and workforce markets. As one banker explained, they decided to start building their own skills in the digital space because they believed the skills for development and innovative digital services just weren’t available in the job market: “Our approach is more at an artisan level: so what we are saying is that in digital there are different jobs, the jobs of tomorrow.” CB2

This respondent also felt that the industry itself didn’t offer much promise of developing these skills. A recent trip to Silicon Valley had illustrated to him, the skills needed were in general short supply and the universities weren’t addressing this in their curriculum development:

> “One of the things that I articulated in building this capability here, was this shortage in skills in the whole digital area. And I went to Silicon Valley last year and I can promise you it is the same thing there; there is a general shortage of skills in these areas. And then the second thing was that I recognised there was this major structural problem in that the universities of today are still trying to work out where digital actually fits in. They are not providing the capability for the sorts of skills we need in the digital area” (CB2).

5.4.4.4 Strength of Entrepreneurial Ecosystem

The ecosystem itself was the subject of much consideration as most felt the South African ecosystem – or connection between the players and institutions that supported an industry – was weak and underdeveloped. This included both a weakness in the VC sector through lack of funding and mature engagement models (as described above) and because participants agreed that the owners of capital in the country had a responsibility to develop the ecosystem themselves. As described by one banker: “If you’re a venture capital firm in an established VC [venture capital], you can invite people in, but if you’re in SA, you have to do stuff in the ecosystem to develop the environment” (CB1).

Many agreed that that the size of South Africa's banking sector was too small to justify competing incubator programmes. One entrepreneur suggested a national accelerator programme independent of the banks,similar to Level 39 in the UK. However it was suggested that this accelerator be supported by all players;

> "There should be one Fintech Incubator nationally – banking market is fairly consolidated, financial market is very complex, it's difficult to scale if you are a small company, you need to understand and integrate with existing financial systems. Rather than compete with them" (FE2).

Interestingly, all the entrepreneurs enjoyed a healthy relationship with other entrepreneurs through networks and informal connections, some had met partners at supporting universities, "We were friends who met at varsity. We started our company together… it's a niche closed group of people and resources, and space" (FE7). However others participated in formal (incubator programmes, hosted events at academic institutions, formal member associations like AlphaCode) and informal support structures such as local friends, sports clubs and family connections. The entrepreneurs recognised that this support structure was invaluable to their success, as one said: "Between entrepreneurs there is a very frank, candid knowledge transfer, and sharing knowledge and experiences" (FE2). It was recognised that the connection to other entrepreneurs, both those with similar companies and those without, created a connection to opportunities, ideas, experience and information sharing. Entrepreneurs were just as keen to benefit from the systems of support that were discussed, as to contribute, as they felt the pay-it-forward culture was the bedrock of support for new business. As one interviewee - who was a member of Endeavour (an international entrepreneur mentoring network) - said "I was selected, it's a rigorous programme. It's a give-back to entrepreneurs" (FE8).

Unfortunately, there was also an elitist narrative in the interviews – those entrepreneurs that had enjoyed some measure of commercial success, or were from particular ethnic or cultural backgrounds, preferred to support and promote other entrepreneurs of similar backgrounds, or with similar commercial prowess. This was particularly disappointing given the immense need for both the development and support of less commercially successful SMEs in South Africa, and the lack of diversity in the holders of capital in the country. As one interviewee explained:

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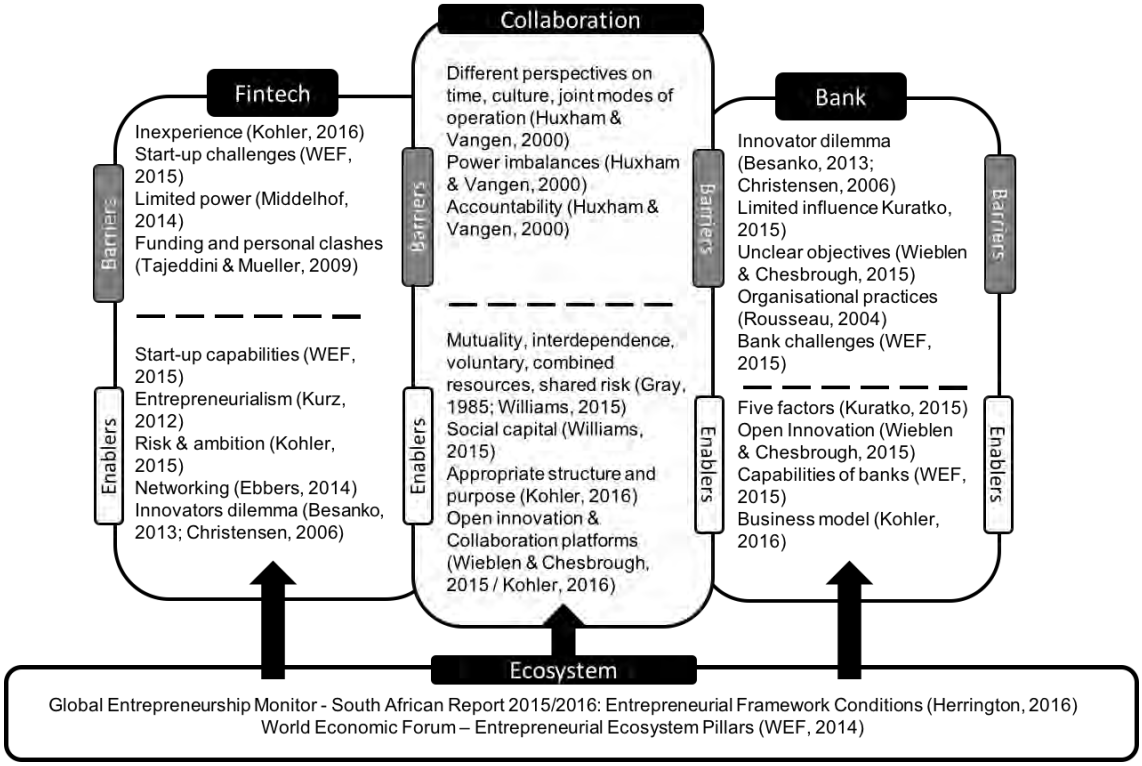
> "There is a well-developed intercompany network between start-ups, the guys that are doing well, they build those networks themselves, support each other. Then there is a second tier that go to pitch events, start-up evenings, 100% of your time goes into making this thing work, but I don't really have time for cocktails and talks. We just don't have enough success stories being published. In Silicon Valley, the different ventures support each other. In SA we just don't know who they are, there haven't been big successes – as soon as a company gets good, it goes to the US, or they get acquired by an international company. So the top talent gets sucked up by international [investors]" (FE7).

5.5 Theoretical connections in results

In reference to the literature framework presented in Chapter 2, the results of Chapter 5 begin to paint a picture of the relevant antecedents to collaboration. The results showed which of the barriers and enablers detailed below were relevant and played a role in fintech-bank collaboration. Importantly, the responses showed a strong organisational behaviour theme relating to internal politics, management structures and control, which was surprising given the depressing entrepreneurship indicators and statistics within the South African ecosystem. More importantly, the results showed that the individual behaviour of leaders and decision-makers had more impact on collaboration success than the macro-economic conditions. These findings are analysed further in Chapter 6.

Figure 6 (Repeat): A Framework for Research into Corporate Fintech Start-up Collaborations



5.6 Conclusion

Chapter 5 presents the findings of the focus group dinner and the research interviews. Secondary data was collected at the focus group dinner which was grouped according to theme, and key factors were described against each theme. The primary data collected in the research interviews was again grouped per research theme, and the factors of each theme presented. Factors were selected once data saturation was achieved and relevant quotations from respondents were used to illustrate each antecedent factor. The findings were intentionally aligned to the literature framework presented in Chapter 2 for ease of analysis. Chapter 6 follows with a further discussion of the results and analysis of the findings.

6 CHAPTER 6: DISCUSSION OF RESULTS

6.1 Introduction

In Chapter 6 the research findings are discussed in depth. The results are analysed in detail, in the context of the purpose of the study discussed in Chapter 1, and in light of the literature presented in Chapter 2. The insights from the investigation are provided in the following chapter with a comparison to the concepts and factors of collaboration presented in the current business and academic literature in order to answer the Research Questions outlined in Chapter 3.

The findings were found to have credibility as they were believable in the context of the research study. With such close parallels between the current literature and the research results, the study was deemed highly dependable as defined in Chapter 4 on research methodology. The findings could be repeated and were consistent with both the study's objectives and each other. Finally, the study found some transferability of the findings to other industries – this was indicated in the following analysis.

The research findings presented an understanding of the antecedent factors to collaboration between fintech start-ups and banks, and offered new insights that are currently unexplored in the literature reviewed. The relevance of these results and the relevant literature which pertains to the study are interrogated in the following sections.

6.2 Discussion of Results for Research Question 1

Research Question 1: How does the innovation outlook of the corporate bank affect its ability to collaborate with fintech start-up firms?

Research Question 1 sought to establish how the innovation outlook of the corporate bank affects its ability to collaborate with fintech entrepreneurs or start-up firms. It was necessary to discuss which of the controllable internal factors of innovation were in effect in the banking interviewees in order to develop this understanding. The internal factors discussed included: management support, work discretion / autonomy, rewards / reinforcement, time availability and organisational boundaries; which are recognised as barriers or enablers in the corporate start-up relationship. Furthermore, the results

showed which were relevant in the fintech industry (Kuratko et al., 2014). The literature framework developed for Figure 6, was expanded upon during the analysis and the major barriers and enablers were extracted from the results. The key determining factors for innovation within corporate banks were considered to be:

1. Decision making speed
2. Innovation resistance
3. Compliance culture and fear of reputational damage
4. Servicing legacy technology over innovation
5. Internal corporate politics and conflicting interests
6. Perverse incentives
7. Open innovation
8. Leadership diversity
9. Internal disruptors
10. Independent innovations labs

Each of these factors is discussed in turn.

6.2.1 Decision making speed

The study found that the speed at which decisions are made within banks is critical to the development of a successful innovation outlook. This was evident in the way banks postponed the feedback to entrepreneurs, in their extremely long development time-lines, slow turn-around on contracting and general lack of urgency. This links strongly to the dynamics in collaboration developed under Research Question 3 and showed that the banks were setting both the rules and pace of engagement. This was not necessarily a bad thing, as the South African banking industry is known for its prudence and conservative outlook, a position that has earned it top marks from the WEF annual Competitiveness Rankings (Schwab & Sala-i-Martin, 2016). However, the same organisation, the WEF, has urged banks and fintech entrepreneurs to collaborate for the mutual development and success of the industry (WEF, 2016).

The importance of decision-making speed to the study, was evident in the lack of empathy shown by banks to the nature of innovation and entrepreneurialism, as defined by Schumpeter(Kurz, 2012).Schumpeter's entrepreneur graped opportynities and acted quickly to secure an advantage in that opportunity. This is contradictory in the fidnigns, where banks are presented with entrepreneurial opportunities but were shown to take too long to realise the offer. Essentially, slow decision-making kills innovation projects and the capability for collaboration with innovative partners.

6.2.2 Innovation resistance

As the South African banking industry is both highly concentrated and highly respected, the respondents identified a key self-reinforcing mechanism for dampening innovation. Compared to the Israeli technology sector and the supporting ecosystem of banks, the South African banking sector is fairly isolated from the associated technology sector. However, as noted, the South African banking sector has a long-standing reputation as one of the most competitive and secure sectors in the world (Schwab & Sala-i-Martin, 2016).

This prestigious position may actually be hindering innovation in the fintech space, as banks are constantly reminded of their role in promoting the strongest sector of the South African economy, and the pressure to maintain the status-quo could play an important role in the factors hindering innovation. This is typical of the Innovators Dilemma (Christensen, 2006), where the incumbent is faced with maintaining their position yet slowly eroding customer value, or embracing new technology and threatening their competitive advantage (Besanko, 2013). Executives are hard-pressed to choose between responding to market appetite for digital innovation as evidenced in the ubiquitous smart-phone and the permeation of mobile technology in the economy, and looking out for share-holders' interests.

The identification of innovation resistance in the study was important to establishing the appetite for innovation within banks. Where innovation apathy or resistance was experienced, banking respondents felt helpless to promote innovation or collaboration projects. Similarly, innovation resistance may have been at play when fintech partners were stone-walled in approaching banks with innovative ideas or proposals. This defines another important dimension in the collaboration framework for engagement.

6.2.3 Compliance culture and fear of reputational damage

Not only does slow-decision making and innovation resistance kill innovation, but a culture of fear also plays a major role in the lack of innovation capabilities within banks. The highly regulated banking environment (South African Reserve Bank, 2016) described in Chapter 2 outlines the multiple layers of regulation, and banks are no doubt faced with massive compliance costs. Whether or not the compliance culture is mutable

was not explored, but operating within and being respectful of the compliance landscape presents its challenges.

Nevertheless, respondents in the study were generous in their prognosis: South Africa's banking sector enjoyed a prestigious position in the economy because of the protection of stakeholder interests and the rigorious regulatory environment.

This made banks an attractive partner in innovation, if only they recognised the strength of their experience as a shared asset in the relationship, as opposed to a weapon of control over entrepreneurs. This is discussed further in the analysis of Research Question 3.

6.2.4 Servicing legacy technology over innovation

Whilst both parties to collaboration recognised the sunk-cost effect in the innovation decision-making process, the entrepreneur would not have personal experience of the massive impact legacy systems have on executive decisions (unless they were ex-banking employees themselves). The sunk-cost effect, although technically irrelevant in investment decisions, still plays a psychological role in the innovation process within banks. This is where the Innovator's Dilemma makes its strongest appearance (Christensen, 2006; Besanko et al, 2013).

The banking sector in South Africa has not only invested heavily in system technology, but has also committed resources, organisational structures, reward and incentive programmes, and even training systems to maintaining these investments. Consequently behaviour in firms evidences an inertia that favours sticking with the current technology (Besanko et al., 2013).

Whilst a new entrant has not yet invested in a preferred technology the new firm has the luxury of reviewing the latest alternative technologies without bias in favour of one technology over another. Incidentally, the fintech entrepreneurs showed empathy for the banking executives faced with the sunk-cost dilemma, particularly those who had experience in the banking sector themselves. Those entrepreneurs with the most empathy for the Innovator's Dilemma, were also the most experienced and established fintech startups. This experience may have had some impact on their collaborative approach. It appeared that those start-up companies that attempted to partner with the

banks to solve their challenges, versus those that wanted to disrupt or over-take the incumbent banks, were more inclined to understand and respond to the opportunities for collaboration with banks.

This was important to the study because it recognised the pain-points for incumbent banks, and clearly identified entry points for entrepreneurs savvy enough to innovate around sunk-costs and legacy technology.

6.2.5 Internal corporate politics and conflicting interests

Bureaucracy and inertia were recognised as key challenges to innovation in corporate firms (World Economic Forum, 2015), and this could - by extension - imply that the high level of internal politics experienced by the respondents in the study was a significant barrier to innovation and collaboration.

Corporate governance has made some inroads into the principal agency problem, but the best governance controls in the world can never protect against collusion. Corporate politics and favouritism are effectively a form of collusion. The selfish interests of a few powerful individuals are disruptive in the execution of strategy within firms, and this is evident in the banking examples revealed in the study. Where personal interest, competition, and turf-protection were found, innovation projects were stifled.

There were some examples of the use of corporate politics to favour innovation projects, for example when one was the pet-project of a senior executive, but this type of favouritism sends the wrong signal to the organisation: that innovation is driven by personal interest rather than organisational objectives. This is particularly important to the study because the identification of conflicting interests could be addressed through internal means, and innovation may still have a chance of success within the corporate environment.

6.2.6 Perverse incentives

The controllable internal factors for innovation described in the literature (Covin, Garrett, Kuratko, & Shepherd, 2015; Kuratko et al., 2014); namely management support, work discretion or autonomy, reward and reinforcements, time availability, and organisational boundaries, were repeatedly corroborated. These factors were connected to banking innovation practices, and the enabling forces within South African banks embarking on

technology innovation projects. The literature was explicit in outlining the alignment of incentives with innovation metrics, and the evidence for this was overwhelmingly positive in the study.

Schumpeter described an entrepreneur as someone who took risks in order to pursue new opportunities (Besanko et al., 2013), but also recognised that the characteristics of an entrepreneur existed in an environment conducive to 'creative destruction' – the ultimate recognition that experimentation creates opportunity. This is at odds with the perverse incentive structures within firms that discourage innovation. The implication of this finding is that organisations that ignore the potential of failure in experimentation, and the prospect for organisational learning and leveraging new opportunities, actually miss out on the latent potential of their own employees.

Whilst corporate responsibility is used often to justify this behaviour, it has created a perversion of the principal of corporate governance, the protection of stakeholder (principal) interests from the selfish interests of the manager (agent). Whereas before bank executives had an unduly high personal stake in reporting good, executives currently have an unduly high personal stake in failure, and perversely would rather do nothing than risk failure.

This factor was important to the study because it complements the fintech characteristics sought by the banks. Perhaps the risk-taking nature of entrepreneurs offers banks a Trojan horse for innovation projects, and correctly managed, could drive innovation capabilities within the bank under the guise of an external party assuming the risk.

6.2.7 Open innovation

Chesbrough's seminal work on open innovation, and subsequent collaboration models, brought about a revolution in innovation practices, both for entrepreneurs and incumbents (Chesbrough, 2012; Weiblen & Chesbrough, 2015). What the study showed however, was that often the internal corporate "anti-bodies" were at odds with this new approach to innovation. However those bankers that overcame the politicking, organisational resistance and bureaucracy were reaping the rewards of open innovation projects with fintech entrepreneurs. Unfortunately, the impact of corporate power abuse, the lack of ownership and accountability, and even perverse incentive structures conspired to create barriers to collaboration.

Chesbrough's open innovation model identifies "the use of purposive inflows and outflows of knowledge to accelerate internal innovation and expand the markets for external use of innovation" (Chesbrough, 2012, pp.21) and was often articulated by respondents in the study. The purposive use of knowledge was important to respondents as it implied a strategic position taken by banks to embrace new sources of knowledge and technology. Open innovation was seen as both a policy and a behaviour within the banks.

6.2.8 Leadership diversity

Having considered the effect of leadership support on the internal political dynamics in banks (Kuratko et al., 2014), it is also reasonable to extend the effect of diverse leadership on innovation within banks. Thus, senior or board level executives may better relate to technology projects (and their teams) when they have demographic similarities to the fintech entrepreneurs or project managers, have had personal experience as entrepreneurs, or have direct use or need of the technology proposed. Further examples are if the senior executives have been exposed at the executive level to sufficiently diverse representatives, thinkers or behaviour to have a credible disposition towards fintech.

This builds on the concept that social capital is essential to the success of collaborations (Williams, 2015). The literature showed just how important trust and social networks were to developing collaborative relationships, and by extension the development of social capital between senior executives can be implied. In South Africa especially, the dire need for diversity in senior positions points to the lack of innovation at corporate entities. Both physical diversity and behavioural, or thinking, diversity are required in banks to embrace the opportunities of digital innovation. The study showed that it was not enough to have racial and gender diversity at the board, there was also a need for millennial representation – the first generation of digital natives – and entrepreneurial experience at senior decision-making forums. This provides an additional voice to the groundswell of attention on corporate leadership diversity and talks to the failure of corporate South African institutions to leverage the commercial opportunities they appear blind to.

6.2.9 Internal disruptors

Both Kurz (2012) and Markides (2006) recognised that corporate venturing stemmed from an entrepreneurial approach to innovation, and not just an acceptance of the threat of change. This finding corroborated the literature on corporate innovation and recognised that proactive innovation requires not only creative ideas around technology, but also a proclivity for fostering change in banks.

This was important to the study because the disruptive personalities that drive innovation and change need to be accepted and in fact rewarded for thinking creatively about business challenges. Where disruptors were embraced, the study showed a better aptitude for innovation, and stronger evidence of the factors necessary for internal innovation.

6.2.10 Independent laboratories

Kuratko talks about the internal controllable factors of organisations which stimulate corporate innovation, of which, independence and work autonomy appeared regularly in the findings (Kuratko, 2015). The productivity effect in organisations (Besanko, 2013) is substantiated in both the literature and the findings as those organisations that were able to ring-fence innovation were better positioned to exploit development projects than those that were subject to the organisation's rules.

6.2.11 Conclusion to Research Question 1

Question 1 found that the barriers and enablers to corporate innovation were those factors that had the most influence on the innovation outlook within the firm. The factors were compared to the literature and further analysed in respect to the research question and the purpose of the study. The research found that the established literature on innovation capabilities which was presented in Chapter 2 sufficiently addressed the innovation factors necessary for consideration in collaboration opportunities, and the results of the study corroborate this finding.

6.3 Discussion of Results for Research Question 2.

Research Question 2: Which entrepreneurial attributes of fintech start-up firms are relevant in assessing collaborative relationships with corporates?

Research Question 2 sought to establish which attributes of the fintech entrepreneur were relevant in the assessment of collaboration partnership success, in their engagement with corporate banks. This was a focussed study of just those traits exhibited in collaboration by entrepreneurs in the fintech industry, as the characteristics of entrepreneurs more broadly have been extensively studied in the current literature. The research therefore sought to identify those determining traits for collaboration. The study found that two factors were important to collaboration, namely experience and risk-taking, and these traits are presented below. It is important to note that although the study only found two important key factors for collaboration, it does not imply these are the only factors necessary for entrepreneurial success by start-up firms, and that others are not important to SME success.

6.3.1 Experience

Experience is a critical barrier to any entrepreneur's career, let alone a fintech entrepreneur, was raised by Kohler and the WEF report, and is one of those factors that is controllable but not easily or quickly fixed (Kohler, 2016; World Economic Forum, 2015). Interestingly, the incubator models offer fintech entrepreneurs exposure to new markets and resources, as well as mentorship and guidance – a critical enabler to fintech success.

The study found a strong relationship between industry and business experience and the success factors for collaboration. Almost all respondents commented on the levels of experience in the fintech entrepreneurs they had encountered, or their own personal experience, and the general take-away was that the better the experience of the fintech in the banking or financial services industry, the better their collaboration potential. Similarly, those entrepreneurs with past SME experience were found to have better collaboration outlooks because they recognised where their strengths and weaknesses lay, and what a collaboration partner could contribute.

In addition to the entrepreneurial characteristics described by Schumpeter (in Kurz, 2012), the technology entrepreneur who showed technological astuteness was also highly sought after. Tajeddini and Mueller's (2009) motivational characteristics and variables associated with techno-entrepreneurship include confidence as a result of experience, and this was therefore corroborated by the study.

6.3.2 Risk taking

These findings support the position of Kohler on inexperience and as well as the innate need for fintech entrepreneurs to achieve greatness, which may add to their ambitiousness and perceived arrogance (Kohler, 2016). In addition, the technology entrepreneur described by Tajeddini and Mueller (2009) in Chapter 2 pinpointed the propensity for risk, as did Knott-Craig who identified this risk-taking behaviour as the most important prerequisite to entrepreneurship (Knott-Craig, 2011). Knott-Craig, the founder of one of South Africa's most successful technology start-ups, presents a remarkable point: the risk-taking by entrepreneurs is matched by th risk-aversion found in corporates. Perhaps what is interesting in the results is that the respondents respected the risk-taking entrepreneur to a degree, but had words of caution for fintech startups without the maturity to know when to risk it all and when to approach projects more conservatively.

For this study it was important to recognise that all entrepreneurs take risks, it's inherent in their behaviour. Every decision made by entrepreneurs involves some form of risk and as the study found, not all entrepreneurs were comfortable with taking that level of risk personally. However, there were different types of risk and those healthy, measured risks that created learning and potential future iterations were good risks. Conversely, those risks that destroyed value, wasted resources or time, or even worse, destroyed reputations, were thoughtless and should be avoided. Similarly, banking partners were looking for moderate risk-takers in the entrepreneurship space.

6.3.3 Conclusion to Research Question 2

Question 2 found that there were two distinct characteristics to fintech entrepreneurs that were important in the collaboration process, namely experience and risk-taking. The types of experience, namely financial industry, technology and SME experience were explored and defined by the study. These were considered important antecedents to collaboration in the study. Likewise, risk-taking was identified as an important determinant in the fintech characteristics considered in collaboration. The level of risk-taking was the important outcome of the study.fintech start-ups that made irrational decisions were viewed unfavourably by banking collaborators, but those that took calculated, decisive risks were preferable.

6.4 Discussion of Results for Research Question 3:

Research Question 3: What are the successful modes of collaboration between fintech start-up firms and established corporate banks?

Research Question 3 explored the successful modes of collaboration between fintech start-up firms and established corporate banks. In other words, where disruptive innovations existed in the fintech environment, the study was concerned with how actors within the collaborative domain engaged, a proposition initially explored by Christensen & Overdorf, and Markides (2000; 2006). Similarly, Research Question 3 sought to establish the conditions under which corporate start-up domains became organised into collaborative structures (Gray, 1985) and thus determine those factors that effected the success of collaborative relationships, i.e. what the barriers and enablers to effective corporate start-up collaboration are (Huxham & Vangen, 2000).

The findings of this question were substantial and corroborated the literature on collaboration and the means of developing innovation structures. This was particularly interesting because it showed that the industry itself was less of a factor in the modes of collaboration than the factors that underpinned the players' efforts. In other words, the results of Research Question 3 are believed to be generalisable to other industries because of the validation of previous literature on collaboration. The key factors for collaboration established in the study were:

1. Joint purpose
2. Combined resources and mutual interdependence
3. Clear rules of engagement and a sense of urgency
4. Power discrepancies
5. Structures and programmes
6. Social capital
7. Relationships, culture and networks

Each of these determinants are discussed in turn below.

6.4.1 Joint purpose

Shared goals and values, and common goals, were raised by Gray and Williams in the literature, and evident in the interviews as an alignment of mutual or shared experiences (Gray, 1985; Williams, 2015). Where participants had similar experiences, they were better able to align goals and values, and had more success in collaboration.

The literature established an extensive list of barriers to collaboration efforts between incumbent firms and start-ups, and the study of fintech-bank relationships showed very little diversion from the theory presented by Huxham & Vangen (2000). Where collaboration partners fail to agree on joint purpose and were unable to communicate effectively on goals, significant barriers to successful outcomes were experienced.

6.4.2 Combined resources and mutual interdependence

What was clear from the interviews was that where resources were shared, and partners appreciated their mutual interdependence, opportunities for collaboration were deepened and became self-reinforcing. This was evidenced in the literature on partners in cooperative relationships recognising the mutual benefit of collaboration, and that they could not achieve their goals independently (McNamara, 2012; Williams, 2015). The start-up was viewed as the party which bore a disproportionate or unfair amount of risk and responsibility in the relationship -despite them having a greater appetite for that risk than corporations. Where the corporate partner could afford the luxury of long lead times, the fintech had to pay salaries, rent space and continue their lives, whilst also being locked into negotiations with a foot-dragging partner. Missing out on other opportunities was viewed as part of the cost of negotiation, the risks of which were borne entirely by the fintech.

Conversely, those collaborations that were deemed successful were the ones where there was a mutual interdependence and perception of shared assets. This was important to the study because of the strong correlation to the literature, and that the current literature could be relied upon for guidance in the development of collaboration in this fairly new industry.

6.4.3 Clear rules of engagement and a sense of urgency

Gray and Williams both recognised the importance of clear rules of engagement when they outlined the benefits of shared goals and values, common goals, flat, non-hierarchical structures and shared risk (Gray, 1985; Williams, 2015).

The lack of a transparent organisational structure and decision-making process was also confusing for entrepreneurs, and the following quote precisely summed up the findings:

> "For entrepreneurs it's a bit jarring, they learnt that there is no such thing as a large organisation. In a large org, there are individuals that may or may not have compatible views, and they all work for the same org, and operate in silos. There are expectations on turn-around time, processes … you have to find good ways to work around the process otherwise you will never get anything done. In contrast with a small company, you will have lots of different contacts and sponsors and clients, so you have to develop a network of different contacts" (FE7).

This quote illustrates just how confusing the rules of engagement are to SMEs in corporate collaborations. Huxham and Vangen addressed this in their recognition of differences in communication and difficulties in aligning internal procedures between partners (2000).

Despite these criticisms, both entrepreneurs and banking respondents agreed that organisational processes, delegation of authority and transparent, quick decision making would significantly improve the collaboration prospects of fintech projects. This point is also sustained by the work of Huxham and Vangen, who recognised that differences in internal procedures related to the joint modes of operation, managing accountability and power imbalances all undermined the success of collaborative efforts (Huxham & Vangen, 2000).

By extension, the failure of corporates to recognise the fintech sense of urgency can be attributed to Williams' work on collaboration theory (Williams, 2015). It is evident from the interviews that there is a power discrepancy between the fintech entrepreneurs and the banks; this imbalance of power undermines the collaboration success. By the same token, in Lee's work on cooperation there is a congruence of goals between actors, and co-destiny exists in the relationship (Lee et al., 2012). This is an important indicator of intent, or lack thereof. The bank's inability to share information and behave in a mutually beneficial way, could be because they consider the engagement with entrepreneurs as a short-term relationship, in purely transactional terms, or simply that they have no interest in the well-being of the entrepreneur. The conclusion would be that the banks do not in fact view some of these engagements as collaborative relationships, and that the entrepreneurs would be wise to change their approach or partner.

6.4.4 Power discrepancy

Both Gray, and Huxham and Vangen specifically mention power imbalances in their barriers to collaboration efforts (Gray, 1985; Huxham & Vangen, 2000). And whilst the WEF report mentioned sophisticated IP protection and management of resources as an enabler to collaboration (2014), this was in response to the mutual interdependence of parties required for effective collaboration, rather than a power play between partners.

Disappointingly, the banks appear to be abusing their position of power in the relationships with fintechs, rather than offering their experience, resources, and credibility as joint assets for mutual benefit, as suggested by Gray and Williams (Gray, 1985; Williams, 2015).

The power of the corporate partner was also raised by Wieblen and Chesbrough as an enabler to collaboration when used effectively for the advancement of joint interests; with proven business routines, established brands and access to resources, the corporate partner offers entrepreneurs a platform of credibility, pooled experience and exposure to markets (Weiblen & Chesbrough, 2015). Unfortunately, when the corporate partner lauds those contributions over their weaker start-up partner, the start-up either becomes “Very gun shy of dealing with Corporates” (FE4), and therefore withdraws from collaborating with corporates altogether, or the full potential of the partnered innovation is not realised.

6.4.5 Structures and programmes

The results of the interviews correlated closely with the academic literature on collaboration structures and their benefits to innovation (Kohler, 2016; Weiblen & Chesbrough, 2015). The business case for collaboration established in the multiple white-papers and business-research produced by consulting firms and international think tanks. From Accenture to KPMG, McKinsey to the World Economic Forum, when collaboration between fintechs and banks works, the literature and the studies found that the results benefit all parties (de Jong & van Dijk, 2015; KPMG, 2015, 2016; Skan et al., 2015; World Economic Forum, 2014, 2015, 2016).

The models defined by Wieblen and Chesbrough, as well as Kohler, describe the various structures and aims of start-up programmes, yet fail to explain how these might work in the face of the various collaboration factors affecting the parties (Kohler, 2016; Weiblen & Chesbrough, 2015). Whilst the entrepreneurial intentions of corporate banks have

been outlined in the literature, and the business case for both innovation and corporate start-up collaboration presented, these structures are still a fairly new phenomenon. As a result, the alumni and sponsors of these structures are only just beginning to develop a longitudinal understanding of their impact over time. The experiences of the interviewees in this study offered a balanced perspective on collaboration structures, in that some felt the programmes offered all the benefits supported by the academic theory, whilst others believed the structures undermined innovation and the objectives of collaboration.

6.4.6 Social capital

Williams, Gray and Huxham and Vangen agree that lack of trust creates barriers to collaboration (Gray, 1985; Williams, 2015; Huxham & Vangen, 2000), and that protecting and developing social capital are essential to the development of valuable relationships in collaboration. Woefully, the majority of the sample of participants had experienced a break-down in trust and the consequent destruction of social capital. This presents an urgent area for intervention by banks, which are seen as the party at fault in interviewees' experiences.

6.4.7 Relationships, culture and networks

The findings are not dissimilar to the positon presented by the WEF on healthy ecosystems, where culturally similar ecosystems have better success rates (World Economic Forum, 2014). As well as this, the alignment of cultural and social norms that the GEMS report recognises as an enabler to entrepreneurship is corroborated (Herrington & Kew, 2016). Culture can also be understood within Gray's suggestion that shared values enable successful collaboration, and equally that strong personal relationships develop and build social capital (Gray, 1985; Williams, 2015).

This was important to the research because it identified those antecedents that could be easily defined and mapped between partners in collaboration.

6.4.8 Conclusion to Research Question 3

Question 3 explored the nub of the research, the barriers and enablers to effective start-up collaboration with corporate partners. The central purpose of the study was to develop a greater understanding of the dynamics at play between partners, and Chapter 3 clearly

corroborated the current literature on collaboration. This was particularly useful to the study because the results could be generalised to other industries.

6.5 Discussion of Results for Research Question 4.

Research Question 4: Which macroeconomic factors influence collaboration between fintech start-up firms and corporate banks in South Africa?

Research Question 4 was concerned with the analysis of the SME and fintech ecosystem and macro-economic factors that influenced collaboration. The study sought to understand how the macro-economic environment effects the collaboration between fintech start-up firms and corporate banks in South Africa, and which macroeconomic factors or ecosystem factors influence corporate start-up relationships.

The data on macro-economic factors showed four keys areas of impact in the fintech ecosystem, namely: markets, financial environment and funding structures, skills and the strength of the entrepreneurial ecosystem. As discussed in Chapter 2, the three major factors identified in the WEF report (2014) were accessible markets, funding and finance, and human capital/workforce education. This was closely associated with the findings in the study. This improved the credibility of the findings as the WEF report analysed two other methodologies – the World Bank Ease of Doing Business Report Ecosystem, and the EY Ecosystem – to develop their own ecosystem pillars with the Stanford University research team (WEF, 2014).

Each of these factors is discussed in turn in the following sections.

6.5.1 Markets

Markets are of particular importance to the respondents in the study and the subsequent findings. Whilst it was recognised that the South African consumer market had a lot of potential it was considered under-developed. According to the WEF report, a well-developed and responsive consumer market creates a ready platform for local SMEs to scale, and provides a pull factor for new businesses seeking consumers (2014).This was important because it showed the potential for the consumer market, which is fairly small, but that effort was needed by all players in the ecosystem to develop it.

The market maturity, or sophistication of the various collaboration opportunities, was considered fairly undeveloped in South Africa. This impacted both the internal market dynamics and external market burdens– in order words, the way the players interacted with each other, and the burden on incumbents to develop the market for future players.

The ecosystem in South Africa, which includes technology companies, banks, entrepreneurs and the supporting legal and professional services industries (see PWC Fintech Ecosystem – Chapter 2), was also found to be under-developed. This related to the accessibility of markets for consumers, commercial opportunities and other collaborators. This was important to determine how important consumer and commercial market access and sophistication was to the collaboration between fintech and banks, and corroborated the WEF report on the strength of their ecosystem pillars, and this important factor was evident in the fintech ecosystem.

6.5.2 Financial environment and funding structures

Many new businesses require front-end funding to build scale quickly. This is not a surprising finding given Schumpters original definition of entrepreneurship, as developed in Kurz (2012).

According to Kurz (2012), Schumpeter's entrepreneur does not have the financial means to realise her business project or innovative new product, but brings to the free market new ideas, new goods and new methods of production. The owner of capital – and this is the important finding in the study - thus provides the entrepreneur with a mandate to execute this plans (Kurz, 2012). In other words, entrepreneurs actively seek a relationship with financiers. This was evident in the research and mentioned by most respondents who recognised the symbiosis of innovation and capital.

For Schumpeter the banker is a provider of credit (Kurz, 2012), and the study showed a demonstration of his model of creative destruction: through the creation of new means of production via the innovation process, the old means are destroyed and replaced through the entrepreneurial venture.

For example, angel investors and venture capital are the two dominant financing components in the Silicon Valley/Bay Area, and in South Africa bank-loans against personal finances are the norm. However Makinane found that local lending institutions

are heavily biased against young entrepreneurs (2015). Banks and organisations such as the National Empowerment Fund (NEF) and Industrial Development Corporation (IDC) were found to consider individuals' personal assets and financial management skills before considering granting a loan (Makinane, 2015). This situation is dissimilar to other fintech markets where skill, potential, networks and even national interests are considered in the loan decision.

The study found that not only were entrepreneurs 'gun-shy' of corporate funding, but that VC funding was an expensive option in South Africa. Where banks provided capital or start-up funding, the restrictive financing conditions often stifled the entrepreneurs. There was a silver-lining to the funding cloud – those entrepreneurs that had successfully incubated their fintech start-ups in bank-sponsored programmes, were more inclined to meet VC providers or funders through the incubator networks, and thus benefitted financially from the process. The incubator models also served as an important signal of firm quality to VC funding because of the rigorous vetting process of potential incubator participants.

6.5.3 Skills

The study found the education level of entrepreneurs, both in finance and technology, to be an important determinant for collaboration as was evidenced in the numerous examples cited by both bankers and fintech entrepreneurs. This validated the WEF and GEMS' propositions that better education led to better entrepreneurs.

Human capital and workforce availability is consistently ranked as a pivotal ecosystem pillar for company growth within the WEF and GEMS reports (2014; 2016). Correspondingly, entrepreneurs reported the challenge of retaining talent in the ecosystem in the face of talent poaching from international firms like Google and Amazon (operating out of Cape Town).

The South African education system is considered one of the worst in the world according to the World Economic Forum (2016), and a brain-drain from this flourishing sector would undermine the pipeline of educated and capable entrepreneurs. This was important to the study because it reinforced the findings of the GEMS report which criticised the poor education system in South Africa, and found that this failure in the system undermined the success prospects for entrepreneurs.

6.5.4 Strength of the entrepreneurial ecosystem

Finally the strength of the networks – both formal and informal – between entrepreneurs, mentors and supporters was found to be significant in contributing to the SME sector. The study revealed that where respondents had good access to, and support from, their personal and professional networks, they were more likely to partner, and have success in those partnerships. According to the WEF report on the 8 entrepreneurial ecosystem pillars, entrepreneurs ranked mentors/advisers and network of entrepreneurial peers as highly impactful on their businesses (2014).

Therefore the research findings strongly supported this proposition made by the WEF.

6.5.5 Conclusion to Research Question 4

The results of Research Question 4 were surprising because government policies and regulations were expected to have a more prevalent impact on respondents in the study, as seen in the GEMS report (Herrington & Kew, 2016). However, in line with the literature from the WEF, the top issues affecting fintech start-ups in the South African fintech ecosystem closely embodied the WEF findings, and showed that to a lesser extent the GEMS report was also a useful framework for the evaluation of collaboration projects in the fintech ecosystem.

7 CHAPTER 7: CONCLUSION AND RECOMMENDATIONS

7.1 Introduction

The meteoric rise of fintech entrepreneurs on the international stage feels unprecedented and unmatchable. But is it? And why is it important to South Africa?

Technology bubbles have been seen before – the dot.com bubble for instance – and technology hype has driven some irrational behaviour – the Y2K bug for example. But this shouldn't prevent investment by both entrepreneurs and big banks into the development of a more secure, innovative, customer-friendly and inclusive technology ecosystem in the country. Similarly, South Africa's unique combination of a young population, strong financial institutions and access to the massively untapped African market, provides a ripe development space for an industry bubbling below the surface.

According to the Bank of England's chief economist Andrew Haldane, the continents of Africa and Asia are home to "some of the most advanced fintech companies in the world" (Noonan, 2016, pp.1). South Africa's banking sector is dominated by a few large players, traditionally protected from competition by stringent regulation, complicated credit processes and limited economic exposure. The entrance of disruptive retail banking players into the market, such as Capitec, and mobile banking solutions like Fundamo, as well as the recent licencing of new banking players such as Discovery Holdings, foretells the end of the era of protectionism and monopoly dominance.

Pervasive digital access, reducing technology costs, and an increasing rate of access to the internet has opened up a treasure trove of democratised access to digital financial freedom. Local banking customers now have not only choice between service providers, but the freedom to compare services in real time and with transparent access to information. Established banks have financial capital, reliable scaling models and internationally recognised excellence on their side, with future-focussed bank executives absorbed with how to capitalise on the disruptive fintech trend.

This chapter highlights the main findings of the research, pulling the analysis from Chapter 6 into a cohesive set of proposals and recommendations. In addition to an engagement framework developed from the study, Chapter 7 includes recommendations

to stakeholders based directly on the findings, gives recommendations for future research and explains the potential limitations of the study.

7.2 Principal findings

The principal findings from the study were the need by the two actors within fintech-bank relationships to understand and leverage the other party's traits for the benefit of collaboration. Banks were understood to be subject to a high pressure corporate environment with numerous competing factors affecting innovation. Fintech entrepreneurs were found to possess two key attributes in collaboration, which when considered could improve the success of collaboration. The collaborative structures and modes of association were portrayed and compared to the literature on collaboration, and many of the established determinants of successful collaboration were revealed in the study. Finally, the macro-economic environment was found to impact the fintech ecosystem in much the same way that other ecosystems are affected by macro-economic forces.

The researched produced a validation of much of the established academic theory on collaboration, innovation and ecosystem forces. Consequently a framework for analysis was developed from the findings and supporting literature. The following section explains the development of the fintech-bank collaboration model and its application in practice.

7.3 Introduction to fintech-bank collaboration model

The literature discussed in Chapter 2 revealed four key areas of analysis in understanding fintech-bank collaboration, namely the bank's innovation outlook, the fintech collaboration outlook, the collaboration environment itself, and the macro-economic forces affecting the relationship. A review of the literature, and subsequent analysis of the main theories, was refined into a literature framework (See Figure 6: A Framework for Research into Corporate Fintech Start-up Collaborations.).

In the expansion of this analysis framework, a model for the evaluation of fintech-bank collaboration emerged. This model was drawn from the key findings in the study, and comprised four factors: banks, fintechs, collaboration and the ecosystem. Each variable is discussed in the following section:

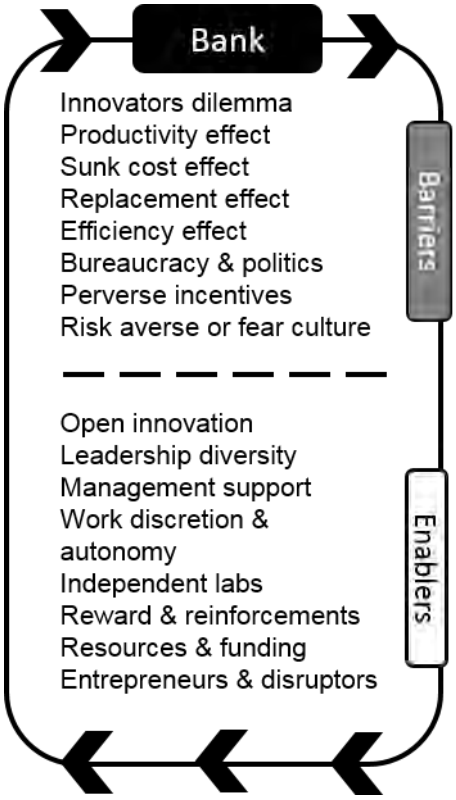
7.4 Development of the model

The model was developed from the literature framework illustrated by Figure 6 in Chapter 2. This was expanded upon and revised according to the findings in the study, and illustrates the key determining factors for collaboration as investigated by the study.

7.4.1 Bank factors

The established literature on innovation, including the Innovators Dilemma (Christensen, 2006; Besanko, et al, 2013) and Chesbrough's concept of Open Innovation (2010) formed the basis of the factors to be considered in the banking system. Drawing from the findings in this study, the antecedents were grouped into barriers and enablers, allowing the user to navigate the banking system's strengths and weaknesses in collaboration. Figure 9 illustrates the bank factors below.

Figure 9: Bank Factors to be Considered in Collaborative Innovation

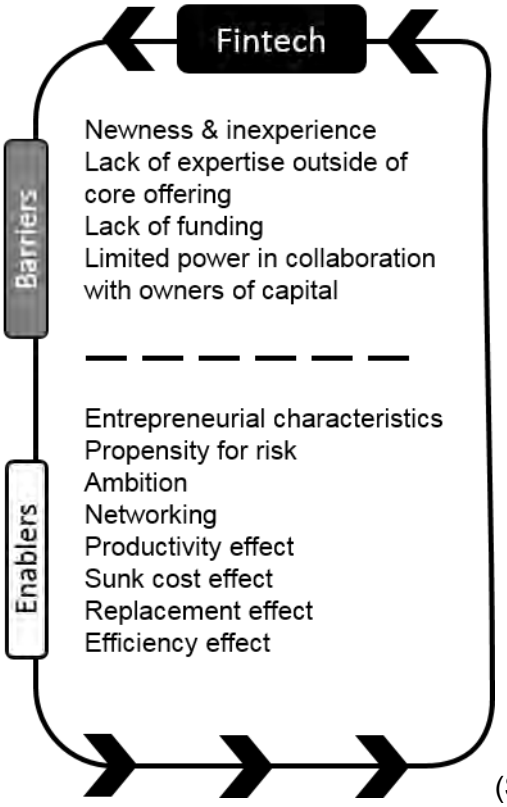


(Source: Author's own)

7.4.2 Fintech factors

The study revealed those characteristics most important to fintech entrepreneurs in collaboration projects, and were rated according to importance in the engagement process with banks. Whilst experience and risk-taking were the top characteristics for collaborating fintech entrepreneurs, the established literature on entrepreneurship added depth to the model. As well as this, a key factor is the ability to empathise with their partner's innovation drivers, namely the Innovator's Dilemma. Figure 10. Illustrates the fintech factors in collaboration below.

Figure 10: Fintech Factors to be Considered in Collaborative Innovation



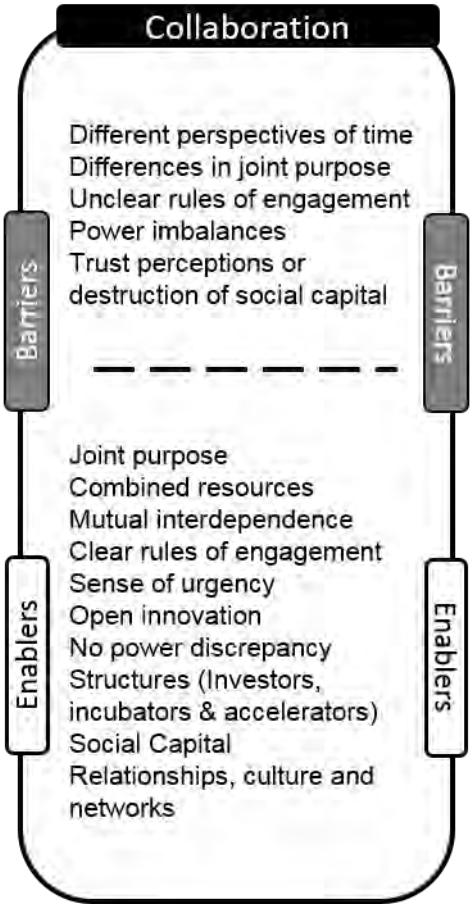
(Source: Author's own)

7.4.3 Collaboration factors

Like the bank and fintech factors, the collaboration factors were drawn from the established theory evidenced in the study. Collaboration factors include both structural

enablers, and relational determinants to successful collaboration between fintech and banks. Figure 11 illustrates the factors for collaboration to be considered in relationships between fintech start-ups and banks.

Figure 11: Collaboration Mode Factors to be Considered in Collaborative Innovation

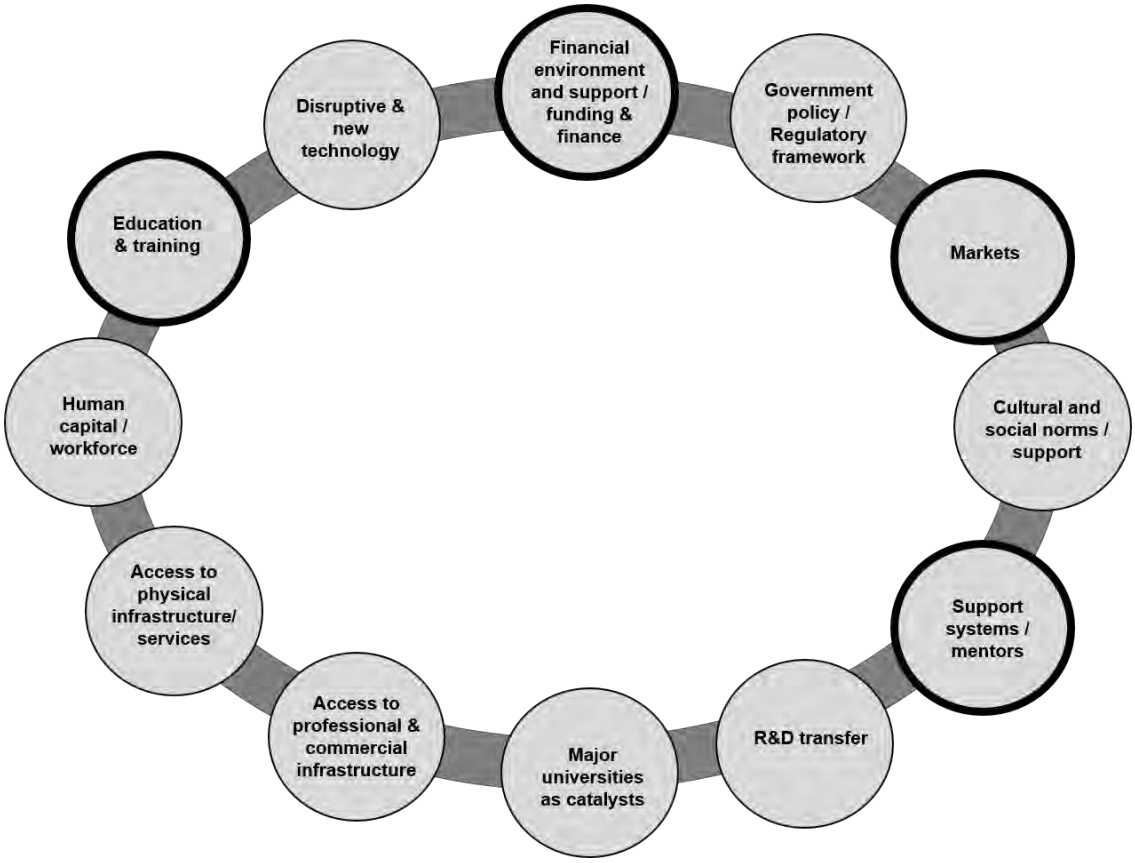


(Source: Author's own)

7.4.4 Ecosystem factors

Finally the ecosystem factors were interrogated in the study and found to be strongly correlated to the established literature on the impact of ecosystems in determining collaboration success. The thickness of the line around each factor indicates its prevalence in the ecosystem. The model is drawn from the literature on Global Entrepreneurship (Herrington & Kew, 2016), and the WEF Report on Ecosystems (World Economic Forum, 2014).

Figure 12: Ecosystem Factors to be Considered in Collaborative Innovation



(Source: Model – author's own, based on Herrington & Kew, 2016 and World Economic Forum, 2014).

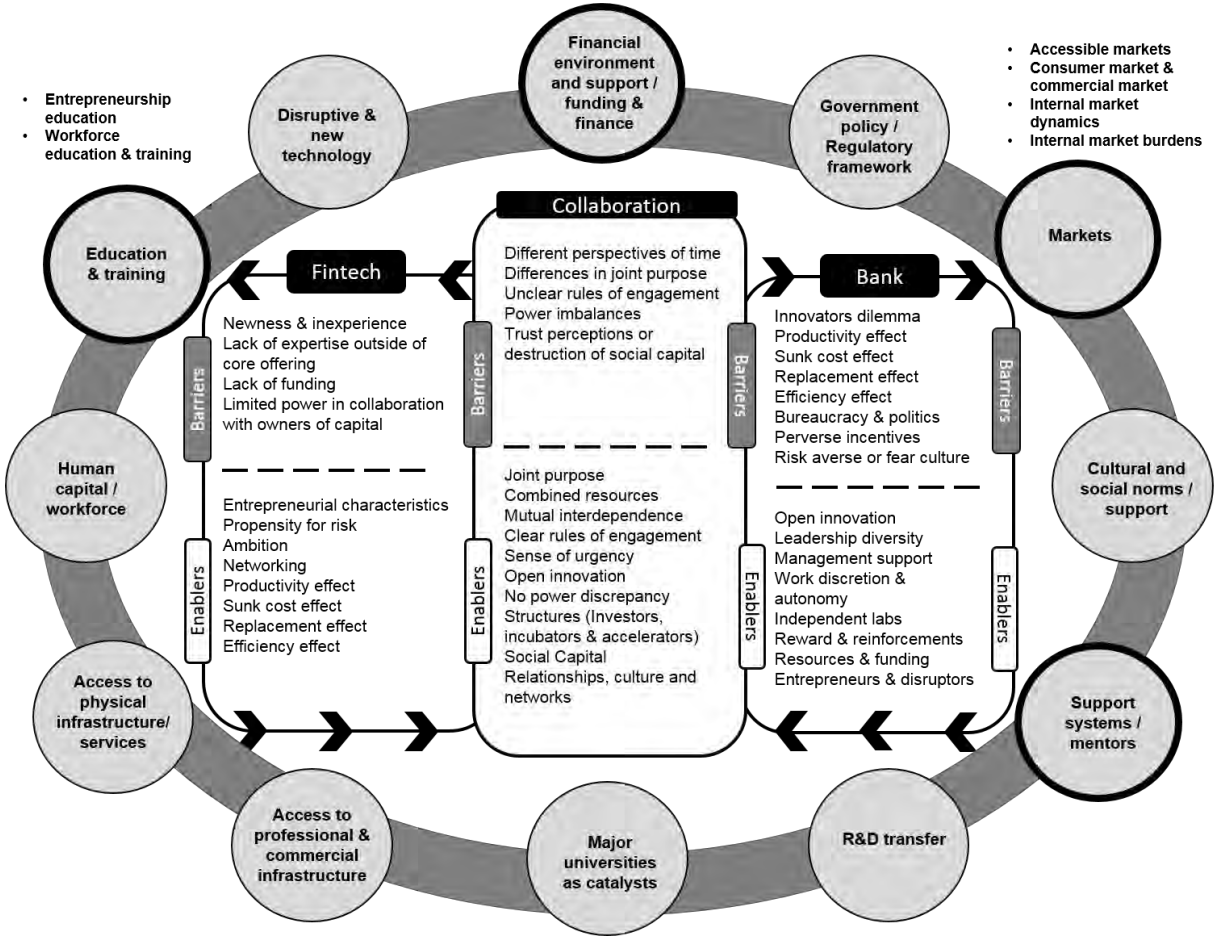
7.4.5 Combined fintech-bank collaboration model

To illustrate the combined effect of collaboration factors on the players in the system, the four preceding figures were combined to form a single model. This model is suggested for use by practitioners and academic researchers alike in the investigation of particular factors in fintech ecosystems. Similarly, it has applicability in banking decision-making processes, such as business development funding, innovation project proposals, and organisational design considerations. Figure 13 presents the combined model below.

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Figure 13. Fintech-bank Collaboration Model: The Antecedents of Effective Collaboration Between Fintech Entrepreneurs and Banks in South Africa

(Source: Author's own).



7.5 Using the model

It is envisaged that this model has application in the development of the collaboration opportunities between banks and their fintech partners. As many of the respondents in the study recognised the importance of ecosystem development, it is worth considering just what that entails, and where the focus of any participant's energy should be.

Using the model provides a simplistic guideline to practitioners to define their engagement with partners. It also provides a check-list for practitioners looking to build a business case for collaboration, as it provides a framework for the evaluation of opportunities. Similarly, the framework could be adapted to other markets, where the basic pillars of ecosystem collaboration are represented, and practitioners in that market could establish the weighting of factors in their own market through a due diligence process.

7.6 Implications for management or practitioners

This study has particular relevance for corporate investors and banks because the prospects for collaboration with fintech start-ups present a growth opportunity. Banks should understand that their internal innovation dynamics play an important, and often dominant role in the fintech ecosystem and this may hinder innovation in the industry when unreasonably prevalent in collaborative relationships. It is also important for investors to recognise the ecosystem development role they need to play in order to grow the system for all. This talks to the nation-building aspect of entrepreneurs and could dissuade less civically-minded venture capitalists. However, given South Africa's three major socio-economic challenges – poverty, inequality, and poor education - investors should be aware of that efforts to improve the ecosystem for all participants can have a multiplier effect in the economy.

However, the most important lesson from this study is the importance of recognising collaboration determinants between players, and possibly offering fintech and banking representatives a decision-making or collaboration framework for engagement. Practitioners looking to embark on open innovation, now have a simple check-list of criteria and determinants to refer to during the engagement.

Consequently, corporate banks looking to work with fintech should try to reduce their innovation resistance and improve their incentive structures in order to develop a truly productive, collaborative relationship.

Finally, this study suggests that banks should embrace the collaborative benefits of innovation partners to bring skills and attributes into their development projects that banks intrinsically do not possess.

Similarly, the entrepreneur should be warned not to enter into relationships with banks lightly, given the barriers to cooperation. It is important for fintech entrepreneurs to acknowledge their value in the ecosystem, but not to overplay their hand as banks offer experience, regulatory expertise and capital for growth. It may be helpful for practitioners to refer to the collaboration model in evaluating new opportunities, understanding unusual behaviour in partners and assessing the likelihood of success in joint projects.

7.7 Suggestions for future research

The following proposals are prioritised for future research.

First, it would be useful to replicate this study and repeat the semi-structured interview approach using a completely different sample in a different location. A comparison between the two samples could be undertaken to compare the identified barriers and enablers between the fintech entrepreneurs and their corporate partners. Similarly, a quantitative study could be conducted to statistically test the identified variables of collaboration, and this may corroborate the finding of the study.

As the fintech industry is fairly small and under-developed it may be worth looking at collaborations between players in other industries. By the same token, only two actors within the fintech ecosystem were investigated, and future researchers may be interested to explore the effect of trilateral relationships, or the impact of public-private partnerships on entrepreneurs in the fintech ecosystem.

Finally, using a longitudinal study may help to identify the direction of causality between the variables identified in the study and contribute to a more advanced understanding of innovation success in collaborative relationships.

7.8 Limitations of the research

As with any research project of this nature, there are limitations. First, the study is limited to South African fintech firms and banks. Generalising the results to other industries or even other countries may not be appropriate, although the corroboration of well-established antecedents to collaboration in the literature has been a feature of the research findings.

The scope of the study was the relationships between fintech and bank partners, and antecedents of those collaborations; however, it is recognised in the literature that collaboration occurs over time (Thomson & Perry, 2006). As this study was limited in scope to an analysis at a point in time in those relationships, it is recognised that the dynamism of collaboration is not captured in the findings.

Also, because the study focussed on experience at a point in time, the analysis was restricted to either past or current experiences at the most superficial level. The study therefore did not develop a definition of collaboration success (only that the participants believed there was or wasn't success) or whether collaborative processes had in fact achieved their intended outcomes. This is a potential area for future research.

Whether or not the findings are transferable to other contexts is dependent on the assumptions of another study. In this case it was assumed that the participants of corporate incubators of South Africa's largest banks were an appropriate and relevant sample for research. Other studies may pursue a comparative investigation into the various actors that surround the ecosystem, such as legal, consultant, government and academic participants, and this may affect the transferability of the findings.

As noted in the presentation of the findings, a single interview with a representative from a bank that did not have an incubator programme was conducted. This was in an attempt to triangulate the results, and test the validity of the findings presented in the study. The interview was conducted at the end of the data collection process and confirmed some of the internal innovation dynamics within corporate banks in South Africa. However, a single interview cannot reliably represent an entire population of other banks not covered by the study, and hence the findings on internal innovation dynamics cannot be generalised to all banks. It would be worth conducting a comparative study in the future

to establish whether there is a difference between the innovation practices of insular, or non-partnering banks, and the population identified in this study.

7.9 Conclusion

The research project studied the antecedents of collaborative behaviour as a relational mechanism in the fintech corporate relationship. To this end, the research focussed on which relationship behaviours, precursors or factors were barriers or enablers to successful cooperative interactions between the fintech entrepreneur and the corporate bank.

This research paper was titled Unicorns and Fortresses for a reason: the extremely rare tech Unicorns in other more advanced markets are contributing billions to economic development, and creating a revolution in the banking industry. Whilst South Africa's banking system displays fortress-like characteristics, the industry's infamous impenetrability may also be its downfall, as disruptive technology undermines the banking sector value-proposition.

In considering the nature of entrepreneurs in South Africa, most of the academic research offers an analysis of the informal, rural, or social entrepreneur sectors, with very little hard, empirical evidence of the behaviour of fintech entrepreneurs in the country. Yet much has been published about the growing technology segment, the entry of a digital native generation into the workforce and the macro-economic pressure on the traditional banking sector to digitalise.

By the same token, the developed nations recognise the vital contribution that partnerships between traditional banks and technology entrepreneurs can make to the economy, especially in the fintech segment, yet do not investigate nor offer guidance on the fintech, or even technology SME sector in South Africa, and by extension, in Africa. With the youngest population on earth, the ubiquitous growth of smart mobile technology, and the myriad socio-economic issues to be solved by better banking services, the environment seems ripe for successful partnerships and new ventures in the fintech space.

To South Africa's detriment, Africa's first tech Unicorn has been named in Nigeria; Africa Internet Group attracted US $84 million worth of funding in April 2016 to bring its value

to just over US$1.04 billion (Zillman, 2016). South Africa evidently needs to catch up, and its strong banking industry may well need to drop their proverbial drawbridges and partner with new fintech entrants, or risk increasing isolation in their impermeable fortresses.

In summary, the findings allow a more fine-grained understanding of the collaborative drivers, compared to what has been advanced in other entrepreneurship literature, although it is evident that many of the factors of analysis are transferable to the fintech industry. Additionally, because the macro-economic factors that affect the fintech corporate relationship in South Africa cannot be divorced from the analysis, the insights offered provide potential areas of intervention for both corporate and start-up entrepreneurs, academic institutions and policy-makers alike.

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9 APPENDICES

9.1 Appendix A: Literature Framework

INNOVATION DYNAMICS WITHIN CORPORATE BANKS		
BARRIERS	**Literature**	**Keywords**
Creative destruction	Hageman, 2012 Kurz, 2012	Schumpeter, Creative Destruction
Innovators Dilemma	Christensen, 2006	No routine process / create external
Innovation & Productivity effect - as experienced by the incumbent	Besanko, 2013	Winner take all / Have external independent labs
Innovation & Sunk cost effect - as experienced by the incumbent	Besanko, 2013	Legacy systems, capital commitments
Innovation & Replacement effect - as experienced by the incumbent	Besanko, 2013	Dis-incentive to large firms, cheaper for new firms to innovate
Innovation & Efficiency effect - as experienced by the incumbent	Besanko, 2013	Margin and market share loss by incumbent
Bureaucracy and Inertia	WEF, 2015	Politics, inertia, bureaucracy, red-tape
Corporate Politics		Corruption, pork-barrelling, red-tape, inertia, brown-nosing, power, favouritism, networks.
Perverse Incentives	Rousseau, 2004	Key performance indicators, misalignment
Not invented here		NIH, internal dynamics, politics, resistance
Compliance / Risk-averse culture	WEF, 2015	Regulation and compliance
Increased due-diligence	Wieblen & Chesbrough, 2015	Long vetting process, pressure to make quick decisions
Threat from other capital	Wieblen & Chesbrough, 2015	Competition in market for innovation

Unclear strategic objectives for partnership	Wieblen & Chesbrough, 2015	Strategic goal misalignment
Limited means to influence day-to-day operational decisions	Kuratko, 2015	Power of equity vs management control
ENABLERS	**Literature**	**Keywords**
Innovation Value Chain	Birkinshaw & Hansen, 2007)	internal, cross-unit, and external sourcing; idea selection and development; and spread of the idea
Management Support	Kuratko, 2014	Internal, controllable factors
Work discretion / Autonomy	Kuratko, 2014	Internal, controllable factors
Reward and Reinforcements	Kuratko, 2014	Internal, controllable factors
Time availability	Kuratko, 2014	Internal, controllable factors
Organisational boundaries	Kuratko, 2014	Internal, controllable factors
Able to scale	Kohler, 2016 / Wieblen & Chesbrough, 2015	Resources, growth, knowledge
Repeatable business model	Kohler, 2016	Experience, know-how
Optimal resource allocation	Kohler, 2016 / Wieblen & Chesbrough, 2015	Experience, know-how
Power	Wieblen & Chesbrough, 2015	In market, industry, negotiation
Established Brands	Wieblen & Chesbrough, 2015	Reputation
Proven business routines	Wieblen & Chesbrough, 2015	Experienced business models / operational effectiveness
Corporate Venturing	Kurz, 2012 Markides, 2006	Innovation style Active collabs
Entrepreneurial characteristic	Kurz, 2012	Schumpeter, Creative destruction

Resources, experience and knowledge to successfully commercialise new offerings	WEF, 2015	Experience, business acumen
Spread of R&D costs over an extensive and diversified sales base	WEF, 2015	Proven business models
Sophisticated IP protection and management due to experience and resources	WEF, 2015	Legal knowledge and power
Less threatened by litigation	WEF, 2015	Access to legal resources
Regulatory and compliance expertise	WEF, 2015	Experience and deep internal business intelligence
Threat from other capital	Wieblen & Chesbrough, 2015	Competition in market for innovation
Pressure to establish clear strategic objectives for partnership	Wieblen & Chesbrough, 2015	Strategic goal alignment
CHARACTERISTICS OF THE FINTECH ENTREPRENEUR		
BARRIERS	**Literature**	**Keywords**
Newness & inexperience	Kohler, 2016	Immaturity, new, green
Scarcity of resources, few physical assets (that banks can use as collateral), and limited record of success	WEF, 2015	Personal financial situation
Lack expertise outside of core offerings	WEF, 2015	One-trick pony, limited experience
Lack of scale, distribution channels, and marketing know-how	WEF, 2015	Lack of business acumen, too specialist
Competition, market entry problems, and poor infrastructure	WEF, 2015	Unable to meet requirements to compete
Insufficient understanding of innovation's full applicability and potential	WEF, 2015	Failure to present or develop full innovative potential
Financial engagements	Tajeddini & Mueller, 2009	Funding, lack of
Personal engagements	Tajeddini & Mueller, 2009	Personal interests, conflict with personal life

Limited power in collaboration with owners of capital,	Middelhof, 2014	Official exchanges, power imbalance, dissuades collaboration
ENABLERS	**Literature**	**Keywords**
Closer to sources of technological knowledge, such as universities and research centres.	WEF, 2015	Benefits, ecosystems, new knowledge
Higher degree of flexibility, Tolerance for ambiguity	WEF, 2015 / Tajeddini & Mueller, 2009	Agile
Nimbler response to market signals, Agile and responsive to change	WEF, 2015 / Kohler, 2016	Pivot fast
Proficiency in a specific niche	WEF, 2015	Expertise, specialisation
Entrepreneurial characteristics	Kurz, 2012	Schumpeter's entrepreneur, risk taking, passion, opportunity seeking
Driven by passionate founders	Kohler, 2016	Enthusiasm, passion, commitment
New technology or processes, Innovativeness	Kohler, 2016 / Tajeddini & Mueller, 2009	Novel, inventions, innovation, opportunity
Take risks, Propensity for Risk	Kohler, 2016 / Tajeddini & Mueller, 2009	Entrepreneurial attitude
Aspirations for rapid growth / Achievement need	Kohler, 2016 / Tajeddini & Mueller, 2009	Ambitious
Autonomy	Tajeddini & Mueller, 2009	
Locus of control	Tajeddini & Mueller, 2009	
Confidence	Tajeddini & Mueller, 2009	
Networking entrepreneurs	Ebbers, 2014	Relationships, personal, friendships
Innovation & Productivity effect - as experienced by the new entrant	Besanko, 2013	Winner take all / Have external independent labs

Innovation & Sunk cost effect - as experienced by the new entrant	Besanko, 2013	Legacy systems, capital commitments
Innovation & Replacement effect - as experienced by the new entrant	Besanko, 2013	Dis-incentive to large firms, cheaper for new firms to innovate
Innovation & Efficiency effect - as experienced by the new entrant	Besanko, 2013	Margin and market share loss by incumbent

MODES OF COLLABORATION		
BARRIERS	**Literature**	**Keywords**
Corporate Collaboration & Innovation	WEF, 2015	Venturing, innovation
Different perspectives of time		Time, urgency, lack of respect or empathy, selfish, self-centred.
Differences in joint purpose because of different party aims	Huxham & Vangen, 2000	Misalignment between joint venture goals, different perspectives
Difficult communications related to professional, organisational or ethnic cultures	Huxham & Vangen, 2000	Different cultures, differences in ethnic, racial, gender, opinion, thinking, background, education, etc
Different internal procedures related to joint modes of operation	Huxham & Vangen, 2000	Rules of engagement, organisational structures, terms of relationship
Power imbalances & trust perceptions	Huxham & Vangen, 2000	
Managing accountability and maintaining autonomy, within the fintech partner	Huxham & Vangen, 2000	Independence, autonomy, Lack of ownership and accountability, within the corporate partner
ENABLERS	**Literature**	**Keywords**
Constructive exploration of differences	Gray, 1985	Collaboration between opposites
Mutual interdependence, mutual benefit	McNamara, 2012 / Williams, 2015	Cannot achieve goals independently, clear rules of engagemnet,
Open innovation	Gray, 1985 / Williams, 2015	Collaboration, no boundaries, looking externally
Shared goals and values, Common Goals	Gray, 1985 / Williams, 2015	Alignment, clear rules of engagemnet, sharing, mutual
Voluntary participation, Trust	Gray, 1985 / Williams, 2015	No forced relations, trust
Combined Resources, Everyone contributes Assets	Gray, 1985 / Williams, 2015	Contribution, assets
No power discrepancy, Flat non-hierarchical structure	Gray, 1985 Williams, 2015	Flat hierarchy, power, equality

Assumption of shared risk	Williams, 2015	Shared risk, risk aversion, risk-taking
Social Capital (Trust, valued relationships, and reputation)	Williams, 2015	Trust, reliable, social capital, gun-shy
Distribution of authority	Williams, 2015	Shared risk, authority, leadership
Paradoxically aggregative: Translation of private into collective interests	Williams, 2015	Best interest of the partnership
Integrative - New shared understanding and consensus over compromises	Williams, 2015	Shared understanding and integration
Corporate Collaboration & Innovation	WEF, 2015	Collaboration, cooperation, sharing, partnership
Collaboration structures	Kohler,2016	Open innovation - accelerators
Corporate Venturing	Wieblen & Chesbrough, 2015 / Kohler, 2016	Innovation, internal venturing, entrepreneurship
Start-up Programme (Outside in)	Wieblen & Chesbrough, 2015	Incubators, accelerators
Corporate Incubation or Business Incubation	Wieblen & Chesbrough, 2015 / Kohler, 2016	Start-up programmes, incubators
Start-up Programme (Platform)	Wieblen & Chesbrough, 2015	Start-up programmes, incubators
Corporate Hackathon	Kohler, 2016	Internal, intra-premiership
Corporate Accelerators	Kohler, 2016	Accelerators
Mergers and Acquisitions	Kohler, 2016	External, buy, purchase, inorganic growth

ECOSYSTEM		
BARRIERS	**Literature**	**Keywords**
Weak ecosystems - 8 Pillars not available	WEF, 2014	The pillars are absent or not linked
Poor Framework Conditions	Herrington, 2015	An unhealthy or unsupportive environment for entrepreneurs and business
ENABLERS	**Literature**	**Keywords**
Strong ecosystems - 8 Pillars available and pervasive	WEF, 2014	Positive interaction and support for the 8 pillars
Strong Framework Conditions	Herrington, 2015	A healthy macroeconomic environment for entrepreneurship and business
ECOSYSTEM FACTORS (Enabling when present or positively applied, or considered barriers when absent or destructive to business)		
Financial environment and support	Herrington, 2015	Entrepreneurial Framework Conditions (EFC)
Concrete government policies: entrepreneurship priority and support	Herrington, 2015	Entrepreneurial Framework Conditions (EFC)
Government policies: taxes, bureaucracy	Herrington, 2015	Entrepreneurial Framework Conditions (EFC)
Government entrepreneurship programmes	Herrington, 2015	Entrepreneurial Framework Conditions (EFC)
Entrepreneurship education: primary and secondary level	Herrington, 2015	Entrepreneurial Framework Conditions (EFC)
Entrepreneurship education: vocational, professional & tertiary-level	Herrington, 2015	Entrepreneurial Framework Conditions (EFC)
R&D transfer	Herrington, 2015	Entrepreneurial Framework Conditions (EFC)
Access to professional & commercial infrastructure	Herrington, 2015	Entrepreneurial Framework Conditions (EFC)
Internal market dynamics	Herrington, 2015	Entrepreneurial Framework Conditions (EFC)
Internal market burdens	Herrington, 2015	Entrepreneurial Framework Conditions (EFC)

Access to physical infrastructure/services	Herrington, 2015	Entrepreneurial Framework Conditions (EFC)
Cultural and social norms	Herrington, 2015	Entrepreneurial Framework Conditions (EFC)
Accessible Markets	WEF, 2014	Entrepreneurial ecosystem
Funding & Finance	WEF, 2014	Entrepreneurial ecosystem
Government & Regulatory Framework	WEF, 2014	Entrepreneurial ecosystem
Major Universities as Catalysts	WEF, 2014	Entrepreneurial ecosystem
Human Capital / Workforce	WEF, 2014	Entrepreneurial ecosystem
Support Systems / Mentors	WEF, 2014	Entrepreneurial ecosystem
Education & training	WEF, 2014	Entrepreneurial ecosystem
Cultural Support	WEF, 2014	Entrepreneurial ecosystem

9.2 Appendix B: Interview Questions

Broad interview questions were drawn from the literature review in Chapter 2 and the literature consistency matrix (detailed in Appendix A). Where appropriate, open-ended questions were introduced to the conversation following a brief explanation of the research study.

- How does your company work with tech start-ups, and if not, why?
- What are the barriers and enablers to co-operation between the parties in collaborative relationships?
- What are the determining factors to developing future partnerships with technology entrepreneurs for Corporates?
- What are the consequences of failure in corporate start-up collaboration?
- Who is the right Fin-Tech / Start-up Partner and what are their traits?
- Discuss your engagement with senior leadership in your organisation?
- How does the partnership / individual player deal with legacy technology (from the corporate incumbent's perspective, and from the digital innovators perspective)?
- How does the macro-economic environment / industry / market affect the collaboration between your firm and its partners?

9.3 Appendix C: Coding Used to Analyse Interviews and Frequency Table

Table 11: Coding used to analyse interviews

Code Name	Innovation dynamics within corporate banks	Modes of collaboration	Characteristics of the fintech entrepreneur	Macro-economy
Accelerate	x			
Adaptive	x			
Agility	x			
Alignment	x	x		
Alliance		x		
arrogant			x	
Atypical	x		x	
Autonomy	x			
Bank	x			
Barriers	x	x	x	x
Brand	x		x	
Build	x			
Collaboration	x	x	x	
Communication		x		
Consumer demand	x		x	
Contract		x		
Control	x	x		
Corporate	x			
Corporate Venture Model	x			
Culture	x		x	x
Customer needs	x		x	
Dedicated Resources or Personnel	x			
Detecting Demand			x	
Direct Access	x	x	x	
Disintermediation	x			

Code Name	Innovation dynamics within corporate banks	Modes of collaboration	Characteristics of the fintech entrepreneur	Macro-economy
Disruption	x		x	
Marginalised and commoditised	x			
Ecosystem		x		x
Education			x	x
Employee Performance Management	x			
Enablers	x	x	x	x
Engagement Model		x		
Entrepreneur maturity			x	x
Entrepreneur	x		x	
Entrepreneurial Spirit	x		x	x
Equity	x		x	x
Experience	x		x	
Experiment	x	x	x	
Failure	x	x	x	
Fear	x			
Fintech		x	x	x
Incentives	x			
Incubate	x			
Independence	x	x	x	
Industry	x	x	x	x
Industry Experience	x		x	x
Industry maturity				x
Inertia	x			
Innovation	x	x	x	x
Interference	x			

Code Name	Innovation dynamics within corporate banks	Modes of collaboration	Characteristics of the fintech entrepreneur	Macro-economy
Internal	x		x	
Internal Politics	x			
Investment	x	x	x	x
Job-protection	x			x
KPIs	x			
Lack of transparency	x	x	x	
Language	x			x
Leadership Support	x			
Long termism	x		x	
Longevity	x	x	x	
Macroeconomic environment	x	x	x	x
Market appetite	x	x	x	x
Market maturity	x			x
Maturity	x		x	
Mergers & Acquisitions	x			
Narrative	x		x	x
Networks	x	x	x	x
New ideas	x	x	x	
New industries			x	x
New markets		x	x	x
Ownership	x	x	x	
Partnership	x	x	x	
Peer to Peer	x	x	x	x
People	x	x	x	
Personal brand	x	x	x	
Perverse Incentives	x			
pitfalls	x	x	x	

Code Name	Innovation dynamics within corporate banks	Modes of collaboration	Characteristics of the fintech entrepreneur	Macro-economy
Platforms	x	x	x	x
Power	x	x	x	
Presentation style			x	
Pricing		x	x	
Process Innovation	x	x	x	
Procurement	x			
Product Innovation	x	x	x	
Relationships	x	x	x	x
Responsibility is not owned.	x			
Risk avoidance / Disregard for Opportunity costs	x			
Scaling failure			x	
Scaling proof of concept	x	x	x	
Scaling success	x	x		
Shadow Banking			x	x
Short termism	x	x	x	
Size advantages	x			
Skills	x	x	x	
Startups		x	x	x
Sustainability		x		
Team and Organisational Competency	x		x	x
Technology	x	x	x	x
Technology Alignment	x	x	x	
Transaction Costs	x	x	x	x
Valuation	x	x	x	x
Venture Capital	x	x	x	x

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Code Name	Innovation dynamics within corporate banks	Modes of collaboration	Characteristics of the fintech entrepreneur	Macro-economy

9.4 Appendix D: Focus group dinner participant list

An informal, public focus group was hosted in August 2016 at the Gordon Institute of Business Science (GIBS), University of Pretoria in Illovo, Johannesburg. Guests were invited to a dinner hosted by the Dean, Professor Nicola Kleyn, and members of the GIBS faculty and executive staff were included in the guest list. The event was also attended by journalists and hosted on-the-record as a public thought-leadership and ideation event. Notes were collected from the event for purposes of developing the research questions and exploring the potential for primary interviews.

Because of the secondary nature of the data, no direct quotes were attributed in the findings to speakers or their organisational affiliation. The researcher used the topics of conversation at the dinner to develop the literature review and associated research questions, and employed convenience sampling to approach potential interviewees for the collection of primary data.

Table 12: Focus group participants

Name	Organisation	Role
Ashley Singh	Liberty	Head of Data and Information Services
Claire Thwaits	GIBS	MBA Student
Dalene Rowe	Nedbank	Head of Specialised Sales
Danielle Laity	Standard Bank	Innovation Manager
Dominique Collett-Antolik	RMB	Senior Investment Executive
Duran Chetty	Mutual and Federal	Head of Digital Solution
Galina Kroucheva	Hollard	CIO
Gavin Kandier	Zurich Insurance Company South Africa Ltd	Country Head of IT
Hannes Kriel	Nedbank	MIS Manager: Corporate Card Services
Hayley Pearson	GIBS	Coordinator
Howard Fox	GIBS	Director: Marketing
Jamie Whittaker	Discovery	CIO
Jeff Chen	GIBS	Lecturer

Justin Brice	Zurich Insurance Company South Africa Ltd	National Head: Specialised Motor Division
Kris Tokarzewski	Discovery Health	CIO
Liesl Babb-Mackay	RMB Alphacode	Director (Guest Speaker)
Marcus Portmann	ABSA	Chief Architect and Head of IT: Architecture and Innovation
Matthew Emanuel	Finmark Trust	
Neil Adamson	Discovery Vitality	Enterprise Architect - Vitality Internationa
Nicola Kleyn	GIBS	Dean
Paul Smith	Technopreneur	
Rob Godlonton	EOH	CEO - ICT
Simnikiwe Mzekandaba	ITWeb	Senior reporter
Tanya Knowles	Strate	Head of Innovation
Thato Ramagaga	Standard Bank	Innovation Fund Manager (Alliance Manager)
Warren Bond	Matchi	Founder and entrepreneur
Zureida Ebrahim	MMI Holding	CEO: Client Engagement Solutions

9.5 Appendix E: Consent Letter

INFORMED CONSENT FOR RESEARCH CONDUCTED BY

GORDON INSTITUTE OF BUSINESS SCIENCE, UNIVERSITY OF PRETORIA

INTRODUCTION

I am conducting research on digital disruption, and am interviewing various stakeholders, experts and thought-leaders within South Africa. You have been invited to participate in the research because of your experience, role in your organisation, professional knowledge and/or opinions.

YOUR RIGHTS AS A RESEARCH PARTICIPANT?

Participation in this study is voluntary. You have the right not to participate at all or to leave the study at any time. Deciding not to participate or choosing to leave the study will not result in any penalty or loss of benefits to which you are entitled, and it will not harm your relationship with GIBS.

It is reasonable to expect the following benefits from this research:

- *With your permission, recognition in the list of research participants.*
- *A copy of the final submission post examination.*

However, we can't guarantee that you will personally experience benefits from participating in this study. Others may benefit in the future from the information we find in this study.

Of course, all data will be kept confidential. The researchers have made every effort to minimise risks to participants including a commitment to confidentiality of the data recorded.

CONTACTS FOR QUESTIONS OR PROBLEMS?
If you have any concerns, please contact my supervisor or me. Our details are provided below.

***Researcher**: Claire Thwaits, Claire.thwaits@outlook.com or +27837305494*

***Supervisor**: Dr. Jeff Yu Chen, chenj@gibs.co.za or +27722227119*

Consent of Subject (or Legally Authorized Representative)

Name: _____

Signature (or Representative): _____

Date: _____

Upon signing, the subject or the legally authorized representative will receive a copy of this form, and the original will be held in the GIBS research record.

Printed name of Researcher: **Claire Thwaits**

Signature of researcher:

9.6 Appendix F: Ethical Clearance Letter

Dear Mrs Claire Thwaits

Protocol Number: **Temp2016-01386**

Title: **The Antecedents of Effective Collaboration between Established and New Fintech Companies**

Please be advised that your application for Ethical Clearance has been APPROVED.

You are therefore allowed to continue collecting your data.

We wish you everything of the best for the rest of the project.

Kind Regards,

Adele Bekker

9.7 Appendix G: Turnitin Report