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A preliminary cognitive framework towards effective ideation for disruptive innovation

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Abstract

In a world of increased disruptive innovation, volatile macroeconomic variables and unpredictable change, businesses are at risk of being disrupted as disruptors grow enormous user bases seemingly overnight and are then agile enough to continue innovating to stay ahead of the game. Incumbent businesses default to survival mode as they struggle to keep market share because the bureaucracy that burdens these large corporates inhibits their ability to react quickly. That being said, it has never been easier to revolutionise business models and innovate than it is presently, given the velocity of change in technology which underpins most of what disruptive innovation is about. Numerous models and frameworks have been proposed to assist one's cognitive process for ideation but none exist for disruptive thinking, hence a disruptive innovation ideation framework is called for.

Using a qualitative research approach, the study was conducted in four phases as we inductively derived a preliminary cognitive framework for disruptive innovation. Phase 0 of this study included an extensive literature review to ensure the important theories relevant to entrepreneurship and innovation were taken into consideration. Three significant findings were uncovered using the Interpretative Phenomenological Analysis (IPA) method to examine the interviews gathered in Phase one, two and three of this research. Two population groups formed part of this study, (1) 26 of Africa's most accomplished Disruptive Innovators and (2) 12 Senior Managers from the retail and wholesale sector. Group 1 was used to seek answers to research questions one and two using semi-structured interviews whilst Group 2 was used to answer research question three using the same interview method.

The study led to the creation of the preliminary cognitive framework "Enriched Disruptive Ideation" (EDI) framework and revealed three major findings: (1) Challenging both the common perception and the conception of business (2) the importance of building a good team (3) the emergence of the seven main themes, all of which were incorporated in the framework. This research as a result provided some contributions to bridging the gap in linking entrepreneurship and innovation theory.

Keywords

Disruptive innovation, cognitive framework, ideation, entrepreneurship, hunch.

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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.

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Glossary of terms

Audacious Identity: A characteristic of an innopreneur whereby they display larger than life self-belief and are willing to take on bold risks which are encouraged through their valiant vision of differentiation.

Combinatory Play: A method used by innopreneurs that utilises different types of innovation instead of reinventing concepts, by combining and introducing small degrees of innovativeness to existing concepts and business acumen, as a result combining existing concepts in a novel way to create new innovations.

Design Thinking: "Is a hypothesis-driven process that is problem, as well as solution, focused. It relies on abduction and experimentation involving multiple alternative solutions that actively mediate a variety of tensions between possibilities and constraints, and is best suited to decision contexts in which uncertainty and ambiguity are high. Iteration, based on learning through experimentation, is seen as a central task" (Liedtka, 2015, p. 3).

Disruptive Innopreneurs: An entrepreneur or a group of entrepreneurs who seize an opportunity by developing and then offering a unique solution to the market which leads to significant shifts in how an industry and/or a community operates, resulting in Disruptive Innovation.

Disruptive Innovation (DI): Through competitive responses to innovation, a new market offering generates value and gains market share through disrupting the common modus operandi of rivals within an existing market and value network, subsequently displacing these established market leading firm's offering and alliances as the value of the new offering becomes superior.

Note: This definition is the researcher's own definition based on the arguments created in the literature review Section 2.2. Radical innovation and disruptive innovation are used as interchangeable terms during this study.

Disruptive Innovation Theory (DIT): DI as coined by Professor Clayton Christensen has been defined as: "'Disruption' describes a process whereby a smaller company with fewer resources is able to successfully challenge established incumbent businesses. Specifically, as incumbents focus on improving their products and services for their most demanding (and

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usually most profitable) customers, they exceed the needs of some segments and ignore the needs of others. Entrants that prove disruptive begin by successfully targeting those overlooked segments, gaining a foothold by delivering more-suitable functionality- frequently at a lower price. Incumbents, chasing higher profitability in more-demanding segments, tend not to respond vigorously. Entrants then move upmarket, delivering the performance that incumbents' mainstream customers require, while preserving the advantages that drove their early success. When mainstream customers start adopting the entrants' offerings in volume, disruption has occurred." (Christensen, Raynor, and McDonald, 2015, p. 46).

Enriched Navigation: An effectual style of venturing, which forms part of the ideation process practiced by innopreneurs, enabling them to seek viable means to continuously improve and maximise their opportunity-return. Based on new information gathered, innopreneurs may choose to venture onwards or revert back to the previous stage of the framework for further refinement or alternatively pivot in a new direction; at times, some innopreneurs may even reshape their audacious identities.

Envisioning: A trait and ability of innopreneurs to imagine an alternative future or visualise possible future situations.

Fragmentation: The art of breaking down a potential solution or concept into its key principles so as to form the basis attributing to the overall success and assists in ensuring the correct fragments/principles are kept to enable the product/offering to work well.

Hunch: A feeling or guess, based on intuition rather than fact.

Ideation: In the context of this study is defined as: "The early phase or front-end of the innovation process, in which ideas are generated and evaluated, potential concepts are formulated, and potential development projects are initially planned, they are summarised as the activities that are undertaken before any well-structured and formal new product development process" (Kock, Heising, and Gemünden, 2014, p. 540). Ideation thus encompasses the stimulation, identification, selection and integration of ideas.

Innopreneur: An entrepreneur or a group of entrepreneurs who seize an opportunity by developing and then offering a solution to the market using innovation and technology to create its unique value.

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Moments of Significance (MOS): The moments that cause customers to interact with the solution or offering in a certain way and provides valuable insights to understanding customer behaviour and action.

Value-construct Analysis: The method used to unpack customers' value perception at an even a deeper level in order to analyse customers' value-construct association knowing that a user assigns value based on his/her inner construct.

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Chapter 1: Introduction to the research problem

1.1 Background to the research problem

Disruptive Innovation (DI) has the potential to turn industries upside down and fundamentally change the way business operates. Professor Clayton M. Christensen, the pioneer of this powerful approach to innovation, described in his definitive book “The Innovator’s Dilemma” and reinforced by W. Chan Kim and Renée Mauborgne, authors of “Blue Ocean Strategy”, have shown that disruptive innovation challenges the conventional understanding of what is valuable (Verganti, 2016). In a McKinsey poll conducted in 2016, 84% of global executives reported that innovation was extremely important to their growth strategies, but a staggering 94% were dissatisfied with their organisation’s innovation performance (Christensen, Hall, Dillon, and Duncan, 2016). DI is attributed with the downfall of industry giants such as Blockbuster, Kodak and Xerox on the one end and the overwhelming success of industry disruptors such as Airbnb, Netflix and Uber on the other. DI is described as a process by which a product or service takes root initially in simple applications at the bottom of a market and then relentlessly moves up market, eventually displacing established competitors (Christensen, 2013; Christensen, Raynor, and McDonald, 2015). This definition is however still in dispute and will be discussed in Chapter 2, hence the definition this study makes use of is described in the glossary of terms above.

What is it that sets the habits of industry icons such as Steve Jobs (founder of Apple), Jeff Bezos (founder of Amazon) and Travis Kalanick (founder of Uber) apart from the rest? The question that must be answered is, if disruption is the solution, why do organisations struggle with the ability to innovate this dramatically? One of the reasons according to Clayton Christensen’s “The Innovator’s DNA” is that it has much to do about the underpinnings of their creative thinking (Christensen, Gregersen, and Dyer, 2011).

Business models have also been seen as a targeted DI phenomenon; business models are defined as the four interlocking elements of customer value proposition (CVP), profit formula, key resources and key processes that taken together, create and deliver value (M. Johnson, Christensen, and Kagermann, 2008). In a disruptive age, established business models are under attack: “Business models are subject to rapid displacement, disruptions and in extreme cases, outright destruction” (de Jong and van Dijk, 2015) and companies are faced with the dilemma of how to reframe their current business models to stay competitive. Friedrich von den Eichen, Freiling and Matzler (2015) argue that business model innovations fail due to not overcoming identified barriers (awareness, search, system, logic, culture) with openness,

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networking, affirmation of complexity and thinking and acting as a whole: “We are imprisoned in our thinking patterns, and our analysis focus is too narrow” (Friedrich von den Eichen et al., 2015).

Given today’s pressure to innovate and the changing nature of the workforce, businesses are left with the dilemma of not when but how a new idea could be transformed that can propel a company to unprecedented levels of performance. The goal as a manager is, according to Julian Birkinshaw, professor of strategy and entrepreneurship at the London Business School, “You’re not trying to ride the next wave; you’re looking for the perfect wave.” (Birkinshaw, 2014). Birkinshaw (2014) continues, explaining that failure to pursue the right idea can cause a great deal of damage and adopting and then abandoning new ideas can wear out an organisation and reduce the likelihood that leaders will be able to bring about sustained improvement. Kock, Heising, and Gemünden (2014) stipulate that organisations must strictly select and prioritise promising ideas and concepts because resource constraints do not allow for the pursuit of every idea and that organisations should practice ideation portfolio management. There are many challenges involved in the implementation of ideation portfolio management and a cognitive framework that facilitates promising ideas and concepts would be an important prerequisite to effective innovation.

The ubiquitous nature of big data that has pervaded the business landscape over the past decade allows businesses to collect an enormous variety and volume of customer information, at unprecedented speed, and perform sophisticated data analysis. Surprisingly businesses still fail to understand their customer needs even though businesses today know more about customers than ever before (Christensen et al., 2016). By virtue of being disruptive, innopreneurs do not have the relevant data available to support and assist the thinking process that leads to disruptive innovation, let alone a method to validate their product or service with customers. To see which ideas truly have potential, managers need new assessment criteria, they lack a method for capturing the most promising possibilities (Verganti, 2016).

Disruptive innovation leads to exponential growth, as described in the CB Insights “The Unicorn List 2016: Current Private Companies Valued at $1Billion and above”, which includes 152 companies and sitting at a combined total of $532 billion valuation; most of these whose success is attributed to disruptive innovation, with Uber topping the list at a current valuation of $51 billion (Schadler, 2016).

It is believed that providing a systematic framework for ideation offers numerous benefits, which include but not limited to: turning the idea into reality; providing a structured approach

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to the strategic uncertainty that characterises a new idea; and allowing you to overcome other challenges during the ideation process and course correct if required (Scott, 2014). Authors of the "Ten Types of Innovation" further support this view and state that providing a systematic means to innovation can increase chances of breakthroughs: "We are convinced that by thinking about innovation in a more systemic way, you improve your chances of building breakthroughs" (Keeley, Ryan, Brian, and Helen, 2013).

However, the relationship between innovation and entrepreneurship has not received much attention (Brem, 2011), hence these gaps in disruptive innovation's body of knowledge need further improvement:

> Effective disruptive innovative ideation has still eluded most organisations, an ideal framework is yet to be developed.
> Current ideation techniques and models do not follow a disruptive thinking approach, the need to uncover an improved cognitive process is required.
> The relationship between disruptive innovation and entrepreneurship requires further research.

Bradley, Loucks, Macaulay, Noronha and Wade, (2015) suggest that if you are a disruptor, it doesn't matter if the market you are in is stable or complex, you will always be in it; therefore it is wise to see disruption as core part of strategy. We conclude this introduction by stating that there is a greater need to unpack the antecedents that spark these DI ideas, hence this research is particularly interested in the underlying factors that can assist one's cognitive process leading to DI ideation, the front-end of disruptive innovation.

1.2 Research scope

In the context of this study we refer to Disruptive Innovation (DI) using the theory of disruptive innovation coined by Harvard professor Clayton Christensen as our theoretical base but provide our own definition of DI in Chapter 2, Section 2.2 as the current DI theory is in dispute and outdated. The term "disruptive innopreneurs" will be used throughout this study when making reference to these disruptive innovators or highly innovative entrepreneurs, while the term "innopreneurs" will be used to refer to entrepreneurs using innovation to provide solutions and offerings to the market.

Innovation has been classified into various categories, Alexander and Van Knippenberg (2014) compare radical to incremental innovation and identify three types of innovations:

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incremental, really new, and radical. Alexander and Van Knippenberg (2014) refer to really new and radical innovation as products or services that are new to the market, industry or the world and distinguish radical innovation from really new if the products or service comprise both market and technological discontinuities as opposed to either market or technological discontinuities. Norman and Verganti (2014) in differentiating radical from incremental identify only these two categories, where radical innovation refers to a change of frame, "doing what we did not do before"; and incremental innovation as improvements within a given frame of solutions, "doing better what we already do" (p. 82). We therefore use the terms "radical innovation" and "disruptive innovation" interchangeably.

With the primary focus of the research on disruptive innopreneurs within Africa, due to the constraints mentioned in the limitations Section 4.10 below, our data sample has concentrated mainly on South African, Kenyan and Nigerian innopreneurs. Using South Africa as the case in point, the slump in the South African economy during 2016 has increased demand for a growth stimulus to boost economic performance and ensure the country does not enter a recession in 2016. Improvements in innovative ideas and thinking would lead to an increase in performance and efficiencies for organisations and provide much needed relief on poverty and unemployment levels, with the nominal unemployment currently at 26.6% (Statistics South Africa, 2016). Furthermore, South Africa's global competitiveness ranking as reflected in The WEF Global Competitiveness Report 2015-2016 sees the country currently placed 49th out of 140 countries, third among the BRICS economies (World Economic Forum, 2015). The report classifies the participating countries into five stages of development, where South Africa is still classified under the "Efficiency driven" economies, the third stage of development; where countries being classified under stage five being the most developed economies. The report further defines twelve distinct pillars which are used to determine the key drivers of the economy, this study will include on one of the twelve pillars, namely technology readiness. **WEF Global competitiveness report - Ninth pillar:** Technological readiness "Measures the agility with which an economy adopts existing technologies to enhance the productivity of its industries, with specific emphasis on its capacity to fully leverage information and communication technologies (ICTs)" (Schwab, 2014). South Africa currently ranked 50th out of 140 countries in the latest WEF report (World Economic Forum, 2015). Technology is a key enabler for innovation and South Africa has performed well in this area compared to its neighbours, creating a platform for disruptive innovation to manifest itself if leveraged correctly. The Global Entrepreneurial Monitor 2015/16 however reveals that South Africa together with Morocco have the worst Entrepreneurial Employee Activity (EEA) out of the 45 participating economies, and a "World Bank Doing Business" raking of only 73/189 (Kelley, Singer, and Herrington, 2015). A pragmatic approach to disruptive thinking that encourages

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entrepreneurial activity in South Africa will help improve these statistics and, as a result, reduce the devastating effect of the high unemployment levels in the country as mentioned above.

A recent McKinsey report by General Electric (GE) CEO Jeff Immelt stated that South Africa's economic transformation will be dependent on investment in infrastructure, transportation and education, saying that: "GE will be supporting this endeavour by investing about $60 million in a customer-innovation centre that will serve as a technology hub for the region". Immelt concluded by saying that this hub will contribute to creating the necessary innovations in power growth (Immelt, 2015). This highlights the fact that South Africa requires innovative solutions to achieve its economic transformation acceleration and remain competitive.

1.3 Research objectives

Following on from the issues highlighted in the research problem above, the purpose of this study is to contribute to and enrich the cognitive understanding of disruptive ideation and to increase the chances of disruptive thinking from an entrepreneurial perspective. Through the lenses of cognitive framework's, innovation and entrepreneurship literature, we investigate the critical cognitive processes that characterise disruptive ideation and develop a conceptual framework towards enhancing disruptive ideation. De Jong and van Dijk (2015) highlight that the ability to reframe regardless of industry or location has one common denominator, the digitisation of business, which upends customer interactions, business activities, the deployment of resources, and economic models.

By providing a concrete theoretical background to support the framework's underpinnings through the exploration of contemporary innovation and entrepreneurial theory, and providing a complementary framework that encourages ideation through the lens of disruptive opportunity identification, we believe that this study will improve the quality of disruptive ideas, facilitate the process towards disruptive thinking and overcome blockages in the cognitive process of entrepreneurial ideation. By extending research on the generation of entrepreneurial opportunities in the context of disruptive innovation, the study also aims to contribute to the understanding of both disruptive thinking and the process of opportunity generation for disruptive innovation, hereby contributing towards DI's body of knowledge which may assist both scholars and practitioners generate disruptive, new ideas that link unmet customer needs with innovative business models, products and services, ultimately resulting in exponential growth. It should however be noted that after the completion of the

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study and the findings reveal no significant correlation to effective disruptive thinking, we still believe that the study would extend and contribute to the understanding of disruptive innovation theory and assist in refining the disruptive thinking process.

1.4 Process flow

In order to explain the various processes used to complete this study and attempt to achieve the research objectives of Section 1.3 above, we divided the study into four phases, outlined below:

Phase 0: The foundation of this study was completed by a *comprehensive* literature review on the various concepts underpinning the research questions of chapter 3. It was clear that due to the gaps in the relationship between innovation and entrepreneurship theory a comprehensive literature review was required in order to provide a sound theoretical foundation to develop a cognitive framework that itself does not exist in any literature.

Phase 1: From the literature review together with the research methodology of Chapter 4, we uncovered the key themes supporting disruptive innovation ideation and propose an initial preliminary cognitive framework as discussed in the research objectives above and as a result sought to answer Research Question One.

Phase 2: This phase comprised validating the framework using both the literature review and results from the semi-structured interviews described in Chapter 4 in an attempt to answer Research Question Two.

Phase 3: Further support for the framework is solicited by applying the framework within organisations and then gaining feedback from the subjects using semi-structured qualitative surveys on the application and usability of the framework, and in so doing attempt to answer Research Question Three.

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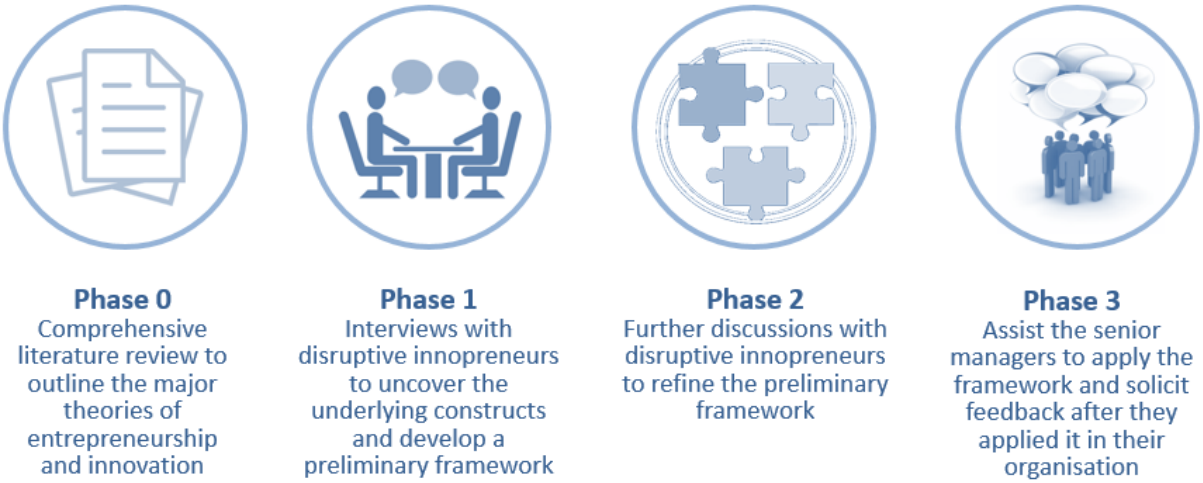
The process flow is graphically depicted in Figure 1 below.

Figure 1: Process flow of the four-phase study



Source: Authors own

1.5 Significance and potential implications for this study

This is one of the most ambitious attempts to conduct research in this field, we used the four phases explained above in order to further contribute the body of work that deals with the theory of Disruptive Innovation. The purpose of this study is to close the gaps that exist in linking innovation and entrepreneurship by determining the differences or similarities between the two. It further attempts to contribute to the theory by developing a much-needed cognitive framework to guide entrepreneurs and disruptive innopreneurs and their desires or intentions to work towards effective disruptive innovation (DI).

At this juncture such a framework does not exist and it is the author's aim to provide a structure that would effectively assist innopreneurs to ideate more efficiently towards DI by highlighting the pathways, thought-processes and personal characteristics that have led to DI in the past, as well as encourage audacious thinking at both individual and corporate levels. In the corporate context, the framework would provide a valuable base upon which to construct the necessary elements for a better understanding of their customers, improve their innovation appetite and enhance the value offering that these customers are seeking.

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In order to be competitive in a global marketplace, businesses understand that disruption and Disruptive Innovation can fundamentally change the way business operates in both positive and negative aspects for their company. A framework that can be used as a guide in facilitating an organisation to either disrupt or respond to disruption is becoming a necessary tool in business strategy.

In June 2016, South Africa rose two places in the 2016 World Economic Forum Global Competitive Index to 47th out of 138 countries studied, improving its ranking in 10 of the 12 pillars measured. However, while the country has the most competitive economy on the African continent, innovation and new high-growth start-ups will need to improve drastically to compete globally. As technology continues to make certain human skills redundant, the key to future success is clearly improved entrepreneurship and innovation competiveness. How, then, do we improve competitiveness and therefore options, while providing robust structures for potential innovators to create products, services and jobs?

1.6 Motivations for this study

1.6.1 Personal

Now more than ever large organisations find it increasingly difficult to continuously innovate due to the added pressures of governance, legal and stakeholder requirements. As a result of this “red tape” and requirements to adapt to market conditions that reduces agility in large organisations and/or inhibits their ability to innovate, disruptive innovation becomes an even greater threat to business. The researcher has long been fascinated by the quantity and quality of disruption taking place with little attention being given to this threat by incumbents. Secondly, the entrepreneurial orientation that is lacking in South Africa needs to change if South Africa is to continue being the “Gateway to Africa”, one way that South Africa is able to improve its entrepreneurial orientation as a country is to make use of its country-specific advantages inherit in its DNA such as access and understanding of emerging markets and its experience in frugal innovation, which is where most disruptive innovations start. Hence the researcher embraced as a personal ambition in pursuit of finding answers to these pivotal questions, therefore the reason for this larger in-depth study.

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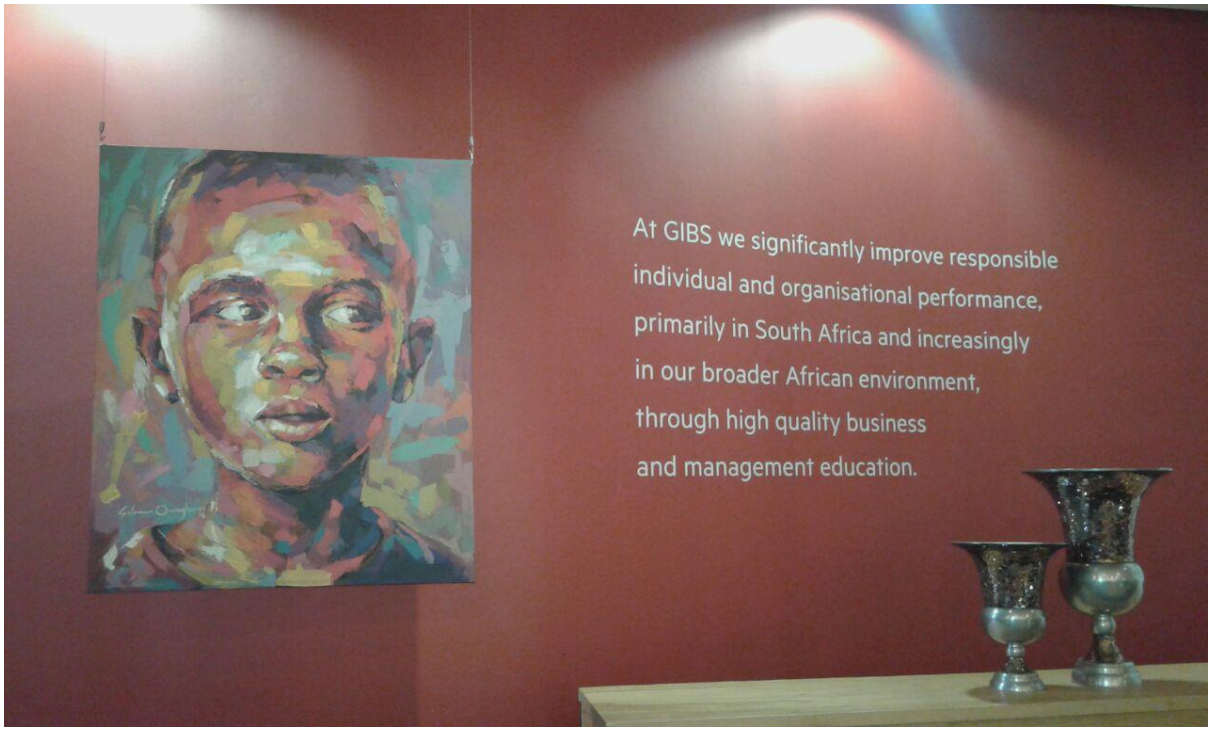
1.6.2 Inspiration for this research

The GIBS Mission – 'To significantly improve responsible individual and organisational performance, primarily in South Africa and increasingly in our broader African environment through high quality business and management education' - inspired me not only to explore the theoretical model but also the applicability of the model itself to assist Africa in becoming more innovative.

The ethos of GIBS – performance, high quality and continuous improvement - formed the basis of my inspiration to make a contribution to this mission.

The researcher aims to have this research developed into a published book that can share the findings of this research with business leaders and entrepreneurs and inspire them in the same way the researcher has been inspired and motivated.

Figure 2: Gordon Institute of Business Science (GIBS) Mission Statement



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Chapter 2: Literature review

2.1 Introduction

Literature in creativity and innovation management commonly held the view that an idea needs to be further developed and refined until a product or service offering is available that can be commercialised in the marketplace (Amabile, Conti, Coon, Lazenby, and Herron, 1996; Afuah, 2003; Vogel, 2016). Furthermore, there has been limited research on the relationship between innovation and entrepreneurship (McFadzean, O'Loughlin, and Shaw, 2005) but not treated within in literature stream (Brem, 2011). Similarly, Vogel (2016) argues that it is surprising that entrepreneurship research still experiences a lack of sufficiently fine-grained concepts, given that early studies proposed that the entrepreneurial process was seen as a continuance from an initial idea or concept to an opportunity, to implementation and growth. Vogel (2016) further explains that consensus among researchers regarding innovative and entrepreneurial activities is weak, particularly with regard to precise terms used and the links between the terms (Garcia and Calantone, 2002; McFadzean et al., 2005; Brem, 2011).

This chapter will review the academic theory pertinent to the domains as related to the research objectives described in the previous chapter; namely innovation, entrepreneurship and cognitive frameworks and therefore concentrates on the shared elements from these literature streams. This study however also required the exploration of the cognitive reasoning theory in order to understand the cognitive processing inherent with disruptive thinking. The theory reviewed in this chapter has been broken down into seven main sections. The first element involves discussing the theory of disruptive innovation to provide the context and backdrop in which this study core body of knowledge is based, discussing and reflecting on the development of the theory as well as the debates and shortcomings to gain an understanding of the writer's point of view on disruptive innovation theory. We then highlight the implications and ubiquitous nuances of disruptive innovation and what this means for business. We argue that DI requires a different approach and highlight why disruptive thinking is required. We then take a look at opportunity formulation and explain both view points, opportunity discovery and creation. An initial outlook of the cognitive process is then proposed which explains what theory at this juncture is able to explain. We then shift the focus to the underlying construct of entrepreneurship in section 2.6 by dividing this diverse literature stream into four dimensions. In an attempt to bring all the various theory together we then bring the main constructs together by linking entrepreneurship with DI in section 2.7. Lastly, we end this literature review by providing a possible outlook to the cognitive process that could

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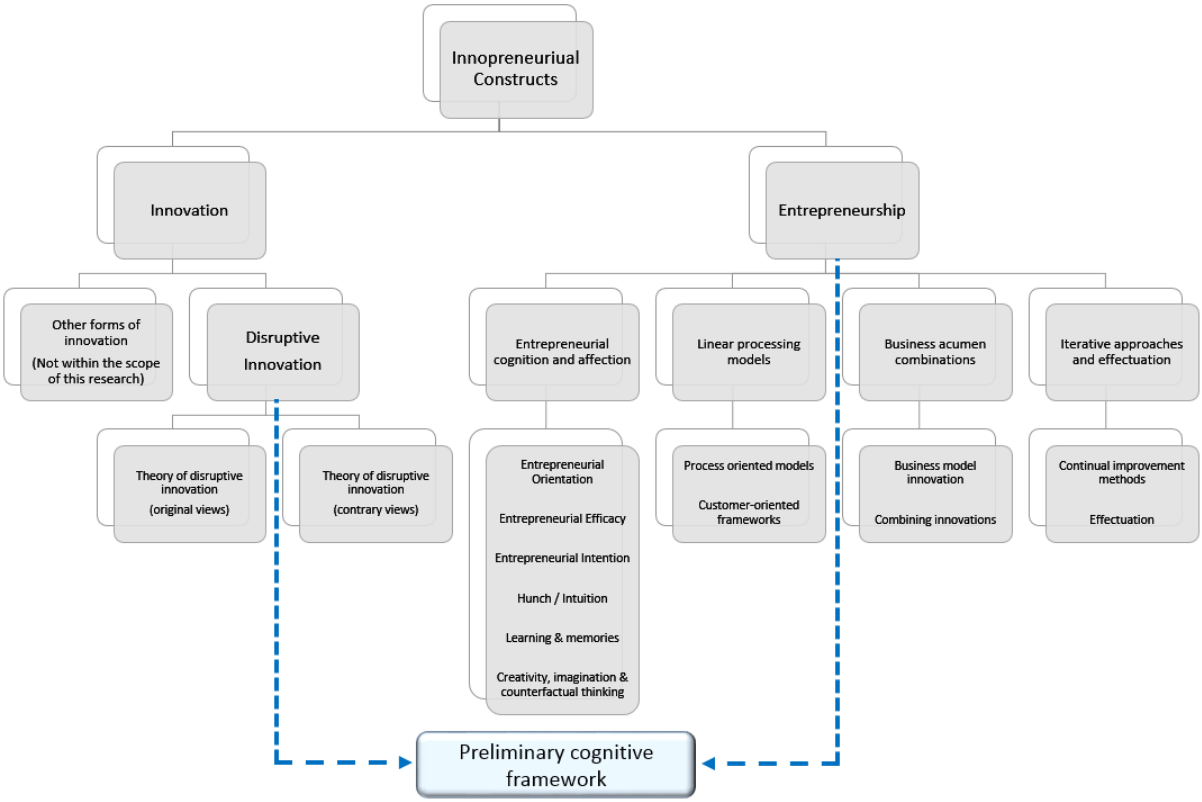
lead to disruptive innovation. Figure 3 below provides an overview of the key literature streams this study will review, specific elements and terms will be deliberated in the relevant sections as the discussion progresses.

Figure 3: Overview of the domains of knowledge forming part of this study leading to the research questions



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2.2 Disruptive innovation (DI)

Disruptive Innovation (DI) was first coined by Harvard Business School Professor Clayton M. Christensen in 1997 and the theory has further been refined by Adner and Zemsky (2003), Adner (2002), Gilbert (2001); Christensen and Raynor (2003); Christensen, Anthony, and Roth (2004); (Christensen, 2006). This research briefly defines Disruptive Innovation (DI) as: "Through competitive responses to innovation, a new market offering generates value and gains market share through disrupting the common *modus operandi* of rivals within an existing market and value network, subsequently displacing these established market leading firm's products and alliances as the value of the new offering becomes superior."

Disruptive innovation not only serves as the means to rapid start-up growth, but is also the core strategy for an increasing number of incumbent business's competitive advantage. At the heart of Blue Ocean strategy is value innovation – the simultaneous pursuit of differentiation and low cost. (Kim and Mauborgne, 2015). Nagji and Tuff (2012) state that organisations that perform well at total innovation management simultaneously invest at three levels of ambition, carefully managing the balance among them, suggesting a ratio of investment and resources to core innovations (70%), adjacent innovations (20%) and transformational innovations (10%). This allocation of resources for corporates' business strategies is known as the golden ratio. Their findings suggest that of the highest performing organisations that invested in all three levels of innovation, 70% of total returns are from transformational innovation, the inverse of the resource allocation ratio. Google's co-founder Larry Page suggests that the company strives for a 70-20-10 balance and has credited the 10% of resources that are dedicated to transformational efforts with all the company's truly new offerings (Helft, 2012). Suggesting that disruptive innovation should form part of any organisations corporate strategy, Rubera and Kirca (2012) found that radical innovations consistently generate more positive performance outcomes than incremental ones. Disruptive innovation has also shown positive effects for long-term performance and survival by incumbents practicing continuous innovation. Apple, Amazon and Zara are examples of prominent firms that are pursuing this model by constantly disrupting their own business with innovation. While new start-ups are looking at ways of disrupting their incumbents by means of disruptive innovation, the same incumbents are looking for ways to fight back with the same "secret sauce" using continuous innovation strategies for long term survival (Christensen et al., 2011).

Reviewing disruptive innovation theory, Yu and Hang (2010) point out that disruptive innovation deserves examination through different lenses when clarifying some potential misunderstanding of the theory and it is important to note that disruptive innovation does not

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always imply that disruptors are necessarily start-ups. This suggests that incumbents could survive the disruptive wave or even take the role of the disruptor after they have accumulated transformational experience (Yu and Hang, 2010). Many research scholars have challenged the predictive use of Disruptive Innovation Theory suggesting that disruptiveness was defined *post hoc*, meaning the definition of disruptiveness exists independent of the outcomes. Paap and Katz (2004) pointed out general guidance to predict future disruption, such as "do not ignore your customers, both current and potential", while others (Danneels, 2004; Govindarajan and Kopalle, 2006; Druehl and Schmidt 2008) believe that based on the causes of incumbents firms' success or failure and subsequent offerings, insights will be provided that determine the fate of a firm in a new wave of disruptive innovation.

In addition, further shortcomings on the Theory of Disruptive Innovation as described in the recent MIT Sloan Review (King and Baatartogtokh, 2015) stated that when questioning the usefulness of Disruptive Innovation Theory, "Theories can provide warnings of what may happen, but they are no substitute for thoughtful analysis." The argument is taken further where King and Baatartogtokh (2015) argue that the theory's essential validity and generalisability have seldom been tested in academic literature. They also state that the exemplary cases used in the theory did not fit all its conditions and predictions well; for example, only seven cases out of the 77 (9%) exhibited all four elements of the theory. These shortcomings are further discussed in a subsequent MIT Sloan Review (Vázquez, Bienenstock, and Zuckerman, 2016) who argue that it is not entirely clear what the core idea of the theory of disruption is and what is peripheral. Furthermore Moazed and Johnson (2016) suggest that the reason the Theory of DI needs revision is that the theory only refers to linear business models (linear value chain from the supplier to the consumer) that control their supply and fails to recognise platform business models such as Uber and Apple's App Store, which operate in a different manner to linear businesses by creating and growing a value network; hence suggesting that the current theory is only a demand-side theory and ignores the supply side.

Further research by scholar Joshua Gans in "The disruption dilemma" argues that disruptive innovation theory is outdated and needs revision (Gans, 2016b), whereas Vázquez et al. (2016) argue that the theory's core idea is not entirely clear and question its value, Lepore (2014) dismisses the theory of disruption saying it has only served as a chronicle of the past but not as a model for the future. In response to these shortcomings, Christensen notes that the theory is widely misunderstood and misapplied: "Unfortunately, disruption theory is in danger of becoming victim of its own success." (Christensen et al., 2015). Disruption theory, according to Christensen, suggests that a business must both start in a low-end market and

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move upstream to higher value markets and in the process increase its market share; or the business has to create a new market where none existed before. Christensen does confirm that “Disruption theory does not, and never will, explain everything about innovation specifically or business success generally. Far too many forces are in play, each of which will reward further study” (Christensen et al., 2015).

Moreover in discussing the implications for organisations, Cowden and Alhorr (2013) argue that large multinational enterprises find it difficult to pursue disruptive innovations and tend to get disrupted by new entrants due to the complexity of these large organisation’s internal networks. The suggestion is that the complex nature of internal processes and company structure inherent in these large organisations in getting the job done gets in the way of disruptive innovation. Managers routinely discount future threats and focus on short-term gains at the expense of less certain long-term returns (Tushman and O’Reilly, 2011). This is especially true with larger organisations that struggle to innovate due to complex structures and slow decision-making hierarchy that cripples the agility required to compete against disruptive start-ups (Owens and Fernandez, 2014). Denning (2016) supports this view by stating that the only permanent way out of the innovator’s dilemma as described by the Theory of Disruption is to change the game being played and adopt a new corporate focus in which innovation is a necessity, not an option.

Emphasising the importance of understanding Disruptive Innovation and the ubiquitous nature thereof, deciding which new ideas to pursue in order to gain or maintain market share is not only important, but the timing of those decisions is vital. Ornston (2014) explains that globalisation has generated increased interest in technology-intense industries as a way to sustain national economic competitiveness, and adding DI to the equation forces one to think more deeply when innovating. Linkner (2014) believe organisations that comfortably bask in their own success will fail; explaining that constant creativity, reinvention and innovation are needed to stay relevant and succeed. An alternate view point, Keeley et al., (2013) in Ten Types of Innovation explain that successful innovators use many types of innovation and that focusing exclusively on Disruptive Innovation should not be the only avenue of growth; and suggest making innovation a systematic approach, moving the field from a ‘mysterious art’ to more a ‘disciplined science’ (Keeley et al., 2013). Organisations, mindful of the large failure rate concerning innovative interventions, Keeley et al. (2013) mention that evidence shows a staggering 95% of innovation efforts failed in industries such as manufacturing and services, and a careful balance between risk and reward is a daily strategic decision all businesses encounter.

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2.3 Disruptive innovation requires disruptive thinking

The Theory of Disruptive Innovation is somewhat a post-priori view, as argued by (Yu and Hang, 2010; Paap and Katz, 2004; Danneels, 2004; Govindarajan and Kopalle, 2006; Druehl & Schmidt 2008) and therefore does not provide aspiring innopreneurs a framework within which to derive more disruptive ideas. This research is however not concerned with altering the definitions of Disruptive Innovation Theory but, more importantly, examining the cognitive affecting processing of the disruptive innopreneurs who disrupt the market; so as to suggest a cognitive framework that will assist aspiring innopreneurs to think disruptively. Utilising a proven framework that encourages disruptive thinking, irrespective the complexity of internal networks, would lead to increased disruptive innovation within larger organisations as the key uncertainties of success are reduced and the business processes can be aligned to facilitate the framework, leading to a better understanding and alignment upfront of what is required. Our approach to Disruptive Innovation ideation suggests that by extracting the essence of existing ideation and cognitive frameworks, incorporating nuances in disruptive innovation and cognitive ideation literature will lead to effective disruptive ideation using this contemporary framework due to the following factors:

- Disruptive thinking is encouraged through an iterative process
- Creative ideas are validated before testing in the market
- The process of ideation is systematic and thus repeatable
- Facilitates alignment with strategy as the framework allows you to course-correct
- Minimises time wasted on useless ideas that use valuable resources
- Reduced time in getting ideas to market as the idea has been validated

Why is radical innovation so difficult? Teece, Pisano, and Shuen (1997) argue that the competitive battles in dynamic markets require a paradigm beyond the resource-based view (Barney, 1991). The discovery of new radical ideas is difficult owing to both the processes and individuals' capability to do so (Slater, Mohr, & Sengupta, 2014).

Because disruptive and radical innovation requires a new way of thinking and of understanding all aspects of the concepts, books describing how exponential growth can be achieved and what is required throughout the process have become popular and offer an essential platform from which the innopreneur can operate. (Thiel & Masters, 2014) "Zero to One: Notes on Startups, or How to Build the Future" advises start-ups and established companies that to cultivate exponential growth by vertical progress (going from 0 to 1), creating something that

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did not exist before and to imagine what progress the future will bring, you must be able to view the present differently. Slater et al., (2014) agree that essential to developing radical product innovations, mental models constrain creative thinking while open-mindedness supports proactive questioning of the value of long-held routines, assumptions and beliefs.

In "Exponential Organizations: Why new organizations are ten times better, faster, and cheaper than yours (and what to do about it)", Ismail, Malone, van Geest, & Diamandis (2014) proposed that organisations can achieve exponential growth and disrupt the industry creating the right interfaces, dashboards, experimentation, autonomy and social components; complemented with strategies for staff-on-demand, community and crowd, algorithms, lease assets and engagement with the customers.

Furthermore, in the context of disruption and exponential growth, Diamandis & Kotler (2015) suggest there are three stages of exponential entrepreneurship, these being the adoption of exponentially growing technology, utilisation of advanced psychological strategies, and harnessing of "crowd-power tools" such as crowd sourcing and funding. Steven Kotler explains that the key to achieving exponential entrepreneurship is to understand the growth cycles of exponentially advancing technologies. These technologies are broken up into what Kotler calls the Six D's, namely: Digitalisation, Deception, Disruption, Demonetisation, Dematerialisation and Democratisation.

Increased fascination with how to respond and lead in the era of disruption requires a cognitive affective processing framework that may guide the opportunity to discovery and creation for aspiring innopreneurs and leaders. Owing to the newness and rapidly-changing structures that govern entrepreneurship and innovation across the many sectors currently experiencing it, academic literature is scarce but likely to gain traction among those seeking to define the science and psychology involved.

2.4 Opportunity discovery and opportunity creation

Opportunity as a scholarly construct, however, has been studied for decades, Venkataraman (1997, p. 120) proposed that "*entrepreneurship should focus on opportunities as its distinctive domain and seek to understand how opportunities bring into existence 'future' goods and services as they are discovered, created, and exploited, by whom, and with what consequences*". Shane and Venkataraman (2000, p. 218) defined entrepreneurship as "the scholarly examination of how, by whom, and with what effects opportunities create future goods and services". It is also clear that opportunities are the core of entrepreneurship

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(Stevenson and Jarillo, 1990; Venkataraman, 1997; Shane and Venkataraman, 2000; Gartner et al., 2003; Short et al., 2010) further suggest that without opportunity, there can be no entrepreneurship. Notably, though, the question of, whether opportunities are discovered or created is contested (Krueger, 2003; Zahra, 2008; Alvarez et al., 2010; Vaghely & Julien, 2010).

The origin of creative ideas stems from two viewpoints, namely discovery or construction. Discovery takes its source in cognitive psychology and construction in social constructionism or developmental psychology (Vaghely & Julien, 2010). Hang et al. (2015) findings suggest that there are alternative means of disruptive ideation depending on which markets the organisation decides to enter. They propose that opportunity creation is critical if a disruptive innovation is to be produced for new markets, while discovery of unmet needs is of particular importance for disruptive innovation serving lower-end consumers in existing markets. The distinction aligns with differences between disruptive innovations for the low end of existing markets on the one hand, and disruptive innovations for new or emerging markets on the other.

As described by Oyson & Whittaker (2015), the discovery view, reaffirms Kirzner's (1979, 1985, 1997) illustration of opportunities as being in the environment and existing independent of entrepreneurs. Kirzner (1995, p. 17) held that "discovery involves unnoticed opportunities to be noticed and grasped. Such opportunities are just around the corner and ready to be found by an alert entrepreneur". Diverse terminology used, add fuel to fire and further clouds the opportunity debate (Gartner et al. 2003; Ardichvili et al. 2003; Hansen et al. 2011). Oyson & Whittaker (2015) further explain that opportunity formation has also been described in terms of: search, recognition, identification, perception and development, additionally suggesting that these terms are often used interchangeably. Furthermore, Oyson & Whittaker (2015) argue that the discovery view that has dominated the entrepreneurship literature, particularly that deriving from economics (Gaglio and Katz 2001; Alvarez and Barney 2007; Foss and Klein 2010), considers opportunities as objective (Shane and Venkataraman 2000) and concrete phenomena (Gartner et al. 2003).

Meanwhile, taking the point of this argument further and from an alternative viewpoint, Oyson & Whittaker (2015) suggests that the creation view regards opportunities as having no objective existence; hence opportunities cannot be mere objects of discovery (Foss and Klein 2012) and then refers to (Gartner et al. 2003; Klein 2008) whom believe opportunities exist in the minds of entrepreneurs. Buchanan and Vanberg (1991) reject the discovery view, arguing that opportunities are products of entrepreneurial choices and are also created by the actions

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and imagination of entrepreneurs, therefore one cannot speak of opportunities as given, (Oyson & Whittaker, 2015).

On the contrary, other scholars have seen the opportunity theory debate from a different perspective. (Oyson & Whittaker, 2015, p. 307) argue that the viewpoint of opportunities is a non-issue and to debate them is to miss the point, saying that “Kirzner did not intend for opportunities to be understood as objective realities, and merely used the concept of opportunity as a metaphor to explain the tendency of markets to equilibrate, rather than as the object of analysis”.

Research suggests that opportunity discovery may be a spontaneous and unplanned cognitive process, while creation is a purposive and deliberate process involving both cognition and behaviour. (Oyson & Whittaker, 2015). When looking at the differences of these two viewpoints, discovered opportunities were typically broad, vague, or incomplete and not ready for exploitation, only existing potentially. In order to exploit opportunities that have been uncovered, these options needed to be transformed into robust entrepreneurial opportunities (Oyson & Whittaker, 2015).

Studies have clearly shown that entrepreneurs whose innovations turn out to be disruptive are actively engaged in discovering and creating opportunities (Hang & Ruan, 2015). This thesis takes on the outlook of both the creation and discovery viewpoints. Our research focused on how the innopreneurs created potential disruptive ideas by identifying the opportunity, and subsequently turned the opportunity into a plausible disruptive business. Oyson & Whittaker (2015) argued that some opportunities may be discovered by any ‘alert’ and sufficiently motivated entrepreneur, while others are the subjective and concerted creations of entrepreneurs. In the context of this research, the author refers to this ‘alert’ as the innovator’s ‘sparks’. Cognitive processing that can effectively support disruptive innopreneurs to ignite these sparks, i.e. recognise, develop and evaluate an opportunity, are not well studied.
Irrespective of which viewpoints one takes, disruptive innopreneurs need the appropriate cognition and motivation to challenge the common perception, as well as the right behaviours and processes to understand how to transform the conceptualisation into conception. The thinking process of disruptive innopreneurs leading to a disruptive innovation herby becomes an intriguing topic.

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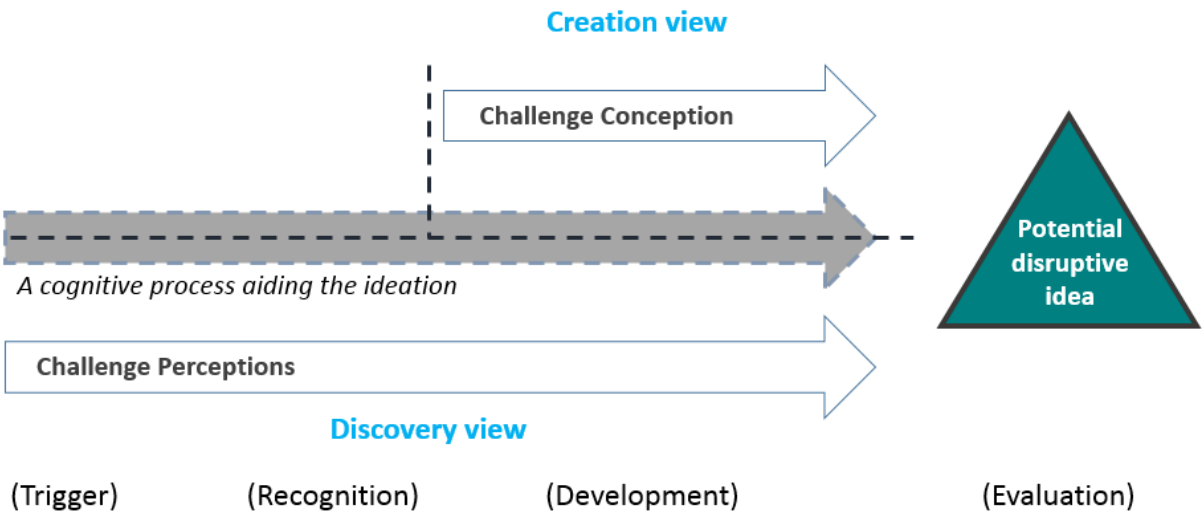
2.5 Initial outlook

Based on the above stated arguments, the author proposes the following outlook towards a cognitive framework. Briefly, a disruptive innopreneur starts by challenging the perception of the *status quo*; thereafter transforms the opportunity into conception and then develops the nascent concept into a viable potential disruptive idea (PDI), as illustrated in the figure provided below.

Figure 4: Initial outlook of the cognitive process of disruptive innopreneurs



Source: Authors own

This initial outlook supports Ardichvili et al. (2003) advancement of an opportunity identification triad involving recognition, development, and evaluation (Oyson & Whittaker, 2015). Examining the illustration of the initial outlook in more detail, we believe that the creation of opportunity cannot take place unless some level of opportunity discovery precedes it. Innopreneurs start by challenging the perceptions of the current status quo, which we refer to as the 'trigger' that starts the ideation process. Similarly, Vogel's conceptual framework starts with a trigger, referred to as "triggers of idea generation" (Vogel, 2016, p. 6). The continuous curiosity to challenge perceptions continues throughout the process, hereby supporting Verganti (2016) argument that disruptive innovation challenges the conventional understanding of what is valuable. Once conceptualised, the innopreneur transforms the recognised opportunity now discovered into a concept, creating the idea we term the 'hunch'. Similar to what Oyson & Whittaker, (2015, p. 329) referred to when arguing, "for discovered opportunities to be exploited, they needed to be transformed into concrete, entrepreneurial opportunities - in other words, created". When the ambiguous hunch has developed into a

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plausible clue, one needs to challenge the conception and find disruptive ways to turn this clue into a potential disruptive idea that is economically and operationally viable as well as capable of achieving exponential growth, this component we have termed ‘Evaluation’. Using Uber as a case in point, the founders’ initial clue of purchasing their own cars generated a lot of interest, but it was not particularly profitable. Only when the clue was further developed by radically and incrementally innovating various operational elements through disruptive business model innovation, did Uber become a grand success.

Ettlie, Groves, Vance, & Hess (2014, p. 311) findings show a “significant direct relationship between balanced thinking style and innovative intention and behaviour measures”. The results demonstrate that cognitive style and innovation are related, but the direct validation of actual innovative behaviours in their specific environments needs further research (Ettlie et al., 2014a). The framework must include elements that assist individuals to challenge perceptions – translating nascent notion into a plausible concept - and thereafter further support the development of the concept into an innovative business offering by challenging the ways of conception. The crucial role of challenging perception of an opportunity is obvious; without it, there is no opportunity to speak of. Equally, the importance of transforming conception should not be neglected. Often true disruptive innovation only emerges when founders shift the direction and/or the combination of business processes. Without combining thoughts and action, discovering and creating, a new, potential disruptive idea will not be possible as eluded to by Hang et al. (2015) when suggesting that the innovators outlook and actions are also critical. Therefore a framework guiding disruptive thinking will be very valuable in improving the effectiveness of DI.

2.6 Towards uncovering an ideation framework of disruptive innovation

In order to understand an innopreneurial thinking model that leads to disruptive innovation, one needs to understand the theory of entrepreneurship and innovation, which have been categorised into four dimensions as discussed in this section. The field of entrepreneurship is broad and it is beyond the scope of this thesis to give an extensive overview of the relevant theories. However, this literature review aims to provide a succinct but holistic overview of the relevant theoretical underpinnings. Popular theories in the domain of innovation and entrepreneurship that are of relevance to this research have been summarised into four dimensions below, as depicted in section 2.1, Figure 3 of the literature review introduction. We first provide a brief overview and then delve into each dimension as the chapter progresses.

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There exists today a global, seemingly insatiable appetite for understanding the innovation process in order to achieve the most favourable solutions for pressing business and economic issues (Mack, 2012; Perrin et al., 2012). This eagerness is widespread across industry, company, group and individual levels of analysis, internationally (Den Butter and Es-Saghir, 2013; Sundgren and Styhre, 2007; Schmiele, 2012; Lin and Liu, 2012; Polder and Veldhuizen, 2012; Pearce, 2012; Belenzon and Berkovitz, 2010; Kalyar, 2011). Vogel (2016) proposed that entrepreneurship research still suffers from a lack of sufficiently fine-grained concepts and leads to confusion in terminology. The theories around disruptive-type entrepreneurship however continue to remain scarce considering that not only has the intersection between innovation and entrepreneurs not yet been defined, the theories of disruptive innovation need further work (Denning, 2016; Gans, 2016a; Philipson, 2016 and Yu and Hang, 2010).

Numerous models and frameworks have been proposed to assist one's cognitive process for DI ideation (Paap & Katz, 2004; El Bassiti & Ajhoun, 2013) but not for disruptive thinking. The purpose of this research is to propose a Disruptive Innovation Ideation Framework. Potential contributions offered by the framework may bridge an important gap in the current entrepreneurship and innovation research, a gap between the micro level factors, such as entrepreneurs' cognition, and the macro level measures that are central to the creation of disruptive innovation.

The first dimension, we have termed "Entrepreneurial cognition and affection", captures the literature related to how innopreneurs utilise internal capabilities and knowledge stored within their memory to discover and create opportunities that challenge common assumptions and conceptions. How an individual construes his or her action is based on the beliefs and expectation of what can be accomplished (Vogel, 2016). Beliefs and expectations are central to strategy and entrepreneurship (Felin & Zenger, 2009). Felin & Zenger, (2009) continue explaining that entrepreneurs and organisations evolve beliefs and assumptions about certain sequences of activities (Simon, 1964), the state of the environment (Gavetti and Levinthal, 2000), the value of their resources (Barney, 1986), about the capabilities they may need to acquire (Makadok, 2001), or about opportunities that may be pursued (Shane and Venkataraman, 2000; Shephard et al., 2007). This holds to be true that beliefs and expectations are the primary precursors of organisational decision making (Cyert and March, 1963), resource acquisition (Barney, 1986), action, and behaviour and, thus, competitive advantage. Felin & Zenger (2009) argued that a process of theorising explains the emergence of novel, entrepreneurial beliefs and strategies. Felin and Zenger (2009) also explains that the process of entrepreneurial theorising consists of three key conceptual elements. These key

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elements are the platform for the triggers of experiential and observational fragments that include, in the first dimension, hunch, intuition and associational thinking; the imagining of possibilities through envisioning, creativity, imagination, counterfactual thinking, entrepreneurial orientation, entrepreneurial self-efficacy, and entrepreneurial intention; and the process of reasoning and justification, which are vital to the success of entrepreneurial theorising. Models found within this first dimension have been developed to assist individuals make better decisions (Felin & Zenger, 2009).

The second dimension, termed “Linear processing”, captures the literature of theoretical frameworks that adopt a predominately linear approach, subdivided into two categories. These two sub-categories’ theoretical frameworks differ profoundly by their contrasting orientation towards customers’ needs, and therefore these subcategories are divided into ‘process’ and ‘customer’ oriented models.

The third dimension is the “Business acumen combinations”, and captures selected models that utilise the bricolage philosophy to ensure various business insights and experiences are being considered in aiding the overall innovativeness of the offerings.

The fourth and final dimension, termed the “Iterative approaches and effectuation” captures the approaches that focus on continuous iterative cycles for improvement such as Plan-Do-Check-Act (PDCA), Agile and Lean type methodologies. The fourth dimension concludes by taking a look at effectuation as a novel thinking method to increase entrepreneurial performance.

2.6.1 Dimension 1: Entrepreneurial cognition and affection

Mental processes such as recognition, perception, identification, knowing, and imagining can assist the innopreneur to identify and create either knowledge-based opportunities or imagination-based opportunities or a combination thereof. Knowledge-based opportunities are also driven by logic and reason, whereas imagination-based opportunities are driven by emotions and beliefs (Oyson & Whittaker, 2015).

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2.6.1.1 Entrepreneurial constructs

The entrepreneurial constructs are the attitudes, behaviours and concepts that are inherent in entrepreneurs and in this study we include the various elements discussed below in this all-encompassing phrase.

Morris, Kuratko, Schindehutte, & Spivack (2012) suggest that entrepreneurship is a temporal experience which is largely unscripted, unpredictable, and uncontrollable; the richness of entrepreneurship lies in how it is personally experienced (Schindehutte, Morris, & Allen, 2006) and construe the responses to this winding path towards venture creation. In a peer-reviewed article titled “How Affect Relates to Entrepreneurship: A Systematic Review of the Literature and Research Agenda”, Delgado García, De Quevedo Puente, & Blanco Mazagatos (2015) provided a comprehensive review around how emotion affects entrepreneurs. Gorgievski & Stephan (2016) also provide a thorough review on the psychology of entrepreneurs in their recent publication titled “Advancing the Psychology of Entrepreneurship: A Review of the Psychological Literature and an Introduction”. These two articles highlighted the intricate relationship between cognition, affection and entrepreneurship, showing that the personal experiences of and how they encounter and engage with the situation indeed shape the entrepreneurial endeavours profoundly (Morris et al., 2012).

Arora, Haynie, & Laurence (2013) in discussing the relationships between cognition and affect highlight the Baron (2008) assertion that the “interface between affect and cognition is both continuous and pervasive” (p. 328) and successful entrepreneurs know how to leverage both of these components. Underpinning the entrepreneurial cognition and action, research has demonstrated that the success of an entrepreneurial endeavour can be linked with the entrepreneurial intention (EI), entrepreneurial self-efficacy (ESE) and entrepreneurial orientation (EO) of the founders (Mousa & Wales, 2012; Wales, Monsen, & Mckelvie, 2011) and the team (Corbett, Covin, O’Connor, & Tucci, 2013; Engelen, Gupta, Strenger, & Brettel, 2015).

Entrepreneurial intention (EI) is a key link between entrepreneurs’ ideas and attitudes, and their entrepreneurial behaviour, as elaborated by Bird (1988). Sweida & Reichard, (2013) argue that prior research has not consistently defined entrepreneurial intention or applied a consistent measure and this is supported by (Bonnett and Furnham, 1991; Chen et al., 1998; Douglas and Shepherd, 2002; Frank, Lueger and Korunka, 2007; Gatewood, Shaver and Gartner, 1995; Kickul and Zaper, 2000; Poon and Ainuddin, 2006; Schmitt-Rodermund and Vondracek, 2002). As described in Sweida & Reichard, (2013) they explain that various

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scholars such as “Luthje and Franke (2003) defined EI as the readiness to start a business, with risk-taking propensity, locus of control and attitudes toward self-employment as predictors. Alternatively, Hmieleski and Corbett (2006) stated that intentions towards starting a high-growth business (p. 48) defined entrepreneurial intention, and assessed this by asking questions about whether or not the participants wanted to grow the business rapidly” (Sweida & Reichard, 2013, p. 288).

Schlaegel & Koenig (2014) explained that the body of knowledge on EI can be traced to the entrepreneurial event model proposed by Shapero and Sokot (1982) and the Theory of Planned Behaviour coined by Ajzen (1991). Other researchers have added to this theory (Bird, 1988; Katz and Gartner, 1988; Krueger, 2009; Shook, Priem, & McGee, 2003; and Schlaegel and Koenig, 2014). Schlaegel & Koenig (2014) go on to explain that EI is about possessing both the ability to think wisely and take action accordingly in the pursuit of entrepreneurship. Additionally defined, entrepreneurial intentions are usually described as one’s desire to own one’s own business (Crant, 1996) or to start a business (Krueger, Reilly, & Carsrud, 2000). Schlaegel & Koenig, (2014) further explain that multiple studies still regard entrepreneurial intentions as one of the crucial antecedents of actual entrepreneurial actions as was suggested by (Krueger et al.; Lee, Wong, Foo, & Leung, 2011).

Considering that the road of entrepreneurship is largely unscripted, unpredictable, and uncontrollable, the richness of entrepreneurship lies in how it is personally experienced (Schindehutte, Morris, & Allen, 2006; Bae, Qian, Miao, & Fiet, 2014). Furthermore, in order to take action, an entrepreneur needs a certain level of entrepreneurial self-efficacy (ESE) with a distinct orientation towards entrepreneurship (Bae et al., 2014).

Another component of the entrepreneurial cognition dimension is that of self-efficacy, and according to Arora et al. (2013) has been applied in contexts as diverse as education, learning, health, business, and entrepreneurship to measure not just the belief, but also the actual likelihood of taking action. Defined by Arora et al. (2013) “Self-efficacy refers to the belief in one’s capabilities to organise and execute actions required to manage prospective situations” and go on to argue that self-efficacy is an important antecedent to entrepreneurial action. Sweida and Reichard (2013) suggest that Self-efficacy has consistently been found to be one of the strongest predictors of setting, persisting and attaining challenging goals; they further argue that that self-efficacy is a good predictor of future performance because self-efficacy is affected more by the attribution of performance than the actual performance.

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As discussed by Arora et al. (2013) in reference to self-efficacy and entrepreneurship, they argue that "self-efficacy represents a proxy for other more 'objective' measures of entrepreneurial performance and has indicated that it is connected to opportunity recognition (Krueger & Brazeal, 1994), career intention, and the decision to pursue an entrepreneurial career (Kickul, Gundry, Barbosa, & Whitkanack, 2009). Chen et al. (1998) provide further evidence that higher levels of entrepreneurial self-efficacy (ESE) are tied to intentions to start a new venture, strengthening the argument scholars have made that entrepreneurial self-efficacy is an important antecedent to entrepreneurial action" (Arora et al., 2013, p. 363).

Sweida & Reichard, (2013) on the other hand, argue that self-efficacy has consistently been found to be one of the strongest predictors of setting, persisting and attaining challenging goals. Furthermore, Sweida & Reichard, (2013) explain that the reasons why self-efficacy is a good predictor of future performance is because self-efficacy is affected more by the attribution of performance versus actual performance. "Meanwhile, low self-efficacy may be present even when one is successful if external attributions are made and high self-efficacy may persist even in the face of failure meaning that those with similar abilities and experiences may develop different levels of self-efficacy partly as a result of how entrepreneurial characteristics are presented, so all entrepreneurs-in-training will not develop the same belief in their entrepreneurial capabilities" (Sweida & Reichard, 2013, p.303).

Another important component of the entrepreneurial inner construe dimension is entrepreneurial orientation (EO) and Henry Mintzberg was one of the first scholars to recognise an entrepreneurial strategy-making mode in firms (Mousa & Wales, 2012). Research on the topic of EO has existed for decades (Covin & Lumpkin, 2011) and although Danny Miller (1983) never alluded to the precise term, he has been credited with introducing the concept of EO to scholarly literature (Covin & Lumpkin, 2011). Mousa & Wales (2012) highlight that other scholars have made significant contributions to the theory of entrepreneurial orientation over the years too (Miller and Friesen, 1982; Covin and Miles, 1999; Richard, Barnett, Dwyer and Chadwick, 2004; Wiklund, 1999; Zahra and Covin, 1995). Van Doorn, Jansen, Van Den Bosch, & Volberda, (2013) posit that the emergence of EO has variously enriched literature on corporate entrepreneurship and venturing (Covin, Green, and Slevin, 2006; Lumpkin and Dess, 1996; Lyon, Lumpkin, and Dess, 2000). Mouse and Wales (2012) found that EO increases post-IPO survival of organisations and also conclude that founder-CEOs positively moderate the relationship between entrepreneurial orientation and long term organisational survival.

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Oyson & Whittaker (2015) make reference to the findings of Jantunen, Puumalainen, Saarenketo, and Kylaheiko (2005) who explain “that entrepreneurial firms create opportunities through their actions, but to take advantage of these opportunities, such firms will often need to reconfigure their resource bases, and dynamic capabilities are the enabling mechanisms for doing this”. These dynamic capability are what (Covin & Lumpkin, 2011) suggest are the key means key means for linking EO to firm opportunity exploitation and subsequent performance. Drawing on the work in entrepreneurship of McDougall and Oviatt (2000, p. 903) who defined EO as “innovative, proactive, and risk-seeking behaviour that crosses national borders and is intended to create value in organisations” (Oyson & Whittaker, 2015).
Mousa & Wales (2012) describe EO as expressing succinctly the process by which organisations view and work through opportunities for innovations that result in market entry and advantage (Covin and Miles, 1999; Lumpkin and Dess, 1996), making EO an important aspect of the identification process for growth and renewal opportunities for firms (Ireland et al., 2009).

Two key elements that must be explored in the identification of areas that encourage both innovation and new opportunities are passion and persistence, both found to be supportive structures of ESE. The first is that of persistence and as argued by Cardon & Kirk (2015, p. 1027) mentions is a “vital element in entrepreneurship, as the process of founding and growing a business is ambitious, difficult and involves meeting and overcoming frequent obstacles along the way”. A vital element in entrepreneurship is persistence (Shane, Locke, & Collins, 2003), and entrepreneurs who are tenacious and resolute in the pursuit of their goals are most likely to achieve success (Cardon & Kirk, 2015).

The business idea or vision these individuals have is based largely on passion (Brockett, 2006; Schwartz, 2004), where passion is considered a core component of the entrepreneurial process (Cardon, Wincent, Singh and Dmovsek, 2009; Murnieks and Mosakowski, 2006; Murnieks, 2007; Nordstrom, Siren, Thorgren, & Wincent, 2016). It has also been empirically validated that passion is a significant factor in the entrepreneurial process (Baum and Locke, 2004; Cardon et al., 2009; Thorgren & Wincent, 2013; Thorgren et al., 2013), with deep identity connections (Cardon & Kirk, 2015). (Nordstrom et al., 2016) highlighting the fact that passion for entrepreneurship involves intense feelings and strong identification with entrepreneurial activities; and its role in the entrepreneurial process, including how passion influences opportunity recognition, venture creation, and venture growth has received significant scholarly attention (Baum and Locke, 2004; Cardon and Kirk, 2015; Cardon et al., 2009; Philippe et al., 2010). Additionally, Cardon, Gregoire, Stevens, and Patel (2012) suggest that passion is at the heart of entrepreneurship, because it can foster creativity and the recognition

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of new information patterns critical to the discovery and exploitation of promising opportunities. The mutual re-enforcing nature of identity and passion Mageau, Vallerand, Charest, Salvy and Lacaille, (2009) discussed how internalising the activity into one's identity is central to the development of passion(Nordstrom et al., 2016). Using the above stated arguments, we infer that EO, ESE, and EI, along with belief, shape an entrepreneur's audacity and identity as suggested by (Nordstrom et al., 2016). When the individual decides to start a business, a new world opens up and a new identity is created (Murnieks et al., 2014; Nordstrom et al., 2016).

People who identify most strongly with certain qualities show more persistence and greater accomplishment of their specific goals than those with less identification (Cardon & Kirk, 2015). This self-awareness involves relating to certain behaviours of processes of behaving, regardless of the outcomes(Houser-Marko & Sheldon, 2006). People generally strive for identity relevance and compatibility between opinions or actions in their behaviours (Hogg, Terry, & White, 1995; Stets & Burke, 2000), as "once identities are integrated into the self-concept, individuals are strongly motivated to act in a manner consistent with those identities (Burke & Reitzes, 1981; McCall & Simmons, 1966)" (Murnieks et al., 2012). It is this identity that provides the much-needed courage and persistence innopreneurs require to pursue their ideas and reach their goals, even if they do not possess the necessary skills, abilities or reasons to expect success, as is pointed out by Cardon & Kirk (2015) when discussion passion and persistence (p. 1032).

EO, ES and EI allow innopreneurs to assume a more courageous identity (Cardon & Kirk, 2015) and be the 'misfit' as defined by (Cooper-Thomas & Wright, 2013), which is the perceived mismatch between the individual and the environment on a dimension that was significant to one or both parties. When the two components - identity and misfit - meet in an innopreneur, it enables them to pursue their goals in a manner that other individuals may not consider attempting; given that the 'misfit' is unafraid of thinking in ways that set them apart from structured thinkers. EO, ES, and EI help innopreneurs take riskier but visible action, sustain self-belief, be proactive, embrace innovativeness, retain competitiveness and seek autonomy for gratifying pursuits – however, they do not explain where the innopreneurs 'alert' comes from and how these alerts can be transformed into a potential disruptive idea (PDI).
At this point, it is important to shift focus to the next component within the first Dimension, Hunch / Intuition. Verganti (2016) claims that intuition becomes the "precious raw material for creating new visions" whereas Hsu (2015) suggests that intuition refers to an individual's ability to associate different information in an instant and come up with content of imagination. Intuition has been regarded as a useful and valid concept in entrepreneurship research (Robert Mitchell, Friga, & Mitchell, 2005), with Mitchell, Friga and Mitchell (2005) viewing

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entrepreneurial intuition as a developmental process that can be fostered within specific domains and allows practitioners to adopt a lifelong learning approach to entrepreneurial intuition. It has been argued that through deliberate practice, intuition can also be improved (Dane and Pratt, 2007; Baylor, 2001; Baron & Henry, 2010), and is an important skill that innopreneurs are able to develop. Additionally, some interesting findings relating to intuition have determined that intuitive and deliberate processing both relate positively to organisational innovativeness (Matzler, Uzelac, & Bauer, 2014b) suggesting a positive relationship between intuition and innovativeness.

In comparison to the volume of information the human sensory system picks up at one time, our conscious capacity appears very limited. Some attempts to quantify this difference suggest a ratio of approximately 1:200,000 (Dijksterhuis et al., 2005; Nørretranders, 1998), indicating that we become aware of only 0.0005 per cent of the information that our senses encounter, meaning that the conscious processing capacity constitutes a fraction of what the entire sensory system can process. Because of these enormous differences in capacity, much of the information-processing in the body takes place without the involvement of the conscious self (Bechara, 2004; Damasio, 1994). Matzler, Uzelac, & Bauer (2014) explain that “sometimes the only signal that is consciously perceived is a feeling referred to as gut feel or intuitive hunch. Many times we remain unaware of the reasons that caused these feelings but we can obtain some insights in hindsight” (p. 31). Hunch and intuition can be regarded as interchangeable terms; and some scholars even refer them as intuitive hunch (Matzler et al., 2014a) but for formal research, intuition seems to be the preferred term.

Various antecedents to the theory of intuition exist, these include a whole array of elements, very neatly described by (Robert Mitchell et al., 2005, p. 657) as having being referred to as: “brain organisation (Isaack, 1978), the environment (Allinson et al., 2000), the existence of implicit theories (Riquelme & Watson, 2002), experience, training, and practice (Bennett, 1998; Covin et al., 2001; Harper, 1989; Khatri & Ng, 2000), expert knowledge structures/decision scripts (Neisser, 1976; Simon, 1987), formal knowledge or beliefs (Barnard, 1938), immersion in a problem (Koestler, 1976), individual perception (Clarke & Mackaness, 2001), the observation of professionals (Burke & Miller, 1999), deliberate practice (Isenberg, 1984; Ericsson 2006; Baldacchino 2013; Baron and Henry 2010), the physical and social environment leading to physiological conditioning (Barnard, 1938), problem sensing, gestation, deliberation, and analysis (Wierzbicki, 1997), situational decision uncertainty (Burke & Miller, 1999), unconscious deliberations (Crossan et al., 1999; Shapiro & Spence, 1997)” and more recently we have seen added use of alertness (Kirzner, 1997; Gaglio CM, Katz JA, 2001; Foss NJ, Klein PG, 2010; Oyson & Whittaker, 2015)

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(Baldacchino, Ucbasaran, Cabantous, & Lockett, 2015) explains that intuition is the trigger of initial business ideas and that these are then developed in a learning process, driven by intentionality and shaped by prior knowledge (Dimov, 2007) and contextual influences (Dimov 2007a). Baldacchino (2013) found that intuition was positively related to the number of opportunities identified as well as their innovativeness,, but also that the identification of highly innovative opportunities required a versatile cognitive strategy comprising analytical processing as well as intuition (Baldacchino et al., 2015). Intuition has been included in other broader multidimensional agendas, prompting (Baldacchino et al., 2015) to publish a systematic literature review on the relationship between entrepreneurship and intuition. However, even as part of the mounting cognition-oriented research agenda in the field of entrepreneurship, limited focus has been placed on studying the role of intuition in the entrepreneurial process (Baldacchino et al., 2015). Similarly Philipson (2016) in discussing customer needs argues that innovations are frequently based on intuitive hunches rather than informed understanding, and Philipson (2016) further mentions that instead of researching markets in traditional manners, innopreneurs should immerse themselves in the lives of their target customer, a concept we will refer to later on in this section. It has further been posited that these hunches take on more significance once they are able to 'collide' with the hunches of other innopreneurs. As defined by Johnson (2010), collective intelligence is largely a collision of a number of "hunches", usually by more than one person, which becomes something greater than the sum of its parts when all the existing parts are brought together to make the idea a reality. This would suggest that these hunches not only exist within a single individual but that further insights are realised once hunches 'collide' among more individuals. Furthermore, according to Professor Linda A. Hill, collective intelligence encourages collaboration, discovery-driven learning, and integrative decision making, by doing so one fosters willingness to innovate (Hill, Brandeau, Truelove, & Lineback, 2014).

Robert Mitchell et al. (2005) believes that there are also many consequential outcomes of entrepreneurial intuition that are of interest to practitioners and researchers. Robert Mitchell et al. (2005) go on to say "The presence or use of intuition has been thought to lead to a wide variety of phenomena, including creativity (Hunter, 2002), successful goal attainment (Williams, 2002), effective management decision making (Gonzales, 2001), prescient market reactions (Tazzia, 2001), and better sales forecasting (Krieger, 2002)". Robert Mitchell et al. (2005) further explain that consequences resulting from intuition also enhance: the aptitude of venture managers (Crossan et al., 1999; Hisrich & Jankowicz, 1990), the use of imagination or original ideas to create and innovate (Isaack, 1978; Olson, 1985), the understanding required entrepreneurial inputs (Conner, 1991; Mosakowski, 1998), the advancement or

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development of competitiveness (Behling & Eckel, 1991; Lank & Lank, 1995), identification of opportunity (Allinson et al., 2000), improved performance on an organisational level (Covin et al., 2001; Khatri & Ng, 2000), and competent decision making (Allinson et al., 2000; Bennett, 1998; Burke & Miller, 1999; Simon, 1987).

Metacognition has been defined as individuals' understanding of their own knowledge and performance (Feltovich et al., 2006) and cognitive scientists have posited that growth in metacognitive resources enhances one's intuitive ability, sometimes described as offline processing (Myers 2002). Intuition involves the processing of information that occurs below the level of conscious awareness but, nevertheless, has measurable effects on decisions, judgments, and overt actions (Baron & Henry, 2010). Baldacchino et al. (2015) proposed that other scholars of intuition also insisted that experience and expertise play a fundamental role in intuitive processing, and link intuition to domain-specific experience and expertise (Epstein 2010; Miller and Ireland, 2005; Blume and Covin 2011; Baldacchino et. al., 2015)

Entrepreneurial intuition is an ever-changing process where alertness cognitions meet with domain competence such as culture, industry, technology, specific conditions, and other factors to enable the conscious revelation of opportunities to create new value. According to (Robert Mitchell et al., 2005, p.671), "better utilisation of intuition within entrepreneurship practice appears to begin with the systematic enhancement of entrepreneurial alertness cognitions". By leveraging the knowledge stored within the memory to assess the context and the environment in which decisions are made, innopreneurs can increase trust in their intuitive hunches (Hogarth, 2001; Kahneman and Klein, 2009). Different forms of knowledge are stored in individuals' memory and how one utilises these memories to aid decision making with the right timing is of great significance for the disruptive innovators and the field of entrepreneurship (Matzler et al., 2014b).

2.6.1.2 Knowledge as the form of memory

Apart from the cognitive resource such as EE, entrepreneurs need to have a skill base that enables them to cope with what are generally called the 'liabilities of newness' (Shepherd D.A, Douglas E.J. and Shanley M, 2000; Politis, 2008).

The success of entrepreneurship has been suggested as being a continuous learning process (Politis, 2008) and the acquisition of knowledge and skill mastery is necessary throughout the radical innovation process (Alexander & Van Knippenberg, 2014). Researchers have for a

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number of years discussed the importance of knowledge in entrepreneurship (Johanson and Wiedersheim-Paul 1975; Johanson and Vahlne 1977; Eriksson et al. 1997; Cope 2005). Baron & Henry (2010) emphasise that learning is a key form of improving the cognitive resources of entrepreneurs, which has also been discussed by (Corbett, 2007; Kolb and Kolb, 2005; Holcomb et al., 2009). Baron and Henry (2010) suggest that entrepreneurs' enhanced cognitive resources relate to an extent to the success of the identification and evaluation of business opportunities as well as their capacity to perform tasks, and augmented performance of their new ventures. The ontological nature of opportunities, and whether they are objective (Shane and Venkataraman 2000), concrete phenomena (Gartner et al. 2003), waiting to be discovered (Kirzner 1979, 1985, 1997) or are subjectively constructed (Foss and Klein 2012) reaffirms our view that opportunities are both constructed and discovered. Oyson & Whittaker (2015) explain that broadly following critical realism and epistemological constructivism which assume an external reality independent of individual knowledge that is subjectively experienced (Perry et al. 1999; Babbie 2007) and created (Viney 1992; Raskin 2002) supports our view. Irrespective of how knowledge was acquired and whatever form of knowledge it may be, all forms of knowledge are stored in an individual's memory.

As argued by Cope (2005) entrepreneurs are avid learners. Once an individual has learned and experienced an event or stimulus, the interpretation of the experience can be referred as knowledge and is stored in two forms of memory, namely autobiographical and transactive. Bryant (2014) suggests that autobiographical memory refers to the memory people have of their own lives (Conway, Singer, & Tagini, 2004), and transactive memory refers to the collaborative storage and retrieval of memory among sets and groups of people (Wegner, 1987).

Autobiographical memory is a memory system comprising of personally experienced events or sensations recalled from an individual's life, based on a combination of episodic memory which includes actual experiences of particular people, occasions or objects experienced at specific time and place; and semantic memory, which includes facts and general knowledge about the world. Bryant (2014) posited there are two levels of autobiographical memory, and that the first and most fundamental level of the knowledge base that underpins autobiographical memory is the life story schema, defined as the overall framework for a specific life narrative, as argued by (Bluck & Habermas, 2000). As a mental representation of a life's components and links, the life story schema is not factual knowledge but a narrative framework of the life path's structure; for example, being a professor and being an entrepreneur are both typical life story schemas (Bryant, 2014).

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As pointed out by Bryant, (2014, p. 1085) “in a series of seminal papers, Wegner (1987, 1995) and Wegner, Giuliano, and Hertel (1985) demonstrate that transactive memory allows people to be locations of external memory storage for each other. Via transactive memory, persons can access information stored in other minds by virtue of knowing that other people store such information - that is, by storing the external address of the relevant memory”. Bryant (2014) argued that transactive autobiographical memory systems naturally emerge within new enterprises or endeavours and play an important role at the micro foundational level in how the entrepreneurs pursue their goals or mission. Moreover, Bryant (2014) argue that by managing the design and development of these memory systems, the key figures in a new venture may influence the process of imprinting, thereby improving the capacity for adaptability.

Bryant (2014) highlight the two major functions of transactive memory, namely differentiated and integrative. Differentiated transactive memory transpires when several items or structures of memory are embedded in different individual memory stores, but the individual is aware of the general labels and locations of the items they do not hold personally (Ren & Argotte, 2011), meaning that differentiated memories are internal to the individual(s) who store these memories (Peltokorpi, 2008). On the contrary, integrative transactive memory occurs when these same items or structures of memory are held in different individual memory stores, and the memories of the individual overlap due to the fact that they share homogenous label and location information. Hence bombarding one’s hunch with others hunches is important, referred to earlier in this section as ‘collective intelligence’. West (2007) argues that increasing knowledge resource through accessing the wisdom of the crowd creates a rise in perspective from the information-seeking and knowledge-structuring behaviours of entrepreneurs, and the success of the new venture often depends largely on how the founding team collectively understands its world, estimates the potential effects of possible actions, makes decisions, and apportions resources appropriately (West, 2007). Scholars have identified the roles of ambidextrous distributed leadership, reflexive team processes, social sensitivity and empathy-driven dynamics in achieving goal orientation shifts as important factors in radical innovation success and building collective intelligence (Alexander & Van Knippenberg, 2014; Woolley, Chabris, Pentland, Hashmi, & Malone, 2010; Greer & Lei, 2012). Therefore one needs diverse views and experience to access others’ autobiographical memory and transactive memory to improve the quality of one’s hunch. The opportunity to bombard one’s ideas with others, along with the understanding of how to effectively exchange, debate, reflect, integrate and experiment with creative hunches, are equally vital (S. Johnson, 2010; Hill, Brandeau, Truelove, & Lineback, 2014). For scholars following a connectionist perspective, intuition processes are ‘sensitive to the holistic aspect of the information sample, namely, the

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coherence in the pattern' (Betsch and Glöckner 2010, p. 284), and are closely related to associative learning (Baldacchino et al., 2015).

As was discussed in section 2.4 above, we pointed out that in the presence of the crowd or when immersed in other settings, opportunity discovery may also be spontaneous. In some cases entrepreneurs did not deliberately set out to discover opportunities, but came across them (Oyson & Whittaker, 2015). We argue that this ability of disruptive innopreneurs allows for the assessing of these memory systems referred to above and generates that "aha moment", often termed serendipity or synchronicity. Serendipity refers to the occurrence and development of events by chance in a happy or beneficial way. Synchronicity is the experience of two or more events that are apparently causally unrelated occurring together in a meaningful manner. Serendipity is a propensity for making fortunate discoveries while looking for something unrelated. From the outside, serendipity looks like luck; from the inside, it results from careful preparation and choosing the right people (Kingdon, 2012). Prolonged participation in deliberate practice enables the entrepreneur to effectively draw on large stores of inferred knowledge (Cianciolo et al., 2006), and so persist with judgments and further decisions in an ostensibly effortless manner, adn one that may enhance cognitive resources in the areas of perception, memory, and intuition (Baron & Henry, 2010).

One can also incorporate Christensen et al. work to describe serendipity and synchronicity as Christensen further advocated the use of associational thinking. Technically speaking, associational thinking is a cognitive process of connecting concepts that appear at first to be unconnected (Dyer, Gregersen, & Christensen, 2008). As explained in "The Innovators DNA", research shows that five discovery skills distinguish the most innovative entrepreneurs from other executives. These five skills are broken down into two areas, doing and thinking. Doing is achieved through questioning, observing, networking and experimenting behaviours; thinking is done using associative thinking which helps innopreneurs associate to cultivate new insights (Dyer et al., 2008). These behaviours combine the course to innovate (essentially EO and EE) together with the cognitive skills to synthesise novel inputs with associational thinking and distinguish innovative managers from the administrative oriented managers (Christensen, 2006).

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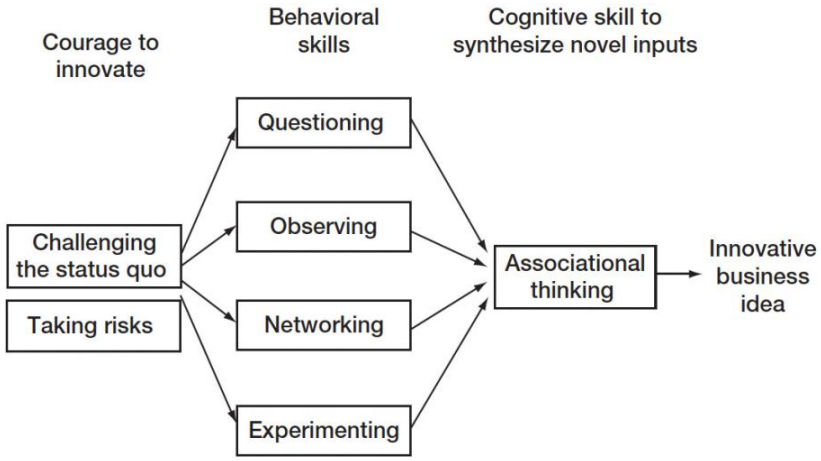
Figure 5: The Innovator's DNA Model



Source: (Christensen et al., 2011)

Furthermore, curiosity is the aspect Christensen et al. (2011) refer to as the questioning skill of "The Innovators DNA model", questioning allows innovators to break out of the status quo and consider new possibilities. Innovators ask questions without worrying about looking foolish and be curious about the convention beliefs one can challenge (de Jong & van Dijk, 2015). Grant, Grant, & Gallate (2012) explain that there are seven essential strategies to make teams and organisations more innovative, the first is cultivating curiosity. Grant et al., (2012) further explain that being curious is important as a questioning mind asks the type of questions that drives new discoveries. Asking the right questions can help you broaden your perspective and make smarter decisions (Schoemaker & Krupp, 2015). Moving past assumptions, beliefs, experiences, prejudices, and traditional ways of looking at things can result in innovative solutions.

2.6.1.3 Vision and foresight

Like entrepreneurs, innopreneurs need vision (Renko, El Tarabishy, Carsrud, & Brännback, 2015) and shared-vision (Van Doorn et al., 2013) in order identify opportunity because without this vision, one remains trapped within the confines of established belief systems. These visions enable innopreneurs to create an alternative future which enables the foresight necessary to predict the feasibility and plausibility of the opportunity. Foresightedness has been defined as the combination of developing an understanding of possible futures for an organisation and acting upon that understanding in a way that brings benefit to the organisation (Horton, 1999). Foresight, often conceptualised as a required competence for successful organising in complex and rapidly-changing business environments, has been

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characterised as the ability to go beyond current categories of thought and identify, explore, and take advantage of latent opportunities bypassed by others (Sarpong & O'Regan, 2014). Oyson & Whittaker (2015) have pointed out that these arguments are consistent with Venkataraman's view of entrepreneurship, which is to understand how opportunities bring into existence 'future' goods and services, created, and exploited; by whom; and with what consequence. In the context of autobiographical memory Bryant (2014) argue that specific historical sequences of events, including the narratives of periods of lifetimes that comprise collective autobiographical memory may also become imprinted, and may consequently limit the capacity to create the necessary vision and imagine different future (Johnson, 2007), we hereby state that such a process of envisioning also requires EI, EE and EO, together with creativity and imagination.

"Future events, outcomes, and their ultimate results are often based in counterfactual thoughts" have been known by scholars for many years; the counterfactual thoughts are the meaning, reflections on "what might have been" under different circumstances or if the individual had taken different actions (Baron, 2000; Gilovich & Medvec, 1994; Kahneman & Lovallo, 1994; Miller & McFarland, 1986; Arora et al., 2013). Specifically, counterfactual thinking involves comparing actual events to alternatives that are constructed *ad hoc* or imagined, rather than based in past experience (Arora et al., 2013). In the context of entrepreneurship where a future-focused orientation pervades and opportunity discovery is the goal, the role that counterfactual thinking may play in determining "what may yet be" could prove important. However, support for this proposition remains ambiguous in the context of the extant entrepreneurship research (Arora et al., 2013). Research suggests that certain individual levels of preparedness for the future may be served by counterfactual thinking that helps identify the schemas for future action and drives the formation of plans necessary for success (Arora et al., 2013). Noting that a key defining characteristic of entrepreneurship is the act of decision making in the face of uncertainty, some scholars have suggested that counterfactual thinking may be what furthers the entrepreneurial process, as inherent in counterfactual thoughts are certain mechanisms that enable the deconstruction of the past to make sense of the present, in preparation for future actions and events. Thus, such cognitions are important antecedents to entrepreneurial action amid an unknowable future (Baron, 2000; Gilovich & Medvec, 1994; Kahneman & Lovallo, 1994). However research focused on the interface of counterfactual thinking and entrepreneurship to date has been equivocal (Arora et al., 2013). Furthermore, Arora et al. (2013, p.362) posit that: "counterfactual thinking's impact on entrepreneurial self-efficacy, actions, and outcomes may be important, (Hmieleski & Corbett, 2008; Markman, Baron, & Balkin, 2005; Zhao et al., 2005)" suggesting that the

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ambiguity represented in the literature may hint at a more complex relationship than suggested by previous research.

2.6.1.4 Creativity and Imagination

To achieve counterfactual thinking, a radical way of looking at a problem is required. Linear thinking, a primary thinking style according to Ettlie, Groves, Vance, & Hess (2014) comprises the more traditional cognitive pattern of logical, rational, analytical and data-driven decision-making, which is reliant on conventional and predictable information sources or inputs such as rational analysis, logic, reason and cause-effect logicality. “A complementary, increasingly important thinking style or cognitive counterpart to linear thinking is nonlinear thinking, largely defined as including emotional and intuitive assessments, lateral thinking, creativity, holistic/overall systems appraisal, integrative and synergistic thinking, flexibility in perception, imagination and visualisation, values-based cognition and insight” (Ettlie et al., 2014, p. 312) Despite the popular notion that employee and managerial cognition associated with entrepreneurial behaviour and innovativeness utilises a predominantly nonlinear thinking style framework, innovative behaviours and objectives are more likely associated with a style of thinking that entails a balance of both linear and nonlinear cognition and decision-making (Ettlie et al., 2014). It is this non-linear thinking that is considered counterfactual, but that drives creativity and imagination, and the antecedent for hunches, intuitions, clues, or unshaped suspicion that may potentially lead to disruptive innovation. Innovators in a variety of fields need high quality internal and external resources to develop their imaginations and create works of influence (Yuling Hsu, 2015). Throughout the process of innovation, starting with the formation of an original idea, implementing that idea, organising the content, highlighting the characteristics and simulating or conjuring audience’s viewpoints, the amount of imagination and creativity required cannot be overestimated. How individuals liberate imagination is very often influenced by both internal and external factors. Internal factors refer to how someone uses their cognition, motivation, emotion, and self-efficacy (Finke,1996; Hsu, Liang, & Chang, 2014; Vygotsky, 1967/2004); while external factors refer to how they collaborate with resources within their environment, such as physical components, social climate, organisational measure, and aggregate culture (Chang & Lin, 2013; Liang, Hsu, & Chang, 2013; Zhao, Seibert, & Hills, 2005).

However, there have been few empirical studies systematically exploring how internal and external situations can work together to stimulate the creator’s imagination (Yuling Hsu, 2015). “While the role of entrepreneurial imagination has not been explored empirically, it is an

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important factor as some entrepreneurs who have no knowledge of international opportunities nonetheless succeed in leading their firms to international markets. Together, and progressively building on each other, these findings contribute to our understanding of opportunity discovery and creation" (Oyson & Whittaker, 2015, p. 305). As demonstrated by Lundmark & Westelius (2014), theorising consists of disciplined imagination that unfolds in a manner analogous to artificial selection. It arises from the consistent application of selection criteria to "trial and error" thinking, and the "imagination" in theorising comes from deliberate diversity introduced into the problem statements, thought trials, and selection criteria that comprise that thinking. (Eckhoff & Urbach, 2008; Lindqvist, 2003) summarised key points regarding imagination and pointed out that for individuals, imagination is the bridge of thinking between reality and the unknown. Broad theoretical expositions have clearly shown that imagination is vital for innovators. As argued by (Chiu, 2013; Perdue, 2003; Stokes, 2006), to achieve outstanding performances in the field of creativity, high-quality imaginative energy is essential (Yuling Hsu, 2015). We hereby deduce that creativity and imagination refine the process of the "hunch" and create greater visions of an alternative future that is counterfactual to the present.

2.6.1.5 Hunch and vision are reciprocal complementary

We conclude this first dimension by highlighting the complementary nature of the "hunch" and "vision" discussed above. Various neuroscience studies implemented functional magnetic resonance imaging or functional MRI (fMRI) scanning and discovered that episodic memory is partially accountable for imagination of fictitious experiences (Hassabis, Kumaran, & Maguire, 2007; Van Hoeck et al., 2013). Results substantiate the fact that that a common brain network is shared by episodic and counterfactual thinking, involving the core memory network that includes the hippocampal area, temporal lobes, midline, and lateral parietal lobes in the brain; and the prefrontal areas that may be related to the process of metalising (medial prefrontal cortex) and performance monitoring (right prefrontal cortex) (Gaesser, Spreng, Mclelland, Addis, & Schacter, 2014).

2.6.1.6 Shortcomings of models under this section: Dimension 1

Even though these models are strong on the inner core elements and provide suggestions on how to view potential opportunities better they do however lack a process to understand customers and the customers' core assumptions. Additionally these models disregard

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harnessing business acumen (explained below) and how to transform an opportunity into a viable, profitable new venture.

2.6.2 Dimension 2: Linear processing

Linear thinking as explained by (Ettlie et al., 2014a, p. 312) “consists of the more traditional cognitive pattern of logical, rational, analytical, and data-driven decision making that relies on conventional information sources or inputs such as rational analysis, logic, reason, and cause-effect predictability”. In this section we categorise the linear process oriented models in two categories. Although these categories are not mutually exclusive, each category of the two models has a slightly different focus: Category one – emphasises how the entrepreneur or innopreneur follows through with the cognitive processes in a process oriented way (Progression-centred); Category two – emphasis is place on a customer centric approach where entrepreneurs or innopreneurs put the customer at the centre of the entrepreneurial endeavour (Empathy-driven).

2.6.2.1 Category one: Process-oriented models (Progression centred)

Well-known approaches such as, stage-gate model or ‘‘waterfall’’ type models (Cooper, Edgett, & Kleinschmidt; 2002) and innovation funnel (Hakkarainen & Talonen, 2014) have been applied for the process of idea development and innovation management within organisations but there is a lack of research concerning whether such principles can be applied as the cognitive process aiding the generation of ideas for potential disruptive innovation. Combined with open innovation these approaches become a powerful method to acquire a new range of ideas (H. W. Chesbrough, 2012).

Many ideas solicited and refined using these models require a disruptive thinking framework to take these ideas further. Supporting the need for an improved technique to ideation, (El Bassiti & Ajhoun, 2013) suggests that further research is required to identify the most suitable and appropriate ideation techniques. From an individual’s standpoint, even though one can adopt these models to refine one’s idea, these models are not useful in guiding the ideation process to an innopreneurial concept as discussed below, let alone disruptive innovation.

The role of triggers in idea generation has received significant attention from creativity and innovation scholars, as was highlighted in section 2.6.1 and by certain entrepreneurship

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researchers (Bhave, 1994; Ardichvili, Cardozo, Ray, 2003 and Vogel, 2016). Bhave (1994) proposed a process model of entrepreneurial venture creation that differentiates between different “triggers”, internally versus externally stimulated, and demonstrates that there are various paths to arrive at opportunity. This model however does not include the concept of a venture idea (Vogel, 2016).

(Brem, 2011; Brazeal & Herbert 1999) emphasised that the concepts of change, innovation and creativity are integral components of entrepreneurship, but entrepreneurship research in this regard is thin and, given its importance to the core of entrepreneurship in the management research field, there is a vital need for more research. and a basic requirement for entrepreneurship research to become a more important management research field (Brem, 2011). Vogel (2016) argues that by placing emphasis on entrepreneur’s social ties as a mechanism for developing a more complete venture concept (Vogel, 2016; Singh, 2000) explained that frameworks visualise influence of individual and environment factors on idea and opportunity, but does not consider triggers and paths to ideas. Singh (2000) suggests that unrecognised opportunities exist, but it takes the right person, in the right environment to develop an idea that results in a recognised opportunity (Vogel, 2016). Chandler, Dahlqvist, and Davidsson (2002) have a different approach to opportunity recognition and categorise these opportunities into three areas, namely: Proactive Search, Reactive Search and Fortuitous Discovery. Chandler, Dahlqvist, and Davidsson (2002) believe taxonomy introduces these different approaches to opportunity recognition. Vogel (2016) suggests that this model serves as a basis for their proposed framework. On the other hand, Shane’s (2003) framework is based on an individual opportunity nexus and argues that an opportunity is present in combination with individual and environmental factors, contrary to the Singh (2000) model. Shane (2003) explains that an individual identifies opportunities and exploits it. Examining Ardichvili, Cardozo, and Ray (2003) model advocates that the key influencers of opportunity recognition of prior knowledge and personality traits together with social networks trigger an “alertness”. After the alert opportunity recognition follows three processes: Perception of need, discovery of possible fit and creation of fit through establishment of concept. The model does not consider venturing of ideas, however (Vogel, 2016).

Another process oriented model developed by Ireland, Hitt, & Sirmon (2003) argued that strategic entrepreneurship is a unique, distinctive construct through which firms are able to create wealth. They demonstrate that the four dimensions of: entrepreneurial mind-set; entrepreneurial culture and entrepreneurial leadership; the strategic management of resources and applying creativity to develop innovations are important dimensions of strategic entrepreneurship and result in wealth creation. On the other hand, Chandler, DeTienne, and

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Lyon (2003) proposed four distinct opportunity development processes as a basis for their proposed framework. These processes included (1) proactive search, (2) problemistic search, (3) fortuitous discovery, and (4) opportunity creation. Additionally, McMullen and Shepherd (2006) described their model as a model of entrepreneurial action that explains how an individual develops a third-person opportunity (an opportunity for everyone) to a first person opportunity (an opportunity for entrepreneur). The model has two parts, namely the attention stage and the evaluation stage. The attention stage includes prior knowledge, knowledge and third person opportunity. The evaluation stage consists of feasibility and desirability assessment, which leads to entrepreneurial action. Alternatively, the Davidsson (2012) model uses three constructs to describe the opportunity process: opportunity conditions, individual characteristics and perception of opportunities. Opportunity conditions together with individual characteristics of the entrepreneur influence the perception of opportunities and hence the entrepreneurial action. In describing the six phases within the process of sustainable entrepreneurship, Belz and Binder (2015) suggest the following: 1) Recognition of a social or ecological problem to be solved; 2) recognition of a social or ecological opportunity; 3) development a double bottom line solution; 4) development of a triple bottom line solution; 5) funding and creation of a sustainable enterprise; 6) constructing or penetrating a sustainable market (Belz & Binder, 2015).

2.6.2.2 Category two: Customer-oriented frameworks (Empathy driven)

Central to both entrepreneurship and innovation, stated by Prahalad (2012) “The starting point of the process was a detailed and in-depth understanding of the consumer” (Prahalad, 2012, p. 7). “Innovations are often based on intuitive hunches rather than informed understanding” (Margolin, 1997, p. 227; Prahalad, 2010). “Rather than researching markets, they must immerse themselves in the lives of their target consumers” (Prahalad, 2006, p. 7). The innovators that Prahalad (2012, p. 7) studied used video-ethnography to identify more than just what the subjects were saying, they fully immersed themselves in the subjects experiences. Many researchers have identified this “intimate knowledge” as a key for successful innovation and competitiveness (Brown, 2008; Oestreicher, 2009; Liedtka, 2015; Mickahail, 2015; Brown & Martin, 2015 and Christensen et al., 2016). This kind of commitment permits organisations to gain intimate knowledge of their customers. The strategy researcher Porter (1990) identified “commitment” to the target group (customers) as a key antecedent to international competitiveness. The entrepreneurship researcher von Hippel (1994) identified the “stickiness” of needs information as a key issue for innovation, i.e. how to understand customers’ needs and the stickiness of solutions knowledge (Philipson, 2016). Instead of ethnography, von Hippel developed a method called the lead-user theory for how to learn

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these needs before the competitors (von Hippel, 1986; Herstatt and von Hippel, 1992; Urban and von Hippel, 1998; Olson and Bakke, 2001; Liien et al., 2002; Lüthje and Herstatt, 2004; Lettl et al., 2006; Franke, von Hippel and Schreier, 2006). Furthermore, scholars have pointed out the general guidance to predict future disruption begin with understanding the customers, both current and potential (Paap and Katz, 2004; Yu & Hang, 2010). The issue is to identify the drivers of the future, those that emerge when old drivers reach their leverage limit, and those that emerge when your customers' environment changes (Yu & Hang, 2010).

Research streams focusing on market segmentation, marketing mix four P's, customer centricity and the like focus too much on customer profiles and on correlations unearthed in data, and not enough on what customers are trying to achieve in a particular circumstance (Christensen et al., 2016). In the context of Disruptive Innovation, moments of significance are the points in a customer transaction that have a significant impact on their experience, entice the customer and form a lasting impression of the brand. These moments of significance are usually emotional touch-points, where feelings often override facts and provide the ability to understand and anticipate customer needs. The added complexity when it comes to disruptive innovation is that not only does one need to immerse oneself in customers' experiences, but also understand that there is no solution or prototype that exists that customer can relate to. This has further been emphasised by Gustafsson, Kristensson, & Witell (2012) saying that "The really radical solutions are difficult to imagine in advance based on experiences with current products". Martin (2013) agrees that for minor improvements to a product or service, the innovator would be wise to engage with customers and listen to what they say, however this is not possible with disruptive innovation as there is nothing to which the customer can relate. Steve Jobs once said, "It's really hard to design products by focus groups. A lot of times, people don't know what they want until you show it to them" (Verganti, 2009).

Ariely (2008) much like Steve Jobs mentions that most people don't know what they want until they see it in context. Human beings fail to understand the profound effects of emotions on what we want and consistently overvalue what we have. Importantly, he asserts that these "misguided behaviours are neither random nor senseless. They're systematic and predictable, making us predictably irrational". Ariely (2008) proves that too much choice can reduce sales conversion rates and choice can create buyer's remorse. Hence in a world with increased choice, we need to ensure we really understand irrational customers. Harris, Fisk, & Sysalova (2016) findings further cement this argument by proving that customers exaggerate service consumption negatively by word-of-mouth and that the negative word-of-mouth is more prevalent than positive communications, meaning that customer's feedback is not always based on fact.

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The current and successful customer oriented framework that will be discussed below is the Design Thinking approach, which incorporates the Jobs-to-be-done framework and the Customer Journey in this study. The basic concept of design thinking requires the designer to empathise with the end-user within the context of his or her design, including having an understanding of the way in which they do things and why; their physical and emotional needs; how they perceive the world; and what is meaningful to them.

Design thinking approaches

Another major stream of literature has elaborated on customer orientation under disruptive changes, which attempted to seek solutions from the customer's perspective (D. Yu & Hang, 2010). Design thinking as a problem solving approach has been defined as "a discipline that uses the designer's sensibility and methods to match people's needs with what is technologically feasible and what a viable business strategy can convert into customer value and market opportunity." (Brown, 2008). Design thinking provides a methodology for problem solving and understanding the unique needs of customers, the interest shown towards this problem solving framework is evident from the increase in practitioner writing on the subject over the past few years (Kelley and Littman, 2005; Pink, 2005; Brown, 2008; Martin, 2009;; Verganti, 2009; Liedtka and Ogilvie, 2011). As described by Liedtka (2015) design thinking is a hypothesis-driven process that is problem, as well as solution focused. Design thinking relies on abduction and experimentation through various iterations generally consisting of three stages, the first being the data gathering of user needs which typically uses a variety of ethnographic research techniques such as participant observation, jobs-to-be-done, and journey mapping (Liedtka, 2015). The second stage typifies idea generation using tools such as brainstorming, mind mapping and other ideation techniques. The last stage consists of prototyping and testing, supporting the experimentation and adductive methodology. "Design thinking practices have the potential for improving innovation outcomes by mitigating a well-known set of cognitive flaws: humans often project their own world view onto others, limit the options considered, and ignore disconfirming data" (Liedtka, 2015, p. 937). In other words, design thinking is seen as a potential solution to overcome the cognitive biases of customers.

While design thinking is relatively new to management literature, product design has however been a field of study by business scholars for many years (Bloch, 2011). (Johansson-Skoldberg, Woodilla, & Cetinkaya, 2013) also argue that design thinking as a management field is not academically anchored and suggests that further research with regards to management design thinking is required, explaining that the current theoretical body of knowledge is too closely related to the practice of designing and therefore lacks research

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within the management discourse. Similarly, as reasoned by Liedtka (2015) the specific mechanisms through which the use of design, approached as a thought process, might improve innovation outcomes have not received significant attention from business scholars.

This leads us to the Jobs-to-be-done framework developed by Harvard Business School Professor Clayton Christensen who uses ethnographic research techniques and has been seen to overcome many of the shortcomings inherent in other customer oriented approaches. Ethnographical techniques encompass a variety of qualitative research methods that focus on developing a deep understanding of users by observing and interacting with them in their native habitat. Design thinking provides an understanding of the criteria customers apply in choosing between solutions, and this framework neatly aligns with the notion of design thinking. The framework emerged as a helpful way to look at customer motivations in business settings and really understand the "job" to be done as opposed to understanding the customer. Having an understanding of the "job", customers find themselves "hiring" a product or service, companies can more accurately develop and market products well-tailored to what customers are already trying to do (Christensen, 2015). Professor Christensen states that "You can segment markets any way you choose – but if you don't know the job that needs to be done by your product or service, failure is on the cards" and notes a 95% failure rate in the 30 000 products launched internationally per annum (Christensen et al., 2016). Knowing the job your product or service will be "hired" to do, takes more than listening to what customers want or segmenting your market for example. What is really valuable is knowing the actual "customer journey", and the only way that would be possible is to know what jobs are required (Christensen et al., 2016). Closely tied to the Jobs-to-be-done framework is the Customer Journey, also a customer-centric approach which considers the sequence of events that customers, whether by design or chance, undergo to understand, purchase and interact with offerings. These offerings may include commodities, goods, services or experiences (Norton & Pine II, 2013). If done correctly, managing the customer journey entails far more than just incremental improvement to current offerings; it can help firms innovate, provide the correct resources and make the transformation from an old business model to one based on a new "jobs-to-be-done" required by customers (Norton & Pine II, 2013). Well-designed customer journeys are intended to produce a stimulating and valuable experience for customers, and to do this effectively companies need to analyse how to attract the right customers, minimise use of resources, produce greater value and define technological requirements for the future. Organisationally, adopting a journey-centric approach allows companies to move from silo functions and top-down innovation to cross-functional processes and empowered, bottom-up innovation. According to (Rawson et al., 2013) companies fail to pay adequate attention to the customer's complete experience on the way to purchase and after, it's the full journey that

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really counts, which further cements the reason for innopreneurs seeking the critical moments at which customers “hire” goods or services to satisfy the jobs-to-be-done.

As described above in this section thus far, customer oriented frameworks rely heavily on the ethnographical understanding of customers and hence understanding the emotional dimension is important. From an academic perspective, the emergence of a new, interdisciplinary field of research was heralded in the special issues published on product design in the Journal of Product Innovation Management (2011) and the Journal of Consumer Psychology (2010)(Swan and Luchs, 2011). Apart from functions, aesthetic appeal and ergonomic value, the symbolic interpretations attributed by consumers to aspects of a product’s appearance are greatly influenced by context factors (Bornemann, Schöler, & Homburg, 2015). Accumulated research makes it clear that human decision making is, in fact, far from rational (Ariely et al., 2003; Sjoberg, 2007; Tversky and Kahneman, 1974), largely guided by emotion (Bechara, 2004; Damasio, 1994), and influenced by the presence of others (Bond, 2005; Matzler et al., 2014b). Consumers are therefore intrinsically emotive, particularly when comes to decision making.

According to Grönroos & Voima (2013, p. 2) “Value is perhaps the most ill-defined and elusive concept in service marketing and management (Carú and Cova 2003; Sánchez-Fernández and Iniesta-Bonilla 2007; Woodall 2003)“. A number of attempts to create overall interpretations of value have appeared (Khalifa 2004; Sánchez-Fernández and Iniesta-Bonilla 2007; Sánchez-Fernández et al. 2009; Woodall 2003), generally conceptualising from an individual standpoint (Holbrook 1994, 1999), assessing the relationship between pay-offs and sacrifices (Day 1990; Woodruff and Gardial 1996; Zeithaml 1988), or using means-ends models (Gutman 1982; Howard 1977; Woodruff 1997; Zeithaml 1988). The common cognitive perspective has moved recently towards to a more holistic and experiential perspective that acknowledges value within the context of customer experiences (Heinonen and Strandvik 2009; Helkkula, Kelleher and Pihlstrom 2012), as part of extended social systems (Edvardsson et al. 2011; Epp and Price 2011), or the financial gains generated by business partners (Grönroos and Helle 2010).

Generally, value creation requires increasing the consumer’s in a manner that ensure they are better off in some manner (Grönroos 2008; Nordin and Kowalkowski 2011; Vargo & Lusch 2008). However, the actions of a service provider could also leave customer worse off (Echeverri and Skålen 2011), meaning that the value creation process may take a negative turn (Grönroos & Voima, 2013). As explained by Carbonell & Rodriguez-Escudero (2014), customer involvement in the creation of new services is an important contributing factor to

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their success (Alam, 2002; Carbonell, Rodriguez and Pujari 2009; Kristensson. Gustafsson and Archer 2004; Mohr and Sarin, 2009; Neale and Corkindale, 1998; Sanden, 2007) and reduces development time (Alam, 2006; Carbonell et al., 2009) but how one involves the customers becomes a key question. As argued by Yen Hsu (2016), the value comes from the results of collaboration as well as the knowledge and experience gleaned by all participants. For this reason, organisation consistently communicate with consumers via value co-creation and collaborate with all parties and departments in the creation of products and services to grow market share (Prahalad and Ramaswamy 2004; Bhalla, 2010; Camarinha-Matos et al., 2009a, 2009b; Komulainen (2014), Leticia Santos-Vijand, Gonzalez-Mieres and Lopez-Sanchez. (2013). In concurrence with these arguments, (Carbonell & Rodriguez-Escudero, 2014) reveal that the development of a new service can lead to more innovative ideas, but ask what sort of innovations they are if they are always created from the viewpoint of the customer. For this reason it is necessary to unpack customers' underlying constructs. In Personal Construct Psychology, there is no concept of self or ego.

Instead, as demonstrated by George Kelly's Personal Construct Psychology, we propose the notion of core constructs in understanding customers' worlds and experiences. The theory's foundation entails the exploration of what people do; what they may be attempting to accomplish; their circumstances; and how they find meaning in it all. Core constructs are constructs that define and are important to an individual; that determine their behaviour in different circumstances and that connect them to other people. Core constructs entail personal meaning-making, so that someone is being engaged in an ongoing process of meaning-making from the beginning, which is essentially how human beings create their own systems for understanding their worlds and experiences in meaningful ways (Epting & Paris, 2006). The assumption of this theory holds that because humans are unable to comprehend "reality" beyond the limits of their sensory systems (Karnaze, 2013) they consistently construe their personal reality based on their own worldviews and perception. Constructs, even core constructs, always involve a process of interpreting what is ongoing and subject to change, we are dealing with a process of constant invention (Epting & Paris, 2006). Bohlmann, Spanjol, Qualls, & Rosa (2013) argue that truly effective innovators, must know their customers' customers and competitors as well as - or better than - their own customers do. Market research must extend to the end-user in order to have a broad and inclusive understanding of customer-needs dynamics. In disruptive innovation, the scope of customer needs may become more valuable based on perceived downstream customer trends. Companies could possibly innovate on secondary needs as mainstream consumers are not always supportive of a firm's design freedom to innovate radically on primary features (Bohlmann et al., 2013). Understanding customer dedication and how this evolves with their changing needs can help

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companies to align their resources with innovative initiatives that customers are more likely to accept. It is how people create meaning out of whatever they encounter that shapes their behaviour.

Therefore, by investigating the core constructs of the customers and experiencing what they are experiencing, innopreneurs can gain the deeper understanding of the value–perception association of customers and introduce new ways to reassign the value or restructure the perception. Additionally, we propose that the core of a firm's entrepreneurial identity is its value proposition (Chandler, Broberg, & Allison, 2014). The value proposition responds to the questions, "How does the product or service help customers?" and "Why would they buy our product rather than a competing alternative?" (Johnson et al., 2008; Morris et al., 2005; Zott and Amit, 2010). Therefore it is important to review the core constructs and the super-ordinate constructs (assumptions and perceptions) of customers to understand the "moments of significance" in order to assign the correct value associated with the offering. Disruptive innovation should be considered as antrophogenic phenomena. It is a human centred process with an empathetic approach that is core to its success.

2.6.2.3 Shortcomings of models under this section: Dimension 2

While the models emphasise taking the next steps sequentially or enabling sufficient understanding of the customer's real needs, the methodology required to encourage entrepreneurs to be audacious is lacking and no clarity on how to combine insights with other knowledge and prior memories is provided. These models themselves may be empathetic to customers' needs, but without the challenging of one's own assumptions only incremental innovation is possible. We have also emphasised the fact that entrepreneurial ideation is not purely a linear process, but requires the ability to iterate and provide improved opportunities through each experience and learning. Finally, these models lack business acumen as well as the strategic management needed to generate viable profitability, as we explain in the section that follows.

2.6.3 Dimension 3: Business acumen combinations

While products and technology are often highlighted in innovation, business models are a key factor in success (Chesbrough, 2007). Understanding value appropriation via effective commercialisation strategies is critical for innovators, as long-term profitability of companies and often their very survival relies on identifying and exploiting new business opportunities and revenue streams for both entrants and incumbents starting anew (Shan, 1990; Gans and

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Stern, 2003; Hill and Rothermael, 2003; Verhees and Meulenberg, 2004, Colombo et al., 2006; He et al., 2006). Duhamel, Reboud, & Santi (2014) posit that to generate inspired ideas, innovative and effective solutions hold the same importance as the conception in pursuit of disruptive innovation. However, the subject of the implementation of innovations has not been widely developed and agreed in strategic management literature (Adams et al., 2006; Haeussler, 2011; Walsh, 2012; Gans & Persson, 2013; Duhamel et al., 2014).

To date, published research has clarified some of the building blocks of value capture for innovation; including strategic market orientations (Slater and Mohr, 2006; Mu and Di Benedetto (2011), pricing differentiation (Liozu et al., 2012) legal protection (Pisano and Teece, 2007); methods of competing (Porter, 2008), diffusion and scaling (Rogers, 1995; Porter, 2008), strategic networking (Slotte-Kock & Coviello, 2010), partnership (Alvarez et al., 2006; Duhamel et al., 2014) product and product-system development (Duhamel et al., 2014), distribution of resources (Teng, 2007) and value optimisation through assets (Pisano, 2006). A range of organisational competencies have also been named as key contributing factors; including structures, (Watts, 2001; Junarsin, 2009), strict organisational routines and culture (Stringer, 2000; Watts, 2001; Philips et al., 2006; Birkinshaw et al., 2007; McLaughlin et al., 2008; Junarsin, 2009), incorrect staffing, compensation and systems of reward (Stringer, 2000; Watts, 2001; Birkinshaw et al., 2007; (Chang et al., 2012), formal and informal financing (Li, 2008; Robinson and Cottrell, 2007; and (Lam, 2010).

Until it is commercialised in some way via a business model, however, the economic value of a product or technology remains dormant (H. Chesbrough, 2010). Turning viable innovative inspiration into an effective strategy for the basis of potential disruptive innovation is a difficult process; and studies show that managing radical innovation requires a different strategy to that required in managing incremental or evolving innovation (Watts, 2001; Phene et al., 2006; Junarsin, 2009; Koen et al., 2010 Chang et al., 2012) Inadequate planning frameworks and methods of evaluation (Stringer, 2000; Watts, 2001; McDermott and O'Connor, 2002; Birkinshaw et al., 2007) have been cited as among the most important contributions to the breakdown of radical innovation (Chang et al., 2012). This highlights the need for a business model that successfully combines the relevant business acumen components to guide the thinking process of the disruptive innopreneurs. While the aim of this research is not to investigate nor propose a business model template suitable for disruptive innovation, it is important for this literature review to provide the key theoretical underpinnings around some of the most popular business model frameworks.

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Karimi & Walter (2016, p. 343) propose that “companies facing disruptive innovations must be equipped to meet any unforeseen opportunities or threats by implementing disruptive business model innovation (BMI) themselves, as disruption creates prospects that are almost always associated with new products and services (Christensen and Raynor, 2003; Lucas, 2012)”. Karimi & Walter (2016) go on to say that although business models are frequently mentioned, they are rarely analysed and often poorly understood (Teece, 2010). From an entrepreneurial standpoint, Karimi & Walter (2016) explain that a business model is created by organisations to implement commercial opportunities unambiguously initiated by imperfections in the market (George and Bock, 2011; Downing, 2005; Franke et al., 2008; Cohen and Winn, 2007). (Karimi & Walter, 2016) discuss the BMI model as being a previous business model, one that offers products or services not previously available (Hwang and Christensen, 2008; Mitchell and Coles, 2004). While BMI adoption is crucial in realising fiscal value, the correct business model is not always apparent (Achtenhagen et al., 2013). Karimi & Walter (2016) conclude that BMI necessitates the exploration by innopreneurs of the various alternatives to the ways in which business is currently being conducted, underpinned heavily by understanding how customers’ needs can be met in novel and effective ways (Nidumolu et al., 2009). Seen in this light, it is clear that the BMI model has become more central to the success of a business than the innovations of products or services (Johnson et al., 2008).

Business models are defined as the four interlocking elements of customer value proposition (CVP), profit formula, key resources and key processes that taken together, create and deliver value (M. Johnson et al., 2008). If the innovative business model itself adequately differentiated and difficult to replicate for incumbents and new entrants alike, it can also be a valuable tool in creating competitive advantage (Teece, 2010). Radical innovation of the business model is shown to provide sustainable competitive advantage to a service firm, proving the importance of the concept of the business model to understanding the nature of the business; and linking the model to essential academic discussion of recent decades around the notions of “sustainable competitive advantage”, “structural capital” and “tacit knowing” (Philipson, 2016).

While relatively new, the concept of business modelling has been discussed in academia for around 20 years (Chesbrough, 2007, Andriopoulos and Lewis, 2009; Doz and Kosonen, 2010; Mets, 2009; Osterwalder and Pigneur, 2010; Teece, 2010; Chatterjee, 2013; Baden-Fuller & Haefliger, 2013; Gassmann, Frankenberger, & Csik, 2015; (Wrigley & Straker, 2016) and Philipson, 2016). In has, though, many similarities with earlier concepts of dominant logic (Prahalad and Bettis, 1986; Bettis and Prahalad, 1995; Philipson, 2016) and strategic fit (Porter, 1996). Business models are largely considered part of the strategy subfield, Stähler

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(2002) produced one of the earliest summaries of a business model's crucial elements (Philipson, 2016). A business model should, essentially, be able to link two dimensions of company activity value creation and value capture through a profound understanding of user needs (Teece, 2010, p. 190).

Bricolage, defined as something constructed or created from a diverse range of things" or "making do by applying combinations of resources already at hand', has been acknowledged as a helpful technique used by successful innovators and entrepreneurs (Baker and Nelson, 2005; Fisher, 2012; Linna, 2013). This reconstructing, interchanging, and combining in a variety of ways constitute "creative reinvention" (Rice & Rogers, 1980). In an entrepreneurial context, bricolage is the act or process of "creating something from nothing", in other words using what is available at the time to find solutions and unearth opportunities (Baker & Nelson, 2005; Fisher, 2012). The theory of entrepreneurial bricolage was originally applied to describe how entrepreneurs seek resources, steer clear of new and potentially bothersome encounters, and merge the resources at hand to solve problems and create or make the most of opportunity. The theory further determined that value can be generated by the strategic utilisation, innovation and combination of these five domains of business inputs: physical inputs, labour inputs, skills inputs, customers/markets input and institutional and regulatory environment input. (Baker & Nelson, 2005). By extrapolating the bricolage principles, business model innovation can essentially be regarded as the search for a new type of bricolage of business acumen components, enabling a company to generate new methods of crafting and producing value for its stakeholders. This bricolage of business acumen components focuses primarily on finding novel ways to generate revenues and define value propositions for customers (Teece; 2010; Philipson, 2016). Considering that any fiscal value of an innovative concept is latent until it is commercialised (Chesbrough; 2010), innopreneurs must seek inspired bricolage of business acumen components to produce profitable enterprises.

As the foundation of varying value propositions, Schumpeter (1934) distinguishes between five types of innovations: new products, new methods of production, new sources of supply, exploitation of new markets, and new ways to organise business. Similarly, Treacy and Wiersema (1993) advocated these value proposition types can be classified into three broad value categories — product leadership (differentiation), customer intimacy, and operational excellence. Kaplan and Norton (2004) further posited that value propositions can incorporate product or service attributes such as cost, quality, availability, and functionality; close relationships between company and customers, suppliers, and other stakeholders; and the image a product or service lends to customers (Chandler et al., 2014). Various frameworks of business acumen combinations can be defined by extrapolating from these classical theories.

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A few years on and business model innovation has become a popular topic, with a number of highly-regarded researchers adding their assertions to a growing body of work (Teece, 2010; Philipson, 2016). Teece, (2010) advocated the business model could be innovated through proposing different value proposition, product/services, architecture and/or revenue model. Osterwalder, Alexander and Yves Pigneur (2010), proposed the use of key business acumen components, namely customer segments, value propositions, customer relationships, channels, revenue streams, key actives, key resources, key partners and cost structure. The Business Model Canvas was initially proposed by Swiss business theorist Alexander Osterwalder based on his earlier work on Business Model Ontology and offers a framework designed to assist entrepreneurs to discover customers and create a business model, to make use of a window of opportunity and reduce time-to-market (Ruseva & Ruskov, 2015). Similarly, authors of the book "Ten Types of Innovation" support this view and state that providing a systematic means to innovation can increase the chance of breakthroughs. "We are convinced that by thinking about innovation in a more systemic way, you improve your chances of building breakthroughs" (Keeley et al., 2013). Ten Types of Innovation framework suggests that successful innovators use many types of innovation (Keeley et al., 2013). Keeley et al. (2013) explain that innovations can be built up systematically and, in so doing increases the odds of success exponentially.

By leveraging the most appropriate timing, innopreneurs can increase the innovativeness of their entrepreneurial activities by finding ways to improve key business acumen components such as systems, networking, profit models, structures, processes, product systems, core product, services, channel, branding and customer engagement. Chatterjee (2013) asserted that the business model may be categorised into efficiency-based, perceived value-based, network value or loyalty-based, and network efficiency methods of approaches; and that innopreneurs can innovate business models using one or more of these approaches. With outlook centred on the targeted customer ("who"), (Gassmann et al., 2015) provided an overview of a business model innovation based on these key components: the "What" (what the target customer is offered); the "How" (actions, processes and approaches to create and dispense the value proposition to the customers); and the "Value" (how the business can be monetarily viable). Wrigley and Straker (2016) further promoted the idea that the innovation of business models should be applied by taking into account these five areas of business acumen components: customer-led, cost-driven, resource-led, partnership-led and price-led.

Perhaps one of the most relevant arguments regarding this research was made by (Baden-Fuller & Haefliger, 2013) who argued that business models are of necessity linked with

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technological innovation, and posited that it is not just openness that is required in determining technological trajectories, but the connectivity between openness and user engagement. They defined the business model as a structure that solves issues of identifying the customers; engaging with those customer's needs; delivering satisfaction, and monetising the value. Importantly, the researchers advocate that business models are not merely proclamations of economic linkages but are actual cognitive devices that influence technological outcomes.

In a rapidly changing and often uncertain global economic arena, innopreneurs must clearly become sensitive, adaptive and responsive to changes in any specific marketplace. This will require innopreneurs find methods of innovating their business models as the path to boosting competitive advantage (Wrigley & Straker, 2016). In a disruptive age, established business models are under attack; "Business models are subject to rapid displacement, disruptions and in extreme cases, outright destruction" (de Jong & van Dijk, 2015) and companies are faced with the dilemma of how to reframe their current business models to stay competitive. Friedrich von den Eichen, Freiling and Matzler (2015) argue that business model innovations fail due to the lack of overcoming identified barriers (awareness, search, system, logic, culture) with openness, networking, affirmation of complexity and thinking and acting in a whole; "We are imprisoned in our thinking patterns, and our analysis focus is too narrow" (Friedrich von den Eichen et al., 2015). In a survey conducted by the Global Centre for Digital Business transformation that included 941 business leaders globally, it was found that the most successful disruptors employ "combinatorial disruption," in which multiple sources of value - cost, experience, and platform are fused to create disruptive new business models and exponential gains (Bradley, Loucks, Macaulay, Noronha, & Wade, 2015a). Subsequently, it is clear that different versions of business modelling tools can be enormously valuable for the thinking process of innopreneurs, particularly if rational risk management is also introduced (Miller, 2007). Research has also strongly advocated for these models to add value to the venture, processes of experimentation, effectuation; and leadership are required to overcome these barriers (Chesbrough, 2010). The significance of coupling all major key dimensions for an effective innopreneurial endeavour cannot be overestimated.

2.6.3.1 Shortcomings of models under this section: Dimension 3

Although these models are strong on combining knowledge and prior memories, they lack a process required to understand customers' needs and perceptions, furthermore they have no regard to an empathetic approach in understanding these needs or perceptions, further

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exacerbating the matter. Lastly, these models do not challenge conventional beliefs and would therefore only lead to incremental innovation.

2.6.4 Dimension 4: Iterative approaches and effectuation

Kaizen means continuing improvement involving everyone (Imai, 1986) and to make their new ideas known (El Bassiti & Ajhoun, 2013). Frameworks based on the Kaizen principles such as PDCA (plan, do, check and act) and DMAIC (define, measure, analyse, improve and control) have been well received by companies over the years (El Bassiti & Ajhoun, 2013; Mishra & Sharma, 2014). Rather than treating a business model as a “cast in stone” formula for how a business should be run, researchers posit that the business model is a dynamic and progressive process involving creation, extension, repeated revision, and termination (Cavalcante, Kesting, & Ulhoi, 2011; Demil & Lecocq, 2010; Mark, Bouwman, & Kaaker, 2013). Iterations between different structural modes and varying combinations have proven central to enabling a company’s transformation to the new business model (Khanagha, Volberda, & Oshri, 2014). Andries, Debackere, & Looy (2013) argue that when operating under uncertainty, entrepreneurial prospects should improve with experimentation and a range of business models (Gruber et al., 2008; (Andries and Debackere, 2007; Gruber, MacMillan and Thompson, 2008). Through experimentation, the initial value proposition evolves into a viable business model by means of “a series of trial and error changes pursued along various dimensions” (Nicholls-Nixon, Cooper, and Woo, 2000 p. 496).

Without incorporating a sense of experimentation and exploring the unknown, ongoing upgrading and enhancement cannot produce the most valuable outcome. Based on Kaizen, the Japanese business philosophy of continuous improvement of working practices and personal efficiency, IT industry leaders have developed methodologies such as Agile, Scrum and DevOps as the preferred guiding principles to best innovate and develop new software code (Beck et al., 2001; Sutherland, 2014 and Cooper & Sommer, 2016). Some researchers have supported the benefits of combining the iterative approach with linear processing (Cooper & Sommer, 2016). Others have been developing distinct methods of working, such as combining elements of design thinking with iterative perspectives. A company culture that encourages employees to use design thinking on a daily basis is now considered essential for development (Carlgren, Rauth, & Elmquist, 2016). As discussed in the literature thus far (Johansson-Sköldberg et al., 2013; Liedtka, 2015) hold that the key to understanding design thinking might lie in the interplay of its elements, rather than in a single element in isolation; (Carlgren et al., 2016) support this argument by suggesting that the implementation or mindfulness of multiple dimensions throughout the process of design thinking is required.

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Because customers perceive value differently and change this value perception over time, successful organisations base their value propositions on numerous and varying product and service elements (Smith and Colgate, 2007 and Chandler et al., 2014). Lumpkin, Hills, and Shrader (2004) proposed a two-stage model of discovery and formation, grounded in their five-phase framework of the iterative creative process originally proposed by Csikszentmihalyi (1996). The final stage of the model was the concept of elevation, where a feedback loop was created to modify the approach of the previous components until one could progress further through the framework.

Taking this approach of combining iterative ideation and experimentation a step further, Saravathy asserted (2008) that when uncertainty arises, entrepreneurs adopt a decision logic that is unlike that clarified by a traditional or more rational model of entrepreneurship. Effectuation has been described as a reasoning or problem solving framework exercised by entrepreneurs that takes a different view to that of causality and provides a way to control a future that is inherently unpredictable. Alternatively defined, effectuation is "a logic of entrepreneurial expertise, a dynamic and interactive process of creating new artefacts in the world" (Roach, Ryman, & Makani, 2016, p. 217). Sarasvathy (2008) differentiates effectuation processes from causation processes by stating that the processes "take a particular effect as given and focus on selecting between means to create that effect" (p. 245). Some studies have furthermore shown the relationship between effectuation and bricolage, including the effect of a combination of the two (Baker & Nelson, 2005; Fisher, 2012; Welter, Mauer, & Wuebker, 2016).

Sarasvathy (2001) emergent theory of effectuation is receiving growing prominence as one of the most promising frameworks currently informing entrepreneurship (Perry, Chandler, & Markova, 2012; Brettel, Mauer, Engelen and Kupper, 2012; Read, Song and Smit, 2009). Roach et al., (2016) explicate that effectuation offers a new perspective to entrepreneurial performance and questions how pertinent traditionally accepted causation-based models of entrepreneurship are today. Effectuation measures include; means (who I know), leverage contingencies (experimentation), pre-commitments and affordable loss (Goals) (Roach et al., 2016). Still, not many researchers have attempted to cross the divide between innovation and effectuation (Berends et al., 2014; Brettel et al., 2012). Researchers have argued that the ideology of effectuation processes can be considered design processes (Simon, 1981; Dew et al., 2008; Roach et al., 2016). Additionally, Roach et al., (2016) determined that the "means" and "leverage the contingencies" mechanisms of the effectuation theory were found to impact positively on innovation orientation and product/service innovation.

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Basing dialogue on opportunity creation theory, theorists and practitioners have been discussing how business models develop further through business model reassessment and business model experimentations (Ojala, 2015). Additionally, Ojala (2015) explains that these models, focus more on flexible and efficient product development, oriented with the "lean startup" method by Ries (2011) and Blank (2013), placed immense weight on the value of learning from market feedback, ongoing product development and the notion of a 'pivoting' effect through continuous learning. The imperative role of learning has been distinctly expressed (Minniti and Bygrave, 2001, Gruber et al., 2008, Ries (2011), Blank (2013); Corbett and Katz, 2012. Additonally, Dunne & Dougherty (2016) assert that studies of radical innovation (Leifer et al., 2000; Van de Ven et al., 1999) underscore practices that could prove significant in the context of intricacy. Abductive reasoning "refers to reasoning that forms and evaluates hypotheses in order to make sense of puzzling facts" (Weick, 2005, p. 433). Scholars suggest that abductive reasoning or retroduction is what could enable innovators to work through complexities of product innovation (Dunbar, Garud, & Raghuram, 1996; Garud, Gehman, & Kumaraswamy, 2011; Grandori, 2010; Weick, 2005). It is also suggested by organisational theorists that companies can change to their configurations radically by experimenting with various components of their configuration at the same time, during the learning phase (Levinthal, 1997; Ahuja and Katila, 2004) in their pursuit of new pathways Leifer et al. (2000) determined that radical innovators rarely think in a linear or predictable sequential manner, but iterate in a swell of uncertainties across various sectors that affect business (Dunne & Dougherty, 2016). Dunne & Dougherty (2016, p. 143) highlight the importance of abductive reasoning or logical inference and the key role it plays, "Iteratively integrating across disciplinary boundaries gathers up and synthesizes what innovators are learning while still keeping the whole in mind as they work". This clarifies that learning serves as the starting point of an abductive reasoning and is a factor that augments how innopreneurs plot a course in their ventures.

Agility of mind and venture is vital to the innopreneur developing in this era of disruption and an economy that favours innovation and creativity (Rigby, Sutherland, and Takeuchi, 2016 and Denning, 2016b). Conceptual work should, in future, place greater emphasis on investigating and the exploration of search, learning, and experimentation for individuals, teams, and businesses (Welter et al., 2016). Welter et al., (2016). Some researchers have advocated that future research delve more deeply into relationships between effectuation and established constructs (Perry et al., 2012), for example, in the case of this study, as those suggested in dimension 1, 2 and 3 above, again underscoring the importance of this research.

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2.6.4.1 Shortcomings of models under this section: Dimension 4

Shortcomings of the models discussed in this section fail to acknowledge the cognitive and behavioural dimensions of an opportunity, particularly the role of the entrepreneur in discovering or creating it and the entrepreneur's subjective construction of the opportunity as having a potential for exploitation through entrepreneur-led action. In other words, as explained by (Oyson & Whittaker, 2015) a situation is entrepreneurially discovered or created (the cognitive dimension) as an opportunity only if the entrepreneur conceives it as having a potential for exploitation through entrepreneur-led action (the behavioural dimension). These models also have no consideration for the emotional aspect concerning customers and therefore would not be able to understand the moments of significance not do they dig deeper to understand the underlying constructs of customers value perceptions needed to develop disruptive innovations.

2.7 Linking entrepreneurship with disruptive innovation

There has been very little comment in the literature on the relationship between innovation and entrepreneurship so far, particularly with regard to precise terms and the relationship between the terms (Garcia and Calantone, 2002; McFadzean et al., 2005; Brem, 2011) and even less comment on the cognitive approach innopreneurs pursue in the field of disruptive innovation.

The bridge between entrepreneurship and innovation from the individual's cognitive processing point of view remains a sector in which more research is required. McFadzean, O'Loughlin and Shaw (2005) presented a combined definition of corporate entrepreneurship and innovation, and concluded that previous models on the subject are disjointed due to the relationships and dynamics between these two factors remaining largely unexplored. The McFadzean et al., (2005) model shows clear gaps in the process between the entrepreneur and innovation, noting the three factors - entrepreneurial attitudes, vision and actions that explain the dynamics and the relationship between the entrepreneur and innovation processes. McFadzean et al., (2005) hypothesised that an organisation's performance depends on the innovation process as well as the variables of the entrepreneur. The McFadzean et al., (2005) model included a number of components, essentially described the organisation's performance by including strategic variables, external variables and internal variables with types of innovation (Brem, 2011). Brem (2011) also explored a variety of

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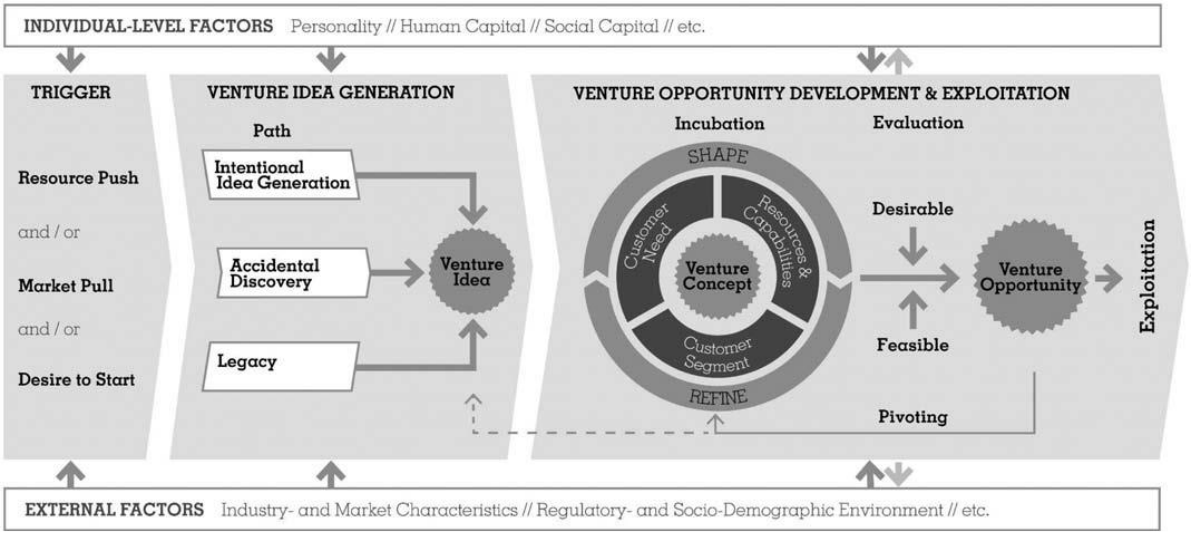
outlooks around linking innovation and entrepreneurship within the context of corporate value chain; entrepreneurship approach via process-based innovation; and personal tasks in the innovation process, as well as their descriptions.

More recently, Vogel (2016) argued that a key cause of the slow progress in scholarly comprehension of opportunities is that the majority of work undertaken so far has not recognised the difference between the concepts of venture ideas and venture opportunities. Vogel attempted to address some of these above-stated challenges in his recent paper "From Venture Idea to Venture Opportunity" and proposed the following conceptual framework (Vogel, 2016). The Vogel framework seems to be aligned with our literature review to a certain extent but its depiction is complicated and its findings have not been empirically tested. Additionally, the Vogel framework lacks entrepreneurial affection as described in Section 2.6.1.

Figure 6: Vogel Conceptual Framework



Source: (Vogel, 2016)

2.8 Leading to the final conceptual framework

In the above literature review sections we have discussed the various dimensions of what we believe are pertinent to an innopreneurial thinking model; and used this literature to link entrepreneurship with disruptive innovation. Additionally, we have also observed and highlighted the history of various frameworks developed within the entrepreneurial and innovation literature. While these frameworks are by in their own right very useful, they seem

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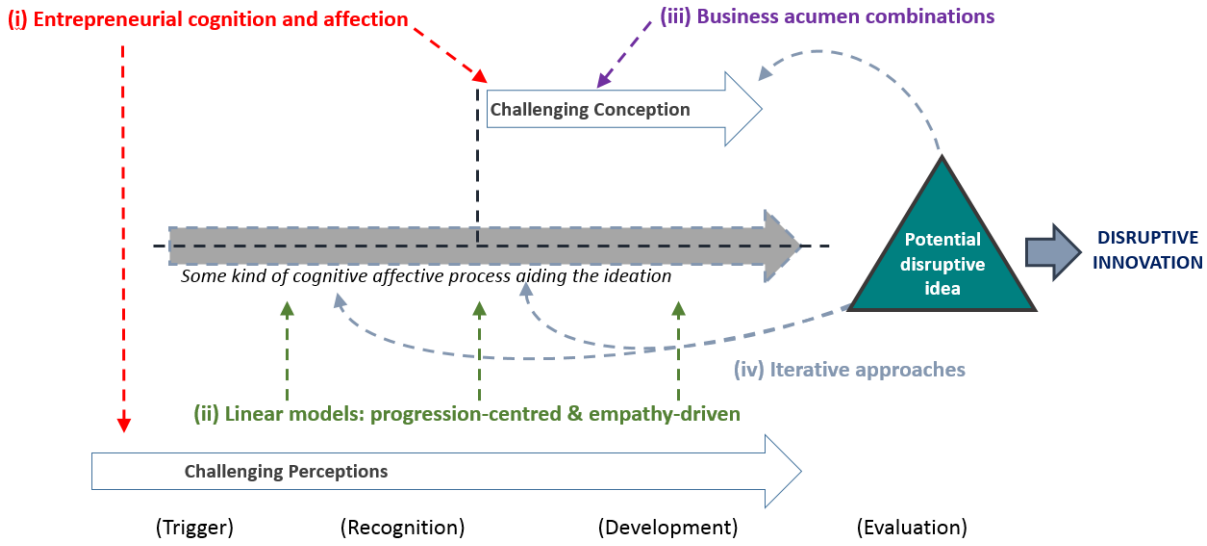
to be adopted in isolation of one another. As argued, a holistic ideation approach that may be used by disruptive innopreneurs is yet to be developed and the various theoretical constructs underpinning the ideation process is still not completely understood.

To address these gaps, a key objective of this research is to propose a preliminary ideation framework that can guide individuals to foster potential disruptive ideas. This research therefore aims to iteratively produce and validate a preliminary cognitive framework for effective ideation of disruptive innovation, this objective will be addressed by the three research questions outlined in the next chapter. Hereby adding to the initial outlook discussed in section 2.5 and taking into account the extensive literature review together with the arguments described on the various constructs, the premonition leads to the following outlook as a potential cognitive framework that may lead to disruptive innovation.

Figure 7: Possible outlook on the individual's cognitive process leading to disruptive innovation



Source: Authors own

As depicted in the Figure 7 above, the four dimensions discussed in Section 2.6 of this literature review have been incorporated to reflect where the theoretical underpinnings align to the cognitive process that was alluded to in section 2.5, Figure 4 of the initial outlook for the framework, hereby providing a solid foundation to progress the framework as we integrate the next phase of the study.

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2.9 Conclusion

In the era of disruption, managers routinely discount future threats and focus on short-term gains at the expense of less certain long-term returns (Tushman & O'Reilly, 2011). This is especially true with larger organisations who struggle to innovate due to complex structures and slow decision making structure that cripple the agility required to compete against disruptive start-ups. Even with powerful ideation approaches such as design thinking, jobs-to-be-done and crowdsourcing which have assisted organisations in obtaining a vast number of novel concepts, both from inside and outside the organisation, many organisations still struggle to identify and capture big opportunities. To see which ideas truly have potential, managers need new assessment criteria, they lack a method for capturing the most promising possibilities (Verganti, 2016). This argument is further support by Hang, Garnsey, and Ruan, (2015) stating that "In view of the importance of Disruptive Innovations in both emerging and advanced economies, a better understanding of how to cultivate opportunities is called for". Thus these ideation requirements would necessitate the need for an ideation framework in order for both individuals and organisations to sustain the innovative dynamism required for disruption, similarly teaching employees within the organisation to think effectively towards DI becomes a determinant of corporate competitiveness.

Dyer et al. (2008) developed a theory regarding behavioural patterns that contribute to innovative entrepreneurs' (innopreneurs) ability to recognise opportunities for new venture creation. Entrepreneurs, innopreneurs and others involved in the innovation process face complex challenges and an abundance of data and probabilities, and often use emotions typically linked to their past experience to reduce the number of viable options and inform behavioural intent (Kidwell and Jewell, 2008; Camelo-Ordaz et al., 2011; Ettlie et al., 2014). Notwithstanding the broadly accepted notion that employee and managerial cognition associated with entrepreneurial behaviour and innovativeness espouses a largely nonlinear thinking style framework, researchers posit that innovative objectives and behaviour patterns are more likely linked to a thinking style that emphasises a balance of both linear and nonlinear knowledge acquisition and decision making (Ettlie et al., 2014a), further highlighting the need for a thinking framework to aid decision making.

As described by Short, Ketchen, Shook, & Ireland (2010), the field of entrepreneurship has experienced a rapid increase in scholarly research examining the role of opportunities in new venture creation. Against the backdrop of the extensive literature review provided in this literature review, the gaps between entrepreneuring and innovating at the individual ideation

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level requires further theorising. More specifically, scholars have observed that the field still lacks construct coherence (Suddaby, 2010) and a suitable method of analysis for empirical studies, therefore creating a "serious disconnect between theory and empirical examinations" (Hansen, Shrader, & Monllor, 2011, p. 7). Danneels (2004) has suggested tailoring existing technology forecasting methods to predict potentially disruptive technology. Govindarajan and Kopalle (2006) are of the opinion that the disruptive innovation framework could indeed assist in making ex ante predictions about the type of organisations most likely to originate disruptive innovations (D. Yu & Hang, 2010). This MBA research aims to bridge the gap and provide some level of insights helpful to both scholars and practitioners.

In order to improve the performance with regard to disruptive innovation in established companies or organisations, research has advocated that the organisation acquire four key capabilities, these being: (1) openness capability, (2) autonomy capability, (3) integration capability and (4) experimentation capability (Chang et al., 2012). It is highly unlikely that disruptive innovation is achieved through an individual's own effort without the support of other stakeholders. While this research focuses on uncovering the cognitive process of the disruptive innopreneurs, future research should be explored on the member-exchange effect and the agentic-influence of how disruptive innopreneurs leverage social physics, collaborate as group and/or partner with other with stakeholders. Similarly, as described by Christensen (2012) "Disruption is less a single event than a process that plays out over time, sometime quickly and completely, but other times slowly and incompletely". However, unless all required stakeholders involved can acquire the cognitive competency required for DI, it is unlikely the group interaction will lead to the desired outcome. Wagner (2012) mentions that innovators tend to share a common developmental arc: play, passion and purpose, where play is unstructured and exploratory. Even though individuals' cognitive processing used to identify and create opportunity for disruption may appear to be random and unstructured, a framework that guides the thinking process of aspiring innopreneurs will be of significant value as already eluded to above where it was noted by the fact that companies fail at innovation due to wasting time and expensive resources on fruitless ideas, secondly noting that companies do not have the necessary internal skills to think disruptively. We therefore argue that innovation without effective entrepreneurship will remain fruitless and cannot achieve disruptiveness. It is hoped that by providing a cognitive framework for disruptive ideation that guides innopreneurs to disruptive thinking would provide a progressive solution to these dilemmas, mindful that such a framework is yet to be developed.

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We wish to note that this is perhaps the most comprehensive review of entrepreneurship and innovation literature that has been used to produce any framework to date and therefore we are confident in progressing to the next phase of the study. As the Gordon Institute of Business Science's mission is to improve responsible individual and organisational performance across the broader African environment, this introductory cognitive framework will be discussed and taught to select senior business leaders in Africa; encouraging them to apply the framework to their strategic planning, to facilitate their innovation strategy. This objective will be addressed by the research question 3 outlined in the following chapter. Lastly, we would like to add that the researcher aspires to publish this chapter as a standalone review, ergo the extensive literature review.

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Chapter 3: Research questions

It was established in the literature review that the development of a cognitive framework which leads to disruptive thinking and results in effective disruptive innovation ideation is yet to be developed. Using proven contemporary concepts and frameworks together with a solid theoretical background we believe that an explorative qualitative study of successful disruptive innovators would provide a platform to develop this much needed cognitive framework. We therefore base the three research questions on the constructs that emerged in Chapter 2, cognisant of the research aims described in Chapter 1.

DI not only serves as the means to rapid start up growth but also the core strategy for an increasing number of incumbent business's competitive advantage. DI affects all industries and due to its ubiquitous nature, organisations are being forced to develop a strategy that incorporates disruptive innovation in the corporate strategy (Dawson & Hirt, 2016). This increased emphasis for DI reaffirms the need for a framework that not only encourages disruptive thinking but leads to effective implementation of DI strategies. To achieve this objective, the study seeks to understand the answers to the following research questions.

3.1 **Research question one:** What are the common themes underpinning the cognitive process of disruptive innopreneurs when developing their ideas?

This question seeks to understand the common behaviours, traits and knowledge that accomplished successful disruptive innopreneurs within Africa draw on when developing successful disruptive solutions. It is believed that this should provide the common underlying constructs to disruptive thinking, providing further clarity and additional insights to the possible outlook proposed on the individual's cognitive process leading to disruptive innovation discussed in Section 2.8 above.

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3.2 **Research question two:** If the preliminary framework was to be used by disruptive thinkers, what are the shortcomings of the model?

After a preliminary framework has been developed, disruptive thinkers who participated in answering research question one would be required to critique the framework by reflecting on the appropriateness of the framework to guide disruptive thinking and validate whether or not the framework contains the constructs they made use of when developing their successful disruptive innovation, if this was not the case these insights where required would be incorporated into the next iteration of the preliminary framework.

The main aim of this question is to better understand possible shortcomings of the proposed preliminary cognitive framework towards effective ideation for disruptive innovation, which has been validated by Africa's most successful disruptive thinkers.

3.3 **Research question three:** If the framework is applied within an organisation so as to provide a methodology to improve their innovation strategy, what benefits or limitations does the framework provide?

While the first two research questions focus on uncovering the cognitive process of the disruptive innopreneurs at an individual level, we investigate the framework's application within an established organisation by taking the execution of the framework one step further. This research question seeks to understand the applicability of the framework as a possible methodology to guide and improve the disruptive innovation strategies within organisations. Senior managers within the African retail and wholesale sector are taught to apply the framework within their various business units so as to provide a methodology to improve their corporate innovation strategy. Once it has been established that the senior leaders are able to correctly apply the framework, they implement the framework as a tool to ideate disruptively within their business unit. Once completed, focus groups are established where these senior managers illicit feedback from their peers whom were involved in applying the framework within the organisation so as to gain insights on the applicability of the framework being used towards improving disruptive innovation within the organisation.

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Chapter 4: Research methodology

4.1 Introduction

This section outlines the proposed qualitative research methodology that was used for this study. The appropriateness of a qualitative approach will be outlined in order to investigate the proposed research questions. The population and sample is then discussed, highlighting the sampling method and sample frame used as well as discussing the reason for their choice.

The literature of a semi-structured interview process is discussed followed by the approach taken in analysing the data from the semi-structured interviews covering the three research questions. We conclude by discussing the assumptions and limitations of the research and describe the steps taken to ensure validity and reliability of the data.

4.2 Research design

(Saunders & Lewis, 2012) suggest using their research onion which serves as a route map in determining your research design. The approach most suitable to this study was inductive (*ex post facto*) reasoning due to the research developing concepts, insights and understandings from patterns, hence a qualitative research study would be the most appropriate method as it seeks to gain new insights, asks new question and assesses topics in a new light. The importance of using qualitative research for this study is its idiographic nature, meaning that it aims to understand the meaning that people attach to everyday life as well as captures and discovers meaning once the researcher becomes immersed in the data (De Vos, 1998).

The type of study followed was of an exploratory nature as the research aimed to seek new insights, ask new questions and assessed topics in a new light (Saunders & Lewis, 2012). An exploratory study may well provide tentative answers to the initial questions, which need to be followed up with more detailed research to provide more dependable answers, thus grounded theory principles were used to derive deeper explanations (Zikmund, Babin, Carr, & Griffin, 2009). Due to the qualitative research approach, additional observations were determined by information richness of settings, and the types of observations used were modified to enrich understanding as described by (De Vos, 1998).

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4.3 Universe and Population

The universe for this research included two groups, the first covered research question one and two (Group 1) and the second group covered research question three (Group 2). This research has been conducted in the context of business, the universe attributed to Group 1 includes accomplished disruptive African innopreneurs that either founded or co-founded the disruptive organisation or subsidiary. The universe for Group 2 was classified as senior managers heading up teams in the retail and wholesale sector within Africa who were involved in facilitating their organisation's strategy.

More specifically, a population is defined by Saunders and Lewis (2012) as the complete set of group members. The population of this study for these two distinct groups were further defined as:

Group 1: Disruptive Innopreneurs - DI

The research population comprised successful disruptive African innopreneurs that either founded or co-founded the disruptive organisation or subsidiary and who met the following requirements:

i. Successfully implemented a disruptive innovative idea in the past ten years.
ii. The innovation was successful for at least one year.
iii. The innovation was of a disruptive nature.

Group 2: Senior Managers - SM

The research population comprised senior managers heading up teams in the retail and wholesale sector within Africa who were involved in facilitating their organisations strategy and whom met the following requirements:

i. Involved in making decisions concerning the organisations strategy.
ii. Directly responsible for at least five subordinates.
iii. Have the autonomy to implement and control the strategy of their individual business unit.

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4.4 Sampling

4.4.1 Sampling method

Saunders and Lewis (2012) defines a sample as a subgroup of the whole population. The sampling technique used for this study was non-probability sampling. The reason this technique was used was mainly due to the fact that we did not have access to the complete list, i.e. sampling frame of the population and therefore unable to select a sample from this population at random. Furthermore, this meant we were not aware of the chance or probability each member within population had at being selected (Saunders & Lewis, 2012), i.e. the probability of being chosen was unknown (Zikmund et al., 2009).

As a consequence of the above, purposive sampling, a form of judgement sampling was used as the specific sampling technique to gather the sample for sample Group 1 and 2 explained in Section 4.3. Purposive sampling as defined by Zikmund et al. (2009) is the sampling technique in which a researcher selects the sample based on personal judgement about some appropriate characteristic of the sample member, in our study this would be the characteristics mentioned in Section 4.3 for each of the two groups.

Over and above the purposive sampling technique, an element of convenience sampling was also used to gather the sample, this technique refers to obtaining people or units that are conveniently available (Zikmund et al., 2009). Group 1 and 2 of the population was gathered using existing personal networks of the researcher as well as those networks of the researcher's supervisor.

4.4.2 Sample unit

The sample unit of this study has also been categorised into two groups, which align with the population described in Section 4.3. For Group 1, the sample unit is the individual disruptive innopreneurs and their cognitive thinking process. For Group 2, the sample unit is the individual senior manager and their perception of the applicability of the framework to facilitate disruptive innovation.

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4.4.3 Sample size

The size of a sample in a typical nonprobability sample typically relies on the concept of "saturation", or the point at which no new information or themes are observed in the data (Guest, Bunce, & Johnson, 2006). Creswell (1998) recommends a sample size between five and twenty-five for a phenomenological study and twenty to thirty for a grounded theory study. On the other hand, Kuzel (1992) recommends a sample size related to the heterogeneity and research objectives of the study, recommending six to eight interviews for homogenous samples and twelve to twenty data sources when looking for disconfirming evidence (Guest et al., 2006). Seeing that this study included both phenomenological and grounded theory methods the researcher was guided by these recommendation of sample size and for sample Group 1 a total of twenty six semi-structured interviews were conducted with disruptive innopreneurs within Africa to ensure data saturation. The sample size for sample Group 2 consisted of a total of 12 senior managers within the retail and wholesale sector of South Africa.

It should be noted that this research called for a sample unit that was particularly difficult to conduct due to the positions held by the interviewees and the demands on their time. All research subjects hold demanding jobs and responsibilities at the top of their respective industries, making access to them challenging and limiting the amount of time available to gather data within the timeframe of this ambitious task.

4.5 Unit of analysis

The unit of analysis as defined by Zikmund et al. (2009) indicates what or who should provide the data and at what level of aggregation. The unit of analysis in the context of a qualitative study is holistic, concentrating on the relationships between elements, context, etc. (De Vos, 1998). For sample Group 1 the unit of analysis is the insights gained from the cognitive thinking process of disruptive innopreneurs. As per the conditions set out in the consent letter and the ethics approval, all participants were assured that their responses would remain confidential, but anonymity could not be guaranteed and it should be noted that the researcher received consensus to use the names of the subjects in this study. For sample Group 2 the unit of analysis is the perceptions of the senior managers after applying the framework in their organisation. Due to sensitivity of the intellectual property of the individual organisations strategy, the respondents of sample Group 2 need to remain anonymous.

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4.6 Research instrument: Interview Schedule

Semi-structured interviews and surveys were conducted with the interview subjects and can be found in Appendix 1 and 2 of this report. (Saunders & Lewis, 2012) describes this type of interviews as a method of data collection in which the interviewer asks about a set of themes using some predetermined questions, but varies the order in which the themes are covered and questions asked. The interviewer may choose to omit some topics and questions and ask additional questions as appropriate (Saunders & Lewis, 2012).

The interview process was conducted in line with the recommendation provided by Turner (2010):

i. Choose a setting with little distraction

ii. Explain the purpose of the interview

iii. Address terms of confidentiality

iv. Explain the format of the interview

v. Indicate expected interview duration

Turner (2010) suggests that creating effective research questions is one of the most crucial components of interview design. Researchers desiring to conduct such an investigation should be careful that each of the questions will allow the examiner to dig deeper into the experiences and/or knowledge of the participants in order to gain maximum data from the interviews (Turner, 2010).

The interview schedule for both sample Groups was planned and constructed to include mostly open ended questions in order to allow the respondents considerable freedom in answering; and are the most suited form of questioning for exploratory research (Zikmund et al., 2009). For sample Group 1, the interview schedule consisted of a total of six questions related to the development of the disruptive idea; the first two questions were designed to allow the respondents to share their unprompted explanation of their disruptive idea and what led them to develop this idea. As the interview schedule progressed through the subsequent questions more specific questions were discussed in order to gain an understanding of the thinking process in developing the disruptive ideas. The interview schedule then directed the researcher to elicit feedback from the disruptive innopreneurs using the last two questions to

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critique the framework. The interview schedule for sample Group 2 consisted of two open ended questions designed to elicit the response from the senior managers after the framework was used in the facilitation of their organisation's innovation strategy.

4.7 Data collection

The data was collected in the form of an in-depth semi-structured research approach for sample Group 1 and feedback sessions using semi-structured qualitative surveys for Group 2 so as to address the overall research objectives and answer the research questions described in Chapter 3. As discussed by Harwell (2011, p. 148) "Qualitative research methods focus on discovering and understanding the experiences, perspectives, and thoughts of participants-that is, qualitative research explores meaning, purpose, or reality" which provides the necessary insights in understanding the thinking process disruptive innopreneurs follow when developing disruptive ideas.

Primary data was collected as no secondary data sources were available. This enhanced the findings of the this exploratory research as the researcher was able to interpret the information using known research methods and techniques specifically required to generate new insights for this study.

The interviews were arranged by the researcher and supervisor via email, telephone, social media platforms such as LinkedIn and Facebook as well as referrals from colleagues and business associates. All interviews were recorded and the majority were conducted in the Johannesburg and surrounding areas in a mutually beneficial location for the researcher and interviewee.

4.8 Data analysis

Interpretative Phenomenological Analysis (IPA) as explained by Smith (1996) provided the theoretical basis for the analysis used in this study. Smith (1996, 2004) explains that the interpretative aspect of IPA enables researchers to provide critical and conceptual commentary when eliciting data from participant's sense making activities. The "Phenomenological" aspect attempts to understand the participants' world and describe what it entails. Smith (1996) recommends the use of the IPA method for qualitative methods using semi-structured interviews. The reason for using IPA according to Smith and Eatough (2007) are that qualitative methods typically use small samples, with the intent of giving an in-depth

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analysis of each subject's responses. Smith and Osborn (2008) explain that IPA researchers also provide interpretative analysis, and highlight unique perspectives as well as shared experiences.

Using the IPA method we demonstrated how analysis of the raw data from interview transcripts progressed toward the identification of overarching themes that captured the thinking process of disruptive innopreneurs (Group 1) and the perceptions of senior managers when applying the framework (Group 2). During the interviews, the researcher jotted down field notes whilst recording the interviews (with participant's consent) in order to compare the field notes with the audio recordings at a later stage to provide further context. This method proved to be valuable as field notes supplementing the recordings provided another level of detail such as a "sense of being there" when the audio recordings were eventually analysed. Continuing with the IPA data method as recommended by Smith and Osborn (2008), the researcher read each transcript so as to make "sense" out of what was uncovered and in order to become as familiar with the interview data as possible. We then compiled the data into categories or groups of information, also known as themes which are consistent phrases, expressions, or ideas that were common among the research participants (Zikmund et al., 2009). Next, the themes were recorded and the list of emerging themes were analysed for relationships, the recognitions of similarities and differences within the identified themes. The inductive qualitative analysis lent itself to "code" the various themes as and when we collected and analysed the transcripts, building on themes that were already coded as opposed to having a template or code book before commencing the analysis (Fereday & Muir-Cochrane, 2006). Clusters of the themes were then formed and further analysed to look for further relationships and connections. Similar themes were clustered together and given a label describing the higher order themes, referred to as families. A coded table was then produced which included a list of all the themes and families. The same process was followed for each semi-structured interview and moved through the process of "within-transcript notes", to "within transcript themes", to "independent emerging themes", to "theme clusters" and finally "theme families" (Smith and Osborn, 2008). We were then in a position to interpret the results from these emerging themes.

It should be noted that for Group 1, coding saturation was reached after 14 of the 26 interviews were coded, when the rate at which new themes are created declines as the analysis progresses, to a point where no new insights or themes are uncovered (Guest, Bunce, and Johnson, 2006). Saturation for Group 2 showed similar results and saturation was reached at 11 interviews, and new themes emerged infrequently as analysis continued.

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4.9 Research limitations and assumptions

Inherent in all research methods are limitations that need to be stated. This research methodology was no different and has some key limitations linked to the study are noted:

i. Non-probability sampling was used as the sampling method. Bias is present in this sampling method due to its variability and estimates not being measurable (Zikmund et al., 2009). Due to the convenience sampling technique, the limitations applied to the sampling frame need to be considered. Furthermore, the sample was limited to individuals that were accessible during the data collection period of the study.

ii. The research was conducted using an explorative qualitative methodology, knowing that the researcher will be present during the data gathering, response bias could affect the interviewee's responses, consciously or unconsciously (Zikmund et al., 2009). Though it is hoped that multi-source data will enhance the validity and objectivity of the results.

iii. This ambitious study covered a few distinct research fields and the data collection of such a magnitude was time consuming, due to time constraints the research project was not be able to cover all concepts in detail and therefore this research project is by no means a comprehensive study on the various domains covered.

iv. Only Founders / Co-Founders and senior executives of disruptive organisations within South Africa, Kenya and Nigeria were interviewed for sample Group 1. To gain a greater understanding of the topic, disruptive innopreneurs for sample Group 1 and Senior Managers for sample Group 2 from other African countries could have been interviewed, thereby gaining deeper exploration and increasing the comparability of the interviewee experiences from a more diverse sample (Zikmund et al., 2009).

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4.10 Validity and reliability of research

Qualitative research methods are not used for representivity but relevance, hence the number of respondents are far fewer than in quantitative methods due to the depth of analysis performed (Saunders & Lewis, 2012). Validity is concerned with two areas, the extent to which data collection or methods accurately measure what they were intended to measure and whether the findings truly reflect what they appear to be about (Saunders & Lewis, 2012). The validity, meaningfulness and insights gained from qualitative studies have more to do with the information richness of the study and the observational/analytical capabilities of the researcher than with the sample size (C. Perry, 2001). Threats to the validity of the research would mainly be due to subject selection due to possible biases and unrepresentative of the research population. Testing is another threat to validity as the data collection process can impact the outcomes of the findings (Zikmund et al., 2009). Cognisant of these threats, we have at all times attempted to eliminate all factors that threaten the validity of the research by using all of the data that was elicited in the various semi-structured interviews, thoroughly tested our coding methodology and ensured saturation of coding as explained in the analysis Section 4.8, hence ensuring that data analysis included various steps to validate and verify the data.

Reliability on the other hand refers to the extent to which data collection methods and analysis procedure will produce consistent findings (Zikmund et al., 2009). Threats to reliability would be subject error such as measurement that may take place at different times; subject bias whereby the subject gives unreliable information; and observer bias due to interpretation (Saunders & Lewis, 2012). A concerted effort was made to follow the IPA data methodology to provide consistency in the data analysis; contradictory findings were used to enhance the accuracy of the themes created, and undue attention was not placed on particular anecdotes that supported the researcher's own views and biases.

Lastly, the risk of the researcher was also considered for conducting and analysing the semi-structured interviews, especially researcher bias which as described by Zikmund et al. (2009) is a response bias that occurs because the presence of the interviewer influences the interviewees answers. Every effort was made to reflect the opinions and views of the respondents as opposed to the interactions with the researcher.

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Chapter 5: Results

5.1 Introduction

Chapter 5 reports the results of the data analysis phase 1 to 3 of the study as described in Section 1.4 by using an inductive method for this exploratory study. This chapter is organised such that it provides the background analysis of the two groups of interviewees (Sample Group 1 and 2) and then presents the findings of the results for the three Research Questions raised in Chapter 3 and elaborated on the three major findings of this study. It should however be noted that the aim of research question one was to uncover the key themes underpinning the thinking process of disruptive innopreneurs, therefore due to the emergent themes, the researcher was more interested in the themes than the alternative terms used by the interviewee. Finally, the chapter concludes with succinct conclusion of the results. A brief description of the two sample groups follows below:

Sample Group 1: (26 disruptive innopreneurs)

The list of 26 disruptive innopreneurs summarised in the sample overview depicted in Table 1 below were used to answer Research Question One and Two, also referred to as Phase 1 and 2 of the study respectively. The core objective of Phase 1 was to uncover the key determinants of the cognitive processing utilised by these extremely successful interviewees based on the semi-structured interviews discussed in Section 4.6. Subsequently, by analysing the feedback from the interviewees using the data analysis described in Section 4.8, we endeavoured to create an exploratory understanding of the interrelationship of these underlying determinants so as to conceptualise a plausible ideation framework.

Sample group 2: (12 senior managers from the wholesale and retail sector)

The senior managers were requested to apply the newly developed framework to facilitate an ideation strategy session with a small group of colleagues (each group comprised between five to seven colleagues) so as to provide insights into their organisation's innovation strategy. The senior managers then reported their opinions concerning the applicability and usability of the ideation framework within their organisations which were then analysed.

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5.2 Sample overview and analysis

As described in Chapter 4, the analysis approach followed in this study followed the IPA methodology and due to the inductive nature of this exploratory study also made use of grounded theory principles as the researcher derived deeper explanations as the interview process progressed. It should also be noted that the research supervisor performed a secondary analysis on the data in the form of the voice recordings to provide further data verification and respondent validation for both sample groups.

5.2.1 Disruptive Innopreneurs – Group 1

In total, 26 disruptive innopreneurs agreed to be a part of this study and shared their thoughts with us using the semi-structured interview process described in Section 4.6. The researcher's aim in selecting this population sample was very ambitious; as he attempted to interview the most accomplished disruptive innopreneurs within Africa. The magnitude of this task due to the interviewee's location, high profile, difficulty in gaining access and availability of this quality sample cannot be underestimated. Disruptive innopreneurs are few and far between and this study imposed strict criteria in selecting its interviewees to ensure further validity to the findings. All interviewees have provided consent to reveal their identity, confidentiality was however offered by the researcher. The name, country and industry/sector together with a brief biography per disruptive innopreneur is depicted in Table 1 below. It should be noted that the researcher decided to introduce a degree of anonymity and randomly assigned a code to each of the interviewees starting at identification number DI01 through to DI26 which will be used as the results are reported in subsequent sections of this chapter.

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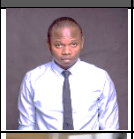
Table 1: Interviewee list of Disruptive Innopreneurs

Name	Picture	Country	Sector	Brief description
Adewale Yusuf		Nigeria	Media and ICT	Co-Founder of Techpoint Nigeria, an innovative start-up that revolutionised the Nigerian media industry in creating a technology platform for improved collaboration for the Information Technology sector.
Akinola Jones		Nigeria	Financial Technology	Co-Founder of Aelle Credit, the first personal online lending platform in Nigeria, disrupted the lending industry through quick approval, low cost and security.
Antonio Bruni		South Africa	Logistics	Founder and CEO of Picup, an on-demand, real-time logistics solution operating in Cape Town, Durban and Johannesburg and voted as a 2015 finalist at the AppsAfrica Innovation Awards.
Arlene Mulder		South Africa	Education	Co-Founder and Director of WeThinkCode, a technology institution that has disrupted the education sector by providing free education to world-class software engineers and guarantees employment.
Barry Swartzberg		South Africa, operating world wide	Insurance and Healthcare	Co-Founder of Discovery Limited, one of Africa's most innovative companies, started in 1992 and since then has continuously reinvented itself by providing world-class innovations for health and life insurance industry servicing over 5.1 million clients worldwide.
Berno Potgieter		South Africa	Services	Co-Founder and CEO of Domestly, an on-demand cleaning service based in South Africa, revolutionizing the way Africa cleans their homes. Winner of the 2016 MTN App of the year award.
Camron Pfafferott		South Africa	Services	Founder and Director of The Rewards Factory, provides bespoke reward and recognition programmes through various online platforms that drive employee, customer and supply chain behaviour.
Craig Lowe		South Africa, operating world wide	ICT	Founder and Managing Director of ExecMobile, removing the complexity and high cost of mobile data roaming for travellers across the world. Voted by BusinessTech in 2015 as one of the Top 10 most disruptive tech companies in South Africa.
Derrick Cooks		South Africa	Consulting	Founder and CEO of Freethinking, provider of innovative consulting services and a first of its kind profit model, whereby a client pays on performance improvements thereby changing the way consulting services are offered within Southern Africa, also the first consulting organisation in South Africa using the design thinking framework as a core offering. Part of the EOH group of companies.
Devin de Vries		South Africa	Transport	Co-Founder and CEO of WhereIsMyTransport, a technology based start-up that is redefining public transport in emerging cities around the world by integrating all modes of public transport into one platform. Winner of the 2015 Global Grand MobiPrize.
Glenn Stein		South Africa	Technology	Founder and Director of Aweza, the first multi-lingual South African language phrase translation mobile application, supporting all 11 official South African languages. 2016 NETEXPLO Intl Award Winner.
Jannie Mouton		South Africa, Namibia and Mauritius	Financial Services and Education	Founder and Chairman of the PSG Group, a listed investment holdings company with interests in financial services, banking, private equity, agriculture and education. The company also owns 28% of Capitec Bank and a controlling interest in Curro

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				private schools. One of South Africa's most successful innopreneurs.
Katlego Maphai		South Africa	Financial Technology	Co-Founder and CEO of Yoco, provides small to medium businesses (SMEs) the ability to accept card payment through a Point of Sale solution using a smart phone and provides these SMEs with an online platform to analyse the transactions. Winner of the 2016 Capetalk and Sage One Small Business Awards.
Lee Annamalai		South Africa and SADC region	Space Technology	Founder of the South African National Space Agency and currently head of the CSIR Meraka Institute, developing computational intensive innovations for Africa and the developing world in spatial technology.
Levon Rivers		South Africa, Operating in Africa	Digital Marketing	Founder of Bookly in collaboration with Native VML, the first mobile reading and book writing app developed for feature phones, especially developed for the emerging markets within Africa. Winner of the 2013 MTN App of the Year Award for Most Innovative App and Winner of the 2015 AppsAfrica Innovations Awards for best mobile innovation.
Mike Aitken		South Africa	Retail	Founder and CEO of Coupon Clearing Bureau South Africa (CCBSA), the first ever centralised and automated coupon clearing bureau in the world. Has since its inception been the national clearing house for consumer coupons in South Africa, fundamentally controlling the industry.
Murray Legg		Mauritius, South Africa, UK	Marketing and Digital Advertising	Founder and CEO of Webfluential, an innovative online marketing company, a world first to connect brand marketers to social media influencers who have large audiences, through an online platform. Selected as one of the top 22 Tech start-ups for 2016 by Investec. Top 200 Young South Africans in 2014.
Neo Hutiri		South Africa	Medical	Founder of Technovera, technology company that has revolutionised the public medical health care sector within South Africa, efficient delivery of chronic medication using smart locker technology. Winner of the Hack.Jozi Awards 2016.
Peter Alkema		South Africa	ICT and Banking	CIO of FNB Business Banking and Founder of the FNB CodeFest IT accelerator used to improve the banking sectors innovativeness. One of Africa's largest commercial banks.
Riaan Stassen		South Africa	Banking	Co-Founder and former CEO of Capitec Bank, South Africa's most innovative bank and arguably Africa's most successful Disruptive Innovation organization in the past decade. Voted as the bank of the year by International banking advisory group Lafferty in 2016.
Sheraan Amod		South Africa	Technology and Healthcare	Founder and CEO of RecoMed, largest and fastest growing healthcare booking platform in South Africa, designed to seamlessly connect public (patients) and their providers (Doctors, clinics, etc). One of Ten Finalists in Tech Lab Africa in 2015.
Stuart Forrest		South Africa, operating Intl	Film, Animation, and Media.	Founder and CEO of Triggerfish animation studios. A digital animation company that has produced two of Africa's most successful films "Adventures in Zambezia" and "Khumba". Named as one of Africa's Top 20 Tech Influencers by IT News Africa (2013). Finalist for the 2012 Sanlam Entrepreneur of the Year Award, winning Innovator of the Year.

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Susie Lonie		Kenya, South Africa and Tanzania	Financial Services	Co-Founder and Commercial Head of M-PESA in Kenya and then implemented throughout Africa whilst under the banner of Vodacom. M-PESA, a mobile money transfer system included two world firsts: Cardless ATM withdrawals, International remittances delivered to a mobile money account. Susie is known as the original M-PESA patent. In 2010 Susie was the co-winner of "The Economist Innovation Award for Social and Economic Innovation" for her work on M-PESA. In 2016 she was presented with the Digital Impact Awards Africa "Africa's Financial Inclusion Medal of Honour" for her work on M-PESA.
Themba Baloyi		South Africa	Insurance	Founder and Executive Director of Discovery Insure Ltd, an innovative Motor Insurance Company under the Discovery Group of companies that transformed the way vehicle insurance companies manage their clients risk and reward them for being low risk clients. Themba was honoured as a 2015 World Economic Forum Global Leader, a tribute bestowed to recognize the most distinguished leaders under the age of 40 around the world. Discovery insure won two global Gartner innovation awards in 2015: Most Innovative New Digital Product and also won the overall EMEA Digital Champion Category.
Valter Adão		South Africa	ICT, Consulting	Head of Deloitte Digital, South Africa. One of the world's leading online and mobile strategy innovation consultancy firms. Valter is also the former leader and founding Director of Monitor Deloitte in Africa and has assisted Deloitte South Africa to disrupt itself and assisted Deloitte South Africa's clients to become more innovative.
Wimpie du Plessis		South Africa	Healthcare	Founder and CEO of MediKredit, considered the pioneer that changed the face of healthcare processing in Africa, moving from a paper-based environment to an Electronic Data Interchange (EDI), where medical claims are received electronically in a real-time environment. MediKredit's products affect 4.2 million of the 8.5 million health-insured lives in South Africa.

The researcher would like to stress the point here that access to disruptors of this calibre across the continent is exceptionally difficult, given their responsibilities to their respective companies or organisations, and the issues with timing that occur in setting up interviews and ensuring the interviewer and the party being interviewed are both able to be at a place conducive to interviewing at the same time.

5.2.2 Senior Managers – Group 2

In total, 12 senior managers from the wholesale and retail sector took part in this study. The purpose of choosing the interviewees from these sectors was to reduce the unnecessary

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complications and sample bias as a result of using different industry sectors. All interviewees selected have extensive experience facilitating strategic discussion sessions. Starting this third phase of the research, the proposed framework was presented to all interviewees during a three-hour workshop to ensure each interviewee fully grasped the essence of the framework and its intended application. To adhere to the confidentiality of the organisation and reduce unnecessary complications, the researcher intentionally did not request the interviewees' consent to reveal their names and background. Due to these sensitivities and the nature of the data collected, the details of the interviewees and the organisation names will remain anonymous. These senior managers were codified from SM01 to SM012 as will be referred to in subsequent sections in this chapter. Overall, 36 pages of report feedback was obtained from these senior managers explaining their findings during the feedback sessions using semi-structured qualitative surveys.

5.3 **Research question one:** What are the common themes underpinning the cognitive process of disruptive innopreneurs when developing their ideas?

In total, 26 semi-structured interviews were conducted and recorded during Phase 1 of the study, in pursuit of answers to research question one, using the methodology explained in Chapter 4. A summary of the interview durations is depicted in Table 2 below.

Table 2: Summary of interviews and duration

Description	Quantity
Number of interviews	26
Total duration of interviews	1229 minutes
Average duration of interviews	47 minutes
Shortest interview	31 minutes
Longest interview	105 minutes

During the process of answering research question one and completing the analysis of the semi-structured interviews, the study revealed three major findings. The first major finding is discussed in section 5.3.1 below, the second in section 5.3.2 and the third major finding is the seven theme families discussed in section 5.3.3 to 5.3.9.

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5.3.1 Challenging both the common perception and the conception of business – First significant finding

The first significant finding uncovered by this research is that all of the interviewees, (26 of 26) shared the sentiment that when pursuing an innopreneurial endeavour, the ideation processes should incorporate the aspects of challenging both the common perceptions and conception of the business, furthermore having an innovative idea itself is important but one cannot disrupt the industry if the idea itself cannot be translated into a successful business. Contrary to some of the common views that disruptive innovation holds about having a novel concept, our interviewees strongly advocated that to pursue disruptive innovation, one literarily has to innovate everything; from the value concept and technology; getting the correct data for testing, defining the profit model, educating customers to embrace what they have not seen before and many other facets of the business model. In order to be disruptive, rolling out the concept, considering the business model and scaling the business should be considered as part of the "ideation process" when taking into consideration whatever the potential disruptive innovation might be. Quoting from interviewee number 3, 9, 12 and 21 (DI03, DI09, DI12 and DI21):

DI03 — *"Having a cool idea is all good and well. But in the "disruptive business", one cannot assume anything! We thought that because people use Uber and understand the concept, people will use our offering for logistics once we launched it. In reality, it is not the case. We also had to innovate around our customer education. We quickly realised that it is extremely important to educate the customers. Even when some people know of our existence, they still do not want to use it..... We also had to get hold of the real data..... In a 'disruptive business', you cannot think you come up with an innovative concept or innovative product will be good enough. In reality, you have to innovate everything to make the business work."*

DI09 — *"The challenging perceptions is key, that is the key part, more often than not people don't necessarily want to change the status quo, 80% to 90% of people will continue to move things along normally, that's not necessarily good or bad it's the way it works, it's how society is wired … the idea of thinking outside the box, do you actually need the box, what if we do away with the box, it's about debating our constructs and how we try and solve a job that needs to be done."*

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DI12 — *"I am not Steve Jobs. I did not do anything amazing. All I did was turn a few simple ideas that were not offered in the market at the time into very successful businesses. To execute the ideas well is somewhat more important than having the idea itself."*

DI21 — *"Lots of people come up with potentially disruptive concepts every day. But how to evaluate technology feasibility of the disruptive concept remains as the key. Can this (idea) be done or not? How can we execute this (idea) innovatively? . . . .Having an idea is easy. Placing all your value on an idea isn't good enough. Innovative and quality execution becomes important. Besides, most ideas will be changed a few times before they become the final products . . . . Exceptional execution should also be considered as fundamental to succeed in a disruptive innovation business."*

To challenge the *status quo* of both, the common perceptions around a novel way of creating value for the customers, and the execution of a successful business based on such nascent value-creation idea, are equally important. These selected comments above from the interviewees further supported the initial argument stated in Chapter 2. A disruptive innovation can only occur when a potentially disruptive idea is coupled with an effective entrepreneurial game plan.

5.3.2 The importance of building a good team – Second significant finding

The majority of interviewees, 16 of the 26, highlighted the importance of having a good team within the organisation in order to improve innovativeness, noting that these findings were all from disruptive companies. Many interviewees stated that one can only refine the nascent ideas and execute the ideas effectively by drawing on the variety of strengths and experiences of different members within the team. Quoting from Interviewee DI05, DI17 and DI22.

DI05 — *"We don't use focus groups for finding out what our customers want. Customers cannot always tell you what is disruptive as they don't know what they don't know or have not thought of it properly yet. (To) leverage our own people to debate what are the right products is our preferred way of introducing products to the market…….we invest in people and employ the best of the best …. we (the team) have to really rely on our deep understanding of the customers."*

DI10 — "*It's (Business success) something where the whole team should be weighing in ….. I guarantee you, if your start-up doesn't have bench warmers, you not going to have*

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much contribution to what the next movement should be like …… Need the engagement of the entire team."

DI12 — "*As we grew and brought in other people we saw the opportunity …. Need to get the right people to roll it out" and "It is a continuous process of improvement."*

DI17 — *"Bombardment of the ideas amongst your team is important".*

DI22 — *"Building a good team is essential. Empower our crew members to become champions so they can deliver and continue to innovate."*

It is beyond the scope of this research to define a cognitive-processing framework for group ideation. The intricacy of the group dynamics, communication styles, power distribution, leadership approaches and many other factors increase the complexity of the group ideation model. Having stated this, the research would attempt to argue that each individual forms the basis of a group. Quoting Interviewee DI12's statements:

DI12 — *"(Turning a) disruptive innovation into (a) successful business does not happen over a few nights. It takes time and a process to get there. It is not just one light bulb moment."*

Therefore, this research argued that if each and every team member was equipped with the cognitive ideation process helpful in nurturing disruptive innovation, it would make the team more effective in the pursuit of creating a disruptive innovation. An individual-based cognitive ideation process framework thus becomes even more imperative.

5.3.3 Seven Theme Families – Third significant finding

We now turn to the third significant finding of this study, seven superordinate themes (Theme Families) emerged after the semi-structured interviews were analysed. These theme families have been termed:

i) Hunch and envisioning
ii) Moments of significance
iii) Value–construct analysis
iv) Audacious identity
v) Fragmenting and borrowing

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vi) Combinatory play

vii) Enriched navigation

The definitions and findings of these theme families were captured in the respective subsections, from Sections 5.3.3 through to 5.3.9. Attention is drawn to the fact that for sample Group 1, data saturation was observed after interview 14 and no new codes were created as a result thereof, saturation occurs when no new data about a phenomenon is being heard by the interviewer (Morse, 1995) but to ensure the comprehensiveness of this study we continued with interviews that were already arranged and booked.

5.3.4 Theme Family 1 – Hunch and Envisioning

The first cluster of our third significant finding consists of two complementary components – hunch and envisioning. This study found that at the initial stage of the pursuit, the majority of interviewees developed an affinity towards certain opportunity discovery despite not having solid proof at the time. Then based on this intuition, interviewees further extrapolated how the future could be if this opportunity discovery leads to a successful venture.

DI12 — *"We just want to build something that makes sense and adds value to people. Sometimes one doesn't have to complicate things. If you know where you can make a difference, there could be a gap."*

DI23 — *"We felt that if e-microfinancing is an important area and we can add value in this area. It was a strange thing… Even though I don't have the proof at the time, I feel that I was onto something big deal and I have to make it work."*

Under this cluster; four additional sub-themes emerged: (1) hunch, (2) envision of making a difference, (3) foresight and counterfactual thinking and (4) memory and knowledge.

5.3.4.1 Hunch

Hunch refers to having a feeling or a guess based on intuition rather than having the facts about a concept. 24 of the 26 interviewees clearly revealed that there was some kind of intuitive thought that triggered their ideation process. Even though the speed and the magnitude differ, some interviewees expressed that they had an instant light bulb moment while others stipulated that often these hunches do not appear as an "aha" moment.

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Regardless whether the hunches were developed instantaneously, through a process or a combination thereof, over a period of iterative refinement, they concur that these hunches assisted them in narrowing down their focus and ignited their aspirations.

DI07 — *"It was a hunch that helped me start the business. 70% was more about the gut feelings."*

DI13 — *"I had a previous encounter when I was traveling in America. That experience gave me the aha moment when I returned to South Africa."*

DI22 — *"I thought this may be something interesting. But it wasn't an instant "aha" moment. It was developed gradually."*

DI25 — *"The concept may start with what is possible and apply the logics to it. You may have a hunch. But you have to test it. It is more about creating the hypothesis and (having one) tests one's own hypothesis.'*

5.3.4.2 Envision of making a difference

Envisioning or to envision can be considered the act of imagining an alternative future or visualising possible situations yet to come. Contrary to popular belief, the majority of the interviewees stated that making money was not the main focus of their business pursuit. Even though implementing a profitable business was a prerequisite, their main purposes were to find ways to make contributions to the customers and/or the society. 25 out of the 26 interviewees clearly stated their desire to make a difference and add value for other stakeholders. Making a significant contribution to the customers and/or the society was regarded as a priority by these interviewees.

DI02 — *"The country needs it (a product like ours)! I looked at the sector and recognised the needs. I want to make the process easier and faster for people with cheaper price. We want to conquer Nigeria and resolve these problems for people."*

DI03 — *"It was not about the money, about making a difference and improving."*

DI06 — *"I think I can assist the unemployment rate considering that there are a lot of people working as domestic workers."*

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DI10 — *"It's (the concept) something worth solving, it's worth being my life's work, if this was a problem I was stuck on, I am happy with that."*

DI11 — *"When an individual can break through the language barrier, it opens up life changing opportunity for them. We can make a difference for South Africa."*

DI17 — *"People build a business to make the world a better place, not about the money"*

DI20 — *"Especially for a disruptor, a new entrant must not make money the objective….. making money was not the real objective initially. We focused on how to make a difference for the customers."*

DI22 — *"We want to place South African animation in the world, we are from the emerging market. If we can tap into the talents of the emerging market, our diversity, offer something interesting to the international market. We also want to create opportunity for the local talents."*

5.3.4.3 Foresight and counterfactual thinking

As discussed in Chapter 2, foresight can be defined as the ability to predict what would likely happen if the current state persists, whereas counterfactual thinking allows one to step out the current trends and foresee the alternative future in order to see if an intervention could be introduced. It was apparent that many of the innopreneurs developed the ability to predict the noteworthy trends, yet at the same time were capable of imagining how their offerings could make an impact if the trends persisted. The foresight and counterfactual thinking capabilities enabled them to reshape their hunches and strengthen their envisioning. Overall, we observed 25 of 26 interviewees mentioning some level of foresight and counterfactual thinking.

DI08 — *"(at the time,) I believe that machine to machine communication will become the next wave. Even though it is not here in South Africa yet, I think that is where the future is heading to."*

DI11 — *"(we) cannot do it with 'current thinking'! We needed to find a new way to solve the same problem for the future……. (I took time to) unpack what each supplier can offer. Found a sweet spot to blend the technology offerings together."*

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DI23 — *"We challenged the basic conception of the current situation. If you (a customer) can put cash into the system, therefore you (he/she) should be able to take the cash out. It was a simple idea that starts diversifying into other ideas once we challenge the assumption of the current environment. In an ideal world, people (customer) should be able to do both."*

DI26 — *"I believe that the disruptive innovation comes from a person who can take a variety of the scenarios, assimilate all of that and extract the valuable things can create value…..you need a strategic mind to see how it will be played out."*

It should be noted that the reason this study stated that 24 of the 26 interviewees expressed the importance of the hunch, and 25 of the 26 interviewees exhibited degrees of foresight and counterfactual thinking; this is due to the fact that one of the interviewees received the hunch from someone else which led to his disruptive business being developed.

5.3.4.4 Memory and knowledge

Memory is how information is encoded, stored, and retrieved. Whereas knowledge is the facts, information, skills and awareness acquired through experience or education. Considering that all forms of knowledge are stored in the form of memory, this research decided to categorise these two elements together. 19 out of 26 interviewees indicated the importance of tapping into personal prior experiences and having various forms of relevant knowledge. Some even further attributed that memory and knowledge play a big role in developing the hunch.

DI11 — "*After high school, I went to Argentina. I spent a lot of time being frustrated as I couldn't understand what is going on around me. When I went to the Eastern Cape, it also made me realised that the language barrier hampers social development."*

DI18 — *"The idea came from my own experience when I was diagnosed with TB (tuberculosis). I have also six family members who are on chronic medication. Therefore it intensifies my understanding of the problem and the desire to solve it."*

DI24 — *"The whole thing started from (several of) my childhood experiences, my interest in aviation and Formula One."*

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5.3.5 Theme Family 2 - Moments of Significance

At every interaction point, a customer exchanges his/her resource, money and/or effort, with a service or product offered by the innopreneur. As the interviewees described their ventures, it became evident that having a hunch or the desire to resolve a problem is simply not enough. All of the interviewees agreed on the importance of observing the moments that customers interact with the offerings just to gain a glimpse of what motivates the customers to act in such way.

Three interrelated sub-themes emerged based on the interview analysis and they are (1) capture and collect all necessary information, (2) rely on own experience as a customer, and (3) apply credulous curiosity.

5.3.5.1 Capture and collect all necessary information

To dedicate a significant effort in capturing and collecting information about the customers was regarded as an important factor by all of the disruptive innopreneurs interviewed (26 out of 26). Some of the interviewees also mentioned that the valuable insights one needs can be captured by asking customers the right questions as well as asking the stakeholders of customers. The importance of capturing this valuable data was highlighted in one way or another. Some interviewees further highlighted the importance of capturing and collecting customer's data, information and/or behaviour patterns in order to justify their hunches. Capturing and collecting the jobs-to-be-done and the pain-points of the customers' journey, enabled them to get a glimpse of the customers' lives and really understand what they assign customer value to.

DI05 — *"We don't just ask the customers. We also ask our distributors to gain better understanding of the customers. We want to understand our customers from all different perspectives and also ensure our distributors understand our customers."*

DI13 — *"Our ideas were refined out of the behaviour analysis of the customers. Earlier on our process, we thoroughly defined our customer's journey and defined the customers' life-cycles. This analysis became the north star of our business. We always started thinking*

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about the customer's journey before building something. This ended up saving us time and improved the customers' experience."

DI15 — *"We keep on asking the community and those people in our ecosystem what they will be using our product for, why will they use it and how will they be using it. This helps us drill down to the true value our users are looking for."*

DI18 — *"I visited the clinics to see (things) for myself. I spent time talking to the nurses and other stakeholders. Without this kind of engagement, you cannot see the problem differently. I would sit and listen to all types of stakeholders – looking at customers and customer's customers too."*

DI20 — *"You need to be close to the market, its fundamental….." and "if you don't get your feet wet in the market you will lose your ability to innovate" and " as a white guy I walked the streets of Alexandra with an open neck shirt, in a Citi Golf not a Mercedes and a suit and tie . Most important for our customers are relationship to the bank and being close to the customer."*

DI24 — *"We tried the focus groups. But that didn't work well. Customers don't know how to evaluate what they don't know or have not experienced…… Sometimes, we need to know about our customers more than they know themselves."*

DI26 —*"It is important also to understand customers' life-styles. To design a customer-centric product, you cannot just look into how and why they interact with your product, you need to understand their life-styles"*

5.3.5.2 Rely on own experience as a customer

Sometimes the most vivid understanding of customers' feelings, reaction and behaviours occurred when one was a customer oneself. 17 of 26 interviewees stated that as they referred back to their own experiences when they were the customers, it provided them with a better understanding of what the customers were experiencing. In some sense, these 17 disruptive innopreneurs proposed that the best way to understand their customers is to relate to the moments when they were treated as the customers.

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DI02 — *"I use my own product. My family and friends use my product. This helps me create a product we would also like to use, a product our friends would like to use, and a product that our customers like to use."*

DI10 — *"My own frustration with the public transport systems helped to really feel how the customers are feeling. I was a customer."*

DI11 — *"Using my own experience to strengthen my hunch helped me to understand the pain points of the customers."*

DI21 — *"If you cannot use the product yourself, you should not build it. Self-consumption test is important."*

As a general trend, interviewees also indicated that due to the disruptive nature of their products or services, customers couldn't always relate to the offering early on as there was nothing to compare or relate them to, alternatively they believed that customers didn't always know what they wanted. These disruptive organisations therefore used other means to gain an understanding of the market and testing their assumptions to see if the market was ready for the offering.

DI05 — *"We come up with the products, we rather debate amongst ourselves what is the right product for the market, we have an intuitive understanding of the market, people with the right attitude to find something that is disruptive and unique, rely on them (our people)….. you can't go to clients to discuss their needs because you going to create something that far exceeds their base expectations."*

5.3.5.3 Apply credulous curiosity

The ability to be curious about what is going on around the innopreneurs emerged as an important factor. In 22 of 26 of the interviews, this study observed that disruptive innopreneurs placed a strong emphasis on not holding a preconceived solution to the problem. In one way or another, these 22 interviewees expressed the need to just simply be curious about the situation. Selected interviewees also strongly encouraged the implication of being curious with the greater macro and more detailed micro environment so that they can be exposed to the latest trends and potentially useful information that were seemingly unrelated or unimportant.

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DI04 — *"We really listen. We do not come from the same world as these students come from. We need to understand them."*

DI05 — *"We hold the right attitude to understand our customers. We do not make assumptions lightly. We want to understand (our customers)…….. This culture is sustained in our company"*

DI07 — *"We have had a lot of conversations with a lot of potential clients. Just openly want to find out what they are experiencing."*

DI08 — *"I constantly open my eyes to look for opportunities. Open your eyes and learn!"*

DI14 — *"You pick up there is an unmet need that then gives rise to the hunch. You can have two people sitting on the exact same chair listening to the customers saying something, but one guy based on his worldview, insights and experience can pick up there is an unmet need whereas another guy wouldn't."*

DI23 — *"Talk to people, ask questions, understand the customer and problem you trying to solve, listen and break down the barriers so you can ask the right questions, I even learnt Swahili so I could understand the customer."*

5.3.6 Theme Family 3 - Value-Construct Analysis

In Section 5.3.4 the Moments of Significance (MoS) were described as the step whereby innopreneurs try to gather all the pertinent information about customers and attempt to gain a real understanding of their customers. However, this study further uncovered that many of these interviewees (18 of 26) exhibited the behaviours of attempting to unpack customers' value perception at an even a deeper level. They tried to analyse customers' value-construct association. As stated in Chapter 2, explaining how a user assigns value is based on his/her inner construct. To be able to identify the customers' moments of significance does not necessarily guarantee a thorough understanding of the rationales that underpin the customer's desire to interact with the offerings that lead to the moments of significance. The 18 of the 26 the interviewees that took part in this interview seemed to be skilled in distilling the real needs of their customers and what motivates their customers to feel such needs. These interviewees demonstrated that they took the step of really understanding the value perception of their

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customers. These innopreneurs evaluated their customers' needs from their customers' perspectives, insisting on immersing themselves in the environment of their customers with their customers.

DI02 — *"We know why we are better than other competitors. Because we decide to create a product we would like to use, a product our friends would like to use."*

DI20 — *"I need to be where my customers are. How they eat, what they do, how they think and walk the street to observe……. I like to walk side-by-side with my customers when solving a problem."*

DI23 — *"I have the experience as a customer. I knew what is needed to make things work. I even went to Kenya to experience what customers are experiencing."*

DI25 — *"I need to dance on the same dance floor as my customers and wear similar shoes. It is NOT enough just to ask them questions or simply observe what they do. I need to really understand what they have gone through."*

Additionally, it was observed that during the process of evaluating what affects customers' lives that an empathetic driven approach was extensively adopted by 17 of the 18 interviewees who attempted to unpack their customers' value perception.

DI06 — *"After our family cleaner of 10 years was no longer needed full-time and couldn't find work, I wanted to create job opportunities for the unemployed."*

DI08 — *"We analysed and understood what the real pain points of the customers are and what will really add value to the customers…….. (one must) exercise a process in understanding the value for the customers…."*

DI09 — *"Listen to all the frustrations that people have. Listen to why and what made them frustrated. That was the best way ……. analyse what they needed and start deriving new solutions."*

DI13 — *"Accepting money shouldn't be a difficult thing."*

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DI17 — *"I feel that South African businesses do not exercise product empathy. Businesses don't really try to understand their potential customers at a very deep level. We really took time to unpack why our customers want something."*

DI25 — *"As soon as a business wants to disruptive itself or in coming up with a concept that contradicts an existing business, there will be a great deal of anxiety and resistance. It is not enough to just think about a concept. One should empathise with the stakeholders and without doing so, one cannot influence them to take them on a journey".*

The findings suggested that it is not enough to merely explore the MoS, and analysing the value–construct association of the customer plays an important role in shaping the initial concept. This is perhaps another significant finding of this research considering that disruptive innovation involves offering customers something they have never previously seen before. Without deeply unpacking the value–construct of the customers, one may derive the wrong conclusions about one's product/offering.

5.3.7 Theme Family 4 - Fragmenting and Borrowing

There are many plausible ideas and products in the world that could potentially assist innopreneurs to address the opportunity or problem at hand. However, not all these ideas and products may be applicable in addressing the specific context of the problem. For example, a solution that has been applied successfully in some other business elsewhere may not be 100% suitable for the local context or market. However, some of the principles of the solution may be adopted to address the issues of interest. Thus many interviewees (18 out of 26) suggested that after deeply understanding customers' needs and holding a boundless mind set, one would still needs to find a potentially successful solution elsewhere to assist in addressing the problem. Obtaining a solution, or part thereof, elsewhere might not be transferred from the same industry nor the same country, hence innopreneurs need to be open to learning transfer from dimensions seemingly unrelated to the potential solution. Another finding the study revealed is that by fragmenting a potentially useful solution into the key principles that formed the basis attributing to the overall success, innopreneurs distil which principles can be borrowed to suit the context of the challenge at hand. In order to borrow purposefully from elsewhere, one needs to fragment the key principles/features that enable a product/offering to work well. This research therefore regarded fragmenting and borrowing as two complementary components under one sub-theme.

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DI03 — *"Absolutely, looked at the USA and what could come back to SA, looked at lots of logistics models and companies there."*

DI05 — *"No solution is entirely brand new, it's a confluence of ideas. One borrows concepts from someone else. When we read that book from John Goodman, we know we were on the right track. We borrowed the loyalty product concept from the Edgar's club….. then when Health and Racquet club asked us how can they sell more memberships through Vitality, we borrowed some ideas and incorporated them into our business."*

DI06 — *"definitely, we looked at the Uber for X type models, on demand models, in the USA you get Uber for everything."*

DI13 —*"We borrowed a range of technologies. We started off by seeing what other industry are doing it right and what elements can we take from these successes to fix our problem."*

DI14 — *"Taking out the pieces that make most sense and incorporate (them) accordingly."*

DI15 — *"Heavily. We borrowed the inspirations from overseas competitors. But we only borrowed whatever principles may likely to work well but still adopted these principles to (suit) our unique context."*

DI21 — *"We borrowed some concepts of the platforms from the US. But first we compared what we want to achieve with various types of platforms out there around the world. We get to where we are through standing on the shoulders of the giants. Sometimes even the tiniest concept can make a huge difference. For example, we included photographs in our platform by taking Airbnb's lessons. However, even though we compared with other health care platforms in US we sustainably localise (these concepts) for our own context."*

DI21 — *"When you fragment you analyse everything, it's like the building blocks"*

However, one of the interviewees did caution that fragmenting must be applied without imposing a narrow mind-set. Instead, applying systems thinking and taking on a holistic way of viewing how all components can be borrowed and put together is central to the overall success of disruptive innovation. Quoting from interview DI15:

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DI15 — *"I don't like fragments only. I like to see the total solution. In an idealistic world, when you start fragmenting, you can only see little aspects of it. Must take all these fragments of information and components to assemble them together and build a picture that make sense in the future."*

We therefore proposed that in order to correctly combine the components borrowed, a systematic process would be required to ensure the correct fit, which is discussed in the next theme.

5.3.8 Theme Family 5 - Audacious Identity

This research revealed that all of the interviewees tended to exhibit the willingness to take surprisingly bold risks or assume a larger than life role, in keeping with the audacious identity characteristic of innopreneurs and their valiant vision of differentiation.

Many of the interviewees displayed a strong sense of self-belief at certain point in time, assigning themselves to a role or identity that helped propel them towards success. For example:

DI04 — *"If you think of all the risks and why it can fail you will never do it, we were really passionate about this idea, we believed in it and because we believed in it we got other people to believe in it with us, we just went for it, we never got caught up into the normal way of doing things ….. we just said no, why can't we do it this way"*

DI09 — *"There is also an emotive aspect in disruptors, that there is a sense of fearlessness or appreciation of confronting your fears."*

DI11 — *"This is my calling. I feel that I have to get it done. I have to do it. If nothing else ever came of it, at least when I look back at it, I know I have tried."*

DI20 — *"From the start I knew what we wanted, need to know where you want to be*."

DI26 — *"Must be idealistic! This gives you the basis of shaping the future…… needed to turn this company on its head"*

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Five sub-themes further appeared based on the interviews, these being: (1) Hold a valiant vision, (2) Ask pivotal questions, (3) Harness grit, (4) Pay less attention to the naysayers and sometimes even customer feedback, and (5) Assess own biases and risks.

5.3.8.1 Hold a valiant vision

The findings suggest that what we label as valiant vision, one's audacious and courageous perseverance is the vision that enabled the interviewees to challenge the status quo and contest conventional thinking. A total of 23 of the 26 interviewees offered their opinions on the prominence of self-efficacy, knowing one's purpose and thinking big.

DI03 — *"Belief in yourself, prove you have a different mind-set, think big, not complicated."*

DI04 — *"Entrepreneurs need to be a bit crazy, just need to do it."*

DI07 — *"It's Critical! When you make that jump from challenging the assumption into delivering the idea you need an audacious vision. You must think big."*

DI08 —*"I see myself as a doer. It doesn't matter if there are many people thinking about the same concept. In fact, if so, it is even better. It shows that it is a plausible concept. But taking audacious action to deliver the idea becomes the key (of success)."*

DI010 —*"We will be around for decades, like the plumbing in the walls."*

DI20 — *"You can't look at the customer with a risk hat on, you will never do any business then"*

DI21 — *"We wanted to become the first company offering such service in South Africa but the service offered must be 10x better than similar services offered by other companies."*

DI23 — *"I can see myself solving the problem. This encourages me to see things differently."*

Unfortunately the other three interviewees did not use the words or phrases that could be categorised or permit this research to clearly incorporate their responses under the section of "valiant visions". This however does not mean these interviewees do not hold such visions. In order to be very strict with the qualitative analysis, even though some of the stories

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mentioned during the interviews did provide a vague clue that the interviewees could indeed hold a valiant vision, this study decided not to include their responses into this sub-theme.

5.3.8.2 Ask pivotal questions

When examining the feedback from the interviewees, it appeared that all interviewees possess an important characteristic of asking powerful questions. Although the questions are somewhat different, the study observed that interviewees typically assume the position of thinking big and having a boundless mind set when asking these questions. For example, the following interviewees DI13, DI19 and DI26 practice such observations.

DI13 — *"This to me is the problem. This is where the established companies struggled. This is why many companies do no innovation. Many companies tried to retrofit what you have into an idea you come up with. You should imagine you have infinite resource, then ask what can you do? Don't be constrained with what you have. Have a boundless type of thinking so you can ask boundless type questions."*

DI19 —*"Does it really take a lot more effort for me to think bigger and push this idea through a grander scale?"*

DI26 —*"Firstly (you must) ask what you need. Then you search for the building blocks you need to and make sure they work well with one another. The disruptive innovation is in some way about looking into what is the "pie-in-the-sky" type of idea. For me, if I have to develop a product, I will stand back and ask ideally what you want to do. Then look for the so many possible solutions."*

This study can confirm when then the interviewee described their stories, it was clear that all (26 of the 26) interviewees asked themselves some kind of pivotal questions that challenged the *status quo*.

5.3.8.3 Harness grit

Over and over, interviewees stated that having an idea is not enough. It is the fortitude to keep going and turn the ideas in to a sustainable, profitable business that leads to disruptive innovation. As stated in chapter 2, grit is defined as the mixture of passion and resilience over a lengthy period of time, and 22 of the 26 interviewees shared their conviction concerning the

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significance of having passion and resilience. Some interviewees further stated that the elements of grittiness and the audacious identity mutually reinforce one another. Some of the quotes include:

DI04 — *"My belief and passion got others to believe as well."*

DI05 — *"Need to ensure you can out last it (bad times), people give up here, it is a hard, hard slog…. you need grit and determination and you do it properly, ethically and honestly…..it's in those hard yards, the grit, and the determination."*

DI07 — *"Nothing in the business venture is a like a free flow. There are challenges always. Your passion affects how you make decisions. It also affects the overall success."*

DI10 — *"Find a real problem that you believe is worth solving, because nothing less will allow you to remain gritty for the amount of time you need to stick to it (persevere) in order to crack it."*

DI12 — *"Disruptive innovation turns into successful business do not happen over a few nights. It takes time and a process to get there. Therefore you need to be prepared to work for it."*

DI22 — *"Our success can be attribute towards our" willingness to take risk, reinvent and go through a lengthy period of hard time to get to where we are."*

DI23 — *"This is going to work because I am going to make it work, whatever it takes."*

5.3.8.4 Pay less attention to the naysayers and sometimes even customer feedback

The pursuit of disruptive innovation often encounters resistance from other people, mostly owing to the fact that people, including customers, have not seen how one can solve a problem in this nascent way, and people are less positive about an idea they cannot relate to. In total, 14 of the 26 interviewees expressed that at times, one has to ignore the naysayers and customers' feedback. They stated that customers do not always know what they want. Some even stated that spending efforts on focus groups do not in fact add meaningful value in the business of disruptive innovation.

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DI01 — *"I had to stop listening to so many people who told me that this idea is not going to work. But some of them now ended up using my product".*

DI08 — *"Some of my friends and family were not too happy (with my choice)."*

DI10 — *"If I had listen to what other people say, I would of quit umpteenth times by now….I have received comments like: you guys are like roaches, you just never die"*

DI15 — *"Many people keep on saying that this idea is not going to work."*

DI24 — *"We tried the focus groups. But that didn't work well. Customers don't know how to evaluate what they don't know or have not experienced…… Sometimes, we need to know about our customers more than they know themselves."*

DI26 — *"Previous colleagues thought we were absolutely crazy, no such model existed anywhere in the world……. No one thought real-time information was possible, thought I was mad"*

Owing to the deeper understanding of customers' desires as the result of value–construct analysis, it permits these interviewees to take on such risk-taking approaches

5.3.8.5 Assess own biases and risks

Despite the interviewees exhibiting a great level of self-efficacy, 17 of the 26 interviewees stated that they were still willing to constantly challenge their own biases and analyse their ideas for potential risks. Selected interviewees stated the imperatives of assessing one's own biases and the risks of the venture. This permitted them to decide what to do, mentioning that even customers do not fully understand the offerings, as stated in the previous sub-theme. It also appeared that the more one can assess one's own biases and the potential risks, the better one can assume an audacious identity to develop a valiant vision.

DI03 — *"Identify the challenge and identify the possibility. But make sure I spend time to understand the problem. We test the idea with actual data. Even with an exaggerated scenario just to test if the concept works…….. We tested our assumptions all the time."*

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DI13 — *"Deep research and understanding of the dynamics in the local market is a must. This allows us to understand the risks".*

DI20 — *"Be creative but have discipline in implementing and then sit back and ask if it still makes sense what we are doing?"*

DI21 — *"Sometimes entrepreneurs become infatuated with a concept and do not spent time to validate if the idea is feasible."*

DI25 — *"The concept may start with what is possible and apply the logics to it. You may have a hunch. But you have to test it. It is more about creating the hypothesis and (having one) tests one's own hypothesis. Ask yourself if this is (the future of) what it can be, then what needs to hold true to make this hypothesis comes real. Slowly eliminate the barriers and biases to makes it come real."*

5.3.9 Theme Family 6 - Combinatory Play

Combinatory play is essentially what made business acumen approaches and other innovators such as Albert Einstein successful. Instead of reinventing concepts, combinatory play combined and introduced small degrees of innovativeness into these concepts and business acumen in a novel way. The interviewees suggested that this combined way of innovating one's business forms the key features of turning a concept into a business. Secondly, as mentioned in section 5.3.1 above, all interviewees stated that having an innovative idea itself is important but one cannot disrupt the industry if the idea itself cannot be translated into a successful business, combining the various constructs into a customer value proposition. Interviewees attributed the success of their disruptive innovation to degrees of innovating different business acumen components and some of the key components include:

i. Positioned customer value proposition and customer centricity (19/26),
ii. Forged the right partnership with external stakeholders (18/26),
iii. Ensured feasibility of the solution and correct business/profit model (18/26),
iv. Developed the right platform and infrastructure (18/26),
v. Assembled a group of right people (17/26), and
vi. Derived an efficient process of continuous improvement (16/26).

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DI03 — "*We had to develop a different profit model to adapt to this industry.*"

DI05 — "*Disruptive innovations could take years as the product could be too early for the market, market might not be ready for it, combining the disruption with a solid, well structure business model, this anchors the idea into reality*"

DI14 — *"We were lucky. We did this innovation within an organisation that has a huge budget and we were able to attract some budget to kick start our idea…… Combinations bring two domains together that were not together……...bringing in innovation from outside and inside."*

DI20 — *"Disruption is a process, you don't start off with a great idea and this is everything."* and *"Focus on each component, then consolidate and take a single view."*

DI21 — *"You then get to technical feasibility of the disruptive aspect, can it be done or not?"*

Despite the fact that a large number of the interviewees agreed on the importance of combinatory play, one of the interviewees cautioned the overreliance of the combinatory play approach. The combinatory play must be exercised only after one can apply boundless thinking (refer to section 5.3.6.2). The interviewee believed that to achieve disruptive innovation, one should first think about how you address the challenge unconstrained, instead of referring to what resources one has to develop the innovation.

DI13 — *"Misuse of combinatory play can be a problematic. You should first imagine you have infinite resources, then ask what can you do. Don't be constrained with what you have. Have a boundless type of thinking so you can ask boundless type of questions."*

5.3.10 Theme Family 7 - Enriched Navigation

The majority of interviewees (23 of 26) discussed the rationales of why it is so important to just get started and improve continually through experimentations and learning. This research termed this approach "enriched navigation", considering that the innopreneurs enriched their knowledge through experimentations and learning while making adjustments to navigate their ventures. Based on new information gathered, innopreneurs may choose to venture onwards or revert back to the previous stage of the framework for further refinement or pivoting.

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We observed that not one hunch was seamlessly transformed through the various processes discussed above without having any adjustments or iterations made to it in some form or another. Similar to the lean start-up approach, but instead of just merely searching and implementing a minimally viable product, the innopreneurs constantly refine their offerings to gain maximum economic return. This effectual approach assisted them to refine their ventures as they progress to success through iterating. The ethos of continually improving through experimentations and learning has become one of the key features these disruptive innovators constantly exercise.

DI02 — *"Part of our success is that we continuously try to differentiate. Continuously innovate…... Offer more services after we understood the customers and anticipate customers need. We are constantly changing….. When experiencing turmoil, how to adapt and keep going become important. Must know how to adapt. And if needed, change the offerings. Your customers keep on changing. Your industry keeps on changing. One cannot just stay on the same spot even if the first product disrupt the industry."*

DI05 — *"We are exceptionally quick at getting feedback from customers and then make those changes extremely quickly from what we have learnt."*

DI10 — *"We weren't creating sufficient value to change the customers behaviour, if it's not getting adopted, clearly it's not providing a unique value proposition, this sits at the heart of what you trying to solve, so you need to take this and learn from it."*

DI12 — *"Implement a successful business is a continuous process. Continually learning, open your eyes, have the right people around you and keep on improving yourself."*

DI14 — *"You have to search for value and then pivot as much as you can …….. if you not gaining traction you are in a bubble and not testing its (solutions) viability."*

DI15 — *"After our first iteration, we continuously tested to find out what is working, also forced customers to send us feedback so we could learn what improvements are needed."*

DI18 —*"If it's not working, you go back to your network (peers), I still remember when I needed to go back to the department of health and ask for assistance with the legal framework and remove the regulation burden."*

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DI19 —*"We kicked of this disruptive event by getting started. Then we keep refining as we go along."*

DI20 —*"Disruption is a process of improvement, you don't start out with this idea in the beginning, it's a comprehensive solution of various innovations. Not to end up with legacy systems in 10 years, systems need to be scalable and adaptable, constantly need to be improved."*

By applying this approach, many innopreneurs were able to refine and improve their ventures. Some diversified their business and applied their offerings to other adjacent industries; others in fact recognised that they were targeting the wrong sector and the wrong customers. For example:

DI11 — *"Initially we target the education sector. Then we realised that we can apply our product in the healthcare industry."*

DI17 — *"Initially we thought that the guesthouses or small businesses will be our customers. Later on we found that the media houses were more interested in our offerings so we shifted our focus. We only found out who are the real customers after a series of trial-and-errors. Sometimes one has to analyse the idea with the customers through a prototype. Customers may not apprehend what you want to achieve. Sometimes the customers you think are the customer are not really the right customers."*

5.4 Research question two: If the preliminary framework was to be used by disruptive thinkers, what are the shortcomings of the model?

5.4.1 Discussing the preliminary framework

By incorporating the 7 Theme families discussed above, the extensive literature review of Chapter 2 and building on the possible outlook depicted in Figure 7 at the end of Chapter 2, the researcher proposed the preliminary cognitive framework – "Enriched Disruptive Ideation" (EDI) as depicted in Figure 8 below to the disruptive innopreneurs. The disruptive innopreneurs were asked to provide their opinions and critique the framework during a semi-structured interview. Owing to the busy schedule of these disruptive innopreneurs interviewed, we were only able to test the framework with 24 of the 26 disruptive innopreneurs during this second phase of the study.

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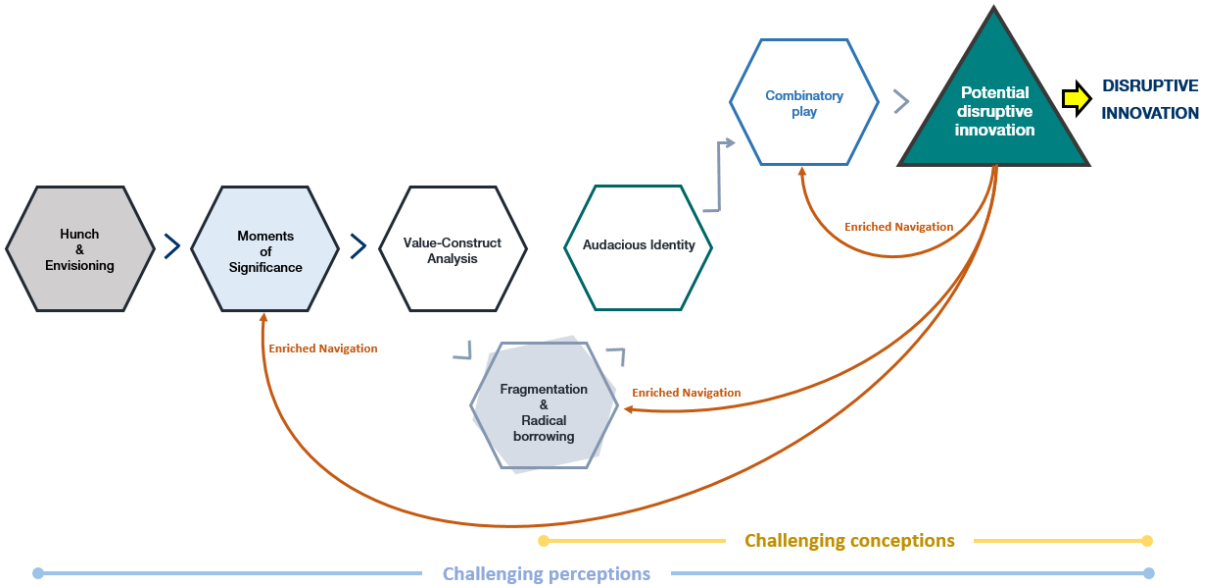
Figure 8: Preliminary cognitive framework - "Enriched Disruptive Ideation" (EDI)



Source: Authors own

The framework presented above in Figure 8 used the possible outlook of the cognitive framework depicted in Figure 7 of Chapter 2 as the starting point in the development of the framework. The findings from the results of research question one were taken and these insights incorporated into the framework, namely the first and third significant findings, noting that the second significant finding is beyond the scope of this study and therefore not included. Further refinement of the framework will be presented and discussed in Chapter 6 of this study.

Feedback received from the interviewees appeared to be very supportive of the framework and they felt that the framework captured the essence of what was required for effective ideation. Some interviewees mentioned that for the first time were able to see a framework that was only previously in their minds and was useful to make sense of what they were thinking about.

DI03 —*"Ja, jeez, it's pretty accurate…… I think what is important is the aspirational identity part, when you thinking big, thinking of something that has never been done before it's very hard to get by in…… I think its (common themes) all there…"*

DI06 —*"It (The Framework) makes perfect sense, yes it makes perfect sense"*

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DI07 —*"I think conceptually its quiet an impressive framework …… I think it's a great model, I like the loop back from Potential Disruptive Innovation into the borrowing because what you find when you get closer to launching an innovation and you start to get feedback, you are a bit apprehensive about whether or not this is going to work so you find yourself going back to the market to say let me try and go validate a few things again."*

DI22 —*"It's quite an accurate fit for how we exactly work."*

5.4.2 Delimitation of phase 2 of the research

Referring to the negative critique of the framework, apart from reiterating the importance of having the right team as already discussed in Section 5.3.2, some of the additional comments can be categorised into three areas:

5.4.2.1 Combinatory play

Four of the interviewees specifically suggested that the combinatory play section can be further elaborated. Another interviewee emphasised the importance of having a great culture in the team. However, seeing that no two businesses will operate the same way, it may be difficult to elaborate on the combinatory play component in detail. As the scope of this research is to uncover a cognitive framework helpful to facilitate disruptive innovation, the suggestion from these interviewees can be incorporated into future studies.

DI05 —*"The piece that is missing is combining that disruption with a solid well-structured business model and finances…"*

DI06 —*"The combinatory play, there is a lot more going on there, definitely a lot more learning going on there and how do you adapt when getting feedback from the market."*

DI07 —*"The one that struck me the most is the combinatory play, because it where a lot of the heavy lifting is in terms of conceptual thinking, implementation and even psychological strain takes place there as you get to the edge of launching."*

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DI20 —*"When it comes to the combinatory play, at times a leader must be careful not to be too logical."*

5.4.2.2 Mindsets

One of the interviewees advocated the importance of having a boundless mindset when applying the combinatory play component as well as asking pivotal questions. He warned that without holding such a mindset, one may impose a set of poor constraints simply due to the shortcomings of one's resources at hand as this will hamper the disruptiveness of the innovation.

An interviewee also suggested that having a cognitive processing framework without the execution mindset would not be helpful. Furthermore, another interviewee discussed the importance of exercising systems thinking when applying the "fragmentation" and cautioned the danger of always seeing things in small isolate components instead of visualising what can be achieved through the sum of all parts.

In short, the researcher feels that the interviewees seemed to be in agreement with the general principles of this framework. All of the above-statements are not in conflict with the framework that has established.

5.4.2.3 Enriched navigation

Some of the interviewees suggested that the preliminary framework may suffer from having the weakness of being slightly "too sequential". They believed that the "enriched navigation" should not be considered as a "backward loop" only. Each and every "step" should be purposefully considered. Even though the overall structure of the framework seemed appropriate, they believed that innopreneurs take on a more iterative way of exploring possible solutions to fit the context and continually refine the idea to gain maximum gratifying return. Some even suggested an innopreneur's mind may have gone through a few iterations between moments of significance, audacious identity and value-construct analysis.

Maybe at times, one may question one's own hunch and the future envision. Selected interviewees also pointed out that the thought-process could revert back to the previous component or components in pursuit of further refinement. This research therefore took these

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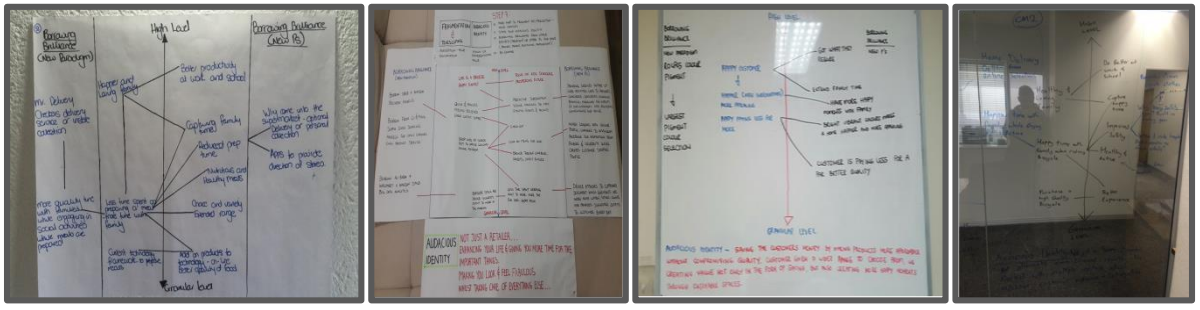
suggestions into consideration, as these suggestions are somewhat congruent with the theory of effectuation. Furthermore, the many references made to the iterative nature required in the framework seemed to lean towards The Lean Start-up approach, but that model may be too simplistic to represent the “wondering mind” of the innopreneurs and will be discussed further in Chapter 6.

5.5 Research question three: If the framework is applied within an organisation so as to provide a methodology to improve their innovation strategy, what benefits or limitations does the framework provide?

The extensive feedback from the senior managers was extracted in this section of the study. Some of the work produced by the teams was captured in Figures 9 and 10, many teams involved in this study seemed to be highly creative and these figures provided some context as to what detail they went into during this process. These pictures show work from some of the teams attempting to fragment the deeper constructs of the targeted customers then borrowing principles from other areas to improve their concept.

Figure 9: Pictures showing four of the team’s ideation activity



Source: Senior Managers interviewed

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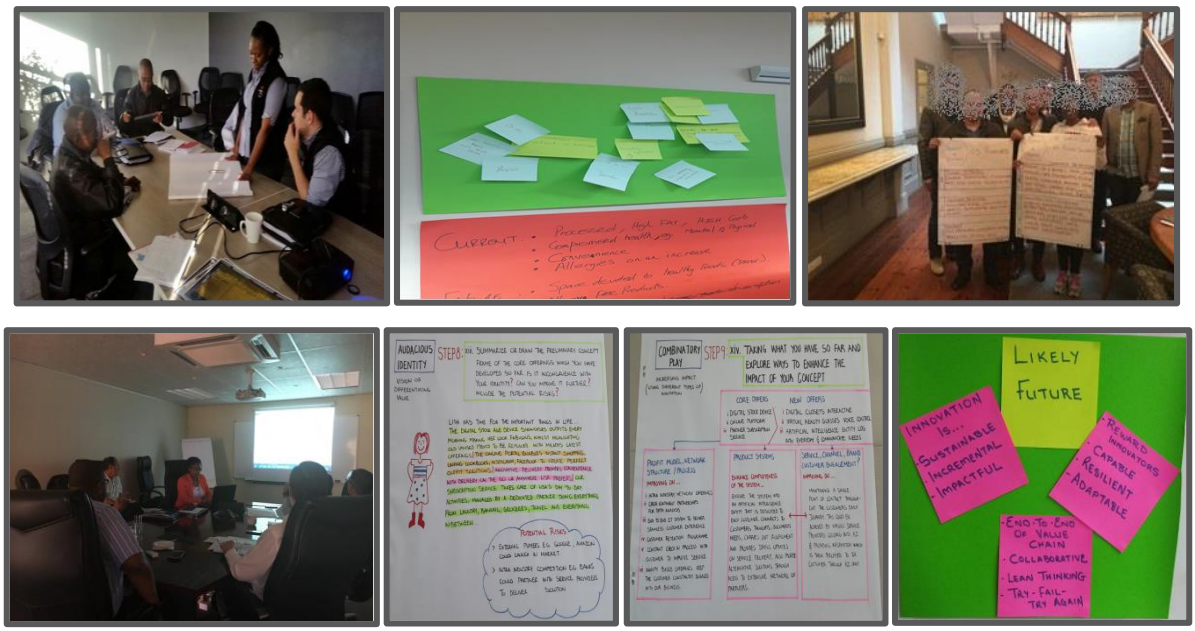
Figure 10: Pictures from the framework application sessions held with the various teams



Source: Senior Managers interviewed

Note: Some of the photographs were edited to protect the identity of the individuals.

Overall, the senior managers that took part in the study found the framework very useful in facilitating an ideation process for disruptive innovation. From the responses received from the senior managers, they reported that it appeared the framework encouraged their team members to speak up about their hunches, shift their mindsets, challenge their thinking from a customers' perspective and collectively follow a process so that the conversations do not deviate from the goal. However, whether or not the framework allows one to really generate disruptive ideas cannot be validated based on this exercise, considering that a venture can only be deemed as a disruptive innovation from a *posteriori* view.

The concise input of each interviewee (Senior Manager) can be examined from the following quotes:

SM01 – *"This model encourages one to take a deeper understanding of the motivation of the customers and it's possibly the most important step in the entire process. This step was useful in assessing both frustrations as well as satisfying experiences of the customer's engagement. The step that the group found most difficult was to borrow strategically. The process was slow to start and seemed difficult to contextualise the path or direction the hunches were taking the conversation. The junior staff were intimidated by the level of conversation and appeared overwhelmed and withdrawn to*

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begin with. Once the hunches and current context were defined, the discussion on the likely future of organisation became extremely helpful. With some assistance, the group conversation gained momentum to progress and some good ideas began to emerge. The group members questioned and challenged one another and the process took longer than the initial time allocated. But the framework allows for step-by-step process thinking. The group was extremely optimistic about the innovation (innovation ideas) and in hindsight; objective views were shared however an insufficient critical conversation was facilitated."

SM02 – *"I felt each component of the model was useful as you cannot complete one without the other. The sequence was also quite appropriate. The identification of a hunch encourages one to envisage what the future will look like. Once you have that picture in mind of where you what to get to it therefore makes it easier to navigate through maze to try and get to that final destination. Having a hunch in mind is the same as setting a goal. Goal setting serves as a GPS in your life, keeping you on the right track towards your destination and saving you from wandering aimlessly. In organisation, we don't spend enough time to discuss and share out hunches. The greatest importance of having a hunch is that it helps you stay focused to achieve what you seek. It acts like a steering wheel that manoeuvres you along the right direction…….When perception (the construct) of the customer has now been identified and understood then linked to moments of significance, it is therefore essential to stand back and decide on how to differentiate oneself."*

SM02 – *"My team and I found using the model was quite easy and was understandable. We also found that each section linked to the next one. In the beginning the team was uncertain to where this will lead them to but was amazed at the outcome. The areas we found useful were: (1) The team came up with brilliant ideas when encouraged them to discuss their hunches, (2) Where we would like to be in the future and the possible implications of that. This opened up their thought process and they started to think out of the box, (3) By sorting the features of the hunches they saw which was of high or low impact and which was realistic or difficult to achieve, (4) They did battle a bit with the customer journey finding the moments of significance. This itself is a good thing, and (5) key perception was clearly understood and they saw the value-construct association from the granular level to the high level how it links from a business level to a personal level."*

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SM04 – *"Yes the model was useful. It allowed for a process to transpire. Through the process the team and I realised that in our hectic schedules we actually forgot how to check and balance. We have become custom to going straight into solution mode. Normally we would foresee a disruption and when we come together as a team we go straight into the potential disruptive idea. We do not check our hunch and scans or common beliefs. We go straight into solution and the one that sells the strongest idea (the idea that sounds good to everyone) we dive into it without knowing if it will make an impact or not.*

SM05 – *"From the outset I would like to declare that we found the entire model to be useful in being able to open up a creative dimension within the human mind which explored out of the box thinking into finding innovative solutions. The seamless flow between components must be complimented as this made the transition easier to interpret. There are some components that we found to be more useful than others and will be explained in more detail as the model is unpacked. I experienced difficulty in being able to gauge whether the component deemed to be less useful."*

SM06 – *"As we worked through this step the participants could directly relate to some of the moments of significance in the customer journey. They each took a few minutes to share with the rest of the team how this applied to their personal day to day journeys and the frustrations they themselves experience. But up till now they were 'blind' to the possible solutions these critical moments can deliver. At each moment we asked the question, what the possible solution would be and what would be the impact on customers. The outcomes were profound. However, The Value – construct Association was the only component the team seemed to have battled with. I think it's primarily because the Value Associations are not necessarily logic in its nature and could just be someone's point of view. Working through the component though the team starting making associations (completely at random) that leads to the high-level outcome perception."*

SM07 – *"The model really requires us to think outside of our normal thinking systems, it allows us to explore options we would have otherwise not considered."*

SM08 – *"The framework requested us to unpack the value- construct association of the customers. This was frustratingly fun for the team. It allowed us to "be" the customer and really dig deep to see what would really make the value proposition worth it for us*

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at the end of the day. We then traced this back to where we felt it would all begin. So in essence, we really need to truly understand our customers better."

SM09 – *"The areas that our team found useful are the combinatory play and the audacious identity. With Combinatory play, the framework enabled the team to build on the new idea by enhancing the impact by unpacking the support components. Whereas Audacious identity encouraged us to challenge each other to think bigger……. The potential risks section was particularly useful as it highlighted the negatives which were not top of mind as we were excited about the positives of the idea. In business we often do not stop to reflect on the potential risks of implementing an idea and ultimately we often find ourselves solving one problem by potentially creating a whole new problem in the business, which could be more detrimental to the business."*

SM10 – *The model proved to be useful. The model and its components assist to create the focus on the right things at the right time to ensure that innovation can collaborative and inclusive which improved the quality and the substantiation of the concept……. The steps within the process assist in creating a level of divergent thinking and gives you the ability to quite easily pull in a thread or trend that can then be detailed from a high-level customer view, linked to my company's perception of the item and allows the ability to drill down to a very granular level without losing focus on the main objective as the team are pulling this through in each step that is followed."*

SM11 – *"(Boosting the element of) audacious identity allows you to look at the future state and determine what your new corporate identity will be…….. The value–construct association was also an eye-opener and we don't do it enough. We also believe that this (is) needed to determine what value the customer would attribute to the implementation of our hunches and likely future. We don't do this enough."*

SM12 – *The audacious identity was particularly useful as it facilitated discussion on how we drive value. All retailers have a strategy, but how do we set our division apart from the competitors? The combinatory play also prompted us to discuss an integrated approach that focuses on collaboration, both internally and with external partners can yield substantial benefits all along the value chain. The concept the team struggled with was mapping the customer journey and the constructs. The link of incorporating the problem of overstocks to moments of significance in a customer's life was not easily understood. How do we map out poor buying disciplines to how customer is feeling?*

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This left a lot of questions which also means that we do not understand our customers enough."

Based on the above-stated feedback, the framework was well-received in general, however we still need to emphasise that this is just a framework and comes with its own delimitations.

5.5.1 Delimitation of phase 3 of the research

It is important to mention that selected interviewees pointed out that effectiveness of using this framework is dependent on one's facilitation competency. Some of the senior managers mentioned that they should work on their facilitation skills. For example:

SM02 – *"I should have set some ground rules before the session started. Try to get things flowing and keep up the momentum and energy. I probably should have monitored and summarised people's viewpoints at each stage instead of getting too involved in the discussion myself."*

SM11 – *"I had a tendency of leading the team towards my ideas. I was mindful of this fact throughout the process. I had to continually work on allowing them to express their ideas freely and allow them to move the ideation process forward at their pace".*

To introduce the facilitation component with this model to enable the optimum team contributions would be beyond the scope of this research. Moreover, it is also important to emphasise that, like every theoretical model, this is a *just* framework. It still requires a courageous leader to drive the framework and help the team to think more audaciously. For example:

SM04 – *"We found some steps slightly confusing as well the concept of 'audacious identity'. We cannot change the identity of the store…….. Asking the staff to develop an audacious identity was one they could not do"…*

Nevertheless, the above-stated reflections remain as some of the delimitations of this research. Future research agendas could explore what key principles are required in a group environment to enable the team to come up with more innovative ideas using this framework.

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5.6 Conclusion

The results presented in this chapter have attempted to answer the three research questions via a three-phase methodical approach: The first phase relates to research question one, which provided an analysis of an impressive sample of Disruptive Innopreneurs by using a semi-structured interview method to obtain the common themes underpinning the thinking process of disruptive innopreneurs when developing their ideas. The results of this analysis culminated in three major findings: (1) Challenging both the common perception and the conception of business (2) the importance of building a good team (3) the emergence of the seven theme families. The second phase of research related to research question two used the final conceptual model presented in Chapter 2, section 2.8, as the foundation to further develop the framework incorporating the seven theme families. The framework was then further refined after presenting it to the interviewees for critique, their feedback included an overwhelmingly positive response towards the framework, their negative critique concerning the framework was then presented in Section 5.4.1. This negative critique will be used to make further improvements to the framework as will be presented in chapter 6. The third and final phase of the study included presenting the framework to senior managers and elicited their feedback on its applicability and usability in a corporate environment, where the framework was used to facilitate an innovation strategy session. These senior managers were largely astounded by the helpfulness of the framework and its utility in aiding their disruptive thinking. Even while not too great a finding, limitations and criticism of the framework received was also presented in Section 5.5.1.The researcher at this point would like to express his gratitude to all of the interviewees involved in this research. In conclusion, the results from Chapter 5 and their significance in developing a preliminary cognitive framework towards effective ideation for disruptive innovation will be presented in Chapter 6.

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Chapter 6: Discussion of results

6.1 Introduction

This chapter provides a detailed discussion as it seeks to bring together the results presented in Chapter 5 with the extensive theory and arguments built in Chapter 2 as we demonstrate and provide the answers to the research questions of Chapter 3 and the research objectives as described in Chapter 1.

The four-phase process allowed for a comprehensive study and analysis which culminated in developing a preliminary cognitive framework and was presented in Figure 8, Section 5.4.1 as the “Enriched Disruptive Ideation” (EDI) framework in its pre-final form. The study produced three significant findings during the process, as was discussed in Section 5.3 of this study. Building onto this solid foundation, the framework was further critiqued in an attempt to answer research questions two and three, it is now hoped that with the comprehensive literature of Chapter 2 and the analysis of Chapter 5, this study is able to develop a final conceptual cognitive framework that would lead to effective ideation in the context of disruptive innovation.

This chapter will be discussed by dividing the chapter into the three research questions and later integrate these findings to provide a holistic view of all four phases described in Section 1.4 of Chapter 1.

6.2 Discussion of results for Research Question One

What are the common themes underpinning the cognitive process of disruptive innopreneurs when developing their ideas?

The aim of this research question was to elicit the critical components of the cognitive process of disruptive thinkers in developing their successful disruptive ideas and understand by way of listening, recording, noting and analysing their stories as described in Chapter 5, (section 5.3). Drawing on the correlations and insights gained in Chapter 5, using the literature review described in Chapter 2 and the research methodology described in Chapter 4, was used in search of answers to the research question.

As described in Section 5.3 of Chapter 5, the study revealed three major findings for research question one, these findings will now be discussed in further detail.

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6.2.1 The importance of building a good team – Second significant finding

The second significant finding presented in Chapter 5 was the importance of building a good team. The majority of interviewees suggested that in order for the business to successful, a strong senior team is a requirement. Further highlighted in the results section 5.3.2.

Engelen et al. (2015) found that the behaviour of top management teams can play a significant role in facilitating EO performance. Additionally, West (2007) argues that increasing knowledge resource through accessing the wisdom of the crowd creates a rise in perspective from the information-seeking and knowledge-structuring behaviours of entrepreneurs, and the success of the new venture often depends largely on how the founding team collectively understands its world, estimates the potential effects of possible actions, makes decisions, and apportions resources appropriately (West, 2007). Therefore the importance of diverse views, experience and expertise to access others' autobiographical memory and transactive memory to improve the quality of one's hunch is a key antecedent to disruptive innovation.

It is however beyond the scope of this research to define a cognitive framework for group ideation. Furthermore, owing to the fact that group dynamics, communication styles, power distribution, leadership approaches and many other factors all have an influence on ideation process of a group and would increase the complexity of the group ideation model. Having stated this, this research would like to argue that each individual forms the basis of a group, consequently if each and every individual team member was equipped with a cognitive ideation process helpful in nurturing disruptive innovation, it would make the team more effective in the pursuit of creating a disruptive innovation. We hereby conclude that an individual-based cognitive ideation process framework thus becomes even more imperative as it not only supports the individual innopreneur but the entire team.

6.2.1 Challenging both the common perception and the conception of business – First significant finding

In light of the first significant finding of this study, Section 5.3.1 revealed that the ideation process should incorporate the aspects of challenging both the common perceptions and conception of the business during the ideation process for disruptive innovation. This was aptly described by the interviewees in the results section 5.3.1.

Referring back to Chapter 2, we defined Disruptive Innovation (DI) as: "Through competitive

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responses to innovation, a new market offering generates value and gains market share through disrupting the common *modus operandi* of rivals within an existing market and value network, subsequently displacing these established market leading firm's products and alliances as the value of the new offering becomes superior." This suggests that incumbents could survive the disruptive wave or even take the role of the disruptor after they have accumulated a transformational experience (Yu & Hang, 2010), but this is only possible if these innovations are transformational or revolutionary as opposed to evolutionary. Dunne & Dougherty (2016) determined that radical innovators rarely think in a linear or predictable sequential manner, but iterate in a swell of uncertainties across various sectors that affect business. We therefore conclude that challenging the common perception and conception of business is a key requirement in any ideation model for disruptive innovation.

Additionally, it was found in the results that in order to be disruptive, rolling out the concept, considering the business model and scaling the business should be considered as part of the "ideation process" when taking into consideration whatever the potential disruptive innovation might be, as described by the interviewees in the results section 5.3.1.

As argued in Chapter 2, the origin of creative ideas stems from two viewpoints, namely discovery or construction. Discovery takes its source in cognitive psychology and construction in social constructionism or developmental psychology (Vaghely & Julien, 2010). Hang et al. (2015) findings suggest that there are alternative means of disruptive ideation depending on which markets the organisation decides to enter. Hang et al. (2015) propose that opportunity creation is critical if a disruptive innovation is to be produced for new markets, while discovery of unmet needs is of particular importance for disruptive innovation serving lower-end consumers in existing markets. From the start, one does not know if the venture will lead to disruptive innovation and as a result start out as an entrepreneurial venture, subsequently through challenging both the conception and perception and iterating through a continuous process, our findings revealed are required ingredients for disruptive innovations, section 5.3.1.

The theories around disruptive type entrepreneurship however continue to remain scarce considering that not only has the intersection between innovation and entrepreneurs not yet been defined, the theories of disruptive innovation need further work (Denning, 2016; Gans, 2016a; Philipson, 2016 and Yu and Hang, 2010). Based on these gaps in the body of knowledge between innovation and entrepreneurship, innopreneurs tend to think either in terms of innovation or entrepreneurship, for disruptive innovation you need both.

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To challenge the *status quo* of both, the common perceptions around a novel way of creating value for the customers, and the execution of a successful business based on such a nascent value-creation idea, are equally important. Secondly, disruptive innovation is a process and developing a solid business concept needs to be a part of the ideation process because even though an innovative idea is important, one cannot disrupt the industry if the idea itself cannot be translated into a successful business.

6.2.2 Seven Theme Families – Third significant finding

The auspicious results from Chapter 5 further indicate a third significant finding for research question one, in the form of seven superordinate themes we termed “Theme Families”. Each of these theme families will now be discussed as it relates to the literature review and the results of this study.

6.2.3 Theme Family 1 - Hunch and Envisioning

In so far as providing insights to the first major theme, our findings revealed two complementary components: (1) Hunch and (2) Envisioning. Furthermore, emergent themes suggested sub themes of: (3) foresight and counterfactual thinking and (4) memory and knowledge.

6.2.3.1 Hunch

In Chapter 5, section 5.3.4.1 it was noted that the majority of interviewees (24 of 26) started their cognitive process by describing that the initial thought in developing their disruptive idea was triggered by a situation that they had been exposed to and that this situation manifested a need that was intrinsically entrenched, as described by the interviews in results section 5.3.4.

In this study we refer to this intrinsic manifestation as a hunch, which infers a gut feeling that lights up insight and prescience in a way that enables intuition. Oyson & Whittaker (2015) support this argument as they describe that the “trigger” is what starts the opportunity formation process. Additionally as referred to in the second major finding already discussed, the team make-up of the organisation also plays a part with regards to a hunch. As described in Section 5.3.2, we found that interviewees generally indicated that these hunches often exist as a collective where ideas come together from other people, normally co-founders or other “bench warmers” within the start-up team to add new meaning to an existing hunch, this

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concept is referred to as collective intelligence as noted in the literature of Chapter 2, section 2.6.1. Collectivism in encouraging one to foster innovation is to create a community that have both a sense of purpose and shared values. Furthermore, collective intelligence by means of sharing and discussing with others encourages collaboration, discovery-driven learning, and integrative decision making, and doing so one fosters the willingness to innovate (Hill et al., 2014; Johnson, 2010).

Verganti (2016) claims that intuition becomes the “precious raw material for creating new visions” whereas Hsu (2015) suggests that intuition refers to an individual’s ability to associate different information in an instant and come up with content of imagination. Intuition has been regarded as a useful and valid concept in entrepreneurship research (Robert Mitchell et al., 2005), with Mitchell, Friga and Mitchell (2005) viewing entrepreneurial intuition as a developmental process that can be fostered within specific domains and allows practitioners to adopt a lifelong learning approach to entrepreneurial intuition. It has been argued that through deliberate practice, intuition can also be improved (Dane and Pratt, 2007; Baylor, 2001; Baron & Henry, 2010), and is an important skill that innopreneurs are able to develop. Additionally, some interesting findings relating to intuition have determined that intuitive and deliberate processing both relate positively to organisational innovativeness (Matzler et al., 2014b) suggesting a positive relationship between intuition and innovativeness.

6.2.3.2 Envisioning of making a difference

The second component of this first theme family that emerged as part of this early phase of the ideation process is envisioning. Chapter 5, section 5.3.4.2 describes this construct as the act of imagining an alternative future or visualising possible situations yet to come, however these futures were based on making a difference to their customers and society, getting rich was not the main reason for starting these entrepreneurial ventures, this was evident from the direct quotes mentioned in section 5.3.4.2. This empathetic approach has been seen where emphasis is placed on a customer centric approach where innopreneurs put the customer at the centre of the entrepreneurial endeavour. These approaches to customer centricity were neatly defined in the literature section 2.6.2.2 and highlighting the fact that the jobs-to-be-done framework is an important part of this process and relies heavily on the ethnographical understanding of customers and therefore brings in the emotional dimension to fully understand these concepts.

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The much-vaunted preternatural ability of Apple founder Steve Jobs to envisage and predict market trends is largely credited with giving him the ability to create must-have market-leading products, which he anticipated that the consumer would want long before the consumer knew he or she would want it. Jobs was reportedly never satisfied with ”good enough” and continuously sought a better, more desirable product that created markets where none had existed before. Yu (2013) argues that what sets Jobs aside from the rest was his strategic visioning, overcoming internal resistance and sustaining change momentum. Wright (2012) similarly argue that Jobs was an innovator because he could make inferences between technology propositions and conclusions about human experiences.

This strategic thinking is what Liedka (2006) refers to as hypothesis-driven, stating that strategic thinking mirrors the scientific method, it is both creative and critical in nature and as suggested by the findings in Chapter 5 section 5.4.1.2 we see that the foundation of innovation is not a tactic, but a mindset. The innopreneur, therefore, asks all the questions of a strategic thinker, but has a rebellious instinct “misfit” to sense and predict future trends to enable them to remake the market landscape. This was evident from the results in section 5.3.4 as hypotheses were seen to be tested and the “misfit” characteristics portrayed.

Following on from the concept of mindsets, it was suggested in the literature section 2.6.1.1 that this rebellious nature is what Cooper-Thomas and Wright (2013, p.24) define as being misfit: “We defined misfit as a perceived mismatch between the individual and the environment on a dimension that was salient to one or both parties.” The ability of these innopreneurs to behave in an uncomfortably conspicuous way is a personal trait we see emerge from the findings. This was neatly described by one of the interviewees in section 5.3.4.

DI10 — *“It’s (the concept) something worth solving, it’s worth being my life’s work, if this was a problem I was stuck on, I am happy with that.”*

Studies concerning the “misfit” of disruptive innopreneurs remain scarce but one could argue that being misfit requires entrepreneurial orientation (EO) + entrepreneurial intention (EI) + entrepreneurial self-efficacy (ESE).

It was argued in the literature of section 2.6.1.1 that a high level of EI, EO and ESE together was necessary for the success of an entrepreneurial endeavour (Mousa & Wales, 2012; Wales, Monsen, & Mckelvie, 2011). Entrepreneurial orientation (EO) in the case of self-efficacy and innovation describes the mindset of the innopreneurs, being able to act on a hunch and combine resources and performance with innovativeness, reactiveness, autonomy

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and the propensity for risk-taking. EO is the action part, by taking risks proactively and innovatively.

Entrepreneurial intention (EI) has been defined as the search for information that can help fulfil the goal of venture creation and is the key link between entrepreneurs' ideas, attitudes, and their entrepreneurial behaviour (Bird, 1988). As was observed in Chapter 5, section 5.3.4 we saw patterns of these opportunity seeking behaviours.

ESE as referred to in the literature section 2.6.1.1 argues the fact that ESE is a good predictor of future performance. Sweida and Reichard (2013) suggest that self-efficacy has consistently been found to be one of the strongest predictors of setting, persisting and attaining challenging goals; they further argue that that self-efficacy is a good predictor of future performance because self-efficacy is affected more by the attribution of performance than the actual performance. These disruptive innopreneurs, whilst envisioning their hunch taking shape and come to life are often more keen to make a difference than to focus on profits and as a result an empathetic approach towards customers, personal values and passion become important characteristics these disruptive innopreneurs enjoy, as evident referring to the results of 5.3.4.2.

EO, EI and ESE elaborated on above are therefore important antecedents for innopreneurs as they afford them the opportunity to see the future differently.

Before moving on to the sub-themes of this theme family, we first explain why disruptive innopreneurs need both "Hunch" and "Envisioning". As explained above, these disruptive innopreneurs are able to envision their hunch as a future possibility; the hunch helps them focus on a coherent scope of envisioning whereas envisioning provides the vision to position the hunch for innovation. Strategic hypothesis thinking is what will ultimately link the hunch and vision to the final offering, through a series of creative, critical thoughts that the disruptive innopreneur will use or discard at will, in order to follow their intuition and passion. This type of strategic thinking required by the innovator is both different from and in conflict with traditional thought processes, as described as being misfit. If these disruptive innopreneurs are not able to envision the success, they go back and reshape their hunch. Hereby, the disruptive innopreneur following both hunch and intuition would be far more likely to provide something customers don't even know they want until they get it.

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6.2.3.3 Foresight and counterfactual thinking

Foresight is the ability of respondents to not only align their hunch with the environmental trends but also to predict what possible futures would play themselves out in the context of their idea generation adoption. Foresight can essentially be called the instinctive hunch, where you are able to see or predict, imagine or even anticipate what is likely to happen or be required in the future. Developing the assertion further, section 5.3.4.3 displayed evidence of these traits from the findings.

Foresight, often conceptualised as a required competence for successful organising in complex and rapidly-changing business environments, has been characterised as the ability to go beyond current categories of thought and identify, explore, and take advantage of latent opportunities bypassed by others (Sarpong & O'Regan, 2014).

As argued in the literature section 2.6.1.3, counterfactual thinking forms part of the thinking style used in foresight. Counterfactual thinking is a concept in psychology that involves the human tendency to create possible alternatives to personal events that have already occurred; something that is contrary to what actually happened. Conceptualisations of future events, outcomes, and their ultimate results are often based in counterfactual thoughts; meaning, reflections on "what might have been" under different circumstances or if the individual had taken different actions (Baron, 2000; Gilovich & Medvec, 1994; Kahneman & Lovallo, 1994; Miller & McFarland, 1986). Counterfactual thinking often serves as a standard for comparison when people assess their satisfaction with events and outcomes. Supporting this theory, our findings suggest disruptive innopreneurs refer and make reference from counter factual thoughts as described in section 5.3.4.4.

We thus argue that reflecting on one's past personal experiences and determining alternative outcomes allows innopreneurs to use or relate to the same logic when predicting possible alternative futures for their hunch as well as using the technique to increase their ability to identify opportunities. Studies focusing on how disruptive innovators made effective use of their "episodic memories" and "episodic future thinking" during their ideation phase are limited. Our study shed light on these cognitive processing approaches. Additionally, we call upon further research in these areas.

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6.2.3.4 Memory and knowledge

Our findings further suggest that in the manifestation of the hunch that triggered the innopreneur's thoughts in developing these disruptive ideas, it is notable that reference was made to past personal experiences which occurred in a particular point in time, section 5.3.4.3.

Similarly to counterfactual thinking, episodic memory as described in Chapter 2, section 2.6.1.2 is a rich recollected experience and a defining characteristic of memory recall, the memory for our everyday personal experiences. Recollection of this type of memory is widely accepted to be a reconstructive process (Bartlett, 1932; Schacter et al., 1998; Conway and Pleydell-Pearce, 2000; Rubin et al., 2003; Hassabis and Maguire, 2007; Schacter and Addis, 2007) as opposed to the simple retrieval of a perfect holistic record.

As argued by Cope (2005) entrepreneurs are avid learners. Once an individual has learned and experienced an event or stimulus, the interpretation of the experience can be referred as knowledge and is stored in two forms of memory, namely autobiographical and transactive. Bryant (2014) suggests that autobiographical memory refers to the memory people have of their own lives (Conway, Singer, & Tagini, 2004), and transactive memory refers to the collaborative storage and retrieval of memory among sets and groups of people (Wegner, 1987).

We therefore argue that autobiographic or episodic memory stimulates disruptive innopreneur's knowledge to generate the emotive trigger they require to make a difference and in so doing progress their hunch further.

6.2.4 Theme Family 2 - Moments of Significance

Moments of Significance are those moments that cause customers to interact with the solution or offering in a certain way and provides valuable insights to understanding customer's behaviour and actions. These are the critical moments that innopreneurs need to pay attention to as they provide the clues customers associate value to and cause them to act. At every interaction point, a customer exchanges his/her resource, money and/or effort, with a service or product offered by the innopreneur and knowing what these significant moments are have emerged as strong theme in this study. All 26 of the disruptive innopreneurs stressed the importance of understanding these moments where customers interact with their offerings in

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order to gain a glimpse of what motivates the customers to act in such way. Eliciting this valuable information is not about simply asking or talking to customers, these disruptive innopreneurs go to extreme lengths to gather and analyse information from any source their customers interact with. An overwhelming amount of effort in capturing and analysing information about their customers was observed and described in section 5.3.5.1.

As was argued in the literature section 2.6.2.2, one methodology used to understand customers is design thinking, even though this methodology closes the gap in understanding customers, design thinking fails to elicit the moments of significance required for disruptive innovation due to its problem solving nature, where an end state or problem is already known. This is also true during the data gathering stage of design thinking, if a customer has never observed or cannot relate to the offering, how do they explain what they need? This discounting traditional methods used to gather customer information as explained in the literature section 2.6.2.1 and 2.6.2.2. This was further apparent in our results section 5.3.5.1.

Core to the theory of understanding customers as explained in Chapter 2 are the Jobs-to-be-done framework which uses ethnographic research techniques and has been seen to overcome many of the shortcomings inherent in other customer oriented approaches. In literature section 2.6.2.2 we thoroughly explained that the job-to-be-done framework provides a salient methodology in order to understand the moments of significance. Knowing the job your product or service will be “hired” to do, takes more than listening to what customers want or segmenting your market, for example. What is really valuable is knowing the actual “customer journey”, and the only way that would be possible is to know what jobs are required (Christensen et al., 2016). As was explained above, disruptive innopreneurs go to great lengths to understand their customer “inside out”; self-realisation of the situation customers find themselves in, feel and taste it and self-enrich your knowledge. With a genuine affinity for and desire to understand the customer, definitely not a window dressing exercise to please the customer, they persist in trying to interpret the underlying rational, these disruptive innopreneurs really want to understand the jobs-to-be-done and comprehensively observed and discussed in the results section 5.3.5.1.

This raises the question as to whether you should listen to your customers. The added complexity when it comes to disruptive innovation is that not only does one need to immerse oneself in customers’ experiences, but also understand that there is no solution or prototype that exist that customers can relate to. This has further been emphasised by Gustafsson, Kristensson, & Witell (2012) saying that “The really radical solutions are difficult to imagine in advance based on experiences with current products”. Martin (2013) agrees that for minor

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improvements to a product or service, the innovator would be wise to engage with customers and listen to what they say, however this is not possible with disruptive innovation as there is nothing to which the customer can relate. Steve Jobs once said, “It’s really hard to design products by focus groups. A lot of times, people don’t know what they want until you show it to them” (Verganti, 2009). This view was supported in the results presented in section 5.3.5 and neatly summed up one of the interviewees below.

DI05 — *“We come up with the products, we rather debate amongst ourselves what is the right product for the market, we have an intuitive understanding of the market, people with the right attitude to find something that is disruptive and unique, rely on them (our people)….. You can’t go to clients to discuss their needs because you going to create something that far exceeds their base expectations.”*

In order to gain an understanding of the moments of significance the results demonstrated disruptive innopreneurs at times don’t listen to their customers when developing disruptive offerings and need to leverage other vantage points such as going deeper as explained above in this section, we therefore examine other areas called upon for further insights.

Relying on their own experience as a customer is one such area. Disruptive innopreneurs posited that being a customer previously provided them with a better understanding of what the customers were experiencing. Quoting that one of the best ways to understand their customers is to relate to the moments when they were treated as the customers.

The ability to be curious with what is going on around the innopreneurs was also found to be another area leveraged to draw on in developing disruptive offerings. As referred to in the results section 5.3.5.2, we notice countless inferences to the curious nature of the interviewees as they explained the process of understanding the needs of their customers.

Grant, Grant, & Gallate (2012) explain that there are seven essential strategies to make teams and organisations more innovative, the first is cultivating curiosity. Grant et al., (2012) further explain that being curious is important because a questioning mind asks the type of questions that drives new discoveries. Moving past assumptions, beliefs, experiences, prejudices, and traditional ways of looking at things can result in innovative solutions.

Credulous curiosity is a concept that requires an innopreneur to continuously ask “why” and then suspending all previous conceptions and not allowing their own personal experience to

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colour their judgement. It is vital for the innopreneur to know what it is they don't know and not be afraid to admit to not having certain knowledge. Training the mind to be curious and focusing when listening to others share their experience enhances learning (Philipson, 2016). Employing curiosity encourages a new experience and brings the innopreneur closer to the root cause of problems. Acquiring credulous curiosity requires setting aside a belief and being open to a new experience and open ended questions allow the innovator and disruptive innopreneur to explore other worlds, as seen through other people's eyes. Christensen et al. (2011) refers to curiosity as the questioning skill of "The Innovators DNA model", questioning allows innovators to break out of the status quo and consider new possibilities.

Martin (2013) explains that for minor improvements to a product or service, the innovator would be wise to engage with customers and listen to what they say, however this is not possible with disruptive innovation as there is nothing to which the customer can relate. Steve Jobs once said, "It's really hard to design products by focus groups. A lot of times, people don't know what they want until you show it to them" (Verganti, 2009). While it's easy to understand that some life-changing, market-disrupting innovations require technology to be available before they can be achieved, it's also important to note the value of emotion in the success of the innovation. The future changes customers' behaviours in ways no one could imagine, until the customer interacts with the offering and the disruptive innopreneurs suspend judgment whilst understanding customer needs. Curiosity opens windows into knowledge and learning that doesn't wholly exist yet but by asking the right questions, and being fully present in each moment disruptive innopreneurs learn. Seldom relying on facts, these disruptive innopreneurs combine their hunch with feelings and an interest in just about everything, largely because they truly understand the customer better than anyone and are able to solicit the moments of significance.

6.2.5 Theme Family 3 - Value Construct Analysis

The results of Chapter 5, suggested that it is not enough to merely explore the moments of significance, analysing the value–construct association of customers plays an important role in shaping the initial concept by unpacking customers' value perception at an even deeper level. To be able to identify the customers' moments of significance does not necessarily guarantee a thorough understanding of the rationales that underpin customers' desire to interact with the offerings that lead to the moments of significance. The ethnographical approaches such as the jobs-to-be-done framework seek to identify the intimate knowledge

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required in understanding customers' value-construct association. This kind of commitment permits organisations to gain intimate knowledge of their customers. The literature section 2.6.2.2 explained that scholars have pointed out the general guidance to predict future disruption begin with understanding the customers, both current and potential (Paap and Katz, 2004; Yu & Hang, 2010). The issue is to identify the drivers of the future, those that emerge when old drivers reach their leverage limit, and those that emerge when your customers' environment changes (D. Yu & Hang, 2010).

Findings in section 5.3.6 suggest that disruptive innopreneurs evaluated their customers' needs from their customers' perspectives, insisting on immersing themselves in the environment of their customers with their customers.

Apart from functions, aesthetic appeal and ergonomic value, the symbolic interpretations attributed by consumers to aspects of a product's appearance are greatly influenced by context factors (Bornemann et al., 2015). Accumulated research makes it clear that human decision making is, in fact, far from rational (Ariely et al., 2003; Sjoberg, 2007; Tversky and Kahneman, 1974), largely guided by emotion (Bechara, 2004; Damasio, 1994), and influenced by the presence of others (Bond, 2005; Matzler et al., 2014b), this would suggest that consumers are intrinsically emotive, particularly when it comes to decision making. Ariely (2008) proves that too much choice can reduce sales conversion rates and choice can create buyer's remorse. Hence in a world with increased choice, we need to ensure we really understand irrational customers. Harris, Fisk, & Sysalova (2016) findings further cement this argument by proving that customers exaggerate service consumption negatively by word-of-mouth and that the negative word-of-mouth is more prevalent than positive communications, meaning that customer's feedback is not always based on fact.

The results of Chapter 5 demonstrated that disruptive innopreneurs adopt an empathetic driven approach when attempting to unpack their customers' value perception which supports the theory above concerning decision making and succinctly put by one of the interviewees:

DI17 — *"I feel that South African businesses do not exercise product empathy. Businesses don't really try to understand their potential customers at a very deep level. We really took time to unpack why our customers want something."*

According to Grönroos & Voima (2013, p. 2) value is perhaps the most ill-defined and elusive concept in service marketing and management, arguing that many scholars have attempted to create their own interpretations and recently the understanding has moved towards to a

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more holistic and experiential perspective that acknowledges value within the context of customer experiences (Heinonen and Strandvik 2009; Helkkula, Kelleher and Pihlstrom 2012), as part of extended social systems (Edvardsson et al. 2011; Epp and Price 2011), or the financial gains generated by business partners (Grönroos and Helle 2010). Therefore the need to unpack customers' underlying constructs becomes ever more important to understand the value customers associate with.

The emergent theory of Personal Construct Psychology (PCP) provides an understanding of what people associate value to by understanding their underlying constructs. PCP entails the exploration what people do; what they may be attempting to accomplish; their circumstances; and how they find meaning in it all. Core constructs entail personal meaning-making, so that someone is being engaged in an ongoing process of meaning-making from the beginning, which is essentially how human beings create their own systems for understanding their worlds and experiences in meaningful ways (Epting & Paris, 2006). The assumption of this theory holds that because humans are unable to comprehend "reality" beyond the limits of their sensory systems (Karnaze, 2013) they consistently construe their personal reality based on their own worldviews and perception. Disruptive innovation due to its revolutionary nature more often than not does not exist in the reality of customers, the sense making of what value they associate now and in the future is therefore crucial to understand. Bohlmann, Spanjol, Qualls, & Rosa (2013) argue that truly effective innovators, must know their customers' customers and competitors as well as or even better than their own customers do. The evidence of our results support this theory and is eloquently described by one interviewee as:

DI18 — *"Without this kind of engagement, you cannot see the problem differently. I would sit and listen to all types of stakeholders – looking at customers and customer's customers too."*

In disruptive innovation, the scope of customer needs may become more valuable based on perceived downstream customer trends. Companies could possibly innovate on secondary needs as mainstream consumers are not always supportive of a firm's design freedom to innovate radically on primary features (Bohlmann et al., 2013). Therefore, by investigating the core constructs of the customers and experiencing what they are experiencing, innopreneurs can gain the deeper understanding of the value–perception association of customers and introduce new ways to reassign the value or restructure the perception. Additionally, we propose that the core of a firm's entrepreneurial identity is its value proposition (Chandler et al., 2014). The value proposition responds to the questions, "How does the product or service help customers?" and "Why would they buy our product rather than a competing alternative?"

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(Johnson et al., 2008; Morris et al., 2005; Zott and Amit, 2010). Therefore it is important to review the core constructs and the super-ordinate constructs (assumptions and perceptions) of customers to understand the “moments of significance” in order to assign the correct value associated with the offering.

This has further been emphasised by Gustafsson, Kristensson, & Witell (2012) saying that the really radical solutions are difficult to imagine in advance based on experiences with current products. This leads us to perhaps another significant finding of this research considering that disruptive innovation involves offering customers something they have never previously seen before and without deeply unpacking the value–construct of the customers, one may derive the wrong conclusions about the product/offering.

6.2.6 Theme Family 4 - Fragmenting and Borrowing

Much of the emphasis of Chapter 2 literature review was placed around the discussion of major theories of innovation and entrepreneurship. Considering the theoretical models that bridge innovation and entrepreneurship had not been convincingly established (Brem, 2011), in hindsight, it was the correct starting point of the research. The literature review additionally provided some of the problem-solving approaches typically utilised by entrepreneurs and innovators, such as design thinking and the jobs-to-be-done frameworks as well as the entrepreneurial cognition and affection theories including; entrepreneurial orientation (Oyson & Whittaker, 2015) and entrepreneurial self-efficacy (Bae et al., 2014); however the literature review did not extensively elaborate on the different types of problem-solving thinking. After having interviewed these disruptive innopreneurs, the findings alluded to the need for problem-solving thinking. It appeared that these successful individuals are masterful in a range of problem-solving thinking styles. In particular, these innopreneurs’ cognitive-processing approaches seemed to gravitate around uncovering and exploring the known business principles and technology products available to date, filtering and decomposing which elements within these principles and products that may potentially add value to their pursuits, then borrowing and dovetailing these elements into their venture. This research therefore termed such approaches as “fragmenting and borrowing”. In order to generate maximum value for the venture, both fragmentation and borrowing must work complementarily. In this section, selected theoretical underpinnings will be briefly deliberated to justify the findings of the research.

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The term computational thinking can be traced all the way back to Papert's book (1980) and article (1996) titled "An Exploration in the Space of Mathematics Educations". Computational thinking is regarded as the "thought processes involved in formulating a problem and expressing its solution(s) in such a way that a computer—human or machine—can effectively carry out" (Wing, 2014). Computational thinking describes the mental activity in scoping the problem leading to the formulation of solution. The main characteristics that define computational thinking are "decomposition", "pattern recognition", "abstraction", and "algorithms". Decomposition thinking can be regarded as a strategy for organizing a complex challenge or system into smaller, more manageable parts. It also allows one to analyse which parts are more relevant, pressing or valuable than others. This thinking skill is analogues to one of Liedtka's strategic thinking elements – systems perspective (Liedtka, 1998). Pattern recognition thinking permits one to explore for similarities among and within the challenges and subsequently provide the validity when weighting the different parts. Abstraction thinking assists one to focus on the important information only and pay lesser attention to the irrelevant detail. One can argue that this thinking skill is also comparable with one of Liedtka's strategic thinking elements – intent focused (Liedtka, 1998). Algorithms in the context of this research, algorithmic thinking is a way of getting to a solution through the clear definition of the steps needed when considering the selected parts. The majority of the disruptive innopreneurs interviewed exhibit the ability to exercise these types of thinking well. Baron and Henry (2010) suggested that to the magnitude in which "entrepreneurs acquire enhanced cognitive resources through current or past deliberate practice, their capacity to perform tasks related to new venture success is enhanced and, hence, the performance of their new ventures, too, is augmented". This research thus argues that key to the deliberate practice is the capability of fragmenting the knowledge and the information acquired.

Where the majority of interviewees in pursuit of developing their offering, tended to fragment their potentially useful solution into the key principles, this formed the basis attributing to the overall success.

Throughout history, successful individuals have borrowed ideas from one another. Shakespeare expressively borrowed from Christopher Marlowe to the extent that some historians have questioned whether or not Marlowe was the author behind many of Shakespeare's master pieces (Logan, 2007). Popular author, David K. Murray, a former aerospace scientist, Fortune 500 executive, chief innovation officer, inventor, and software entrepreneur, discussed extensively how innovative ideas are merely the combination of existing ones in a novel and clever way (Murray, 2010). In supporting this theory, (Birkinshaw, 2014) suggest that by taking deliberate steps to understand other innovations and how they

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could be related to your own organisation's way of thinking and functioning, you can better discern which experimental concepts are worthwhile. Applying your mind correctly with thoughtfulness and care can increase your chances of success when you borrow ideas, and in the process acquire new knowledge that will assist companies to be more successful in the long run (Birkinshaw, 2014). Bearing in mind that sometimes the best ideas come from outside one's industry as was strongly advocated by Poetz, Franke and Schreier (2014) and experimenting has been theorised as one of the key behaviours for innovators (Christensen, Gregersen, and Dyer, 2011), many of these innopreneurs appeared to be skilled in borrowing from some other useful concepts and experiment in pursuing a gratifying return.

Scholars have long appraised the internal resources, competencies and capabilities as primary drivers for a firm's sustained competitive advantage (Andrew, 1971). The ability to think beyond the boundary, experimenting with new concepts, and subsequently acquire and adopt and acquire improved resources, competencies and capabilities enhance the competitiveness of the venture. We therefore conclude that "fragmenting and borrowing" is indeed a critical cognitive-processing component for any aspiring innopreneurs. This finding is also congruent with the Corbett's recommendation (Corbett, 2007) in which he suggested that the method whereby entrepreneurs recognise opportunity and perform other key tasks excellently were believed to be as the result of having the right information and knowledge (i.e. "fragmenting") as well as the underlying capacity to use these knowledge effectively (i.e. "borrowing").

6.2.7 Theme Family 5 - Audacious Identity

Considering that the road of entrepreneurship is largely unscripted, unpredictable, and uncontrollable, the richness of entrepreneurship lies in how it is personally experienced (Schindehutte, Morris, & Allen, 2006; Bae, Qian, Miao, & Fiet, 2014). Furthermore, in order to take action, an entrepreneur needs a certain level of entrepreneurial self-efficacy (ESE) with a distinct orientation towards entrepreneurship (Bae et al., 2014). The discovery of new radical ideas is difficult owing to both the processes and individuals' capability to do so (Slater et al., 2014). Referring to section 6.2.1 it was mentioned that only later on in the entrepreneurial venture do innopreneurs' offerings tend towards disruption, suggesting that initially entrepreneurial intention (EI) and entrepreneurial orientation (EO) guide disruptive innopreneurs as they do normal entrepreneurs, as was elaborated in the literature review section 2.6.1. Our findings support this notion and further suggest that disruptive innopreneurs displayed a strong sense of self belief at a certain point in time, assigning themselves to a role

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or identity that helped propel them towards success. The valiant vision of differentiation that the disruptive innopreneurs displayed (section 5.3.8.1) during times of uncertainty and difficulty is seen to coincide with the theory of entrepreneurial self-efficacy (ESE). ESE refers to the belief of the innopreneur in his or her ability and capacity to accomplish a complex task or to deal with difficult challenges. Arora et al. (2013) argue that that self-efficacy is an important antecedent to entrepreneurial action and Sweida and Reichard (2013) claim that ESE is a good predictor of future performance because ESE is affected more by the attribution of performance than the actual performance, leading the study to believe that during times of uncertainty and hardship, disruptive innopreneurs are able to persevere where others would just simply give up. Congruent with the findings as discussed in section 5.3.8, this leads us to conclude that the high self-efficacy disruptive innopreneurs possess affords them the ability to persist even in the face of failure or where others perceive failure.

This discussion further leads us to the theme described in the results section 5.3.8.3 as harnessing grit. Defined as the mixture of resilience and passion over a lengthy period of time, grit was displayed as an important antecedent for disruptive innovation and comprehensively supported by our findings in section 5.3.8. As argued by Cardon & Kirk (2015, p. 1027), persistence is a “vital element in entrepreneurship, as the process of founding and growing a business is ambitious, difficult and involves meeting and overcoming frequent obstacles along the way”, they further add that “entrepreneurs who are dogged and determined in pursuit of their goals have the greatest chance of success”. Moving on to the second element of grit, passion is considered a core component of the entrepreneurial process (Cardon, Wincent, Singh and Dmovsek, 2009; Murnieks and Mosakowski, 2006; Murnieks, 2007; Nordstrom, Siren, Thorgren, & Wincent, 2016). Furthermore, the mutual re-enforcing nature of identity as a central theme in this section, Nordstrom et al. (2016) believe is central to the development of passion. Furthermore, Cardon et al. (2012) suggest that passion is at the heart of entrepreneurship, because it can foster creativity and the recognition of new information patterns critical to the discovery and exploitation of promising opportunities. Similar to resilience, we observed that passion is deeply ingrained in the disruptive innopreneurs attitudes and mindsets, and is evident that this trait broke down the barriers which would normally constrain other entrepreneurs. As a last observation on the concept of grit, interviewees further stated that the elements of grittiness and the audacious identity mutually reinforce one another.

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Turning our discussion to the art of asking pivotal questions, as was mentioned above we discussed that passion fosters creativity and the recognition of promising opportunities, similarly disruptive innopreneurs were seen to assume the position of thinking big and having a boundless mind set when asking questions. Schoemaker and Krupp (2015) suggest that asking the right questions helps broaden your perspectives and leads to smarter decision making. Looking for patterns by applying multiple lenses to connect the dots from diverse sources and stakeholders and delving deeper to see important connections that others miss are one of the methods asking pivotal questions Schoemaker and Krupp (2015) demonstrate leads to improved performance of innovators such as Elon Musk. The innovators DNA described in the literature review section 2.6.1 talks about the five skills necessary for disruptive innopreneurs, one of which is the referred to as the questioning skill of "The Innovators DNA model" (Christensen et al., 2011), questioning allows innovators to break out of the *status quo* and consider new possibilities. Innovators ask questions without worrying about looking foolish and are curious about the convention beliefs one can challenge (de Jong & van Dijk, 2015). Moving past assumptions, beliefs, experiences, prejudices, and traditional ways of looking at things can result in innovative solutions.

In the pursuit of disruptive innovation one often encounters resistance from other people, mostly owing to the fact that people, including customers, have not seen how one can solve a problem in this nascent way, and people are less positive about an idea they cannot relate to. These are some of the challenges disruptive innopreneurs face and as described in the results section 5.3.8.4 we highlight that they typically do not listen to their customers for feedback on what the customer expects or anticipates in their offerings. (Ye, 2016) describes that entrepreneurs are constantly faced with behaviour biases from customers and in cases where this leads to less than desirable outcomes, using an effectual approach to navigate through the clutter could prove to be useful. Alternatively, our findings reveal that disruptive innopreneurs tend to seek other areas to draw on for further information such as analysing their markets and other as well as being inherently intuitive as to what the customer expects. This emphasises the "value-construct analysis" component of the framework, owing to the deeper understanding of customers' desires as the result of value–construct analysis, it permits these interviewees to take on such risk-taking approaches as they ask these pivotal questions to gain a deeper understanding and as a result do not need to listen to naysayers.

Zhang and Cueto (2015) explain that biases of overconfidence decrease risk perception and consequently induces riskier behaviours and decisions of entrepreneurs. Our findings suggested that disruptive innopreneurs needed to constantly challenge their own biases and analyse their ideas for potential risks. This permitted them to decide what to do, mentioning

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that even customers do not fully understand the offerings, as stated in the previous sub-theme. We therefore conclude that for entrepreneurship, overconfidence bias is perhaps more relevant but for disruptive innopreneurs they need to challenge their own biases to test their hypothesis of what is possible. It also appeared that the more one can assess one's own biases and the potential risks, the better one can assume an audacious identity to develop a valiant vision.

6.2.8 Theme Family 6 - Combinatory Play

Defined by the researcher as a method used by innopreneurs that utilises different types of innovation instead of reinventing concepts, by combining and introducing small degrees of innovativeness to existing concepts and business acumen, which results in combining existing concepts in a novel way to create new innovations. All of our interviewees displayed some form of combinatory play, as interviewees attributed the success of their disruptive innovation to degrees of innovating different business acumen components as described in the results section 5.3.9. Due to this component covering varying degrees of business and their processes, the overarching definition of combinatory play explains that innopreneurs combine existing concepts and business acumen to create new value in a novel way using innovative ways to do so. Central to combinatory play is the business model, defined as the four interlocking elements of customer value proposition (CVP), profit formula, key resources and key processes that taken together, create and deliver value (Johnson et al., 2008). Radical innovation of the business model is shown to provide sustainable competitive advantage to a service firm, proving the importance of the concept of the business model to understanding the nature of the business; and linking the model to essential academic discussion of recent decades around the notions of "sustainable competitive advantage", "structural capital" and "tacit knowing" (Philipson, 2016).

In a survey conducted by the Global Centre for Digital Business Transformation that included 941 business leaders globally, it was found that the most successful disruptors employ "combinatorial disruption", in which multiple sources of value—cost, experience, and platform—are fused to create disruptive new business models and exponential gains (Bradley, Loucks, Macaulay, Noronha, & Wade, 2015a). As such this research is in agreement with the current view of combinatorial disruption as disruptive innopreneurs explained how they not only tried to find that missing puzzle piece but exactly where that missing piece was best suited

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for placement in the specific application, thus combining innovations for excellence.

Furthermore the theory of bricolage, defined in the literature review as ‘something constructed or created from a diverse range of things’ or ‘making do by applying combinations of resources already at hand’, has been acknowledged as a helpful technique used by successful innovators and entrepreneurs (Baker and Nelson, 2005; Fisher, 2012; Linna, 2013). We then argued in the literature review section 2.6.3 that by extrapolating the bricolage principles, business model innovation can essentially be regarded as the search for a new type of bricolage of business acumen components, enabling a company to generate new methods of crafting and producing value for its stakeholders. Taking this further, in the literature review section 2.6.3 we neatly explained the various business acumen combination type methods and frameworks that innopreneurs have at their disposal, most notably the Ten Types of Innovation framework which suggests that successful innovators use many types of innovation (Keeley et al., 2013) and go on to explain that innovations can be built up systematically and, in so doing, increase the odds of success exponentially.

Details discussed in the results section 5.3.9 further explained some key components the disruptive innopreneurs practised as part of the theme family under discussion. These six components are by no means a comprehensive list but highlight the key components observed as being critical to the success of the business venture during the analysis of the interviews.

Briefly summarising the key components mentioned we observed an insatiable appetite for customer centricity, being close to the customer trumped all other components, thereby showing that all offerings are developed with the customer top of mind and how that offering would add the most value to the customer. Leveraging networks and partnerships, business model innovation and developing the correct platform and infrastructure were equally important in developing a successful business, as mentioned by the interviewees. This was accomplished by using the correct business platforms centred around ensuring scalability and simplicity; and making use of online platforms where possible, always ensuring that metrics form part of the solution so as to continuously gauge their customer. Assembling the right group of people and ensuring an efficient process of continuous improvement are the remaining key components highlighted in this study, having the right people has already been discussed in section 6.2.2 whereas the efficient process of continuous improvement refers to the lean and agile characteristics required to make adjustments as learning takes place which will be discussed in the next section.

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These results therefore add support to both the notion of combinatory play and bricolage discussed in this section; furthermore we conclude that having an innovative idea itself is important but one cannot disrupt the industry if the idea itself cannot be translated into a successful business, thus combining the various constructs into a customer value proposition.

6.2.9 Theme Family 7 - Enriched Navigation

Enriched navigation forms the last part of the preliminary cognitive framework that was depicted in results section 5.4.1 but as depicted is a component that interacts with numerous components of the framework. Defined by the researcher as an effectual style of venturing that forms part of the ideation process practiced by innopreneurs, enabling them to seek viable means to continuously improve and maximise their opportunity-return. From new learnings that have taken place on the innopreneurs journey thus far form a continuous improvement cycle until the PDI is fit for purpose.

Enriched navigation has its roots deeply entrenched in the emergent effectuation theory that was succinctly described in the literature review under section 2.6.4. Effectuation is “a logic of entrepreneurial expertise, a dynamic and interactive process of creating new artefacts in the world” Roach et al., (2016, p.217). Enriched navigation as is the case with effectuation is an iterative experimental learning driven process. “Effectuation differs from causation in that decision makers dealing with unpredictable phenomena will gather information through experimental and iterative learning techniques aimed at discovering the future”. (Fisher, 2012, p. 1022).

As a general trend, our findings revealed that disruptive innopreneurs continuously innovate as new information becomes available to them, as was presented in the results section 5.3.10 and consistent with what was revealed in section 6.2.9 above. Furthermore, the iterative type approach methods and frameworks described in the literature review section 2.6.4 examined various alternative models such as the “Kaizen” and “Lean startup” methods. While these models are useful for iterative or continuous innovation, we argued in section 2.6.4.1 of the literature, and pointed out the shortcomings of these models. Case in point, the “Lean startup” methodology has been proven to be successful but not for disruptive innovation: Ojala (2015) explain that the model, focuses more on flexible and efficient product development but place immense weight on the value of learning from market feedback, ongoing product development and the notion of a ‘pivoting’ effect through continuous learning. The distinct difference as extensively argued and presented in the discussion section 6.2.5 and 6.2.6, is that disruptive

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innopreneurs do not rely extensively on the market for feedback as radically different offerings are hard for the market to relate to and thus information gathered could not be relied on. Additionally, audacious identity plays a big part in the ideation process for disruptive innovation, this is a further shortcoming other than those presented in section 2.6.4.1 which mainly centre around the lack of empathy and understanding the moments of significance, let alone understanding the value-construct analysis demonstrated to be a requirement for disruptive innovation.

We conclude that enriched navigation is a required component of the preliminary framework as any ideation model involving disruptive innovation is by no means a linear process beginning to end; we now turn to the conclusion where the various theme families are discussed holistically.

6.2.10 Conclusion

We conclude the discussion of results for research question one by summarising the findings which led to discovering the common themes underpinning the cognitive process of disruptive innopreneurs when developing their ideas.

The first significant finding revealed that an ideation process for disruptive innovation is underpinned by a state of mind that challenges both the common perception and conception of what business is about; noting that disruptive innovation is a process and developing a solid business concept needs to be a part of the ideation process because even though an innovative idea is important, one cannot disrupt the industry if the idea itself cannot be translated into a successful business.

The second significant finding includes the importance of building a good team as the final idea and concept is a culmination of inputs from various individuals whom contribute to the quality of the disruptive innopreneur's hunch. It was further stated that even though it is beyond the scope of this research to define a cognitive framework for group ideation, an individual-based cognitive ideation framework remains important as it not only supports the individual innopreneur but the entire team.

The seven theme families that emerged were then discussed as the outcome of our third significant finding and ultimately led to the revelation of the essential components of the framework.

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6.3 Discussion of results for Research Question Two

The second research question expanded on the first by attempting to determine if the preliminary framework that was presented in the results section 5.4 in Figure 8 was a suitable framework for disruptive innovation ideation using some of Africa's most accomplished disruptive innopreneurs as the validation source. The question further sought to understand and unpack the possible flaws or weaknesses in the framework in order to improve the framework's applicability and accuracy for facilitating effective ideation for disruptive innovation.

6.3.1 Discussing the preliminary cognitive framework

Referring to the results discussed in section 5.4 using the solicited feedback from the disruptive innopreneurs we demonstrated that the framework was well received and mention was made that the framework provided a useful way to make sense of the ideation process.

We turn to Figure 8 of the results section which was presented as the cognitive framework to the disruptive innopreneurs to explain the development of the framework leading up to the version as it was presented to the disruptive innopreneurs and also to provide an understanding of its application. For ease of reference, the framework presented in Figure 8 is presented below.

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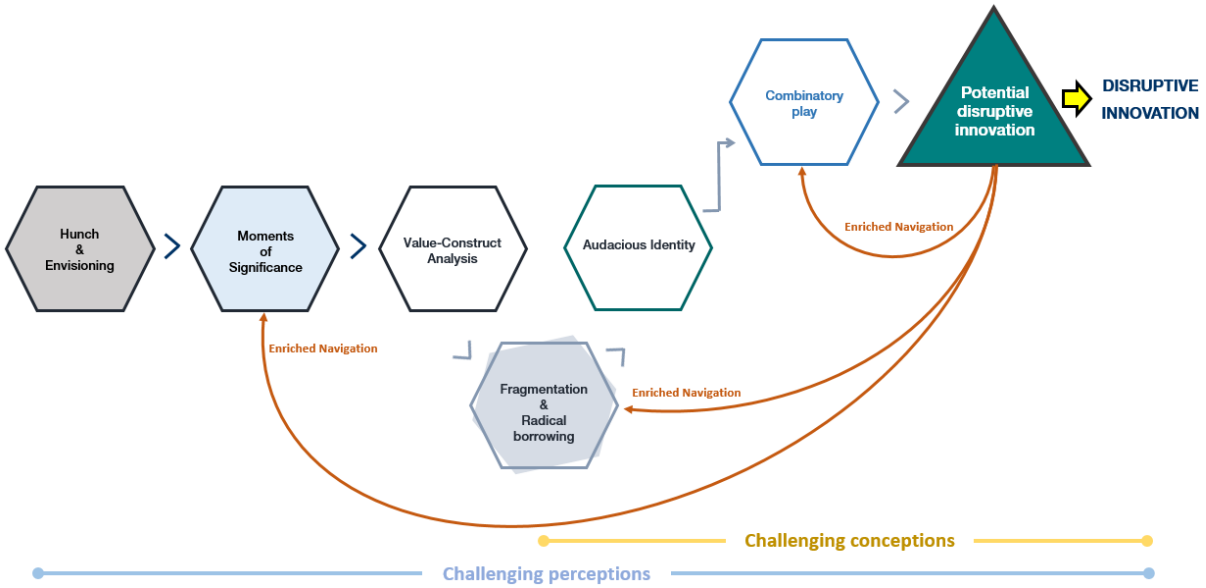
Figure 11: Enriched Disruptive Ideation (EDI) framework as presented in Figure 8



Source: Authors own

As described in the results section 5.4.1 we derived the "Enriched Disruptive Ideation" EDI framework as depicted above iteratively using the theory of the literature review which produced the possible outlook presented in Figure 7 of Chapter 2. We then progressed to the development of the EDI framework presented above in Figure 11 in pursuit of answering research question one, the methodology described in Chapter 4 and the analysis of the findings presented in the results of Chapter 5. Leading on from that point we incorporated the three significant findings described in the conclusion of Chapter 5 into the framework.

The components and how they integrate with each other is now briefly described.

Explanation of the EDI Model:

Our first significant finding revealed that in order to seek disruptive innovation an antecedent for successful ideation requires challenging both the perception and conception of business. The framework incorporates this finding at the foundation level and forms part of the entire process. Challenging conceptions however only starts when one has developed one's hunch to a point that a concept is fully formed, this as explained later starts with "Audacious Identity".

The entrepreneurial venture is triggered by "Hunch and Envisioning", and as explained in section 5.3.4 and 6.2.4, both these sub components are necessary for disruptive innovation and complementary to each other. Disruptive innopreneurs are able to envision their hunch

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as a future possibility; the hunch helps them focus on a coherent scope of envisioning whereas envisioning provides the vision to position the hunch for innovation.

Moments of Significance (MoS) at its core provides the necessary methodologies for understanding customers in the way that is required for disruptive innovation, section 6.2.5 provided a comprehensive explanation of its foundation and its differences to previous methods used.

Value-construct Analysis delves deeper into the mindsets and behaviours of customers through value-construct association techniques and theories explained in section 5.3.6 and 6.2.6 in order to unpack the value-construct's of customers so as to elicit insights of their possible value associations and interactions with radical offerings not seen previously, and in so doing prevent deriving the wrong conclusion as to what customers perceive as valuable.

Fragmentation and borrowing as described in section 5.3.7 and 6.2.7 then ensues after one has a complete understanding of the customer and what value customers associate with potential offerings. Two complementary components, fragmenting a potentially useful solution into the key principles that formed the basis attributing to the overall success, innopreneurs determine which principles can be borrowed purposefully from elsewhere to suit the context of the challenge at hand, while holding a boundless mindset.

Audacious Identity assumes the role of the innopreneurs' characteristics and behaviours explaining that up to this point the venture takes on new meaning where the perceptions now move to conceptions in a way that elevates it to a new level, ready for disruptive intent; encompassing the courage, valiant vision, passion and resilience required in the pursuit of success as explained in section 5.3.8 and 6.2.8.

Combinatory Play integrates by innovation, a method used by innopreneurs that utilises different types of innovation instead of reinventing concepts, by combining and introducing small degrees of innovativeness to existing concepts and business acumen. This results in combining existing concepts using bricolage amongst other techniques in a novel way to create new innovations. Once concepts have been combined for excellence we move on to the potential disruptive innovation (PDI), but as explained through this study more often than not a PDI would iterate through a number of versions until fit for purpose to be presented to the market. Secondly our minds do not work in a sequential or linear fashion and we hereby describe the last component where these iterative changes take place.

Enriched Navigation is the learning and experimentation process that one goes through on the path to the PDI, enabling the disruptive innopreneur to seek viable means to continuously improve and maximise their opportunity-return using an effectuation style of thinking. As

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depicted in the framework, this takes place once the disruptive innopreneur gets to the PDI and with new learnings that have taken place on the journey thus far, either needs to combine in a different way, fragment and borrow more or seek further insights about their customer, starting the process again. This ongoing improvement cycle continues until the PDI is fit for purpose.

In order to answer the second part of this research question we discuss the shortcomings of the framework as evaluated by the interviewees in the next section.

6.3.2 Delimitation of phase 2 of the research

Feedback enjoyed from 24 of the 26 disruptive innopreneurs was categorised into three areas as explained in section 5.4.1 of the results.

Combinatory play was criticised for not including a validation mechanism such as financial and other feasibility models and secondly, ensuring a good implementation plan of the idea. Validating and ensuring that a feasible PDI is proposed did however form part of the preliminary cognitive framework presented and described in section 5.3.9 and was noted in section 5.4.2.1 that as no two businesses are the same, it may be difficult to elaborate on the combinatory play component in detail. Additionally the enriched navigation loop back from PDI to combinatory play was to ensure feasibility of the offering before progressing the PDI further. Concerning the second critique, it should be noted that while these are valid requirements the framework concentrates on the ideation phase of disruptive innovation and therefore would not include elements of implementation even though the researcher believed that the combinatory play component included all the required ingredients to facilitate and ensure a solid foundation for the implementation of a PDI.

The second area that was highlighted as a possible shortcoming was the importance of having a boundless mindset when applying the combinatory play component as explained in section 5.4.2.2 of the results. This criticism was noted by the researcher and incorporated into the next iteration of the framework. The execution mindset and systems thinking critique was well received and already formed part of the framework as covered in the literature review section 2.6.1.4 as counterfactual thinking, and part of the framework as discussed in results section 5.3.4.3 as foresight and counterfactual thinking.

Lastly, the third area of concern uncovered by the disruptive innopreneurs was that the framework was too rigid, in a sense that it seemed to sequential and believed that enriched

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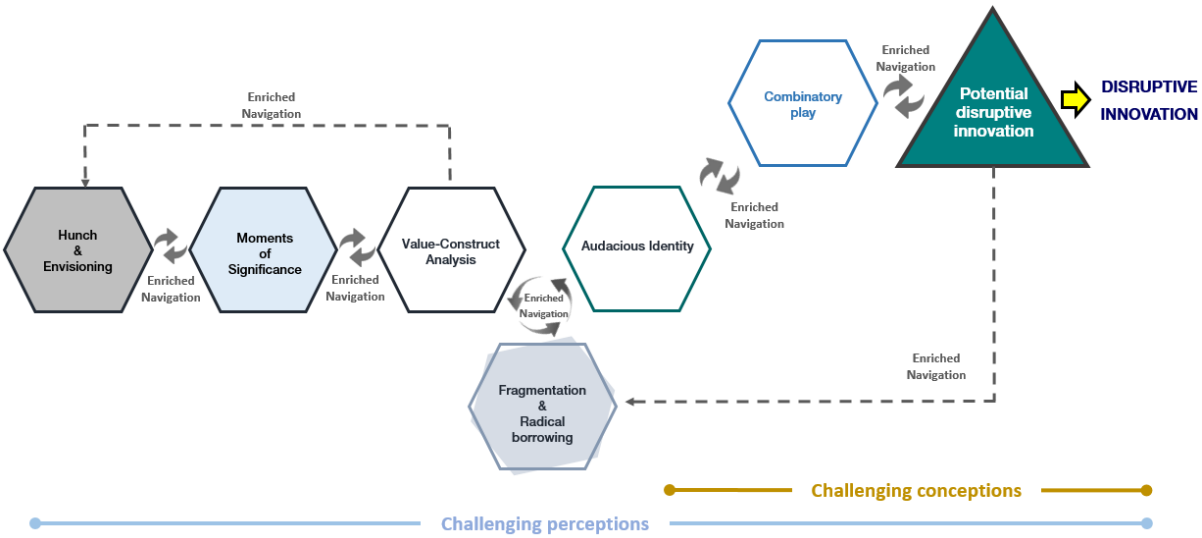
navigation should not only be considered as a feedback loop as described in section 5.4.2.3 of the results section. Secondly, each and every step should be purposefully considered, meaning that “enriched navigation” not only occurs at the interface between the PDI and the three components of “combinatory play”, “fragmentation and borrowing” and “moments of significance” as depicted in the feedback loops of Figure 11 above.

This feedback prompted an improvement not only in the framework but also in the definition of the term “Enriched Navigation”. The new definition for Enriched Navigation has therefore been improved to include these findings and is thus: “A learning and experimentation process that one goes through on the path to the PDI, enabling the disruptive innopreneur to seek viable means to continuously improve and maximise their opportunity-return using an effectuation style of thinking. Based on new information gathered, innopreneurs may choose to venture onwards or revert back to the previous stage of the framework for further refinement, or alternatively pivot in a new direction; at times may even reshape the innopreneurs audacious identity.” Noting that the definition now includes forward and backward learning, pivoting and taking on a new mindset or identity stimulated by further experimentation and learning.

In light of the feedback received in answering research question two, we were obliged to improve the framework, which is presented below in figure 12.

Figure 12: Enriched Disruptive Ideation (EDI) framework - updated as a result of RQ2



Source: Authors own

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As depicted in Figure 12, attention is drawn to the changes made to the framework.

The framework now includes forward and backward learning through enriched navigation at the interface between all of the components. The iterative nature of continuous improvements is no longer observed at the end of the process, namely the PDI, it now occurs pervasively, enabling one to make adjustments at all components of the framework thus ensuring a boundless mindset as one no longer needs to think of the end state in mind, only when testing one's hypothesis at the PDI.

We hereby conclude in answering research question two that the preliminary cognitive framework incorporates the validated results from our findings in the results section 5.4.

6.4 Discussion of results for Research Question Three

This research question sought to formulate a better understanding about the frameworks applicability and usefulness within an organisation to facilitate the innovation strategy and improve the organisations ability to think more disruptively in doing so. The findings were presented in section 5.5 of the results, as a general trend we established that the framework was well received by all the senior managers and found the framework very useful in facilitating an ideation process for their innovation strategy.

In order to maintain consistency, the same version of the framework that was presented to the disruptive innopreneurs as depicted in Figure 11 was used during this phase of the study. As explained in the results the most noticeable benefits of the framework were centred around improving the team's initial hunch, shifting their mindsets towards disruptive thinking, challenging their thinking from a customers' perspective and improving coherence in the team in the achievement of their goal.

Turning to the criticism of the model as received from the senior managers, we first need to state that a framework in itself would have limitations as it depends how the framework is applied, who applies the framework, their capability and capacity, the environment and specifically for this study would be one's facilitation skills in a group setting.

The criticism received as stated in the results section, 5.5.1 concerning the shortcomings of the framework concerning its application and usefulness could be attributed to the facilitation skills of the senior managers.

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We therefore conclude that the framework's applicability and usefulness is dependent on the facilitator's facilitation skills and the mindset of the leaders / facilitators. Additionally, we cannot guarantee that this framework will lead to disruptive innovation within organisations but its usefulness as a framework to guide leaders thinking towards disruptive innovation has been demonstrated in this phase of the study.

6.5 Conclusion

This chapter sought to provide a comprehensive and conclusive discussion of the results and provide answers to the three research questions. The results provided three insightful findings towards developing a preliminary cognitive framework for disruptive ideation as presented in Section 6.3.1. Figure 11, while concurrently surfacing a number of additional insights around disruptive innovation and highlighting the gaps in the body of knowledge between innovation and entrepreneurship. Integrating all of these auspicious findings we refer to Chapter 7 which provides a cohesive summary of the outcomes of this study.

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Chapter 7: Conclusion

7.1 Principle findings and concluding remarks

Throughout history, innovation has reshaped and disrupted the dynamics of societies, the behaviours of communities, the practices of organisations and the behaviours of individuals (Yu & Hang, 2010). Coined by Bower and Christensen (1995), the term “disruption innovation” is commonly used to describe a new superior offering that generates higher value for the customers and penetrates the market by disrupting the common *modus operandi* of the existing competitors within an industry. Such disruption is characteristically the result of having cleverly combined a competitive business model and some forms of innovative technology (Norton & Pine II, 2013). This is the era in which disruption is the new norm. Disruptive innovations have become the reagents that guide corporate and business ventures to greater profitability and added gratifying returns (Yu & Hang, 2010). The majority of the organisations and business endeavours that fail to reap the benefits of or efficiently respond to the emerging disruptive innovation will find themselves in disadvantaged positions with exacerbating implications. The inclination to search, create or align the business pursuit with the next disruptive innovation becomes one of the top priorities for business leaders and entrepreneurs of today. However, Christensen’s theory of disruptive innovation takes on somewhat more of the “*a posteriori*” view. Despite that, the four key components of the theory posited by Christensen can be leveraged in hindsight to explain why an innovation gained disruptiveness (King & Baatartogtokh, 2015; Vázquez, Bienenstock, & Zuckerman, 2016); but cannot be used as a thinking guide in aiding the generation a potential disruptive idea. As successful leaders and entrepreneurs are constantly seeking the next plausible idea of disruptive innovation, establishing a framework that could assist them to better ideate should be of great value in today’s business environment. Furthermore, such a framework may also attract scholarly interest, considering that defensible frameworks that bridge the theoretical underpinnings of entrepreneurship and innovation remain scarce. This was extensively elaborated in Chapter 2 of this thesis.

With a four-phased approach, this research is by no means a walk-in-the-park. In Phase 0, an extensive literature review was conducted to ensure the important theories relevant to entrepreneurship and innovation were taken into consideration. Despite that this leads to a lengthy chapter, and by no means that the review has covered *all* theories known to date, the thoroughness of this phase of the research grounded a solid foundation for the remaining phases of the research.

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In Phase 1, this study interviewed 26 disruptive innopreneurs using the semi-structured qualitative research approach. These interviewees have all successfully created a disruptive innovation endeavour, either entrepreneurially or intrapreneurially. The purpose of this phase is to uncover the dominant cognitive processes leveraged by these impressive individuals. Not only are disruptive innopreneurs rare in this region of the world, many of these interviewees have extremely busy schedules owing to their responsibilities. The researcher is extremely grateful for their time and invaluable inputs. Furthermore, it is worth noting that the researcher was inspired by the GIBS's desire of increasingly engaging with the broader African environment and made his best attempt at inviting disruptive innopreneurs from other African countries to take part in the interviewing process. However, owing to the geographical challenges, language barriers and the limited timeline of the MBA research, this research only managed to study three interviewees from other African countries and seven interviewees who operate in South Africa and other countries. It is hoped that a large scale of study across different regions of the world can be considered by future studies.

Three significant findings were uncovered after using the Interpretative Phenomenological Analysis (IPA) method to examine the interviews gathered in Phase 1 of this research. The first significant finding uncovered by this phase of the research is that all of the interviewees shared the sentiment that when pursuing an innopreneurial endeavour, the ideation processes should incorporate the aspects of challenging both the common perceptions and conception of the business. The interviewees advocated that having an innovative idea itself is important but one cannot disrupt the industry if the idea itself cannot be translated into a successful business. This is perhaps the crucial rationale as to why many scholars and aspiring innopreneurs fail to bridge the gap between entrepreneuring and innovating. The second significant finding uncovered by this phase of the research emphasised the importance of "collective ideation and venturing". The significance of having a remarkable group of team members and collaborators was emphasised by the interviewees. It is beyond the scope of this research to develop a cognitive-processing framework for group ideation and venturing owing to the intricacies of inter-group leadership and team dynamics. But based on this finding, this research would like to make the following argument: considering that a group is formed as the result of the self-assembly individuals and therefore without each individual capable of ideating effectively, having the right group dynamics will not lead to the desired outcome. Such findings heightened the need for a framework that can guide an individual to think disruptively.

The third major finding of this phase of the research revealed seven dominant cognitive-processing themes utilised by the disruptive innopreneurs interviewed. They are termed i) hunch and envisioning, ii) moments of significance, iii) value–construct analysis, iv) audacious

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identity, v) fragmenting and borrowing, vi) combinatory play, and vii) enriched navigation. The exact definitions and the sub-themes were presented in Chapter 5 and discussed at length in Chapter 6. By taking the literature review chapter into consideration, this research formulated a preliminary framework which was then used in Phase 2 of this research.

In Phase 2 of the research, the preliminary framework was presented to 24 disruptive innopreneurs. The responses were generally very positive. A handful of the interviewees still advocated the importance of partnering with a good team of people, discussed the need to further elaborate the combinatory play, and emphasised the importance of audacious identity, viz, the boundless mindset. Another valuable critique alluded to the preliminary framework being slightly “too sequential” and the cognitive-processing of disruptive innopreneurs often adopted a more effectual iteration when refining an idea. This research was able to justify how the above-stated suggestions were incorporated or discarded for the development of the “Enriched Disruptive Ideation” (EDI) framework as presented in Figure 12 of Chapter 6. Quoting from (Hagel, Brown, & Davison, 2008), “in the absence of equilibrium, adaptation is the best strategy”, such effectual iteration seemed like a useful ideation strategy.

Having established the EDI framework, Phase 3 of this research involved lengthy discussions with various senior managers from the retail and wholesale sector and assisted them to grasp the essence of this framework in preparation for one of their strategy sessions. These participants were encouraged to share their perceptions of the applicability of the framework and their responses were documented in Chapter 5. Despite that one of the managers mentioned that it may be difficult to establish an “audacious identity” and sometimes the strategy facilitation competency also affects how one can apply this model, in general these senior managers welcomed this framework and deemed the key concepts to be useful.

Despite larger interview samples, a quantitative survey may be needed to provide further validation, but this research shed some light to the well-needed theoretical foundations that bridge entrepreneurship and innovation. The framework proposed appeared to be theoretical sounded and of practical significance. The researcher would like to acknowledge the valuable contributions made by each and every individual involved in this research.

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7.2 Significance and potential contributions of the findings

As far as the knowledge of the researcher goes, no study to date has extensively focused on the cognitive-processing approaches of disruptive innopreneurs. This research has posited an ideation framework that could be utilised for the ideation of any form of innovation strategy. Even though the samples of this research were mostly Africans, it is envisaged that the findings can be extrapolated and remain pertinent to other aspiring innopreneurs in all regions of the world. Apart from assisting individuals to navigate themselves and better ideate, this research should be in the position to make added contributions:

For organisations:

i. For employee development: talent development practitioners who aim to foster innovative leaders can adopt this framework to harness the thinking capability for their employees. Additionally, considering that the importance of building and sustaining a good team for an innovative venture was repeatedly highlighted by the innopreneurs, more organisational interventions should be channelled to nurture teams to initiate and sustain “collective disruption” (i.e. developing disruptive innovation of internal ventures through the joint effort of the team members).

ii. For strategy formulation: Managers can apply this framework to refine their strategies and practices. Furthermore, coupled with good strategy facilitation skills and superb leadership, managers can also break down each of the sub-themes of the framework to encourage their subordinates to develop intuition, foresight, empathy, credulous curiosity, holistic thinking, grit, customer-centricity, strategy-as-practice and other types of useful competencies supportive of an effective strategy formulation. But above-all, the framework is rooted on the anthropogenic and ethnographic outlooks, and it calls for a deeper understanding of the customers’ inner constructs. If such mindsets of heightened customer-centricity can be cascaded throughout the organisation and become the ethos of all operating units, strategies developed will likely benefit both the companies and their customers greatly.

For scholarly knowledge:

i. This research uncovered the importance of challenging both the perception and conception when comes to developing an innopreneurial venture. The complementarity of opportunity discovery and opportunity creation was also apparent. Therefore, based on these findings, the research would like to recommend to business schools, universities and training institutions to stop teaching *innovation* in isolation.

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Instead, modules and/or courses should seek ways to purposefully dovetail the knowledge of *innovation* with *entrepreneurship* in order to produce innopreneurial leaders.

ii. As indicated in Chapter 2, despite what various framework has attempted, studies to date have not confidently addressed the connection between entrepreneurship and innovation. The cognitive-processing framework proposed in this research attempted to make such scholarly contribution and aimed at bridging the gaps between entrepreneurship and innovation from an individual's ideation perspective. Each individual theme of the framework uncovered and the relationship between these themes are also of scholarly interest.

Philosophically, for South African and African societies:

i. Both South Africa and Africa are in need of more innopreneurs. If countries in this region can educate school learners and university students to think more audaciously, as well as encourage them to challenge both assumptions and conceptions, it will benefit the socioeconomic upliftment of the communities.

ii. As stated in the previous sections, to produce meaningful solutions using this framework requires one to reduce one's own biases and invest more effort into uncovering and understanding others' inner construct. The desire to understand others' perspectives is the cornerstone of solving complex societal challenges. We speak a great deal about the spirit of Ubuntu in South Africa, but do we actually take time to understand and empathise with one another? If all citizens could adopt the attitude of trying to immerse themselves in another's shoes and empathise with those around them, a culture could be created that provides the basis for progressive solutions that tackle numerous iniquitous problems and dilemmas existing in the societies.

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7.3 Limitations and delimitations

Several limitations and delimitations of this research must be stated:

i. All disruptive innopreneurs included in this study were the pioneers who, to a certain degree, disrupted their industries at the time. But in the fierce business landscape competitors always try to catch up (and some competitors have in fact caught up) with these innopreneurs. As this research only aimed at uncovering the key thinking approaches of how these interviewees came up with the disruptive innovation, whether their businesses remain successful today and in the near future or not should not affect the validity of the data gathered.

ii. The dynamics of collective ideation was not part of the scope of this research. Therefore how elements such as collective reasoning, brainstorming, inter-group leadership, mutual influences and other interpersonal dynamics factors influence one's ideation were not part of this investigation.

iii. As qualitative research strictly solicits the perceptions of the interviewees, the researcher cannot proclaim that none of the interviewees may introduce some magnitude of hindsight biases. The interviewees can also speak about their own experience and therefore a qualitative approach lacks the power to make generalised declarations. Further, quantitative research should be carried out to validate the findings.

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7.4 Suggestions for further research

This research recommends future research into the following categories:

i. A quantitative research should be carried out to justify the veracity of the framework. However, owing to the fact that disruptive innopreneurs are scarce in South Africa, the study may have to extent to disruptive innopreneurs in other countries.

ii. The relationship between design thinking and disruptive innovation is an uncontested area of research and therefore it should be included as future research agenda.

iii. The relationship between innopreneurial performance and the selected themes within the framework should be thoroughly examined through a large-scale quantitative investigation.

iv. How innopreneurs can develop some of these sub-themes stated in this framework will be of interest to both scholars and practitioners. For example, how innopreneurs could gestate their hunches, uplift their envisioning capability and unpack the deeper constructs of their customers could be some of the useful extensions of this research. Studies focusing on how disruptive innovators made effective use of their “episodic memories” and “episodic future thinking” during their ideation phase are also limited. Our study shed light on these cognitive processing approaches. Further research in these areas should be conducted.

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Reference List

Adams, R., Bessant, J. and Phelps, R. (2006), Innovation management measurement: a review, *International Journal of Management Reviews*, Vol. 8 No. 1, pp. 21-47.

Adner, R. and Zemsky, P. (2003). Disruptive Technologies and the Emergence of Competition. CEPR Discussion Paper no. 3994, *Center for Economic Policy Research*. Retrieved from http://www.cepr.org/pubs/dps/DP3994.asp

Adner, R. (2002). When are technologies disruptive? A demand-based view of the emergence of competition. *Strategic Management Journal*, 23(8), pp. 667–688.

Afuah, A. (2003). *Innovation management* (2nd ed.). New York: Oxford University Press.

Ahuja G, Katila R. 2004. Where do resources come from? The role of idiosyncratic situations. *Strategic Management Journal* 25(8/9): 887–907.

Ajzen, I. (1991). T*he theory of planned behavior*. Organizational Behavior and Human Decision Processes, 50(2), 179–211.

Alam, I. (2002), An exploratory investigation of user involvement in new service development, *Journal of Academy of Marketing Science*, Vol. 30 No. 3, pp. 250-261.

Alam, I. (2006), Removing the fuzziness from the fuzzy-end of service innovations through customer interactions, *Industrial Marketing Management*, Vol. 35 No. 4, pp. 468-480.

Alexander, L., and Van Knippenberg, D. (2014). Teams in pursuit of radical innovation: A goal orientation perspecitve. *Academy of Management Review*, *39*(4), 423–438. http://doi.org/http://dx.doi.org/10.5465/amr.2012.0044

Allinson, C.W., Chell, E., and Hayes, J. (2000). Intuition and entrepreneurial behaviour. *European Journal of Work and Organizational Psychology*, 9, 31–43

Alvarez, S.A., Ireland, R.D. and Reuer, J.J. (2006), Entrepreneurship and strategic alliances, *Journal of Business Venturing*, Vol. 21 No. 4, pp. 401-404.

Alvarez, S.A., Barney, J.B. (2007) Discovery and creation: alternative theories of entrepreneurial action. *Strategic Entrepreneurship Journal* 1(1-2):11–26

Alvarez, S.A., Barney J.B., Young, S.L. (2010) *Debates in entrepreneurship: opportunity formation and implications for the field of entrepreneurship*. In: Acs ZJ, Audretsch DB (eds) Handbook of entrepreneurship research, international handbook series on entrepreneurship. Springer, New York

© University of Pretoria

Amabile, T.M., Conti, R., Coon, H., Lazenby, J., and Herron, M. (1996). Assessing the work environment for creativity. *Academy of Management Journal*, 39, 1154–1184.

Andrews, K.R. 1971. *The concept of corporate strategy*, Irwin, Homewood, IL.

Andries P, Debackere K. (2007). Adaptation and performance in new businesses: understanding the moderating effects of independence and industry. *Small Business Economics* 29: 81–99.

Andries, P., Debackere, K., and Looy, B. (2013). SIMULTANEOUS EXPERIMENTATION AS A LEARNING STRATEGY : BUSINESS MODEL DEVELOPMENT UNDER UNCERTAINTY. *Strategic Entrepreneurship Journal*, *7*, 288–310. http://doi.org/10.1002/sej.1170

Ardichvili, A., Cardozo, R., and Ray, S. (2003). A Theory of Entrepreneurial Opportunity Identification and Development. *Journal of Business Venturing*, *18*, 105–123.

Andriopoulos, C. and Lewis, M.W. (2009), Exploitation-exploration tensions and organizational ambidexterity: managing paradoxes of innovation, *Organization Science,* Vol. 20 No. 4, pp. 696-717.

Ariely, D., Loewenstein, G. and Prelec, D. (2003), Coherent arbitrariness: stable demand curveswithout sable preferences, *Quarterly Journal of Economics*, Vol. 118 No. 1, pp. 73-106.

Ariely, D. (2008). Predictably Irrational: The Hidden Forces That Shape Our Decisions. New York: HarperCollins Publishers.

Arora, P., Haynie, J. M., and Laurence, G. A. (2013). Counterfactual thinking and entrepreneurial self-efficacy: The moderating role of self-esteem and dispositional affect. *Entrepreneurship: Theory and Practice*, *37*(2), 359–385. http://doi.org/10.1111/j.1540-6520.2011.00472.x

Ayala, J. C., and Manzano, G. (2014). The resilience of the entrepreneur. Influence on the success of the business. A longitudinal analysis. *Journal of Economic Psychology*, *42*, 126–135. http://doi.org/10.1016/j.joep.2014.02.004

Babbie, E. (2007) *The practice of social research*, 11th edn. Thomson Higher Education, Belmont.

Baden-Fuller, C., and Haefliger, S. (2013). Business Models and Technological Innovation. *Long Range Planning*, *46*(6), 419–426. http://doi.org/10.1016/j.lrp.2013.08.023

Bae, T. J., Qian, S., Miao, C., and Fiet, J. O. (2014). The Relationship Between Entrepreneurship Education and Entrepreneurial Intentions: A Meta-Analytic Review. *Entrepreneurship: Theory and Practice*, *38*(2), 217–254. http://doi.org/10.1111/etap.12095

© University of Pretoria

Baker, T. & Nelson, R.E. (2005). Creating something from nothing: Resource construction through entrepreneurial bricolage. *Administrative Science Quarterly*, 50, 329–366.

Baldacchino, L., Ucbasaran, D., Cabantous, L., and Lockett, A. (2015). Entrepreneurship research on intuition: A critical analysis and research agenda. *International Journal of Management Reviews*, *17*(2), 212–231. http://doi.org/10.1111/ijmr.12056

Baldacchino, L. (2013). *Entrepreneurial experience and opportunity identification: the role of intuition and cognitive versatility*. (Doctoral dissertation) University of Warwick, UK.

Bandura, A. (1978). Reflections on self-efficacy. *Advances in Behavioral Research and Therapy*, 1(4), 237–269

Barnard, C. (1938). *The functions of the executive.* Cambridge, MA: Harvard University Press.

Barney, J. 1991. Firm resources and sustained competitive advantage. *Journal of Management* 17 (1): 99–120

Baron, R. A., and Henry, R. A. (2010). How Entrepreneurs Acquire the Capacity to Excel: Insights from research on expert performance. *Strategic Entrepreneurship Journal*, *4*(1), 49–65. http://doi.org/10.1002/sej.82

Baron R.A., Ward, T.B. (2004) Expanding entrepreneurial cognition's toolbox: potential contributions from the field of cognitive science. *Entrepreneurship Theory Practice* 28(6):553–574

Baron, R.A. (2008). The role of affect in the entrepreneurial process. *Academy of Management Review*, 33(2), 328–340

Baron, R.A. (1999). *Essentials of psychology* (2nd ed.). Boston: Allyn and Bacon

Baron, R.A. and Henry, R.A. (2010). How entrepreneurs acquire the capacity to excel: insights from research on expert performance. *Strategic Entrepreneurship Journal*, 4, pp. 49–65

Baron, R.A. (2000). Counterfactual thinking and venture formation: The potential effects of thinking about 'what might have been.' *Journal of Business Venturing*, 15(1), 79–91.

Baylor A. 2001. A u-shaped model for the development of intuition by level of expertise. *New Ideas in Psychology* 15(2): 185–194

Bechara, A. (2004), The role of emotion in decision-making: evidence from neurological patients with orbitofrontal damage, *Brain and Cognition*, Vol. 55 No. 1, pp. 30-40.

Beck, K., M. Beedle, A. van Bennekum, A. Cockburn, W. Cunningham, M. Fowler, J. Grenning, J. Highsmith, A. Hunt, R. Jeffries, J. Kern, B. Marick, R. C. Martin, S. Mellor, K. Schwaber, J.

© University of Pretoria

Sutherland, and D. Thomas. (2001). Manifesto for Agile software development. Agile Alliance. Available at http://agilemanifesto.org/.

Belenzon, S. and Berkovitz, T. (2010). Innovation in business groups. *Management Science*, *Vol. 56* No. 3, pp. 519-535

Belz, F. M., and Binder, J. K. (2015). Sustainable Entrepreneurship: A Convergent Process Model. *Business Strategy and the Environment*. http://doi.org/10.1002/bse.1887

Bennett, R.H. (1998). The importance of tacit knowledge in strategic deliberations and decisions. *Management Decision*, 36, 589–597

Berends, H., Jelinek, M., Reymen, I. and Stultiëns, R. (2014), Product innovation processes in small firms: combining entrepreneurial effectuation and managerial causation, *Journal of Product Innovation Management,* Vol. 31 No. 3, pp. 616-635.

Bettis, R.A. and Prahalad, C.K. (1995), The dominant logic: retrospective and extension, *Strategic Management Journal*, Vol. 16 No. 1, pp. 5-14.

Bhalla, G. (2010), C*ollaboration and Co-creation: New Platforms for Marketing and Innovation*, NY: Springer.

Bhave, M.P. (1994). A process model of entrepreneurial venture creation. *Journal of Business Venturing, 9*, 223–242.

Bird, B. (1988). Implementing Entrepreneurial Ideas: The Case for Intention. *Academy of Management Review*, *13*(3), 442–453. Retrieved from http://doi.org/10.5465/AMR.1988.4306970

Birkinshaw, J. (2014). The Big Idea. *Harvard Business Review*, (May), 50–57.

Blank, S. (2013) Why the lean start-up changes everything. *Harvard Business Review*, 91, 63–72.

Bloch, P. (2011). Product design and marketing: Reflections after fifteen years. *Journal of Product Innovation Management* 28: 378–80.

Birkinshaw, J. (2014). The Big Idea. *Harvard Business Review*, (May), 50–57

Bohlmann, J. D., Spanjol, J., Qualls, W. J., and Rosa, J. A. (2013). The interplay of customer and product innovation dynamics: An exploratory study. *Journal of Product Innovation Management*, *30*(2), 228–244. http://doi.org/10.1111/j.1540-5885.2012.00962.x

Bond, R. (2005), Group size and conformity, *Group Processes and Intergroup Relations*, Vol. 8 No. 4, pp. 331-354.

© University of Pretoria

Bonnett, C. and Furnham, A. (1991), Who wants to be an entrepreneur? A study of adolescents interested in a Young Enterprise scheme. *Journal of Economic Psychology*, *Vol. 12*, pp. 465-478

Bornemann, T., Schöler, L., and Homburg, C. (2015). In the Eye of the Beholder? the Effect of Product Appearance on Shareholder Value. *Journal of Product Innovation Management*, *32*(5), 704–715. http://doi.org/10.1111/jpim.12228

Bower, J.L. and Christensen, C.M. (1995), Disruptive technologies: catching the wave, Harvard Business Review, January-February, pp. 43-53

Boyd, N.G. and Vozikis, G.S. (1994). The influence of self-efficacy on the development of entrepreneurial intentions and actions. *Entrepreneurship Theory and Practice*, 18(4), 63–77.

Blume, B.D. and Covin, J.G. (2011). Attributions to intuition in the venture founding process: do entrepreneurs actually use intuition or just say that they do? *Journal of Business Venturing*, 26, pp. 137–151

Bradley, J., Loucks, J., Macaulay, J., Noronha, A., and Wade, M. (2015a). *Digital Vortex - How digital disruption is redefining industries.* Lausanne, Switzerland: IMD

Bradley, J., Loucks, J., Macaulay, J., Noronha, A., and Wade, M. (2015b). *Disruptor and Disrupted.* Lausanne, Switzerland: IMD

Brazeal, D.V. and Herbert, T.T. (1999). The Genesis of entrepreneurship. *Entrepreneurship: Theory and Practice, Vol. 23*, No. 3, pp.29–45.

Brem, A. (2011). Linking innovation and entrepreneurship – literature overview and introduction of a process-oriented framework. *International Journal of Entrepreneurship and Innovation Management*, *14*(1), 6. http://doi.org/10.1504/IJEIM.2011.040820

Brettel, M., Mauer, R., Engelen, A. and Küpper, D. (2012), Corporate effectuation: entrepreneurial action and its impact on R&D project performance, *Journal of Business Venturing*, Vol. 27 No. 2, pp. 167-184.

Breugst, N., Domurath, A., Patzelt, H., and Klaukien, A. (2012). Perceptions of Entrepreneurial Passion and Employees' Commitment to Entrepreneurial Ventures. *Entrepreneurship: Theory and Practice*, *36*(1), 171–192. http://doi.org/10.1111/j.1540-6520.2011.00491.x

Brown, T. (2008). Design Thinking. *Harvard Business Review*, (June), 85–92. http://doi.org/10.5437/08956308X5503003

Brown, T., and Martin, R. (2015). Design for Action. *Harvard Business Review*, (September), 3–10

© University of Pretoria

Bryant, P. T. (2014). Imprinting by design: The microfoundations of entrepreneurial adaptation. *Entrepreneurship: Theory and Practice*, *38*(5), 1081–1102. http://doi.org/10.1111/j.1540-6520.2012.00529.x

Buchanan, J.M., Vanberg, V. (1991) The market as a creative process. *Econ Philos 7*(1):167–186

Burke, L.A. and Miller, M.K. (1999). Taking the mystery out of intuitive decision making. *Academy of Management Executive*, *13*, 91–99

Bygrave, W., Hofer, C. (1991) Theorizing about entrepreneurship. *Entrepreneurship Theory Practice* 16(2):13–22

Camarinha-Matos, L.M., Afsarmanesh, H., Galeano, N. and Molina, A. (2009a), Collaborative networked organizations– concepts and practice in manufacturing enterprises, *Computers & Industrial Engineering*, Vol. 57 No. 1, pp. 46-60.

Camarinha-Matos, L.M., Paraskakis, I. and Afsarmanesh, H. (2009b), Leveraging knowledge for innovation in collaborative networks 10th IFIP WG 5.5 Working Conference on Virtual Enterprises, PRO-VE 2009, Thessaloniki.

Camelo-Ordaz, C., Fern_andez-Alles, M., Ruiz-Navarro, J. and Sousa-Gine, E. (2011), The intrapreneur and innovation in creative firms, *International Small Business Journal*, Vol. 30 No. 5, pp. 513-535.

Carbonell, P., Rodriguez-Escudero, A.I. and Pujari, D. (2009), Customer involvement in new service development: an examination of antecedents and outcomes, *Journal of Product Innovation Management*, Vol. 26 No. 5, pp. 536-550.

Carbonell, P., and Rodriguez-Escudero, A.-I. (2014). Antecedents and consequences of using information from customers involved in new service development. *Journal of Business and Industrial Marketing*, *29*(2), 112–122. http://doi.org/10.1108/JBIM-04-2012-0071

Cardon, M. S., Gregoire, D. A., Stevens, C. E., and Patel, P. C. (2012). Measuring entrepreneurial passion: Conceptual foundations and scale validation. *Journal of Business Venturing*, *28*(3), 373–396. http://doi.org/10.1016/j.jbusvent.2012.03.003

Cardon, M. S., and Kirk, C. P. (2015). Entrepreneurial Passion as Mediator of the Self-Efficacy to Persistence Relationship. *Entrepreneurship: Theory and Practice*, *39*(5), 1027–1050. http://doi.org/10.1111/etap.12089

Cardon, M.S., Wincent, J., Singh, J., and Drnovsek, M. (2009). The nature and experience of entrepreneurial passion. *Academy of Management Review*, *34*(3), 511–532.

© University of Pretoria

Carlgren, L., Rauth, I., and Elmquist, M. (2016). Framing Design Thinking : The Concept in Idea and Enactment. *Creativity and Innovation Management*, *25*(1), 38–57. http://doi.org/10.1111/caim.12153

Cavalcante, S., Kesting, P., and Ulhoi, J. (2011). Business model dynamics and innovation: (re)establishing the missing linkages. *Management Decision*, *49*(8), 1327–1342. http://doi.org/10.1108/00251741111163142

Chandler, G. N., Broberg, J. C., and Allison, T. H. (2014). CUSTOMER VALUE PROPOSITIONS IN DECLINING INDUSTRIES: DIFFERENCES BETWEEN INDUSTRY REPRESENTATIVE AND HIGH-GROWTH FIRMS. *Strategic Entrepreneurship Journal*, *8*(1), 27–47. http://doi.org/10.1002/sej.1181

Chandler, G., Dahlqvist, J., and Davidsson, P. (2002). *Opportunity recognition processes: A taxonomy and outcome implications.* In W.D. Bygrave, C.G. Brush, P. Davidsson, J. Fiet, P.G. Greene, R.T. Harrison, M. Lerner, G.D. Meyer, J. Sohl, and A. Zacharakis (Eds.), Frontiers of entrepreneurship research (pp. 38–48). Wellesley, MA: Babson College

Chandler, G., DeTienne, D., and Lyon, D. (2003). Outcome implications of opportunity creation/discovery processes. Frontiers of entrepreneurship research. Available at http://fusionmx.babson.edu/entrep/fer/BABSON2003/XVI/XVI-P1/XVI-P1.html, retrieved 17 June 2016

Chang, Y. C., Chang, H. T., Chi, H. R., Chen, M. H., and Deng, L. L. (2012). How do established firms improve radical innovation performance? the organizational capabilities view. *Technovation*, *32*(7–8), 441–451. http://doi.org/10.1016/j.technovation.2012.03.001

Chatterjee, S. (2013). Simple Rules for Designing Business Models. *California Management Review*, *55*(2), 97–124. http://doi.org/10.1525/cmr.2013.55.2.97

Chen, C.C., Greene, P.G. and Crick, A. (1998). Does entrepreneurial self efficacy distinguish entrepreneurs from managers? *Journal of Business Venturing*, *Vol. 13* No. 4, pp. 295-316

Chesbrough, H. (2007). Business model innovation: it's not just about technology anymore. *Strategy and Leadership*, *35*(7), 12–17. http://doi.org/10.1108/10878570710833714

Chesbrough, H. (2010). Business model innovation: Opportunities and barriers. *Long Range Planning*, *43*(2–3), 354–363. http://doi.org/10.1016/j.lrp.2009.07.010

Chesbrough, H. W. (2012). Open Innovation: Where We've Been and Where We're Going. *Research-Technology Management*, *55*(August), 20–27. http://doi.org/10.5437/08956308X5504085

© University of Pretoria

Chiu, F. -C. (2013). Fit between future thinking and future orientation on creative imagination. *Thinking Skills and Creativity*, 7(3), 234-244

Christensen, C. M. (2006). The ongoing process of building a theory of disruption. *Journal of Product Innovation Management*, *23*(1), 39–55. http://doi.org/10.1111/j.1540-5885.2005.00180.x

Christensen, C. M. (2012). Surviving Disruption. Retrieved May 4, 2016, from https://hbr.org/2012/12/surviving-disruption

Christensen, C. M. (2013). Disruptive Innovation. Retrieved May 7, 2016, from http://www.claytonchristensen.com/key-concepts/

Christensen, C. M. (2015). Jobs to be Done | Christensen Institute. Retrieved May 4, 2016, from http://www.christenseninstitute.org/key-concepts/jobs-to-be-done/

Christensen, C. M., Gregersen, H. B., and Dyer, J. (2011). *The Innovator's DNA: Mastering the Five Skills of Dsruptive Innovators* (Illustrate). Massachusetts: Harvard Business Review Press.

Christensen, C. M., Hall, T., Dillon, K., and Duncan, D. S. (2016). Know Your Customers' Jobs to Be Done. *Harvard Business Review*, (September).

Christensen, C. M., Raynor, M., and McDonald, R. (2015). The Big Idea: What is disruptive innovation? *Harvard Business Review*, (December), 44–56. Retrieved from https://github.com/google/physical-web/blob/master/documentation/introduction.md

Christensen, C. M., and Raynor, M. (2003). *The Innovator's Solution.* Boston: Harvard Business School Press.

Christensen, C. M., Scott, A. and Roth, E. (2004). *Seeing What's Next.* Boston: Harvard Business School Press.

Christensen, P., Madsen, O. and Peterson, R. (1994) *Conceptualizing entrepreneurial opportunity recognition.* In: Hills G (ed) Marketing and entrepreneurship: research ideas and opportunities. Quorom Books, Westports

Churchill, N. and Lewis, V. (1983). The five stages of business growth. *Harvard Business Review*, 61, 30–50.

Cianciolo, A.T., Matthew, C., Sternberg, R.J., Wagner, R.K. 2006. *Tacit knowledge, practical intelligence, and expertise. In The Cambridge Handbook of Expertise and Expert Performance*, Ericsson KA, Charness N, Hoffman RR, Feltovich PJ (eds). Cambridge University Press: New York; 613–632.

© University of Pretoria

Clarke, I. and Mackaness, W. (2001). Management intuition: An interpretative account of structure and content of decision schemas using cognitive maps. *Journal of Management Studies*, 38, 147–172

Colombo, M.G., Grilli, L. and Piva, E. (2006), In search of complementary assets: the determinants of alliance formation of high-tech start-ups, *Research Policy*, Vol. 35 No. 8, pp. 1166-1199.

Conway, M.A., Singer, J.A., and Tagini, A. (2004). The self and autobiographical memory: Correspondence and coherence. *Social Cognition*, 22(5), 491–529.

Cooper-Thomas, H. D., and Wright, S. (2013). Person-environment misfit: the neglected role of social context. *Journal of Managerial Psychology*, *28*(1), 21–37. http://doi.org/10.1108/02683941311298841

Cooper, R. G., and Sommer, A. F. (2016). Promising New Approach and a New Research Opportunity. *Journal of Product Innovation Management*, *33*(5), 513–526. http://doi.org/10.1111/jpim.12314

Cooper, R.G., Edgett, S.J. and Kleinschmidt, E.J (2002), 'Optimizing the stage-gate process: what best-practice companies do. *Research Technology Management*, *Vol. 45 No. 5,* September-October, pp. 21-27.

Cope, J. (2005). Toward a dynamic learning perspective of entrepreneurship. *Entrepreneurship: Theory and Practice*, *29*(4), 373–397. http://doi.org/10.1111/j.1540-6520.2005.00090.x

Corbett, A.C. (2007). Learning asymmetries and the discovery of entrepreneurial opportunities. *Journal of Business Venturing*, 22: 97–118.

Corbett AC, Katz JA. 2012. Introduction: the action of entrepreneurs. Advances in Entrepreneurship, Firm Emergence and Growth 14: ix–xix.

Covin, J. G., and Lumpkin, G. T. (2011). Entrepreneurial orientation theory and research: Reflections on a needed construct. *Entrepreneurship: Theory and Practice*, *35*(5), 855–872. http://doi.org/10.1111/j.1540-6520.2011.00482.x

Covin, J.G. and Miles, M.P. (1999). Corporate entrepreneurship and the pursuit of competitive advantage. *Entrepreneurship: Theory and Practice*, *Vol. 23* No. 3, pp. 47-63.

Covin, J. G., Green, K. M. and Slevin, D. P. 2006. Strategic process effects on the entrepreneurial orientation–sales growth rate relationship. *Entrepreneurship Theory and Practice* 30: 57–81

© University of Pretoria

Covin, J.G., Slevin, D.P., and Heeley, M.B. (2001). Strategic decision making in an intuitive vs. technocratic mode: Structural and environmental considerations. *Journal of Business Research*, 52, 51–67

Cowden, B. J., and Alhorr, H. S. (2013). Disruptive innovation in multinational enterprises. *Multinational Business Review*, *21*(4), 358–371. http://doi.org/10.1108/MBR-05-2013-0027

Creswell, J. (1998). *Qualitative inquiry and research design: Choosing among five traditions. Thousand Oaks*, CA: Sage.

Crossan, M.M., Lane, H.W., and White, R.E. (1999). An organizational learning framework: From intuition to institution. *Academy of Management Review*, 24, 522–537

Csikszentmihalyi, M. (1996) *Creativity*. New York: HarperCollins.

Damasio, A. (1994), *Descartes' Error*, Penguin Books, New York, NY

Dane, E., Pratt, M.G. 2007. Exploring intuition and its role in managerial decision making. *Academy of Management Review* 32(1): 33–54

Danneels, E. (2004). *Disruptive technology reconsidered: a critique and research agenda. Journal of Product Innovation Management*, 21(4), pp. 246–258

Davidsson, P. (2012). Entrepreneurial opportunity and the entrepreneurship nexus: A reconceptualization. Paper presented at the Annual Meeting of the Academy of Management.

Dawson, A., and Hirt, M. (2016). Digital strategy: Understanding the economics of disruption. Retrieved May 7, 2016, from http://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/digital-strategy-understanding-the-economics-of-disruption

Day, G. S. (1990). *Market-driven strategy: Processes for creating value.* New York: The Free Press.

de Jong, M., and van Dijk, M. (2015). Disrupting beliefs: A new approach to business-model innovation. Retrieved April 4, 2016, from http://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/disrupting-beliefs-a-new-approach-to-business-model-innovation

De Koning, A. (2003) *Opportunity development: a socio-cognitive perspective*. In: Katz, J., Shepherds, D. (eds) Advances in entrepreneurship, firm emergence and growth: cognitive approaches to entrepreneurship research, *Vol 6.* Elsevier, Oxford, pp 265–314

De Vos, A. S. (1998). *Research at grass roots* (First). Pretoria: JL van Schaik Publishers.

© University of Pretoria

Delgado García, J. B., De Quevedo Puente, E., and Blanco Mazagatos, V. (2015). How affect relates to entrepreneurship: A systematic review of the literature and research agenda. *International Journal of Management Reviews*, *17*(2), 191–211. http://doi.org/10.1111/ijmr.12058

Demil, B., and Lecocq, X. (2010). Business Model Evolution : In Search of Dynamic Consistency. *Long Range Planning*, *43*, 227–246. http://doi.org/10.1016/j.lrp.2010.02.004

Den Butter, F., and Es-Saghir, A. (2013), Productivity effects of trade and product innovations: an empirical analysis for 13 OECD countries. *Applied Economics*, *Vol. 45* No. 31, pp. 4376-4382.

Denning, S. (2016a). Christensen updates disruption theory. *Strategy and Leadership*, *44*(2), 10–16. http://doi.org/10.1108/SL-01-2016-0005

Denning, S. (2016b). How to make the whole organization “Agile”. *Strategy and Leadership*, *44*(4), 10–17. http://doi.org/10.1108/SL-06-2016-0043

Diamandis, P. H., and Kotler, S. (2015). *Bold: How to Go Big, Create Wealth and Impact the World*. New York: Simon and Schuster

Dijksterhuis, A., Aarts, H. and Smith, K.P. (2005), *The power of the subliminal: perception and possible applications*; in Hassin, R.R., Uleman, J.S. and Bargh, J.A. (Eds), The New Unconscious, Oxford University Press, New York, NY

Dimov, D. (2007). From opportunity insight to opportunity intention: the importance of person–situation learning match. *Entrepreneurship Theory and Practice*, 31, pp. 561–583

Dimov, D. (2007a). Beyond the single-person, single-insight attribution in understanding entrepreneurial opportunities. *Entrepreneurship Theory and Practice,* 31, pp. 713–731.

Douglas, E.J. and Shepherd, D.A. (2002). Self-employment as a career choice: attitudes, entrepreneurial intentions, and utility maximization. *Entrepreneurship Theory and Practice*, *Vol. 26* No. 3, pp. 81-90

Doz, Y.L. and Kosonen, M. (2010), Embedding strategic agility, *Long Range Planning*, Vol. 43 Nos 2/3, pp. 370-382.

Druehl, C.T. and Schmidt, G.M. (2008). A strategy for opening a new market and encroaching on the lower end of the existing market. *Production and Operations Management*, 17(1), pp. 44–60

© University of Pretoria

Duhamel, F., Reboud, S., and Santi, M. (2014). Capturing value from innovations: the importance of rent configurations. *Management Decision*, *52*(1), 122–143. http://doi.org/10.1108/MD-03-2013-0169

Dunbar, R. L. M., Garud, R., & Raghuram, S. (1996). A frame for deframing in strategic analysis. *Journal of Management Inquiry*, 5(1), 23–34.

Dunne, D. D., and Dougherty, D. (2016). Abductive Reasoning : How Innovators Navigate in the Labyrinth of Complex Product Innovation. *Organization Studies*, *37*(2), 131–159. http://doi.org/10.1177/0170840615604501

Dyer, J. H., Gregersen, H. B., and Christensen, C. (2008). Entrepreneur behaviors, opportunity recognition, and the origins of innovative ventures. *Strategic Entrepreneurship Journal*, *2*(4), 317–338. http://doi.org/10.1002/sej.59

Echeverri, P., & Skålen, P. (2011). Co-creation and co-destruction–a practice theory based study of interactive value formation. *Marketing Theory*, 11(3), 351–373

El Bassiti, L., and Ajhoun, R. (2013). Toward an Innovation Management Framework: A Life-Cycle Model with an Idea Management Focus. *International Journal of Innovation*, *4*(6), 551–559. http://doi.org/10.7763/IJIMT.2013.V4.460

Endres, A.M., Woods, C.R. (2007) The case for more subjectivist research on how entrepreneurs create opportunities. *International Journal of Entrepreneurial Behaviour* Res 13(4):223–234

Epting, F. R., and Paris, M. E. (2006). A Constructive Understanding of the Person: George Kelly and Humanistic Psychology. *The Humanistic Psychologist*, *34*(1), 21–37. http://doi.org/10.1207/s15473333thp3401_4

Epstein, S. (2010). Demystifying intuition: what it is, what it does, and how it does it. *Psychological Inquiry*, 21, pp. 295–312

Ericsson, K.A. (2006). The influence of experience and deliberate practice on the development of superior expert performance. In Ericsson, K.A., Charness, N., Hoffman, R. and Feltovich, J. (eds), The Cambridge Handbook of Expertise and Expert Performance. New York, NY: Cambridge University Press.

Eriksson K, Johanson J, Majkgard A (1997) Experiential knowledge and cost in the internationalization process. *Journal International Busssiness Studies* 28(2):337–360

© University of Pretoria

Ettlie, J. E., Groves, K. S., Vance, C. M., and Hess, G. L. (2014). Cognitive style and innovation in organizations. *European Journal of Innovation Management*, *17*(3), 311–326. http://doi.org/10.1108/EJIM-11-2012-0101

Felin, T., and Zenger, T. R. (2009). ENTREPRENEURS AS THOERISTS: ON THE ORIGINS OF COLLECTIVE BELIEFS AND NOVEL STRATEGIES. *Strategic Entrepreneurship Journal*, *3*(1), 127–146. http://doi.org/10.1002/sej.67

Feltovich PJ, Prietula MJ, Ericsson KA. 2006. Studies of expertise from psychological perspectives. In The Cambridge Handbook of Expertise and Expert Performance, Ericsson KA, Charness N, Hoffman R, PJ Feltovich (eds). Cambridge University Press: New York.

Fereday, J., and Muir-Cochrane, E. (2006). Demonstrating Rigor Using Thematic Analysis: A Hybrid Approach of Inductive and Deductive Coding and Theme Development. *International Journal of Qualitative Methods*, *5*(1), 80–92. http://doi.org/10.1063/1.2011295

Fisher, G. (2012). Effectuation, Causation, and Bricolage: A Behavioural Comparison of Emerging Theories in Entrepreneurship Research. *Entrepreneurship Theory and Practice*, 1019–1051. http://doi.org/10.1111/j.1540-6520.2012.00537.x

Foss, N.J., Klein, P.G. (2012) *Organizing entrepreneurial judgment: a new approach to the firm*. Cambridge University Press, Cambridge

Foss NJ, Klein PG (2010) Entrepreneurial alertness and opportunity discovery: origins, attributes, critique. In: Landstrom H, Lohrke F (eds) Historical foundations of entrepreneurship research. Edward Elgar, Northampton

Frank, H., Lueger, M. and Korunka, C. (2007). The significance of personality in business start-up intentions, start-up realization and business success. *Entrepreneurship and Regional Development*, *Vol. 19* No. 3, pp. 227-251

Franke, N., von Hippel, E. and Schreier, M. (2006), Finding commercially attractive user innovations: a test of lead-user theory*, *Journal of Product Innovation Management*, Vol. 23 No. 4, pp. 301-315.

Friedrich von den Eichen, S., Freiling, J., and Matzler, K. (2015). Why business model innovations fail. *Journal of Business Strategy*, *36*(6), 29–38. http://doi.org/10.1108/JBS-09-2014-0107

Gaglio, C.M., Kat, J.A. (2001) The psychological basis of opportunity identification: entrepreneurial alertness. *Small Bus Econ* 16(2):95–111

© University of Pretoria

Gaesser, B., Spreng, R. N., Mclelland, V. C., Addis, D. R., and Schacter, D. L. (2014). Imagining the future: evidence for a hippocampal contribution to constructive processing. *Hippocampus*, *23*(12), 1–20. http://doi.org/10.1002/hipo.22152.Imagining

Gans, J.S. and Stern, S. (2003), The product market and the market for 'ideas': commercialization strategies for technology entrepreneurs, *Research Policy*, Vol. 32 No. 2, pp. 333-350.

Gans, J.S. and Persson, L. (2013), Entrepreneurial commercialization choices and the interaction between IPR and competition policy, *Industrial and Corporate Change*, Vol. 22 No. 1, pp. 131-151.

Gans, J. (2016a). *The Disruption Dilemma*. Cambridge: The MIT Press

Gans, J. (2016b). THE OTHER DISRUPTION - When innovations threaten the organizational model. *Harvard Business Review*, (March)

Garcia, R. and Calantone, R. (2002) 'A critical look at technological innovation typology and innovativeness terminology: a literature review', *Journal of Product Innovation Management*, *Vol. 19*, No. 2, pp.110–132

Garud, R., Gehman, J., & Kumaraswamy, A. (2011). Complexity arrangements for sustained innovation: Lessons from 3M Corporation. Organization Studies, 32, 737–767.

Gatewood, E.J., Shaver, K.G., and Gartner, W.B. (1995). A longitudinal study of cognitive factors influencing start-up behaviours and success at venture creation, *Journal of Business Venturing*, *Vol. 10* No. 5, pp. 371-391

Gassmann, O., Frankenberger, K., and Csik, M. (2015). *The Business Model Navigator: 55 Models That Will Revolutionise Your Business* (1 edition). New Jersey: FT Press. Retrieved from https://www.amazon.com/Business-Model-Navigator-Models-Revolutionise/dp/1292065818

Grandori, A. (2010). A rational heuristic model of economic decision making. *Rationality and Society*, 22, 477–504.

Gilbert, C.G. (2001). *A Dilemma in Response: Examining the Newspaper Industry's Response to the Internet*. Unpublished DBA thesis, Harvard Business School, Cambridge, MA.

Gilovich, T. and Medvec, V.H. (1994). The temporal pattern to the experience of regret. *Journal of Personality and Social Psychology*, 67(3), 357–365

Gist, M. (1987). Self-efficacy: implications for organizational behaviour and human resource management. *Academy of Management Journal*, *Vol. 12*, pp. 472-485

© University of Pretoria

Gorgievski, M. J., and Stephan, U. (2016). Advancing the Psychology of Entrepreneurship: A Review of the Psychological Literature and an Introduction. *Applied Psychology*, *65*(3), 437–468. http://doi.org/10.1111/apps.12073

Govindarajan, V. and Kopalle, P.K. (2006). The usefulness of measuring disruptiveness of innovations ex post in making ex ante predictions. *Journal of Product Innovation Management*, 23, pp. 12–18

Grant, A., Grant, G., and Gallate, J. (2012). *Who killed creativity?* Melbourne: Jossey-Bass A Wiley imprint

Greer, C. R., and Lei, D. (2012). Collaborative Innovation with Customers: A Review of the Literature and Suggestions for Future Research. *International Journal of Management Reviews*, *14*(1), 63–84. http://doi.org/10.1111/j.1468-2370.2011.00310.x

Grönroos, C. (2008). Service logic revisited: who creates value? And who co-creates? *European Business Review*, 20(4), 298–314.

Grönroos, C., & Helle, P. (2010). Adopting a service logic in manufacturing. Conceptual foundation and metrics for mutual value creation. *Journal of Service Management*, 21(5), 564–590.

Grönroos, C., and Voima, P. (2013). Critical service logic: Making sense of value creation and co-creation. *Journal of the Academy of Marketing Science*, *41*(2), 133–150. http://doi.org/10.1007/s11747-012-0308-3

Gruber M, MacMillan IC, Thompson JD. (2008). Look before you leap: market opportunity identification in emerging technology firms. *Management Science* 54(9): 1652–1665.

Guest, G., Bunce, A., and Johnson, L. (2006). How Many Interviews Are Enough ? An Experiment with Data Saturation and Variability. *Family Health International*, *18*(1), 59–82. http://doi.org/10.1177/1525822X05279903

Gustafsson, A., Kristensson, P., and Witell, L. (2012). Customer co-creation in service innovation: a matter of communication? *Journal of Service Management*, *23*(3), 311–327. http://doi.org/10.1108/09564231211248426

Gutman, J. (1982). A means-end chain model based on consumer categorization processes. *Journal of Marketing*, 46 (Spring), 60–72.

Haeussler, C. (2011), The determinants of commercialization strategy: idiosyncrasies in British and German biotechnology, *Entrepreneurship Theory and Practice*, Vol. 35 No. 4, pp. 653-681.

© University of Pretoria

Hagel, J., Brown, J., and Davison, L. (2008). Shaping Strategy in a World of Constant Disruption. Retrieved May 7, 2016, from https://hbr.org/2008/10/shaping-strategy-in-a-world-of-constant-disruption

Hakkarainen, K., and Talonen, T. (2014). The Innovation Funnel Fallacy. *International Journal of Innovation Science*, *6*(2), 63–72. http://doi.org/10.1260/1757-2223.6.2.63

Hang, C. C., Garnsey, E., and Ruan, Y. (2015). Disruptive innovation and entrepreneurial opportunity. *Technovation*, *39–40*, 83–93. http://doi.org/10.1016/j.technovation.2014.11.005

Hang, C. C., and Ruan, Y. (2015). Opportunities for disruption. *Technovation*, *39*, 83–93. http://doi.org/10.1016/j.technovation.2014.11.005

Hansen, D.J., Shrader, R., & Monllor, J. (2011). Defragmenting definitions of entrepreneurial opportunity. *Journal of Small Business Management,* 49, 283–304

Harper, S.C. (1989). *Intuition: What separates executives from managers.* In W.H. Agor (Ed.), Intuition in organizations (pp. 111–124). Newbury Park, CA: Sage Publications.

Harris, L. C., Fisk, R. P., and Sysalova, H. (2016). Exposing Pinocchio customers: investigating exaggerated service stories. *Journal of Service Management*, *27*(2), 63–90. http://doi.org/10.1108/JOSM-06-2015-0193

Harwell, M. R. (2011). *Research Design in Qualitative/Quantitative/Mixed Methods* (2nd ed.). Minnesota: SAGE Publications. http://doi.org/10.4135/9781483351377.n11

Hassabis, D., Kumaran, D., and Maguire, E. A. (2007). Using Imagination to Understand the Neural Basis of Episodic Memory. *The Journal of Neuroscience*, *27*(52), 14365–14374. http://doi.org/10.1523/jneurosci.4549-07.2007

He, Z.L., Lim, K. and Wong, P.K. (2006), Entry and competitive dynamics in the mobile telecommunications market, *Research Policy*, Vol. 35 No. 8, pp. 1147-1165.

Heinonen, K., & Strandvik, T. (2009). Monitoring value-in-use of e-service. *Journal of Service Management*, 20(1), 33–51.

Helkkula, A., Kelleher, C., & Pihlström, M. (2012). Characterizing value as an experience: implications for service researchers and managers. *Journal of Service Research*, 15(1), 59–75.

Helft, M. (2012). Fortune Exclusive: Larry Page on Google - Fortune. Retrieved May 1, 2016, from http://fortune.com/2012/12/11/fortune-exclusive-larry-page-on-google/

© University of Pretoria

Hill, C.W.T. and Rothermael, F.T. (2003), The performance of incumbent firms in the face of radical technological innovation, *Academy of Management Review*, Vol. 28 No. 2,pp. 257-274.

Hill, L. A., Brandeau, G., Truelove, E., and Lineback, K. (2014). Collective genius. *Harvard Business Review*, *92*(6). http://doi.org/10.1016/j.outlook.2015.02.004

Hmieleski, K.M. and Corbett, A.C. (2008). The contrasting interaction effects of improvisational behavior with entrepreneurial self-efficacy on new venture performance and entrepreneur work satisfaction. *Journal of Business Venturing*, 23(4), 482–496.

Holbrook, M. B. (1994). The nature of customer value–An axiology of services in the consumption experience. In R. T. Rust & R. L. Oliver (Eds.), Service quality: New directions in theory and practice. Thousand Oak: Sage.

Holbrook, M. B. (1999). Introduction to consumer value. In M. B. Holbrook (Ed.), Customer value. A framework for analysis and research (pp. 1–28). London: Routledge.

Holcomb, T.R., Ireland, R., Holmes, R.M., Hitt, M. (2009). Architecture of entrepreneurial learning: exploring the link among heuristics, knowledge, and action. *Entrepreneurship Theory and Practice* 33: 167–192

Horton, A. (1999). Forefront: A simple guide to successful foresight. *The Journal of Futures Studies, Strategic Thinking and Policy*, *1*(1), 5–12.

Houser-Marko, L. and Sheldon, K.M. (2006). Motivating behavioral persistence: The self-as-doer construct. *Personality and Social Psychology Bulletin*, 32(8), 1037–1049.

Howard, J. A. (1977). *Consumer behavior: Application of theory*. New York: McGraw-Hill.

Hsu, Y. (2015). The Comparison of Mediating Models for Stimulating Imagination with Psychological and Environmental Factors The Comparison of Mediating Models for Stimulating Imagination with Psychological and Environmental Factors. *International Journal of Learning, Teaching and Educational Research*, *12*(July 2015), 13–27.

Hsu, Y. (2016). A value cocreation strategy model for improving product development performance. *Journal of Business and Industrial Marketing*, *31*(5). http://doi.org/10.1108/JBIM-11-2014-0221

Imai, M. (1986), Kaizen: *The Key to Japan's Competitive Success*, Random House, New York, NY.

Immelt, J. (2015). Accelerating South Africa's economic transformation. Retrieved May 7, 2016, from http://www.mckinsey.com/global-themes/middle-east-and-africa/accelerating-south-africas-economic-transformation

© University of Pretoria

Ireland, R. D., Hitt, M. A., and Sirmon, D. G. (2003). A model of strategic enterpreneurship: The construct and its dimensions. *Journal of Management*, *29*(6), 963–989. http://doi.org/10.1016/S0149-2063(03)00086-2

Ireland, R.D., Covin, J.G. and Kuratko, D.F. (2009). Conceptualizing corporate entrepreneurship strategy. *Entrepreneurship: Theory and Practice*, *Vol. 33* No. 1, pp. 19-46.

Isaack, T.S. (1978). Intuition: An ignored dimension of management. *Academy of Management Review*, 3 917–922.

Isenberg, D.J. (1984). How senior managers think. *Harvard Business Review*, 62(6), 81–90

Ismail, S., Malone, M., van Geest, Y., and Diamandis, P. (2014). *Exponential Organizations: Why new organizations are ten times better, faster, and cheaper than yours* (Illustrate). New York: Diversion Books.

Johanson J, Vahlne J (1977) The internationalization process of the firm—a model of knowledge development and increasing foreign market commitment. *Journal International Business Studies* 8:23–32

Johansson-Skoldberg, U., Woodilla, J., and Cetinkaya, M. (2013). Design thinking: Past, present and possible futures. *Creativity and Innovation Management*, *22*(2), 121–146. http://doi.org/10.1111/caim.12023

Johnson, M., Christensen, C. M., and Kagermann, H. (2008). Reinventing Your Business Model. *Harvard Business Review*, (December), 50–60.

Johnson, M.K. and Sherman, S.J. (1990). *Constructing and reconstructing the past and the future in the present.* In E.T. Higgins and R.M. Sorrentino (Eds.), Handbook of motivation and cognition: Foundations of social behavior (*Vol. 2*, pp. 482–526). New York: Guilford Press.

Johnson, S. (2010). *Where good ideas come from by Steve Johnson - Video*. Retrieved from https://www.ted.com/talks/steven_johnson_where_good_ideas_come_from?language=en

Johnson, V. (2007). What is organizational imprinting? Cultural entrepreneurship in the founding of the Paris opera. *The American Journal of Sociology*, 113(1), 97–127

Junarsin, E., (2009). Managing discontinuous innovation. *International Management Review* 5 (1), 10–18.

Kahneman, D. and Lovallo, D. (1994). Timid choices and bold forecasts: A cognitive perspective on risk taking. *Management Science*, 39(1), 17-31

© University of Pretoria

Kaish, S., Gilad, B. (1991) Characteristics of opportunities search of entrepreneurs versus executives: sources, interests, and general alertness. *Journal of Business Venturing* 6:45–61

Kalyar, M.N. (2011). Creativity, self-leadership and individual innovation. *The Journal of Commerce*, *Vol. 3* No. 3, pp. 20-28

Karimi, J., and Walter, Z. (2016). Corporate Entrepreneurship, Disruptive Business Model Innovation Adoption, and Its Performance: The Case of the Newspaper Industry. *Long Range Planning*, *49*(3), 342–360. http://doi.org/10.1016/j.lrp.2015.09.004

Karnaze, M. M. (2013). A Constructivist Approach to Defining Human Emotion: From George Kelly to Rue Cromwell. *Journal of Constructivist Psychology*, *26*(3), 194–201. http://doi.org/http://dx.doi.org.myaccess.library.utoronto.ca/10.1080/10720537.2013.787327

Katz, J.A. and Gartner, W.B. (1988). Properties of emerging organizations. *Academy of Management Review*, 13(3), 429–441.

Keeley, L., Ryan, P., Brian, Q., and Helen, W. (2013). *Ten Types of Innovation: The Discipline of Building Breakthroughs*. John Wiley and Sons

Kelley, D., Singer, S., and Herrington, M. (2015). *Global Entrepreneurship Monitor 2015 / 16 GLOBAL REPORT*. Retrieved from http://www.gemconsortium.org/report

Kelley, T., and J. Littman. 2005. *The ten faces of innovation: IDEO's strategies for beating the devil's advocate and driving creativity throughout your organization*. New York: Doubleday.

Khalifa, A. S. (2004). Customer value: a review of recent literature and an integrative configuration. *Management Decision,* 42(5), 645–666.

Khanagha, S., Volberda, H., and Oshri, I. (2014). Business model renewal and ambidexterity : structural alteration and strategy formation process during transition to a Cloud business model. *R and D Management*, *44*(3), 322–340

Khatri, N. and Ng, A. (2000). The role of intuition in strategic decision making. *Human Relations*, 53, 57–86

Kickul, J. and Zaper, J.A. (2000). Understanding the knot: do personal and organizational determinants influence entrepreneurial intentions? *Journal of Small Business Entrepreneurship*, *Vol. 15* No. 3, pp. 57-77

Kickul, J., Gundry, L.K., Barbosa, S.D., and Whitkanack, L. (2009). Intuition versus analysis? Testing differential models of cognitive style on entrepreneurial self-efficacy and the new venture creation process. *Entrepreneurship Theory and Practice*, 33(2), 439–453

© University of Pretoria

Kidwell, B. and Jewell, R.D. (2008), The influence of past behavior on behavioral intent: an information-processing explanation, *Psychology & Marketing*, Vol. 25 No. 12, pp. 1151-1166.

Kim, W. C., and Mauborgne, R. (2015). *Blue Ocean Strategy* (Expanded e). New York: Harvard Business Review Press

King, A. A., and Baatartogtokh, B. (2015). How useful is the theory of disruptive innovation? *MIT Sloan Management Review*, *57*(1), 77–90

Kingdon, M. (2012). *The Science of Serendipity* (1st ed.). New York: John Wiley and Sons

Kirzner IM (1973) *Competition and entrepreneurship*. University of Chicago Press, Chicago

Kirzner IM (1979) *Perception, opportunity, and profit*. University of Chicago Press, Chicago

Kirzner IM (1985) *Discovery and the capitalist process*. University of Chicago Press, Chicago

Kirzner IM (1995) *The subjectivism of Austrian economics*. In: Meijer, G. (ed) New perspectives on Austrian economics. Routledge, London, pp 11–22

Kirzner IM (1997) *Entrepreneurial discovery and the competitive market processes: an Austrian approach*. *Journal Economic Literature,* 35:60–85

Kock, A., Heising, W., and Gemünden, H. G. (2014). How ideation portfolio management influences front-end success. *Journal of Product Innovation Management*, *32*(4), 539–555. http://doi.org/10.1111/jpim.12217

Koen, P.A., Bertels, H., Elsum, I.R., Orroth, M., Tollett, B.L., (2010). Breakthrough innovation dilemmas. *Research Technology Management*, 48–51.

Koestler, A. (1976). *The act of creation.* London: Hutchinson

Kolb, A.Y., Kolb, D.A. (2005). Learning styles and learning spaces: enhancing experiential learning in higher education. *Academy of Management Learning and Education* 4(2): 193–212

Komulainen, H. (2014), The role of learning in value co-creation in new technological B2B services, *Journal of Business&Industrial Marketing*, Vol. 29 No. 3, pp. 238-252.

Kristensson, P., Gustafsson, A. and Archer, T. (2004), Harnessing the creative potential among users, *Journal of Product Innovation Management*, Vol. 21 No. 1, pp. 4-14.

Krueger N.F. Jr. (2003) *The cognitive psychology of entrepreneurship*. In: Acs ZJ, Audretsch DB (eds) Handbook of entrepreneurship research. Kluwer Academic, London

© University of Pretoria

Krueger, N.F. (2009). *Entrepreneurial intentions are dead: Long live entrepreneurial intentions.* In A.L. Carsrud and M. Brännback (Eds.), Understanding the entrepreneurial mind, international studies in entrepreneurship (pp. 51–72). New York: Springer

Krueger, N.F., Reilly, M.D., and Carsrud, A.L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing*, 15(5–6), 411–432

Lam, W. (2004), New venture creation in two Chinese subcultures: Hong Kong and Shanghai, (PhD thesis). Nottingham Trent University, Nottingham.

Lam, W. (2010). Funding gap, what funding gap? Financial bootstrapping. *International Journal of Entrepreneurial Behavior and Research*, *16*(4), 268–295. http://doi.org/10.1108/13552551011054480

Leifer, R., McDermott, C., O'Connor, G.C., Peters, L., Rice, M., & Veryzer, W. (2000). *Radical innovation: How mature companies can outsmart upstarts.* Boston, MA: Harvard Business School Press.

Lepore, J. (2014). The Disruption Machine - The New Yorker. Retrieved May 8, 2016, from http://www.newyorker.com/magazine/2014/06/23/the-disruption-machine

Leticia Santos-Vijande, M., González-Mieres, C. and Ángel López-Sánchez, J. (2013), An assessment of innovativeness in KIBS: implications on KIBS'co-creation culture, innovation capability, and performance, *Journal of Business & Industrial Marketing*, Vol. 28 No. 2, pp. 86-102.

Levinthal DA. (1997). Adaptation on rugged landscapes. *Management Science* 43(7): 934–950.

Lettl, C., Herstatt, C. and Gemuenden, H.G. (2006), Users' contributions to radical innovation: evidence from four cases in the field of medical equipment technology, *R&D Management,* Vol. 36 No. 3, pp. 251-272.

Li, Y. (2008), Duration analysis of venture capital staging: a real options perspective, *Journal of Business Venturing*, Vol. 23 No. 5, pp. 497-512

Liedtka, J. 1998, Strategic Thinking: Can it be Taught? Long Range Planning, 31,1: 120–129

Liedka, J. (2006). Using Hypothesis-Driven thinking in strategy consulting. *Darden Business Publishing, University of Virginia*, (February), 1–9. http://doi.org/10.2139/ssrn.907959

Liedtka, J., and T. Ogilvie. (2011). Designing for growth. New York: Columbia Business Press.

© University of Pretoria

Liedtka, J. (2015). Perspective: Linking Design Thinking with Innovation Outcomes through Cognitive Bias Reduction. *Journal of Product Innovation Management*, *32*(6), 925–938. http://doi.org/10.1111/jpim.12163

Liien, G.L., Morrison, P.D., Searls, K., Sonnack, M. and von Hippel, E. (2002), Performance assessment of the lead user idea-generation process for new product development, Management Science, Vol. 48 No. 8, pp. 1042-1059.

Linkner, J. (2014). The Road to Reinvention: How to Drive Disruption and Accelerate Transformation. San Francisco: Jossey-Bass.

Lin, C.Y.-Y. and Liu, F.-C. (2012). A cross-level analysis of organizational creativity climate and perceived innovation. *European Journal of Innovation Management*, *Vol. 15* No. 1, pp. 55-76.

Linna, P. (2013). BRICOLAGE AS A MEANS OF INNOVATING IN A RESOURCE-SCARCE ENVIRONMENT: A STUDY OF INNOVATOR-ENTREPRENEURS AT THE BOP. *Joumal of Developmental Entrepreneurship*, *18*(3), 1–24. http://doi.org/10.1142/S1084946713500155

Liozu, S.M., Hinterhuber, A., Boland, R. and Perelli, S. (2012), The conceptualization of value-based pricing in industrial firms, *Journal of Revenue &Pricing Management*, Vol. 11 No. 1, pp. 12-34.

Logan, R. A. 2007. Shakespeare's Marlowe: The Influence of Christopher Marlowe on Shakespeare's Artistry, Routledge; New edition; 260 pgs, 978-0754657637, United Kingdom

Lucas, H.C., Jr., (2012). *The Search for Survival: Lessons from Disruptive Technologies*. Praeger, Santa Barbara, CA.

Lumpkin, G. T., and G. G. Dess. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review* 21: 135–72

Lumpkin, G.T., Hills, G., & Shrader, R. (2004). *Opportunity recognition. In H.P. Welsch (Ed.), Entrepreneurship: The way ahead* (pp. 86–103). New York: Routledge.

Lundmark, E., and Westelius, A. (2014). Entrepreneurship as elixir and mutagen. *Entrepreneurship: Theory and Practice*, *38*(3), 575–600. http://doi.org/10.1111/etap.12004

Lüthje, C. and Herstatt, C. (2004), The lead user method: an outline of empirical findings andissues for future research, *R/D Management,* Vol. 34 No. 5, pp. 553-568.

Lyon, D. W., Lumpkin, G. T., and Dess, G. G. 2000. Enhancing entrepreneurial orientation research: Operationalizing and measuring a key strategic decision making process. *Journal of Management* 26: 1055–85

© University of Pretoria

Mack, T. (2012), Rethinking 'return on investment': what we really need to invest in. *The Futurist*, *Vol. 46* No. 2, pp. 36-40

Mageau, G.A., Vallerand, R.J., Charest, J., Salvy, S.J., Lacaille, N., Bouffard, T. and Koestner, R. (2009). On the development of harmonious and obsessive passion: the role of autonomy support, activity specialization, and identification with the activity. *Journal of Personality*, *Vol. 77* No. 3, pp. 601-646.

Margolin, V. (1997), Getting to know the user, *Design Studies*, Vol. 18 No. 3, pp. 227-236.

Mark, D. R., Bouwman, H., and Kaaker, T. (2013). BUSINESS MODEL ROADMAPPING : A PRACTICAL APPROACH TO COME FROM AN EXISTING. *International Journal of Innovation Management*, *17*(1). http://doi.org/10.1142/S1363919613400069

Markman, G.D., Baron, R.A., and Balkin, D.B. (2005). Are perseverance and self-efficacy costless? Assessing entrepreneurs' regretful thinking. *Journal of Organizational Behavior*, *26*(1), 1–19

Markman, G.D., Baron, R.A., and Balkin, D.B. (2005). Are perseverance and self-efficacy costless? Assessing entrepreneurs' regretful thinking. *Journal of Organizational Behavior*, *26*(1), 1–19.

Markman, K.D., Gavanski, I., Sherman, S.J., and McMullen, M.N. (1993). The mental simulation of better and worse possible worlds. *Journal of Experimental Social Psychology*, *29*(1), 87–109

Martin, R. (2009). *The design of business: Why design thinking is the next competitive advantage*. Boston, MA: Harvard Business Press.

Martin, S. (2013). Stop Listening to Your Customers. *Harvard Business Review*. Retrieved from https://hbr.org/2013/01/stop-listening-to-your-custome

Matzler, K., Uzelac, B., and Bauer, F. (2014a). Intuition: the missing ingredient for good managerial decision-making. *Journal of Business Strategy*, *35*(6), 31–40. http://doi.org/10.1108/JBS-12-2012-0077

Matzler, K., Uzelac, B., and Bauer, F. (2014b). Intuition's value for organizational innovativeness and why managers still refrain from using it. *Management Decision*, *52*(3), 526–539. http://doi.org/10.1108/MD-08-2013-0404

McDermott, C.M., O'Connor, G.C., (2002). Managing radical innovation: on overview of emergent strategy issues. *Journal of Product Innovation Management* 19, 424–438.

© University of Pretoria

McFadzean, E., O'Loughlin, A., and Shaw, E. (2005). Corporate entrepreneurship and innovation part 1: the missing link. *European Journal of Innovation Management*, *8*(3), 350–372. http://doi.org/10.1108/14601060510610207

McLaughlin, P., Bessant, J., Smart, P., (2008). Developing an organization culture to facilitate innovation. *International Journal of Technology Management* 44 (3/4), 298–323.

McMullen, J. and Shepherd, A. (2006). Entrepreneurial action and the role of uncertainty in the theory of the entrepreneur. *Academy of Management Review, 31*, 132–152

Mets, T. (2009), Creating global business model for knowledge-intensive smes: the small

transition country cases, *Economics & Management,* Vol. 14 No. 14, pp. 466-475.

Mickahail, B. (2015). Corporate Implementation of Design Thinking for Innovation and Economic Growth. *Journal of Strategic Innovation and Sustainability*, *10*(2), 67–79

Miller, C.C. and Ireland, R.D. (2005). Intuition in strategic decision making: friend or foe in the fast-paced 21st century? *Academy of Management Executive*, 19, pp. 19–30

Miller, D. and Friesen, P.H. (1982). Innovation in conservative and entrepreneurial firms: two models of strategic momentum. *Strategic Management Journal*, *Vol. 3* No. 1, pp. 1-25

Miller, D.T. and McFarland, C. (1986). Counterfactual thinking and victim compensation: A test of norm theory. *Personality and Social Psychology Bulletin*, 12(4), 513–519

Miller, K. D. (2007). RISK AND RATIONALITY IN ENTREPRENEURIAL PROCESSES. *Strategic Entrepreneurship Journal*, *1*(1), 57–74. http://doi.org/10.1002/sej

Minniti, M. & Bygrave, W. (2001). A dynamic model of entrepreneurial learning. *Entrepreneurship Theory and Practice*, 25(3), 5–16.

Mishra, P., and Sharma, R. K. (2014). A hybrid framework based on SIPOC and Six Sigma DMAIC for improving process dimensions in supply chain network. *International Journal of Quality and Reliability Management*, *31*(5), 522–546. http://doi.org/10.1108/IJQRM-06-2012-0089

Mitchell, R.K., Busenitz, L.W., Bird, B., Gaglio, C.M., McMullen, J.S., Morse, E.A., Smith, J.B., (2007) The central question in entrepreneurial cognition research *Entrepreneurship Theory Practice* 31(1):1–27

Moazed, A., and Johnson, N. L. (2016). Why Clayton Christensen Is Wrong About Uber And Disruptive Innovation. Retrieved May 1, 2016, from http://techcrunch.com/2016/02/27/why-clayton-christensen-is-wrong-about-uber-and-disruptive-innovation/

© University of Pretoria

Mohr, J. and Sarin, S. (2009), Drucker's insights on market orientation and innovation: implications for emerging areas in high-technology marketing, *Journal of the Academy of Marketing Science*, Vol. 37, Spring, pp. 85-96.

Morris, M. H., Kuratko, D. F., Schindehutte, M., and Spivack, A. J. (2012). Framing the entrepreneurial experience. *Entrepreneurship: Theory and Practice*, *36*(1), 11–40. http://doi.org/10.1111/j.1540-6520.2011.00471.x

Mousa, F.-T., and Wales, W. (2012). Founder effectiveness in leveraging entrepreneurial orientation. *Management Decision*, *50*(2), 305–324. http://doi.org/10.1108/00251741211203588

Mu, J. and Di Benedetto, C.A. (2011), Strategic orientations and new product commercialization: mediator, moderator, and interplay, *R&D Management*, Vol. 41 No. 4, pp. 337-359.

Murnieks, C.Y., Mosakowski, E., and Cardon, M.S. (2014). Pathways of passion identity centrality, passion, and behavior among entrepreneurs. *Journal of Management*, *Vol. 4* No. 6, pp. 1583-1606

Murray, D. L. (2010) Borrowing Brilliance: The Six Steps to Business Innovation by Building on the Ideas of Others, Avery, 978-1592405800, New York

Myers DG. 2002. *Intuition: Its Powers and Perils.* Yale University Press: New Haven, CT. PJ (eds). Cambridge University Press: New York; 339–354

Nagji, B., and Tuff, G. (2012). Managing Your Innovation Portfolio. *Harvard Business Review*, (May), 69

Neisser, U. (1976). *Cognition and reality*. San Francisco: Free Press.

Neale, M.R. and Corkindale, D.R. (1998), Co-developing products: involving customers earlier and more deeply, *Long Range Planning*, Vol. 31 No. 3, pp. 418-425.

Nicholls-Nixon CL, Cooper AC, Woo CY. (2000). Strategic experimentation: understanding change and performance in new ventures. *Journal of Business Venturing* 15(5): 493–521.

Nørretranders, T. (1998). *The User Illusion: Cutting Conscious Down to Size*. Viking, New York, NY.

Nordin, F., & Kowalkowski, C. (2010). Solutions offerings: a critical review and reconceptualisation. *Journal of Service Management*, 24(4), 441–459.

© University of Pretoria

Nordstrom, C., Siren, C. A., Thorgren, S., and Wincent, J. (2016). Passion in hybrd entrepreneurship: the impact of entrepreneurial teams and tenure. *Baltic Journal of Management*, *11*(2), 167–186. http://doi.org/10.1108/BJM-01-2015-0007

Norman, D. A., and Verganti, R. (2014). Incremental and Radical Innovation: Desgin Research vs Technology and Meaning Change. *MIT Design Issues*, *30*(1), 78–96. http://doi.org/10.1162/DESI_a_00250

Norton, D. W., and Pine II, B. J. (2013). Using the customer journey to road test and refine the business model. *Strategy and Leadership*, *41*(2), 12–17. http://doi.org/10.1108/10878571311318196

Oestreicher, K. (2009). Segmentation and the Jobs-to-be-done theory: A Conceptual Approach to Explaining Product Failure. *Journal of Marketing*, *5*(2), 103–122. Retrieved from http://www.northern.edu/ceib/ibc/index.html

Ojala, A. (2015). Business models and opportunity creation : How IT entrepreneurs create and develop business models under uncertainty. *Information Systems Journal*, *26*, 451–476. http://doi.org/10.1111/isj.12078

Olson, E.L. and Bakke, G. (2001), Implementing the lead user method in a high technology firm: a longitudinal study of intentions versus actions, *The Journal of Product Innovation Management*, Vol. 18 No. 6, pp. 388-395.

Ornston, D. (2014). When the High Road Becomes the Low Road : The Limits of High-Technology Competition in Finland. *Review of Policy Research*, *31*(5), 454–478.

Osterwalder, Alexander and Yves Pigneur. 2010, *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*. Chichester/GB: John Wiley & Sons Ltd.

Owens, T., and Fernandez, O. (2014). *The Lean Enterprise*. New York: John Wiley and Sons.

Oyson, M. J., and Whittaker, H. (2015). Entrepreneurial cognition and behavior in the discovery and creation of international opportunities. *Journal of International Entrepreneurship*, *13*(3), 303–336. http://doi.org/10.1007/s10843-015-0156-6

Paap, J., and Katz, R. (2004). Anticipating disruptive innovation. *Research Technology Management*, *47*(5), 13–22.

Papert, S. 1996, An Exploration in the Space of Mathematics Educations, Journal of Computers for Mathematical Learning, 1, 1: 95– 123

Pearce, R. (2012). Knowledge-seeking in multinationals and economic development: illustrations from China. *Asian Business and Management*, *Vol. 11* No. 1, pp. 8-30.

© University of Pretoria

Perdue, K. (2003). Imagination. The Chicago school of media theory. Retrieved October 02, 2016, retrieved from http://lucian.uchicago.edu/blogs/mediatheory/keywords/imagination/.

Perrin, C., Perrin, P.B., Blauth, C., Apthorp, E., Duffy, R.D., Bonterre, M. and Daniels, S. (2012), Factor analysis of global trends in twenty-first century leadership. *Leadership and Organization Development Journal*, *Vol. 33* No. 2, pp. 175-199.

Perry, C. (2001). Case Research in Marketing. *The Marketing Review*, *1*(9), 303–323.

Perry, C., Riege, A., Brown, L. (1999) Realism's role among scientific paradigms in marketing research. *Ir Mark Rev 12*(2):16–23

Perry, J. T., Chandler, G. N., and Markova, G. (2012). Entrepreneurial Effectuation: A Review and Suggestions for Future Research. *Entrepreneurship Theory and Practice*, 837–861. http://doi.org/10.1111/j.1540-6520.2010.00435.x

Phene, A., Fladmoe-Lindquist, K., Marsh, L., (2006). Breakthrough innovations in the U.S. biotechnology industry: the effects of technological space & geographic origin. *Strategic Management Journal* 27, 369–388.

Philips, W., Noke, H., Bessant, J., Lamming, R., 2006. Beyond the steady state: managing discontinuous product and process innovation. *International Journal of Innovation Management* 10 (2), 175–196.

Philipson, S. (2016). Radical innovation of a business model. *Competitiveness Review*, *26*(2), 132–146. http://doi.org/10.1108/CR-06-2015-0061

Pink, D. (2005). *A whole new mind: Why right-brainers will rule the future. New York: Riverhead Books*, Penguin Group.

Pisano, G. (2006), Profiting from innovation and the intellectual property revolution, *Research Policy*, Vol. 35 No. 8, pp. 1122-1130.

Poetz, M., Franke, N., & Schreier, M. (2014). Sometimes the Best Ideas Come from Outside Your Industry. *Harvard Business Review*, (November), 1–8.

Polder, M. and Veldhuizen, E. (2012). Innovation and competition in the Netherlands: testing the inverted-U for industries and firms. *Journal of Industry, Competition and Trade*, *Vol. 12* No. 1, pp. 67-91.

© University of Pretoria

Politis, D. (2008). Does prior start-up experience matter for entrepreneurs' learning?: A comparison between novice and habitual entrepreneurs. *Journal of Small Business and Enterprise Development*, *15*(3), 472–489. http://doi.org/10.1108/14626000810892292

Poon, J.M.L. and Ainuddin, R.A. (2006). Effects of self concept traits and entrepreneurial orientation on firm performance. *International Small Business Journal*, *Vol. 24* No. 61, pp. 61-82.

Porter, M. (1990), *The Competitive Advantage of Nations*, Free Press, New York, NY.

Porter, M.E. (2008), The five competitive forces that shape strategy, *Harvard Business Review*, Vol. 86 No. 1, pp. 78-93.

Prahalad, C.K. and Ramaswamy, V. (2004), Co-creation experiences: The next practice in value creation, *Journal of Interactive Marketing*, Vol. 18 No. 3, pp. 5-14.

Prahalad, C.K. (2006), The innovation sandbox, *Strategy_Business*, Vol. 44, pp. 1-8.

Prahalad, C.K. (2010), Innovation's holy grail, *Harvard Business Review*, Vol. 88 7/8, pp. 132-141.

Prahalad, C.K. (2012). Bottom of the pyramid as a source of breakthrough innovations. *Journal of Product Innovation Management, Vol. 29 No. 1*, pp. 6-12.

Raskin, J.D. (2002) Constructivism in psychology: personal construct psychology, radical constructivism, and social constructionism. *American Communcation Journal*, Vol. 5 No. 3, pp. 1-17

psychology. Pace University Press, New York, pp 1–25

Rawson, A., Duncan, E., Jones, C., MacBeth, P., Thomas, J. C., Tombazian, C. M., and Iordanova, K. (2013). The Truth About Customer Experience. *Harvard Business Review*, *91*(11), 26.

Read, S., Song, M. and Smit, W. (2009), A meta-analytic review of effectuation and venture performance, *Journal of Business Venturing*, Vol. 24 No. 6, pp. 573-587

Renko, M., El Tarabishy, A., Carsrud, A. L., and Brännback, M. (2015). Understanding and measuring entrepreneurial leadership style. *Journal of Small Business Management*, *53*(1), 54–74. http://doi.org/10.1111/jsbm.12086

Richard, O.C., Barnett, T., Dwyer, S. and Chadwick, K. (2004). Cultural diversity in management, firm performance, and the moderating role of entrepreneurial orientation dimensions. *Academy of Management Journal*, *Vol. 47* No. 2, pp. 255-66

© University of Pretoria

Ries, E. (2011). *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses*. Crown Business, NY.

Rigby, D.K., Sutherland, J. and Takeuchi, H.: Embracing Agile, Harvard Business Review, April 2016.

Riquelme, H. and Watson, J. (2002). Do venture capitalists' implicit theories on new business success/failure have empirical validity? *International Small Business Journal*, *20*, 395–418.

Roach, D. C., Ryman, J. A., and Makani, J. (2016). Effectuation, innovation and performance in SMEs: an empirical study. *European Journal of Innovation Management*, *19*(2), 214–238. http://doi.org/10.1108/EJIM-12-2014-0119

Robert Mitchell, J., Friga, P. N., and Mitchell, R. K. (2005). Untangling the intuition mess: Intuition as a construct in entrepreneurship research. *Entrepreneurship: Theory and Practice*, *29*(6), 653–679. http://doi.org/10.1111/j.1540-6520.2005.00102.x

Robinson, M.J. and Cottrell, T.J. (2007), Investment patterns of informal investors in the Alberta private equity market, *Journal of Small Business Management*, Vol. 45 No. 1, pp. 47-67.

Roese, N.J. (1994). The functional basis of counterfactual thinking. *Journal of Personality and Social Psychology*, 66, 805–818.

Rogers, E.M. (1995), *Diffusion of Innovations*, The Free Press, New York, NY.

Rubera, G., and Kirca, A. H. (2012). Firm Innovativeness and Its Performance Outcomes: A Meta-Analytic Review and Theoretical Integration. *Journal of Marketing*, *76*(3), 130–147. http://doi.org/10.1509/jm.10.0494

Ruseva, R., and Ruskov, P. (2015). The Reverse Business-Modelling Framework: A new Approach Towards Action-Oriented Entrepreneurship. *European Conference on Innovation* (Figure 1), 796–804.

Sánchez-Fernández, R., & Iniesta-Bonilla, Á. M. (2007). The concept of perceived value: a systematic review of the research. *Marketing Theory*, 7(4), 427–451.

Sánchez-Fernández, R., Iniesta-Bonilla, Á. M.,&Holbrook, M. B. (2009). The conceptualisation and measurement of consumer value in services. *International Journal of Market Research*, 51(1), 93–113.

Sande´n, B. (2007), *The customer's role in new service development,* (Doctoral dissertation). Karlstad University Studies. Karlstad, Sweden

© University of Pretoria

Sarasvathy, S.D. (2001). Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of Management Review*, 26, 243–263

Sarasvathy, S.D. (2008), *Effectuation: Elements of Entrepreneurial Expertise*, Edward Elgar, Cheltenham, Glos.

Sarpong, D., and O'Regan, N. (2014). The Organizing Dimensions of Strategic Foresight in High-Velocity Environments. *Strategic Change*, *23*, 125–132. http://doi.org/10.1002/jsc.1965

Saunders, M., and Lewis, P. (2012). *Doing Research In Business and Management*. Essex: Pearson Education Limited.

Schadler, T. (2016). After The Unicorn Carnage, Does Digital Disruption Take A Holiday? Retrieved May 2, 2016, from http://blogs.forrester.com/ted_schadler/16-02-18-after_the_unicorn_carnage_does_digital_disruption_take_a_holiday

Schindehutte, M., Morris, M.H., and Allen, J. (2006). *Beyond achievement: Entrepreneurship as extreme experience*. Small Business Economics, 27(4), 49–68.

Schlaegel, C., and Koenig, M. (2014). Determinants of Entrepreneurial Intent: A Meta-Analytic Test and Integration of Competing Models. *Entrepreneurship: Theory and Practice*, *38*(2), 291–332. http://doi.org/10.1111/etap.12087

Schmiele, A. (2012), Drivers for international innovation activities in developed and emerging countries. *Journal of Technology Transfer*, *Vol. 37* No. 1, pp. 98-123.

Schmitt-Rodermund, E. and Vondracek, F.W. (2002). Occupational dreams, choices and aspirations: adolescents' entrepreneurial prospects and orientations. *Journal of Adolescence, Vol. 25* No. 1, pp. 65-78

Schoemaker, P. J. H., and Krupp, S. (2015). The Power of Asking Pivotal Questions. *MIT Sloan Management Review*, *56*(2), 39–47. Retrieved from http://search.proquest.com.library.capella.edu/docview/1650910695?accountid=27965%5Cn http://wv9lq5ld3p.search.serialssolutions.com.library.capella.edu/?ctx_ver=Z39.88-2004andctx_enc=info:ofi/enc:UTF-8andrfr_id=info:sid/ProQ%3Aabiglobalandrft_val_fmt=info:ofi/fmt:

Schumpeter, J A. (1934). *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle*. Cambridge, MA.: Harvard University Press

Schwab, K. (2014). *The Global Competitiveness Report 2014-2015 (Vol. 5)*. Geneva: World Economic Forum.

© University of Pretoria

Scott, A. (2014). *The First Mile: A Launch Manual for Getting Great Ideas into the Market*. Harvard Business Review Press. Retrieved from https://hbr.org/product/the-first-mile-a-launch-manual-for-getting-great-ideas-into-the-market/an/10437E-KND-ENG

Shan, W. (1990), An empirical analysis of organizational strategies by entrepreneurial high-technology firms, *Strategic Management Journal,* Vol. 11 No. 2, pp. 129-139.

Shane, S., Venkataraman, S. (2000) The promise of entrepreneurship as a field of research. *Academy Management Review* 25(1):217–226

Shane, S. (2003). *A general theory of entrepreneurship: The individual-opportunity nexus.* Northampton, MA: E. Elgar.

Shapero, A. and Sokol, L. (1982). *Social dimensions of entrepreneurship.* In C.A. Kent, D.L. Sexton, and K.H. Vesper (Eds.), The encyclopedia of entrepreneurship (pp. 72–90). Englewood Cliffs, NJ: Prentice-Hall

Shapiro, S. and Spence, M.T. (1997). Managerial intuition: A conceptual and operational framework. *Business Horizons*, *40(1)*, 63–68

Shepherd, D.A., Douglas, E.J. and Shanley, M. (2000). New venture survival: ignorance, external shocks, and risk reduction strategies. *Journal of Business Venturing*, *Vol. 15*, pp. 393-410

Shook, C.L., Priem, R.L., and McGee, J.E. (2003). Venture creation and the enterprising individual: A review and synthesis. *Journal of Management, 29(3)*, 379–399.

Short, J.C., Ketchen, D.J., Shook, C.L., & Ireland, R.D. (2010). The concept of “opportunity” in entrepreneurship research: Past accomplishments and future challenges. *Journal of Management,* 36, 40–65.

Simon, H.A. (1981), *The Sciences of the Artificial,* MIT Press, Cambridge.

Simon, H.A. (1987). Making management decisions: The role of intuition and emotion. *Academy of Management Executive*, *1,* 57–64

Singh, R.P. (2000) *Entrepreneurial opportunity recognition through social networks*. Garland, New York

Sjoberg, L. (2007), The distortion of beliefs in the face of uncertainty, *International Journal of Management and Decision Making*, Vol. 8 No. 1, pp. 1-29.

© University of Pretoria

Slater, S.F. and Mohr, J.J. (2006), Successful development and commercialization of technological innovation: insights based on strategy type, J*ournal of Product Innovation Management*, Vol. 23 No. 1, pp. 26-33.

Slater, S. F., Mohr, J. J., and Sengupta, S. (2014). Radical product innovation capability: Literature review, synthesis, and illustrative research propositions. *Journal of Product Innovation Management*, *31*(3), 552–566. http://doi.org/10.1111/jpim.12113

Slotte-Kock, S., and Coviello, N. (2010). Entrepreneurship research on network processes: A review and ways forward. *Entrepreneurship: Theory and Practice*, *34*(1), 31–57. http://doi.org/10.1111/j.1540-6520.2009.00311.x

Smith, J. A. (1996). Beyond the divide between cognition and discourse: Using interpretative phenomenological analysis in health psychology. *Psychology and Health*, 11, 261–271.

Smith, J. A. (2004). Reflecting on the development of interpretative phenomenological analysis and its contribution to qualitative research in psychology. *Qualitative Research in Psychology*, 1, 39–54.

Smith, J. A., & Eatough, V. (2007). *Interpretative phenomenological analysis*. In E. Lyons & A. Coyle (Eds.), Analysing qualitative data in psychology (pp. 35–50). London: Sage.

Smith, J. A., & Osborn, M. (2008). *Interpretative phenomenological analysis.* In J. Smith (Ed.), Qualitative psychology: A practical guide to research methods (pp. 53–80). London: Sage.

Smith JB, Colgate M. (2007). Customer value creation: a practical framework. *Journal of Marketing Theory and Practice* 15(1): 7–23.

Snow, M.S. (2002) Competition as a discovery procedure. *Quarterly Journal of Austrian Economics* 5(3):9–23

Stajkovic, A. and Luthans, F. (1998). Self-efficacy and work-related performance: a meta-analysis. *Psychological Bulletin*, *Vol. 124*, pp. 240-261.

Statistics South Africa. (2016). *Statistical release Quarterly Labour Force Survey*. *Quarterly Labour Force Survey, Quarter 2, 2016* (*Vol. PO211*). Pretoria. Retrieved from http://www.statssa.gov.za/?page_id=1854andPPN=P0211

Stevenson, HH., Jarillo, J.C. (1990) A paradigm of entrepreneurship: entrepreneurial management. *Strateg Manag* J 11(Summer Special Issue):17–27

Stokes, D. R. (2006). The evaluative charater of imaginative resistance. *British Journal of Aesthetics*, 46(4), 387-405

© University of Pretoria

Stringer, R., 2000. How to manage radical innovation. *California Management Review* 42 (4), 70–88.

Suddaby, R. (2010). Editor's comments: Construct clarity in theories of management and organization. *Academy of Management Review*, 35, 346–357.

Sundgren, M. and Styhre, A. (2007), Creativity and the fallacy of misplaced concreteness in new drug development. *European Journal of Innovation Management*, *Vol. 10* No. 2, pp. 215-235.

Sutherland, J. (2014). Scrum: *The Art of Doing Twice The Work In Half The Time*, Crown Business,

Swan, K. S., and M. Luchs. 2011. From the special issue editors: Product design research and practice: Past, present and future. *Journal of Product Innovation Management* 28 (3): 321–26.

Sweida, G. L., and Reichard, R. J. (2013). Gender stereotyping effects on entrepreneurial self-efficacy and high-growth entrepreneurial intention. *Journal of Small Business and Enterprise Development*, *20*(2), 296–313. http://doi.org/10.1108/14626001311326743

Teece, D. J. (2010). Business models, business strategy and innovation. *Long Range Planning*, *43*(2–3), 172–194. http://doi.org/10.1016/j.lrp.2009.07.003

Teece, D., G. Pisano, and A. Shuen. 1997. Dynamic capabilities and strategic management. *Strategic Management Journal* 18 (7): 509–33.

Teng, B. S. (2007). Corporate entrepreneurship activities through strategic alliances: A resource-based approach toward competitive advantage. *Journal of Management Studies*, *44*(1), 119–142. http://doi.org/10.1111/j.1467-6486.2006.00645.x

Thiel, P., and Masters, B. (2014). *Zero to One: Notes on Startups or How to build the Future*. New York: Crown Business.

Tversky, A. and Kahneman, D. (1974), Judgment under uncertainty: heuristics and biases, *Science*, Vol. 185 No. 4157, pp. 1124-1131.

Turner, D. W. (2010). Qualitative Interview Design: A Practical Guide for Novice Investigators. *The Qualitative Report*, *15*(3), 754–760. http://doi.org/http://www.nova.edu/ssss/QR/QR15-3/qid.pdf

Tushman, M. L., and O'Reilly, C. a. (2011). Organizational Ambidexterity in Action: *University of California, Berkeley*, *53*(4).

© University of Pretoria

Urban, G.L. and von Hippel, E. (1998), Lead user analysis for the development of new industrial products, *Management Science*, Vol. 34 No. 5, pp. 569-582.

Vaghely, I. P., and Julien, P. A. (2010). Are opportunities recognized or constructed?. An information perspective on entrepreneurial opportunity identification. *Journal of Business Venturing*, *25*(1), 73–86. http://doi.org/10.1016/j.jbusvent.2008.06.004

Van Doorn, S., Jansen, J. J. P., Van Den Bosch, F. A. J., and Volberda, H. W. (2013). Entrepreneurial orientation and firm performance: Drawing attention to the senior team. *Journal of Product Innovation Management*, *30*(5), 821–836. http://doi.org/10.1111/jpim.12032

Van Hoeck, N., Ma, N., Ampe, L., Baetens, K., Vandekerckhove, M., and Van Overwalle, F. (2013). Counterfactual thinking: An fMRI study on changing the past for a better future. *Social Cognitive and Affective Neuroscience*, *8*(5), 556–564. http://doi.org/10.1093/scan/nss031

Vargo, S. L., & Lusch, R. F. (2008). Service dominant logic: continuing the evolution. *Journal of the Academy of Marketing Science*, 36(1), 1–10.

Vázquez, J. P., Bienenstock, M. J., and Zuckerman, E. W. (2016). Debating Disruptive Innovation. *MIT Sloan Management Review*, *57*(3).

Venkataraman, S. (1997) *The distinctive domain of entrepreneurship research: an editor's perspective*. In: Katz, J., Brockhaus, R. (eds) Advances in entrepreneurship, firm emergence, and growth, *Vol 3*. JAI Press, Greenwich, pp 119–138

Venkataraman, S., Sarasvathy, S.D. (2001) Strategy and entrepreneurship: outlines of an untold story. In: Hitt, M.A., Freeman, R.E., Harrison, J.S. (eds) *The Blackwell handbook of strategic management.* Blackwell, Oxford, pp 650–668

Verganti, R. (2009). *Design Driven Innovation: Changing the rules of competition by radically innovating what things mean*. Boston, Massachusetts, USA: Harvard Business Press.

Verganti, R. (2016). The Innovative Power of criticism. *Harvard Business Review*, (February), 88–95.

Verhees, F.J. and Meulenberg, M.T.G. (2004), Market orientation, innovativeness, product

innovation, and performance in small firms, *Journal of Small Business Management,* Vol. 42 No. 2, pp. 134-154.

Viney, L.L. (1992) Social science research in the 1990s: the contribution of constructivism. *Int J Constr Psychol* 5:295–305

© University of Pretoria

Vogel, P. (2016). From Venture Idea to Venture Opportunity. *Entrepreneurship Theory and Practice*, (June), 1–29. http://doi.org/10.1111/etap.12234

von Hippel, E. (1986), Lead users: an important source of novel product concepts, Management *Science*, Vol. 32 No. 7, pp. 791-805.

von Hippel, E. (1994), Sticky information and the locus of problem solving: implications for innovation, *Management Science*, Vol. 40 No. 4, pp. 429-439. Science, Vol. 32 No. 7, pp. 791-805.

Wagner, T. (2012). *Creating Innovators* (1st ed.). New York: Scribner.

Walsh, P.R. (2012), Innovation nirvana or innovation wasteland? Identifying commercialization strategies for small and medium renewable energy enterprises, *Technovation*, Vol. 32 No. 1, pp. 32-42.

Watts, R.M., (2001). Commercializing discontinuous innovations. *Research-Technology Management*, 26–31.

Wegner, D.M. (1987). Transactive memory:Acontemporary analysis of the group mind. In B. Mullen, and G.R. Goethals (Eds.). Theories of group behavior (pp. 185–208). New York: Springer-Verlag.

Weick, K. E. (2005). Organizing and failures of imagination. *International Public Management Journal*, 8, 425–438.

Welter, C., Mauer, R., and Wuebker, R. J. (2016). BRIDGING BEHAVIORAL MODELS AND THEORETICAL CONCEPTS : EFFECTUATION AND BRICOLAGE IN THE OPPORTUNITY CREATION FRAMEWORK. *Strategic Entrepreneurship Journal*, *10*, 5–20. http://doi.org/10.1002/sej

West, G. P. (2007). Collective cognition: When entrepreneurial teams, not individuals, make decisions. *Entrepreneurship: Theory and Practice*, *31*(1), 77–102. http://doi.org/10.1111/j.1540-6520.2007.00164.x

Wierzbicki, A.P. (1997). On the role of intuition in decision making and some ways of multicriteria aid of intuition. *Journal of Multi-Criteria Decision Analysis*, 6, 65–76

Wiklund, J. (1999). The sustainability of the entrepreneurial orientation–performance relationship. *Entrepreneurship: Theory and Practice*, *Vol. 24* No. 1, pp. 37-48

Wing, J. (2014). Computational Thinking Benefits Society, *40th Anniversary Blog of Social Issues in Computing*.

© University of Pretoria

Woodall, T. (2003). Conceptualising 'value for the customer': an attributional, structural and dispositional analysis. *Academy of Marketing Science Review*, 12.

Woodruff, R. B., & Gardial, S. F. (1996). *Know your customers—new approaches to understanding customer value and satisfaction*. Oxford: Blackwell.

Woodruff, R. B. (1997). Customer value: The next source for competitive edge. *Journal of the Academy of Marketing Science*, 25(2), 193–153.

Woolley, A., Chabris, C., Pentland, A., Hashmi, N., and Malone, T. (2010). Evidence for a Collective Intelligence Factor in the Performance of Human Groups. *SCIENCE*, *330*(9), 686–699. http://doi.org/10.1017/CBO9781107415324.004

World Economic Forum. The Global Competitiveness Report The Global Competitiveness Report 2015-2016. (K. Schwab, Ed.) (2015). Geneva, Switzerland: World Economic Forum. Retrieved from www.weforum.org/gcr.

Wright, R. S. (2012). Why Innovations Are Arguments. *MIT Sloan Management Review*, *53*(53317), 95–96. http://doi.org/10.1017/CBO9781107415324.004

Wrigley, C., and Straker, K. (2016). Designing innovative business models with a framework that promotes experimentation. *Strategy and Leadership*, *44*(1), 11–19. http://doi.org/10.1108/SL-06-2015-0048

Wu, S., Matthews, L., and Dagher, G.K. (2007). Need for achievement, business goals, and entrepreneurial persistence. *Management Research News*, 30(12), 928–941

Ye, Q. (2016). Effectual approaches and entrepreneurship outcome: from a perspective of behavioral biases. *Journal of Small Business & Entrepreneurship*, *28*(5), 401–411. http://doi.org/10.1080/08276331.2016.1209028

Yu, D., and Hang, C. C. (2010). A Reflective Review of Disruptive Innovation Theory. *International Journal of Management Reviews*, *12*(4), 435–452. http://doi.org/10.1111/j.1468-2370.2009.00272.x

Yu, H. H. (2013). Decoding Leadership: How Steve Jobs Transformed Apple to Spearhead a Technological Informal Economy. *Journal of Business and Management*, *19*(1), 33–44. Retrieved from http://search.proquest.com/docview/1549237582?accountid=14872%5Cnhttp://sfxhosted.exlibrisgroup.com/waldenu?url_ver=Z39.88-2004andrft_val_fmt=info:ofi/fmt:kev:mtx:journalandgenre=articleandsid=ProQ:ProQ:abiglobalandatitle=Decoding+Leadership:+How+Steve+Jobs+Tran

© University of Pretoria

Zahra, S.A. (2008) The virtuous cycle of discovery and creation of entrepreneurial opportunities. *Strategic Entrepreneurial Journal* 2:243–257

Zahra, S.A. and Covin, J.G. (1995). Contextual influences on the corporate entrepreneurship-performance relationship: a longitudinal analysis. *Journal of Business Venturing*, *Vol. 10* No. 1, pp. 43-58.

Zeithaml, V. A. (1988). Consumer perception of price, quality and value: a means-ends-model and synthesis of evidence. *Journal of Marketing*, 52(July), 2–22.

Zhang, S. X., & Cueto, J. (2015). The Study of Bias in Entrepreneurship. *Entrepreneurship: Theory and Practice*, 1–36. http://doi.org/10.1111/etap.12212

Zhao, H., Seibert, S.E., and Hills, G.E. (2005). The mediating role of self-efficacy in the development of entrepreneurial intentions. *Journal of Applied Psychology*, 90(6), 1265–1272.

Zikmund, W., Babin, B., Carr, J., and Griffin, M. (2009). *Business Research Methods* (Eighth). USA: South-Western Cengage Learning.

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Appendix 1: Semi-structured interview schedule for Group 1

Consent letter for qualitative interview

Research title:
A preliminary cognitive framework towards effective ideation for disruptive innovation.

Reason for research:
I am conducting research on disruptive innovation, and trying to get a better understanding of the thinking process successful innovators follow when developing disruptive innovations. The interview is expected to last about an hour, and will assist us in getting closer to an effective cognitive framework for developing disruptive ideas.

Your participation is voluntary and you can withdraw at any time without penalty.

All data solicited will be kept confidential.

If you have any concerns, please contact either myself or my supervisor as per the details below:

Researcher name: Mr. Davlin Richardson

Supervisor name: Dr. Jeff Yu-Jen Chen

Cell Phone: +2782-371-8489

Office Tel: +2711-711-4000

Email: 442910@mygibs.co.za

Email: chenj@gibs.co.za

Signature of researcher: _____

Date: _____

Participant name and surname: _____

Signature of participant: _____

Date: _____

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Interview schedule

Interview starts with a five minute introduction explaining the background and reason for the research.

We then move to the eight questions that will be asked by the researcher in two parts, A and B.

PART A:

Question 1:

Explain your successful disruptive innovation and describe what it entails.

Question 2:

Guide me through your thought process in coming up with this innovative idea and explain what triggered your thoughts to develop this innovation?

Question 3:

What made this innovative idea different to others in that the idea was developed into a successful solution or offering?

Question 4:

How did you know that your idea would create better value for customers and how did you gain an understanding of their needs and/or mindsets?

Question 5:

Did you relate or associate your innovative idea with other concepts or offerings in developing the idea, if so how?

Question 6:

During the explanation of your thought process earlier, I am picking up the following patterns…….. Can you confirm that this is in fact the case?

PART B:

Question 7:

During my explanation of the proposed framework, would you agree that the description of your thought process earlier suggests that there are strong relationships with the following components of the model, namely …?

Question 8:

Briefly critique the proposed framework and elaborate on potential problems or pitfalls that one could face using this framework?

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Appendix 2: Semi-structured qualitative survey for Group 2

Consent letter for qualitative interview – Group 2

Research title:
A preliminary cognitive framework towards effective ideation for disruptive innovation.

Reason for research:
I am conducting research on disruptive innovation, and trying to develop a framework that will assist business leaders improve their ideation process towards disruptive innovation.

The interview is expected to last about 30 minutes, and will assist us in getting closer to an effective cognitive framework for developing disruptive ideas and in the process, improve strategy formulation.

Your participation is voluntary and you can withdraw at any time without penalty.

All data solicited will be kept confidential.

If you have any concerns, please contact either myself or my supervisor as per the details below:

Researcher name: Mr. Davlin Richardson

Supervisor name: Dr. Jeff Yu-Jen Chen

Cell Phone: +2782-371-8489

Office Tel: +2711-711-4000

Email: 442910@mygibs.co.za

Email: chenj@gibs.co.za

Signature of researcher: _____

Date: _____

Participant name and surname: _____

Signature of participant: _____

Date: _____

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Interview schedule for group 2

The researcher and supervisor of the study will teach each volunteer the cognitive framework, how to apply the model. Thereafter a trial run will be executed to ensure the understanding of the framework.

The volunteers are then requested to apply the framework that has been taught by forming a think-tank / focus group with four to five colleagues to discuss a business challenge or opportunity of which they can apply the framework. The volunteer will act as the moderator and take the group as a whole through each step of the model and explain how it should be applied. The volunteer would then need to write a short reflective piece on the following two questions:

Question 1:

Which component(s) of the framework were useful and which are not so useful when applying this model in your think-tank / focus group? If so, why so. If not, why not?

Question 2:

As a leader who facilitated the ideation process of the think-tank/ focus group, provide your thoughts on what did you do that worked well, what did you do that didn't work well and which are the areas of improvement when using the framework?

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Appendix 3: Ethical clearance approval letter

Dear Mr Davlin Richardson

Protocol Number: **Temp2016-01117**

Title: **A preliminary cognitive framework towards effective ideation for disruptive innovation.**

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

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