

**Reframing Knowledge Brokering as a Lever for Dynamic
Capabilities: Early Insights into a Business Process
Outsourcing Company in Mauritius**

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Abstract

The purpose of this study is to expand the current conceptualisation of knowledge brokering and consider how it can be used as a lever for dynamic capabilities within the specific context of a business process outsourcing company based in Mauritius. In spite of the increasing phenomenon, there is a lack of understanding around knowledge brokering and no established strategic approach to deploy knowledge brokering process across the functional areas of organisations. Though practiced haphazardly in organisations, managers and employees are unaware that they are engaged in knowledge brokering activities. The rationale of this study therefore lies in the exploration of the subject to better understand its key concepts so as to bring more lucidity and structure to knowledge brokering in organisations. This study begins with a critical review of the existing literature by unpacking the concepts of knowledge brokering and establishes its links to dynamic capabilities leading to the development of a conceptual framework which represent the main theoretical contribution of the study. The framework is used as an analytical lens to investigate knowledge brokering as a lever for dynamic capabilities in a business process outsourcing company in Mauritius. To this effect, a methodology rooted in social constructionism was developed and adopts a case-based approach to the empirical work. The methodology used for this study was represented in the form of triangulation over a range of qualitative methods and analytical techniques so as to have a more in-depth exploration and clearer understanding of the phenomenon surrounding knowledge brokering and dynamic capabilities leading to more robust set of results. A first round of unstructured interviews was carried out with eighteen knowledge brokers alongside the analysis of documentary evidence. The second phase consisted of semi-structured interviews with eight knowledge brokers to deepened understanding of some of the themes identified in Phase 1. The last phase of the multi method qualitative process took shape of a confirmatory focus group to validate the framework. The key findings suggested that sensing, the ability to identify opportunities and seizing these openings do not play a significant part of Ceridian HCM Inc. Mauritius, but rather that of North America. As much as technology supports the business in responding promptly to customers' demands, it also acts as a disruptor constantly putting the employees and senior managers under stress. Ceridian's Learning Academy has been able to keep at par with competition in developing the talent needed in general computing skills, however not very successful in the wake of artificial intelligence skills which is an imperative requirement for this industry. On the basis of the findings and conclusion, an operational framework has been developed so as to address the key issues arising from this research, thereby accounting for propositions to institutionalise knowledge brokering at Ceridian HCM Inc Mauritius. This thesis has contributed to theory by merging two stand-alone subjects into a conceptual framework which has been validated for operationalisation within Ceridian and similar business settings. This research also represents a premiere within the high middle-income countries in the southern hemisphere with focus in the outsourcing sector which has not been researched till date.

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Chapter One: Introduction

1.0 Introduction

The purpose of this study is to expand the current conceptualisation of knowledge brokering and consider how it can be used as a lever for dynamic capabilities within the context of a business process outsourcing company based in Mauritius. This introductory chapter is used as a scene-setter and provides a detailed overview of the chosen research topic, leading to a delineation of the overarching research aim and objectives and the consideration of the key contributions of the study. The chapter begins with a cursory overview of the two main subjects of concern under research in this thesis; knowledge brokering and dynamic capabilities. This is followed by an introduction to knowledge brokering and dynamic capabilities and explains how conceptualising these two concepts is key for competitive advantage. The chapter then shed light on the theoretical as well as practical background justifying the need of this research.

An overview of the practical context of business process outsourcing is then explained underlying the critical role of the knowledge brokering process within that particular context. This section then highlights the major challenges and dilemmas facing the industry with respect to the acquisition, dissemination and application of business knowledge as a prime lever of dynamic capabilities and sustainable innovation. The chapter then introduces the organisation under investigation, namely Ceridian HCM Inc. while explaining how the knowledge brokering process acts as a lever in the development of dynamic capabilities, that is crucial for competitive advantage and sustainability. After this, the research problem under this study is explained which leads to the research aim and objective of this thesis. This chapter then moves on to discuss the theoretical,

empirical and practical contribution of this research and ends by explaining the structure of the thesis.

1.1 Rationale of Study

Massingham, (2014), Eisenhardt and Martin (2000), Abbate and Coppolino (2011) purported that knowledge brokers are key for the development of dynamic capabilities, no research merging both concepts have been conducted till date. This thesis is the first piece of work that contributes not only in merging the two stand-alone subjects, knowledge brokering as a lever for dynamic capabilities, but has also developed a conceptual framework later tested, confirmed and upgraded to a practical framework possessing generative capacity for Ceridian HCM Inc. as well transferability into similar business settings. Furthermore, the rationale for this study is to clarify the blurry literature surrounding the roles of the knowledge brokers as well as the stages involved in the knowledge brokering process. The limited research conducted on the information and technology field by Kor and Mahoney (2005) and Rudolph (2017) in web services has focused solely on dynamic capabilities. Till date, no research has surfaced combining knowledge brokering and dynamic capabilities in the outsourcing sector and this thesis therefore bridges this gap in the body of literature. Additionally, most stand-alone research on either knowledge brokering or dynamic capabilities have been conducted in the United States, United Kingdom or developed countries. The fact that the world is shifting business more and more towards lower cost economies, it is essential to understand how business is happening in such low-cost countries where numerous multinationals outsource their business. Therefore, it becomes essential to understand the phenomena of knowledge brokering and dynamic capabilities in middle income economies, of which Mauritius is a prime example, and the empirical contribution this research points to. This research will therefore contribute empirically in decreasing the knowledge gap and

has set the perfect grounds to explore and expand knowledge brokering as a lever of dynamic capabilities in the business process outsourcing industry in an economy where this subject has not been researched before.

Motivations to undertake this study

The motivation to carry the study on the subject of knowledge brokering and dynamic capabilities arose from my personal exposure and observation as an HR Executive Lead in the outsourcing industry. Before joining academia, I worked in the Information Technology Enabled Services (ITES) outsourcing industry for seven years with major multinationals such as Ceridian Mauritius Inc Corporation, Accenture Mauritius, Orange Business Services and De Chazal Du Mee Consulting. Throughout my career I noticed that there were multiple streams of information that was being transferred from one place to another, one department to another, as well as across international branches and the head office. The employees and managers (who are the knowledge brokers) were actually so engaged in their work that they did not notice that they were involved in an extremely complex situation of dealing with numerous information at the same time, identify potential information that was relevant to the business and disregard unimportant ones as well as predict future trends of the industry, market and stakeholder's next move. This huge flow of information across the boundaries was phenomenal and the process was very unclear as to how the knowledge brokers were capturing information, sensing future opportunities and reconfiguring them in an industry that is constantly evolving. This curiosity of mine was eventually translated into my research proposal and eventually the thesis as I was eager to learn about the handling of information and the predictive capability of the employees.

1.2 Context of study

Theoretical context

Knowledge brokering is of crucial importance (Hargadon, 1998) in facilitating knowledge flows in business context incessantly undergoing innovation (Dunning and Ludan, 2008). The knowledge brokering process are beneficial to organisations as it provides strategic opportunities for innovation to companies (Ziam *et al.*, 2009) and support the identification, sourcing and creating of novel solutions to maintain competitive advantage (Eisenhardt and Martin, 2000). Knowledge brokering process reinforce decision making process as well as self-reinforcing capabilities leading to innovative performances (Hsu and Lim, 2013). Organisations are, therefore, in a better position to respond and flex promptly to respond to the fast-evolving demands of the dynamic market changes (Nair *et al.*, 2012) to reconfigure knowledge. As such, the knowledge brokering process play a significant role in the development of dynamic capabilities (Hargadon, 1998). Knowledge brokers act as the mediator between various sources of knowledge, whether local or global (Zhu, Chen and Dai, 2016) and facilitate the interaction among organisations, combination of complementary assets and capabilities, identification of novel ideas (Abbate and Coppelino, 2011) as well as adapting core competencies to address the demands of the rapidly changing environment (Harreld *et al.*, 2006). Knowledge brokering therefore incessantly respond to the changing business landscape while managers use dynamic capabilities to integrate build and reconfigure competencies to respond to these market changes in view of sustaining competitive advantage (Dunning and Ludan, 2008).

Although the knowledge brokering process seem to be of utmost significance in the development of dynamic capabilities in fast evolving organisations (Shapin, 1998; Graham and Tetroe 2007;

Meyers, 2010), its role as a lever in the development of dynamic capabilities through the knowledge brokering process has not been assessed till date (Massingham., 2014). As much as knowledge brokering is unexplored, its role in the development of dynamic capabilities in organisations is still 'terra incognita'. Most of the existing models on knowledge brokering have no theoretical underpinning and those with, have not considered the dynamic capabilities dimensions within fast evolving business environments. The underdeveloped concept of knowledge brokering as a lever of dynamic capabilities therefore demands further expansion and theoretical development. The informed and theoretically grounded approach to knowledge brokering and dynamic capabilities will offer opportunities to organisations to develop higher potential through knowledge-based core competencies (Hsu *et al.*, 2007), deepen coordination and socialisation ability from knowledge brokering activities (Ziam *et al.*, 2009), enact innovation, address new business opportunities (Villarroel, Taylor and Tucci, 2012) and leverage dynamic capabilities to sustain innovation and growth (Abbate and Coppolino, 2011).

Practical context

The Business Process Outsourcing is increasingly being employed by organisations to achieve performance across the entire business while taking advantage of the deep expertise of the service vendor (McIvor, 2008) so that they can focus on their core competencies and services (Belcourt, 2006). A survey carried out by Hewitt Associates pointed to the fact that 94% of their respondents had outsourced one or more of their HR functions (Gurchiek, 2005). Belcourt (2006) clearly identifies at least six major reasons for businesses to outsource; financial savings, strategic focus, access to advanced technology, improved service levels, access to specialized expertise, organisational politics and expertise skills (Shelgren,2004).

- Ceridian Human Capital Management Incorporation

Ceridian Human Capital Management Incorporation is a human capital management software vendor and human resources service provider headquartered in Minneapolis, Minnesota (Ceridian HCM Inc. Mauritius, 2019). Ceridian HCM Inc. amounting to a net worth of 5.15 billion was once the descendent of Control Data Corporation (Booker, 1992). Founded in 1957 by Seymour Cray, the father of supercomputing (Breckenridge, 1996) and William Norris, Control Data Corporation was a pivotal mainframe and supercomputer company. Control Data Corporation can be traced back to Service Bureau Corporation in 1932 when it was founded as a division of IBM (Wainwright, 2015). Seymour Cray is known to be the father of supercomputing, and has been credited for creating and innovating the supercomputer industry which has over decades lead to the high-performance computers we use nowadays (Si, 2019). The company has constantly been linked to a culture of innovation reshaping itself times and again to respond to the dynamics of the markets over decades. The timeline below represents the evolution of the company innovating itself across decades meeting the needs of its demanding and dynamic business environment. Control Data Corporation has continuously been deploying competitive strategies to rebrand and reposition the company alongside developing high-end services by adopting market-led innovative strategies (Wainwright, 2015). In 1992, Ceridian was founded as a spin-off of Control Data Corporation's restructuring process and has inculcated an innovative culture since its existence. The timeline below shows the history and evolution of Ceridian continuously innovating itself to sustain competitive advantage as an opportunity presents itself.

- **1932** – Service Bureau Corporation
- **1957** – Control Data Corporation established
- **1992** – Ceridian formed
- **2012** – Ceridian acquisition of SaaS Dayforce
- **2013** – Ceridian separates its human capital management system and payment businesses
- **2018** – Ceridian traded publicly on the New York Stock Exchange

Twenty years later, in 2012, the dynamic market conditions demanded that Ceridian innovated itself again to sustain dynamic business demands of the millenia and Ceridian acquired Dayforce Corporation – a cloud Human Capital Management solution. The acquisition also led to the split of the Ceridian into two companies (1) Ceridian Human Capital Management Holdings Inc and (2) Comdata Inc which handles the payment business. Ceridian HCM Inc. was formed on the basis that the Director of Dayforce identified a flaw within the system and sensed that this flaw could be turned into an opportunity through cloud technology that would revolutionised the business.

Headquartered in the United States, Ceridian HCM Inc. have grown into a very successful multinational with operations spanned in 19 locations across the world including Canada, Australia, United Kingdom and Ireland, Mauritius and United States. Ceridian HCM Inc. Mauritius is one of the delivery centers. Established in 2000 with 10 employees, Ceridian Mauritius has earned its position as an Employer of Choice with over 700 employees servicing all the business units within Ceridian Global (US, Canada, UK, Australia, Ireland), some additional 10 countries for international payroll services and more than 40 countries for gift card payment solutions. Ceridian HCM Inc. launched its first Innovation Challenge in 2013 encouraging employees to cultivate a change culture to strengthen our innovation capability through leveraging the energy and creativity of their people. Ceridian HCM Inc. Mauritius has a leading player in

information technology outsourcing and business process outsourcing industry in the country and continues to be so. The main areas of operation for Ceridian HCM Inc. Mauritius are Dayforce, business process outsourcing-back office operations, payroll processing, benefit and claim processing, tax services, account payable, account receivables, financial reporting, IT software development, testing, maintenance and support.

Today Ceridian HCM Inc. flagship program Dayforce, which is now hosted on cloud platform, provides human resources, payroll, benefits, workforce management, and talent management functionality. The adoption of the cloud platform proved to be a major change driver for the company as cloud computing provided an integrated service system allowing knowledge to be accessible promptly to multiple users on the same platform. Knowledge brokering is a phenomenon that is of particular relevance to Ceridian, specially where they have to deploy new knowledge to keep abreast of competition.

Knowledge brokering can prove to be crucial in driving Ceridian's HCM Inc's business as it is heavily reliant on the capabilities to sense, seize and apply valuable knowledge that can in turn generate competitive advantage and sustainable growth. As a functional activity, the knowledge brokering process enhances dynamic capabilities by giving the knowledge broker prompt access to relevant knowledge from the Ceridian HCM Inc.'s scalable platform built on modern cloud technologies. Within a business environment that is constantly undergoing change, the knowledge brokering process allows the company to leverage operations, even more so, when information and technology is under constant change, such as cloud computing. This enables the knowledge broker to develop advanced insights, predictive analysis and prompt decision making which is key for Ceridian HCM Inc. to maintain competitive advantage while operating in dynamic working environment. The knowledge brokering process therefore sustain Ceridian HCM Inc's advantaged

position to optimise management of the entire customer lifecycle, leverage cloud management for prompt service delivery, develop better consumer experience, streamline tedious workflows, meet strategic organisational insights and simplify legislative compliance thereby creating business opportunities for the organisation. The knowledge brokering process at Ceridian HCM Inc. now allows for more real time collaborations, transparency and clarity (Marston *et al.*, 2011) between the knowledge broker and the client by provisioning low-cost services and least management effort (Mell and Grance, 2011). Ceridian HCM Inc., is therefore in a position to, support the demands of the dynamic business environment by giving knowledge producers and knowledge users the opportunity to seizing the required information immediately for decision making through the knowledge brokering process. The innovative culture engrained at Ceridian HCM Inc. has continuously encouraged the knowledge brokers to incessantly thrive with agility and innovation while promoting deep domain of organisational expertise and promptly accessing relevant information for informed decision making. Ceridian HCM Inc. culture of innovation and open knowledge sharing in dynamic environment makes it a good case for the study of this thesis.

1.3 Research problem

During a preliminary investigation in the form of a social gathering with Ceridian HCM Inc.'s staffs, they revealed that the process of knowledge brokering is almost done unconsciously. The employees were not aware that they were actually engaged in the various roles of knowledge brokering as well as the process of knowledge brokering. The informal conversation also revealed the fact that some employees were totally unaware of the concept of knowledge brokering and others lacked understanding of the concept and demanded definition and explanation of what a knowledge broker is. This pointed to practical loopholes and the absence of clear agentive roles for leading the knowledge brokering process clearly and distinctively at Ceridian HCM Inc. The

lack of policies, procedures and processes surrounding lead to a haphazard approach to knowledge brokering, missing out opportunities, to such a vital process that could contribute to uplifting dynamic capabilities and the competitive advantage of Ceridian HCM Inc. This research, therefore, became of preliminary importance to inform the various knowledge brokers Ceridian HCM Inc. of the significant roles that they were contributing to their organisation so that they can, in the near future, reinforce the potential of the knowledge brokering process, dynamic capabilities and uplift their organisation's competitive advantage.

1.4 Research aim and objectives

The aim of this study is to reframe and consolidate the theoretical foundation of the concept of knowledge brokering and consider how it can be used as a lever for dynamic capabilities within the context of a business process outsourcing organisation based in Mauritius.

Objectives

1. To conduct a critical review of extant literature on knowledge brokering and expand its theoretical dimensions as a lever for dynamic capabilities
2. To explore the nature of the current process of knowledge brokering within Ceridian HCM Inc. Mauritius to identify its main components, agentive roles and to consider its key challenges and outputs
3. To critically examine, in consultation with key stakeholders, how the current process of knowledge brokering can be effectively enhanced via the reframed concept of knowledge brokering.

4. To develop, on the basis of the theoretical development and empirical insights generated in this study, a practical framework geared towards optimising the process of knowledge brokering within Ceridian HCM Inc. Mauritius and other similar organisational settings.

1.5 Contribution of study

The contribution of this research is grouped theoretical, empirical and practical. They are explained below.

Theoretical

The first layer of contribution explores and expand the concept of knowledge brokering as a lever of dynamic capabilities. Although knowledge brokers are of great importance in the development of dynamic capabilities in fast evolving organisations (Shapin, 1998; Graham and Tetroe 2007; Meyer, 2010), its contribution in the development of dynamic capabilities has not been researched till now (Massingham, 2014). As much as knowledge brokering is an unexplored subject, its role in the development if dynamic capabilities have not been assessed till now. Existing models of knowledge brokering have no theoretical underpinning. Those theoretically founded are weak and have not taken into consideration the dimensions of knowledge brokering as a lever of dynamic capabilities in fast evolving business environment. This research contributes a very first piece of work by merging the two disconnected areas of research to study how knowledge brokers are levers to the development of dynamic capabilities.

Empirical

The empirical insights of this research will cast light on knowledge brokering process on a special business process outsourcing site in Mauritius, Ceridian HCM Inc. There are not many researches which have been carried out in business process outsourcing combined with knowledge brokering

and dynamic capabilities till date. Most empirical research on dynamic capabilities till date have been carried out within various industries such as creativity (Naldi, Wikström and Bjorn Von Rimscha, 2014), manufacturing (Danneels, 2008), accountancy (Døving and Gooderham, 2008), energy generation (Helfat, 1997), technology (Kor and Mahoney, 2005) and health and medical (Karim, 2006; Pablo, Reay, Dewald and Casebeer, 2007). Though the single empirical piece of work carried out in the technology industry was by Kor and Mahoney in 2005, their research mainly focused on investment returns marketing activities as a sustainable source of competitive advantage. Furthermore, the technology considered by Kor and Mahoney was specialised in medical, surgical and dental instruments and not purely information technology related. Within the very few researches conducted on knowledge brokering and outsourcing with cloud as a platform, Rudolph (2017) analyses a case study in Amazon Web Services, a United States based service company. Battleson *et al.*, (2016) carried another piece of empirical research on dynamic capabilities and cloud computing within multiple IT organisations based in the United States. So far, though the dimensions of dynamic capabilities set the right foundation for research within business process outsourcing through cloud computing in multinationals, no research has been conducted in such industry till now. Despite the growing literature on business process outsourcing through cloud computing, there is a lack of a systematic framework to understand how business process outsourcing can help organisations achieve dynamic capabilities through the knowledge brokering process (Eisendhart and Martin, 2000), and this motivates the choice of our research methodology to inductively develop a framework (Battleson *et al.*, 2016; Rudolph, 2017). This research therefore contributes empirically to lessen this gap sets the perfect grounds to investigate knowledge brokering as a lever of dynamic capabilities in the business process outsourcing industry.

Practical

With respect to practical contribution, the subject itself as a whole is industry based and practice oriented. It is a first attempt to test a conceptual framework combining these two subjects within the industry. This tested framework represents the ability to generate capacity within Ceridian to improve competitive advantage. At a later stage the same tested framework can be used to generate capacity within other companies within dynamic business environment for competitive edge or tailor-made to suit their business needs.

1.6 Structure of study

Figure 1.1 above illustrate the flow of chapters in this thesis with supportive explanation on each corresponding stage described. The thesis starts with the introductory chapter stating the theoretical and practical research context. This is followed by the research problem from which stem the aim and objectives of this research. This chapter then ends with the theoretical, empirical and practical contribution of this research and the structure of chapters.

Chapter two, literature review, starts with unpacking the notions of knowledge brokering and develops an enhanced typology of knowledge broker roles. This is then followed by a critical analysis of existing models of knowledge brokering eventually leading to the reframing of the knowledge brokering process and its potential benefits. The chapter then moves on to developing

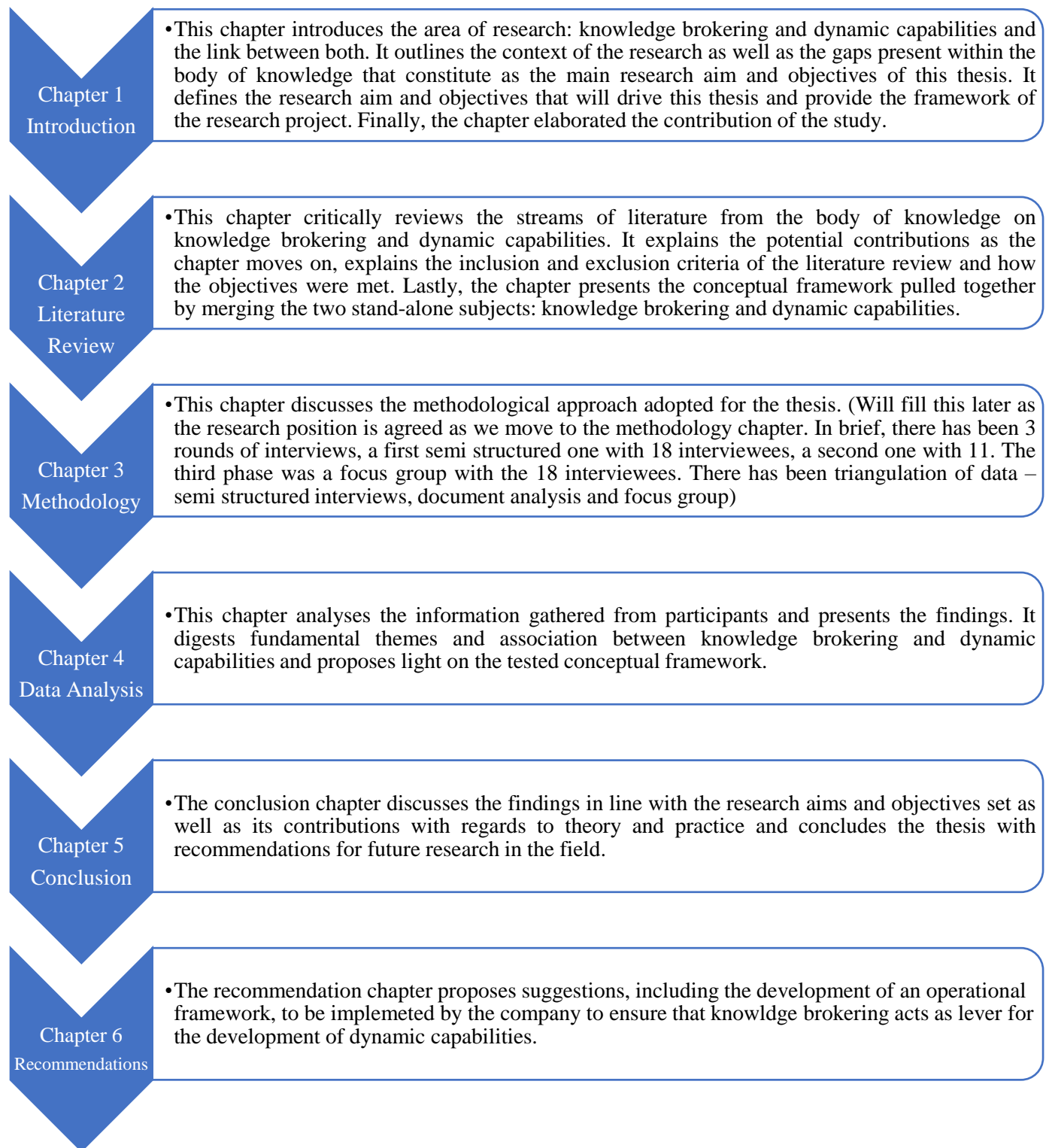


Figure 1.1 – Structure of thesis

the major contribution of this thesis, which is the development of a framework conceptualising knowledge brokering as a lever for dynamic capabilities in the business process outsourcing sector.

Chapter three provides by explaining on the research philosophy adopted which is then followed by a discussion about the case study being researched, the time frame, the data collection and the process of making sense and identifying key issues arising from the data. The chapter then covers an evaluation of the credibility of the research findings against a set of criteria including validity, reliability transferability and concludes with reflexivity on the ethical issues arising at each key stage of the research process.

Chapter four, Data Analysis, presents and distils the findings into themes and subthemes derived from existing literature as well as emerging findings. The chapter presents the analytical framework and move with an in-depth examination of the three dimensions of dynamic capabilities: sensing, seizing and reconfiguring, in the organisational context and further explains the numerous strategies adopted by Ceridian HCM Mauritius Inc to carry out such activities. This chapter ends with concluding on the analytical framework and confirming knowledge brokering as a lever for dynamic capabilities.

Chapter five revisits the research aims and objectives and explains how these have been effectively achieved. It then provides a discussion of the key findings and most importantly adds another layer of interpretation to consider the causes of the issues and concerns, providing the base for the development of recommendations in the next chapter.

Chapter six, develops a set of recommendations on the basis of the key findings and conclusion presented in the preceding chapter which sets the parameters for a concrete line of actions and an operational framework that can be institutionalised at the company being researched.

CHAPTER TWO Literature Review

2.0 Introduction

This chapter is two-fold with the first part presenting a critical overview of the historical developments of knowledge brokering to highlight the evolution of knowledge and the various roles of the broker. It starts by unpacking and clarifying the various notions surrounding the concept of knowledge brokering into its simplest components so as to clarify the understanding around the subject. This exercise leads to the development of an enhanced version for the typology of the knowledge broker which contributes to the existing literature by making clear identification and demarcation between the various roles assumed by the knowledge broker. This is followed by a review of the key theoretical foundations that have been used by previous scholars to study knowledge brokering.

2.1 Conceptualising knowledge brokering as a lever for dynamic capabilities

Chapter 2 then leads to the second part of the review entitled “Conceptualising knowledge brokering as a lever for dynamic capabilities” that establishes a strong connection between knowledge brokering and dynamic capabilities to demonstrate how a reframed concept of knowledge brokering can be used as a powerful lever for dynamic capabilities. For doing so, the chapter provides a critical analysis of existing process models of knowledge brokering that leads to the development of a reframed knowledge brokering process. Potential benefits of the enhanced model are drawn out to explain how the new enhanced model can be beneficial for individual, job, organisation and industry level. The next section of this chapter synthesises conceptual framework which explains how the knowledge brokering process and the knowledge broker roles act as a

lever for the development of dynamic capabilities which serves as justification for the derived research questions and act as an orientation map for data collection in primary research.

2.2 Selection criteria

This chapter identify existing theories and models of knowledge brokering and signal loopholes and gaps in the literature surrounding the concept of knowledge brokering. The body of literature of the subject being quite broad with various branches of literature, it was important to devise a set of criteria relevant to the research subject. The selection criteria were based in three mains categories, namely relevance, significance and theoretical building to determine the inclusion and exclusion criteria of the research.

Inclusion criteria for relevance included texts reviewed on knowledge brokering process, concepts, models and theoretical foundations of the knowledge brokering process, knowledge broker roles, benefits and challenges, sectors where knowledge brokering has been applied, dynamic capabilities and its history and evolution. The relevance of these streams of literature is important to this study as it provide the foundation to establish the links between knowledge brokering and dynamic capabilities.

As part of significance, focus have been placed on key authors and academic articles that contributed to the relevant streams of literature for this research. Key authors' works such as Gould & Fernandez (1989), Merton (1968), Marsden (1982), Simmel (1950), Burt (1992), Hargadon (1998), Oldham & McLean (1997) consolidated the enhanced concept of knowledge brokering developed in this research. A total of 138 articles on knowledge brokering was reviewed. None of the 3 books identified on knowledge brokering were relevant to the business context as the focus

were mainly on health and child wellbeing. This pointed to the fact that there is a gap in the body of literature concerning knowledge brokering in business context.

As for dynamic capabilities, the works of key authors, such as Schumpeter (1942), Penrose (1959), Nelson and Winter (1982), Prahalad and Hamel (1990), Teece (1976, 1986, 1988, 1994, 2007, 2009) and Hayes, Wheelwright and Clark (1988) were foundational and significant for this research. 64 articles were reviewed as part of the literature for dynamic capabilities alongside 14 relevant books which was streamlined to 4 main ones corresponding to the business context. The other books on dynamic capabilities were not within the inclusion criteria as the focus was mostly on medical subjects, signifying a gap in existing literature surrounding the subject.

The third selective criteria, focus on theoretical building, has been used to conceptualise knowledge brokering and dynamic capabilities. The lack of resources and body of literature combining both knowledge brokering and dynamic capabilities (Eisenhardt & Martin, 2000; Abbate & Coppelino, 2011; Meyers, 2010) in business context point out the fact that there is a significant gap in terms of research on knowledge brokering in business context, which offers the opportunity for significant research in this thesis. As a way of bridging this gap, the thesis has developed understanding of the concept of knowledge brokering and dynamic capabilities in a different context compared to where research has been carried out previously.

This research contributes theoretically by reframing the concept of knowledge brokering in the business process outsourcing environment as well as the first attempt to generate a new concept by merging the two different notions (knowledge brokering and dynamic capabilities) in a different context other than medical, health or child wellbeing. The knowledge brokering process models of key authors such as Przybycien *et al.* (2010), Oldham & McLean (1997), Berbegal-Mirabent *et al.* (2012), Dagenias *et al.* (2015) and Landry & Amara (2009) have been critically analysed to

develop the model for this study. The conceptualisation of the reframed model was reinforced by main authors' work, such as Eisenhardt & Martin (2000), Eisenhardt & Brown (1999) and Abbate & Coppelino (2011) who have written about knowledge brokering as a lever for the development of dynamic capabilities.

2.3 Unpacking the notion of Knowledge Brokering

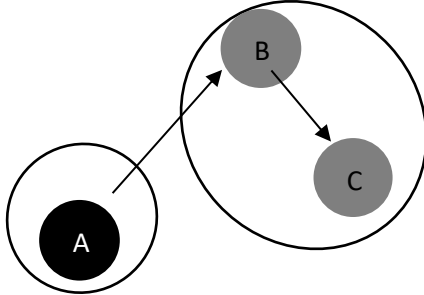
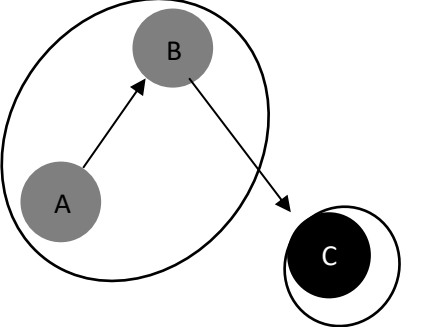
Knowledge

Philosophers such as Toulmin (1990), MacIntyre (1985:104) and Feyerabend (1999) have described how the meaning of knowledge has changed radically over the centuries. While some authors (Polanyi, 1966; Reber, 1989; Grant 1996; Smith, 2000) have placed more emphasis on tacit knowledge, others have paid more attention to explicit knowledge (Hansen *et al.*, 1999; Wah, 1999; Nonaka, 2008). Tacit knowledge can be described as knowledge that cannot be explicated (Polanyi, 2010) and is non-codifiable (Nonaka, 2001). Explicit knowledge on the other hand can be articulated, codified and accessed. Collins (2010) disputes that tacit and explicit knowledge are both important as they depend on each other. Joining Collin's (2010) line of thought, Currie and White (2012) also share the perspective that knowledge is more the connection between 'knowing' and 'doing' as being embedded within each other rather than being separate from learning and practice (Gherardi and Nocilini, 2002; Lave, 1991; Orlikowski, 2002). Organisations can sometimes be systems with uncertainty about knowledge creation (Bosjch-Sijtsema, Fruchter, Vartiainen and Ruohanaki, 2011), especially when they operate within dynamic eco-systems where knowledge creation and mobilisation are situated within networks.

The Broker

While Ward *et al.* (2009) identify brokers as middlemen, intermediaries or agents acting as negotiators, interpreters and messengers between different person, Marsden's (1982) perspective

on knowledge brokers includes the elements of knowledge flows and trust involving three or more actors who act as mediator between unconnected parties. Throughout the brokering literature, the term broker or brokerage within networks was first referred to by Simmel (1950) and was later developed by other scholars such as Gould and Fernandez (1989), Merton (1968), Marsden (1982), Taube (2004) and Bellotti (2009). The roles of brokering were identified by Gould and Fernandez in 1989. Most authors have acknowledged in some of their works, if not all, the five brokerage roles identified by Gould and Fernandez (1989). The five roles identified by Gould and Fernandez (1989) consist of the gatekeeper, representative, coordinator, cosmopolitan and liaison. Table 2.1 below describe the 5 main roles of brokerage identified by Gould and Fernandez (1989) and provides an illustration as to how the broker is linked to the various groups. In every brokerage role described below, there are 3 parties (A, B and C) involved. Each party is depicted by a specific coloured circle (grey and black) marked with the alphabets A, B or C. The boundary of the groups is represented by ellipses. Members of the same group shares the same colour and those of different groups are of different colour. In all types of brokerage roles, the broker is 'B'. The arrows indicate the flow of information between the brokers and the members.

Type of brokerage	Description	Illustration	Position of the broker (The broker is B)	Orientation of the broker
1. Gatekeeper	The broker acquires knowledge from another group and passes it over to the group he belongs to.		B acquires knowledge from a member from another group (A) and disseminate the knowledge to members of his own group (C).	The broker is an outsider to the group where knowledge is being produced. The orientation of knowledge dispersed is internal to the broker's group.
2. Representative	The representative diffuses knowledge of his own group to another group.		B acquires knowledge from a member of his group (A) and disseminate knowledge to the member of another group (C).	The broker is an insider to the group where knowledge is being produced. The orientation of knowledge dispersed is external to the broker's group.

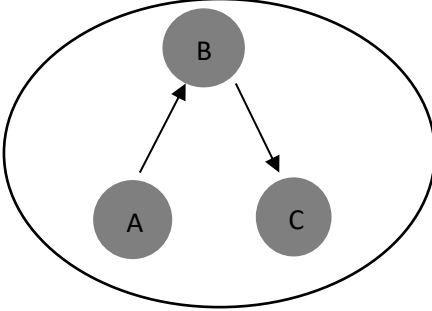
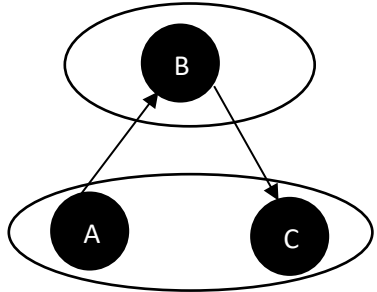
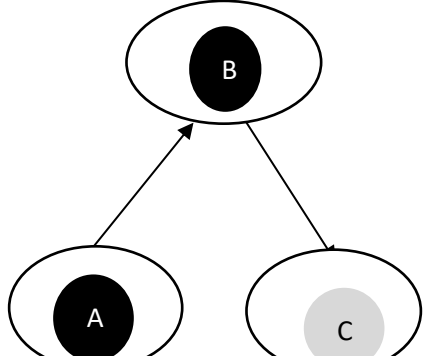
<p>3. Coordinator</p>	<p>The coordinator enhances interaction between members of the group he belongs to. The coordinator is also known as the local broker.</p>		<p>B acquires knowledge from a member of his group (A) and disseminate the knowledge to another member of his group (C).</p>	<p>The broker is an insider to the group where knowledge is being produced. The orientation of knowledge dispersed is internal to the broker's group.</p>
<p>4. Cosmopolitan</p>	<p>The cosmopolitan mediates as an outsider between members of the same group. The cosmopolitan is also known as the itinerant or the consultant.</p>		<p>B acquires knowledge from another group member (A) and disseminates it over to another member (C) in which A is located.</p>	<p>The broker is an outsider to the group where knowledge is being produced. The orientation of knowledge dispersed is external to the broker's group.</p>
<p>5. Liaison</p>	<p>The liaison enhances interactions between different groups as an outsider.</p>		<p>B acquires knowledge from another group member (A) and disseminate the knowledge a member of another group (C).</p>	<p>The broker is an outsider to both groups. The orientation of knowledge dispersed is external to the broker's group.</p>

Table 2.1 - Brokerage roles

Rivalry within and outside groups and the flow of knowledge

The five types of brokerage by Gould and Fernandez (1989) described above explain the various types of brokering relationships within and outside groups that distribute the flow of knowledge contributing to new knowledge creation, thereby encouraging innovation and sustaining competition within organisations (Abbatte and Coppolino, 2011) against rival groups.

According to Gould and Fernandez (1989), brokerage between rival groups in the network reinforces the importance of brokerage while those groups already connected to each other are not rivals and therefore do not add much value to the brokerage process. As such, it can be claimed that communication and knowledge flows within groups should be distinguished from flows between groups and between rivals because flows between rivals add more value to the brokerage process. Brokers present within the same group, such as the gatekeeper, representative and gatekeeper, will add knowledge to the group but not considerably unique knowledge because they are within the same circle (Chiambaretto *et al.*, 2017). The cosmopolitan and the liason, however, will introduce considerable fresh ideas and unique innovation processes completely unknown to the existing members within the circle, thus adding more value to the brokerage process (Wegener, 2015).

Within the whole network transaction, it is important to identify if the subgroup affiliation of the transacting party is relevant, then so is the affiliation of the broker. Within a negotiation, a member of one party may approach someone in a rival party through an intermediary who acts as the broker. The actor may also attempt to go through a related party member within his own group. In this case, the mediator would be considered as a 'representative'. Referring to the local broker (coordinator) as 'localite' in his studies, Merton (1968) states that within the dynamics of the social

process, it can be assumed that locals are important in group integration as it supports brokerage process.

Influential brokering roles and links to knowledge

Based on Merton's 1968 two types of influential brokering roles, the coordinator and the cosmopolitan, Taube (2004) also distinguished the same two types of brokers. While Gould and Fernandez (1989) are of the view that in this specific situation, the brokers are playing two different roles (gatekeeper and representative), Marsden (1982) observation is that there can be three roles (coordinator, cosmopolitan/itinerant and liaison) in brokerage relations through the brokering exchange process. The coordinator seems to be more important with regards to the integration within group compared to the cosmopolitan who stays within his group while creating linkages with members of other groups. In situations where the locals leave the inner group, the cosmopolitan's role becomes more important and as having access to resources and knowledge raise his status (Taube, 2004). Where locals normally stand within the group and have frequent social networking with others of the same group and exchanging similar resources, there is no great possibility of identifying and acquiring new knowledge as a broker. On the contrary, the cosmopolitan connects remote actors who are not able to reach each other and thus gain advantage from new knowledge flows as they hold a privileged position as a broker (Bellotti, 2009).

Location of the broker: within or outside the group

The argument here is whether it matters if knowledge brokers are differentiated as being solely internal or solely external or both. As per the brokerage process and roles described by some of the authors (Gould and Fernandez, 1989; Marsden 1982), the broker can assume both the role of the local as well as the role of the cosmopolitan as described by Merton (1968). The local being

the one networking within his group will fit into the role of the internal broker. However, the external broker fits into the role of the cosmopolitan, as the one linking knowledge from groups to groups (Belotti, 2009). As knowledge is identified and acquired within the organisation as well as outside the organisation through the various stakeholders within its eco-system, it can be claimed that the brokerage process should be considered as both internal and external and not limited to one dimension only. Therefore, this imply that brokers can be situated within the organisation in the same department as well as across various department as well as in other organisations within the same industry or across various industry as well as at national level or international level.

Cosmopolitans can be considered as brokers between different groups linking members of each group through connections with locals within the same boundary. In the case of the local, as they are all socially similar, the opportunities of creating social gains that allow for knowledge accumulation is restricted (Burt, 1992). The fact that the local is more interested in social network and development of relations (which constitute his support capital stock), he likely will maintain contacts with actors unconnected to the rest of the members of his group (Taube, 2004). This opens up the opportunity to contact the cosmopolitan, who is in turn more interested in the quality of a contact. In comparison to a local, the cosmopolitan gains remote access to the group without being an immediate member of it (Taube, 2004).

Though the roles of the broker vary according to the groups they are situated in, the commonality between all of them is the mediator role that they assume for transmitting knowledge, in which ever position they assume. The brokers are central to the networks of social relations and monopolise power and influence within these networks (Laumann and Pappi, 1976). However, the brokers are not in a very privileged position when they are in negotiations with parties in marginal positions and not central to the network (Cook *et al.*, 1983). It is also possible that actors within

the social structure are differentiated with regards to activities or interest so that exchanges between some actors differ in meaning from exchanges with other actors. In such cases, some affiliations by the mediator might be more worthwhile compared to other affiliations where the brokerage process might be less meaningful. Existing research by scholars on the role of brokering focusses on that fact that the broker is a single person (Gould and Fernandez, 1989).

While existing research on brokerage emphasises on the linkages mediated by one broker, it can be deduced that brokering relationships can also take place within the three situations; (1) that there are various brokers from one group communicating with various parties in another group and (2) that there is one individual actor communicating with one member of another party or same party (3) that the broker can perform any combination of the brokering roles simultaneously depending on the type of relationship and network that they are operating in. Networks of brokers could also imply that there are various brokers dealing with various parties with various groups at the same time. This depicts the versatility of the broker's role in the network that he operates and supports the fact that a broker can assume any of these roles while knowledge flows within any of the roles assumed by the broker. This would mean that at one single point in time, the organisation is loaded with knowledge flows and innovative ideas that needs to be captured and further developed and enhanced to suit the organisational needs for competitive advantage.

The organisation that is able to capitalise on unlimited knowledge flows and convert these knowledge opportunities in sustainable innovation will win the competitive race. From this statement, it can be concluded that knowledge brokers have a very important role to move knowledge from one place to another with the potential of multiplying innovation and creativity. To be able to have a deeper, broader and better understanding of how the knowledge broker is engaged in assuming these roles, it becomes primordial therefore to unpack the notions of

knowledge brokering such as the meaning of knowledge, the role of the broker, the stages of the brokering be able to identify its key components. With the components of knowledge brokering such as the roles and the stages clarified, it becomes much easier to map the notions with the dimensions of dynamic capabilities for the development of the conceptual framework as primary analysis for this research. The conceptual framework developed will then be depicting clearer how each component of the knowledge brokering roles and process is mapped meaningfully on the dimensions of dynamic capabilities to create each part of the framework which is addressed later in the literature review under theme 2.6.

The knowledge broker

Though the concept of the broker was first mentioned by Gould and Fernandez (1989), the term made its first appearance in the late 1990's through Andrew Hargadon's academic article about Thomas Edison's innovations. Hargadon (1998) description of knowledge brokers is very much linked to the notion of invention and the ability to create innovative solutions to novel problems. Knowledge brokers support firms in achieving strategic competitive advantage by gaining access to a wide variety of industries and exploit such positions by learning and linking creative and innovative solutions in the form of new knowledge combinations. Hargadon (1998) viewpoint of knowledge brokers is more oriented towards innovation to problems, referring to them as modern invention factories. Hargadon (1998) makes no mention of the brokers are within the organisation or external to it or both and of strategic role. Another definition by Currie and White (2012) makes clear distinction about knowledge brokers being both internal and external ones. Where internal brokers focus on interaction of internal knowledge brokering at the individual level and group level including the micro-mechanisms underlying the brokering process in the organisation (Brown,

Collins and Duguid, 1989), external brokering relates mostly to best practices from outside the organisation (Currie and White, 2012).

Risks associated with the knowledge broker

However, both Hargadon (1998) and Currie and White (2012) acknowledge the fact that knowledge brokers work collectively in teams through independent activities. Waring *et al.*, (2013) concept of internal knowledge brokers is very much linked to risk and leadership aspects. The component of risk represents a significant element in Waring *et al.*, (2013) concept of knowledge brokers as the latter is most of the time exposed to risk features such as identifying the right knowledge to capitalise on, devising proper strategies to be able to create network within the particular groups and developing sound decision making process to ensure that they are capturing the right capabilities. At any decision-making stage, should the knowledge broker wrongly capture, and hence later-on, develop the wrong capability the organisation will be far from achieving sustainable competitive advantage. On the other hand, the element of leadership also plays a significant role, as the broker being the first identifier of the capabilities, should have the potential of developing it through organisational acceptance and followers who are willing and volunteers to learn the new capability. As such, the presence of leadership skills within the knowledge broker facilitates the brokering process. However, their definition does not include any aspect of knowledge dissemination and internal or external knowledge brokerage process.

Roles assumed by knowledge brokers

Till date various researchers have mentioned numerous roles assumed by the knowledge brokers. Other authors, such as Oldham and McLean (1997), propose different versions of the knowledge broker such as the latter being knowledge managers, linking agents between producers and users

of knowledge and capacity builders. Compared to Hargadon (1998), Currie et White (2012), Brown, Collins and Duguid, (1989), Waring *et al.*, (2013) descriptions of knowledge brokers, Oldham and McLean (1997) includes the aspect of capacity building within their version of knowledge brokering. Their viewpoint covers the identification of knowledge, acquiring of the knowledge as well as its dissemination. The fact that the knowledge brokers identify, modify and restructure the knowledge that they assimilate within the groups and from the cliques, they hold the tacit as well as the explicit essence of the knowledge. Therefore, they are in a better position to do the knowledge brokering process without distortion of modified knowledge, rather than if the dissemination process was left to the hands of a third party. Such arguments have also been supported by (Hargadon, 2003; Cillo, 2005; Howells, 2006) claiming that the knowledge broker's role goes beyond intermediation, integration and innovation of knowledge (Cohen and Levinthal, 1990; Hargadon and Sutton, 1997) and also the dissemination of knowledge. As stated by Tsoukas and Mylonopoulous, (2004) individuals are not merely information processors but also practical thinkers.

Knowledge brokers hold strategic positions spanning multiple industries and exploiting the possibilities to constantly create new products (Mc Nie, 2007; Goffin *et al.*, 2010; Pawlowski and Robey, 2004; Ward *et al.*, 2009; Cash and Moser, 2000) while transferring ideas from where it is not to where it is needed (Hargadon, 1998; Holzmann, 2012) and creating connections (Hargadon, 1998) adding a supplementary value to the knowledge (Meyers, 2010; Sverrisson, 2001). In broad terms, knowledge brokers build relationship between communities to support the creation, sharing, modification and use of knowledge with the support of technologies that results in dramatic synergy. As such, knowledge brokers are true innovators since they identify process and use ideas developed in various industries to the advantage of their organisation (Cohen and Levinthal, 1990;

Hargadon and Sutton, 1997). The existence and roles assumed by the knowledge brokers in organisations can be disputed to be in many ways; individuals (Meyers, 2010; Ajmal and Koskinen, 2008; Ruuska and Teigland, 2009), in-house consultants or consulting firms (Richter and Niewiem, 2009; Sowe *et al.*, 2007; Hargadon, 2002; Svensson, 2007), organisations in the form of joint ventures (Bosch-Sijtsema, 2010; Park *et al.*, 2011), research oriented organisations (Arayici *et al.*, 2011; Lomas, 2007; Martin *et al.*, 2009; Ward *et al.*, 2009).

Definitional issues about the knowledge broker and roles assumed

As seen till now, the literature offers a plethora of definitions to capture the meaning of knowledge brokers. The ambiguous nature and the complexity of the phenomenon leads to definitional issues and increases the difficulty to capture the definition in one meaning. The confusion around the various definitions of the knowledge broker makes it difficult to pinpoint the various roles assumed by the knowledge broker. However, though the process of knowledge brokering seems to be an abstruse one, the commonality from all the definitional points leads to the fact that the knowledge broker is the mediator between two main parties the (1) producer of knowledge and (2) the user of knowledge. Most definitions have shown agreement to the following;

- 1) directionality - though the main actors can be individuals, offices, consultants, cluster of organisations or an industry the key actors of knowledge brokering are the producer of knowledge, the user of knowledge and the knowledge broker as the mediator between both.
- 2) definition - knowledge brokering consist of the people dimension, the process dimension as well as the institutional dimensions.

As the plethora of definitions for knowledge brokering varies, it seems more conducive to develop a definition that will suit this research. It can be considered that the most comprehensive definition of knowledge brokering encompasses most of the key dimensions and key features of knowledge

brokering. The knowledge broker, for the purpose of this research, will be an individual (Meyers, 2010; Ajmal and Koskinen, 2008; Ruuska and Teigland, 2009) rather than an organisation or a consultancy office as this research seeks how the knowledge broker as an individual can sense, seize and reconfigure dynamic capabilities through creativity (Teece *et al.*, 1997), cognitive (Teece *et al.*, 2009) and entrepreneurial abilities (Shaker *et al.*, 2006), such qualities not present through an organisation or consultancy office, but rather an individual. The knowledge broker, as an individual, acts as the mediator between the knowledge producer and the knowledge user (Meyers, 2010) thereby moving knowledge from one place to the other. While engaging in such activities the knowledge broker is able to identify and acquire knowledge through the sensing capabilities, assimilate, create new knowledge through the seizing abilities and reconfigure knowledge through reconfiguration and testing phases, diffuse the knowledge and provide support as the diffusor and facilitator respectively. These privileged access to knowledge therefore positions the knowledge broker at the centre-point in advantaged position to explore (Belloti, 2009), understand and test the knowledge brokering process as a lever for the development of dynamic capabilities. In view of defining the knowledge broker for the purpose of this research a typology has been developed which follows.

An enhanced typology of knowledge broker roles

People acquire shared meanings, know-how and their sense of identity through participating and learning within the community (Gherardi, 2005). Shi *et al.*, (2012), similar to Fernandez and Gould (1989) perceive that the knowledge sits in a triad consisting of one knowledge broker and two alters who are the knowledge users and the knowledge producers. However, Shi *et al.*, (2012) described additional roles of knowledge brokers stating that some roles (cosmopolitan, gatekeeper

and liaison) involves different subgroups within the cadre of middle line managers (Currie *et al.*, 2014).

While some authors (Simmel, 1950; Gould and Fernandez, 1989, Marsden, 1982; Burt, 2005, Merton, 1973) have investigated numerous versions of brokerage within the social networks, others have researched about knowledge brokering within or without the context of social network. (Ward *et al.*, 2013; Hargadon, 1998; Currie and White, 2012, Brown, Collins and Duguid, 1989; Oldham and McLean, 1997; Hargadon, 2003). These authors came up with different versions of brokerage as well as knowledge brokering representing numerous perspectives and have been distilled into a selective typology of knowledge brokering roles and applied to the context of this research.

While Gould and Fernandez (1989) presented the five roles of brokerage, these five roles are not specific to knowledge brokerage. Though knowledge brokerage assumes some of the roles described by Gould and Fernandez (1989), the roles do not clearly depict which stage of knowledge brokering the broker is at and if the roles are linked with each other or form a sequential pattern. Identifying, understanding and separating the various roles assumed by the knowledge broker is vital as this clearly identify the numerous roles assumed by the knowledge broker, define and differentiate them to their exact roles, organises and structures the roles specifically within the context of knowledge brokering and not in any other context. When the roles are clearly identified differentiated and pinned down, it is easier to understand the literature and notions surrounding knowledge brokering and therefore clearer to link the notions of knowledge brokering with the dimensions of dynamic capabilities, thus supporting a clear development of the conceptual framework of knowledge brokering as a lever for dynamic capabilities which is one of the main contributions of this thesis.

Meyers (2010) and Micheals (2009) are of the view that one way of developing the knowledge brokering concept is by identifying their structural position and relationship within and between communities. Therefore, in view of simplifying and understanding the roles of the knowledge broker from the existing confusing literature, an enhanced typology of the roles of the knowledge broker is proposed taking into consideration the various definitions available. The typology was developed by reviewing all the possible definitions of the knowledge broker roles available in the existing literature. Through this exercise approximately fifty definitions of knowledge broker roles were identified. The various stages of the development of the typology is shown in figure 2.1 below.

The development of the reframed typology of knowledge brokers was done in three stages. The first stage was to scrutinise the existing literature about the possible definitions of knowledge brokering. The definitions and the authors were saved on an excel document where most of the workings were done. The next stage involved coding the knowledge broker definitions available from the existing literature while avoiding all repetitive definitions by other authors. This exercise lead to the identification of four major categories for the roles of the knowledge broker. The third stage was about identifying if there could be a flow within the four enhanced knowledge brokering roles and their responsibilities.

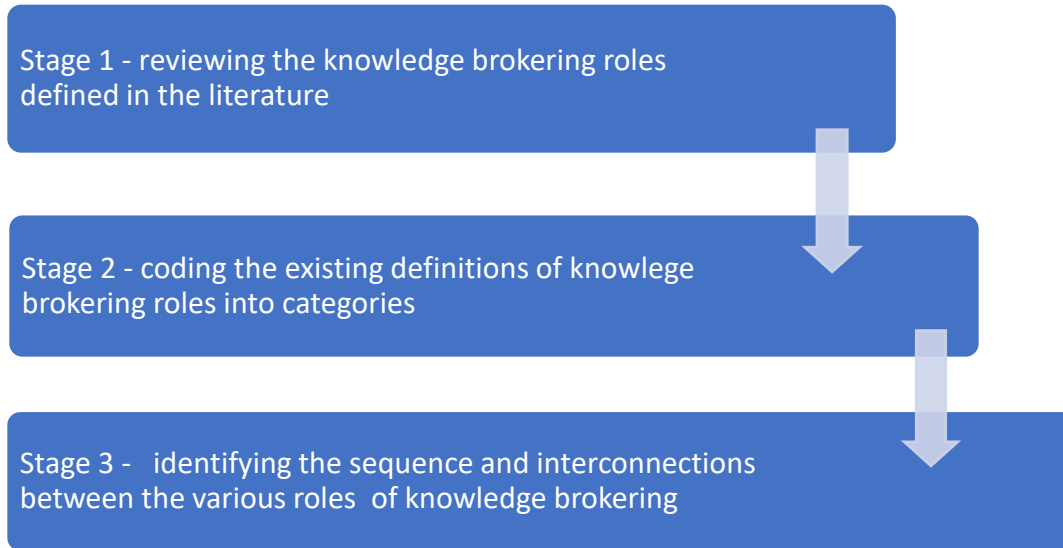


Figure 2.1 - Stages involved in developing the roles of the knowledge broker

The outcome of this exercise lead to a much clearer and enhanced typology of knowledge brokering roles and the identification of their sequential roles from the literature. The four roles of the knowledge broker, are at a later stage, incorporated in the development of the conceptual framework of the knowledge brokering as levers to the development of dynamic capabilities. The enhanced typology of knowledge broker roles is shown and explained in table 2.2 below. The table consists of four columns; the first consist of the reframed knowledge broker role, the second one is the definition of the corresponding knowledge brokering role. The third one refers to the dimensions that has been gathered from the literature review to conceptualise the roles. The last column refers to seminal authors supporting the dimensions identified from the literature about the roles of knowledge brokers. The typology of the reframed knowledge brokering roles have been classified as (1) bridger (2) creator (3) diffuser and (4) facilitator.

Key roles of knowledge brokering	Key meaning	Key responsibilities	Key authors
Bridger	The bridger is the agent who mediates the relationship between the knowledge producer and the knowledge user and identifies the required knowledge through trust.	<ul style="list-style-type: none"> • The bridger develops links between disconnected groups (knowledge producer and knowledge user). 	(Meyers, 2010; Bielak <i>et al.</i> , 2008; Barnett, 2003; Lomas, 2007; Goffin <i>et al.</i> , 2010; Pawlowski and Robey, 2004; Ward <i>et al.</i> , 2009; Hargadon, 1998; Meyer, 2010; Sverrison, 2001; Gould and Fernandez, 1989)
		<ul style="list-style-type: none"> • After developing links, the knowledge broker control resource flows between parties. 	(Burt, 1995; Cillo, 2005; Marsden, 1982, 1983; Granovetter, 1973; Pawlowski and Robey, 2004).
		<ul style="list-style-type: none"> • The knowledge broker identifies the relevant knowledge from the knowledge flows between the knowledge producer and the knowledge user. 	(Goffin <i>et al.</i> , 2010; Pawlowski and Robey, 2004; Ward <i>et al.</i> , 2009; Hardagon, 2003; Cillo, 2005)
		<ul style="list-style-type: none"> • After identifying the relevant knowledge, the knowledge broker accesses the relevant knowledge. 	(Cillo, 2005; Castro, 2015; Goffin <i>et al.</i> , 2010; Pawlowski and Robey, 2004; Ward <i>et al.</i> , 2009; Hardagon, 2002; 2003; Howells, 2006; Nair <i>et al.</i> , 2012; Currie and White, 2012)
Creator	In this second role, the knowledge broker	<ul style="list-style-type: none"> • After accessing the knowledge, the creators use their creativity to reconfigure existing knowledge 	(Meyers, 2010; Pawlowski and Robey, 2004; Perrin, 2013; Burt, 1992; Hargadon, 2002; Meyer, 2010)

	reconfigures and tests the existing knowledge accessed to develop innovative knowledge.	that will suit the organisational needs and demands.	
		<ul style="list-style-type: none"> • While reconfiguring the existing knowledge the knowledge broker exposes himself to elements of risk, detects and predicts the market's next move and reconfigure the knowledge accordingly. The knowledge broker therefore takes calculated risks to be able to survive in the competitive arena. 	(Waring <i>et al.</i> , 2013)
		<ul style="list-style-type: none"> • The main reason the knowledge broker reconfigure knowledge is to implement innovation for competitive advantage. 	(Castro, 2015; Nooteboom <i>et al.</i> , 2007)
		<ul style="list-style-type: none"> • The knowledge brokers transform existing concepts into improved ones in view of maintaining sustainable competitive advantage • Testing is an integral part of the knowledge brokering process. After the model has been devised it is important to put the model to 	(Hargadon, 1998; Meyer, 2010; Sverrison, 2001; Pawlowski and Robey, 2004); Neal <i>et al.</i> , 2015)

		application to assess its relevance to the organisation.	
Diffuser	After having reconfigured the required knowledge for sustainable competitive advantage, the diffuser disseminates the reconfigured and tested knowledge to the knowledge users.	<ul style="list-style-type: none"> After having reconfigured the required knowledge for sustainable competitive advantage, the diffuser disseminates the new knowledge to the knowledge user. 	(Pawlowski and Robey, 2004; Perrin, 2013; Ward et al., 2009; Callon, 1986; Holzmann, 2012; Lomas, 2007; Gould and Fernandez, 1989; Russka and Teigland, 2009, Ziam <i>et al.</i> , 2009)
		<ul style="list-style-type: none"> The knowledge broker is engaged in the knowledge diffusion process and share knowledge in social structures and across boundaries. 	(Burt, 1995; Marsden, 1982, 1983; Granovetter, 1973; Homans, 1951, 1974; Pawlowski and Robey, 2004; Perrin, 2013; Burt, 1992; Hargadon, 1998, 2002; Meyer, 2010, Sverrisson, 2001; Nootebloom <i>et al.</i> , 2007, Bielak <i>et al.</i> , 2008; Ward <i>et al.</i> , 2009)
Facilitator	The facilitator eases the capacity building process and provide support to maintain sustainable competitive advantage.	<ul style="list-style-type: none"> While the diffusor has already shared the knowledge required within the organisation, the facilitator ease the capacity building process to ensure that knowledge is being developed to sustain competitive advantage. 	(Rivard <i>et al.</i> , 2010)
		<ul style="list-style-type: none"> The facilitator uses different methods to be engaged in 	((Hargadon and Sutton, 1997; De Laet, 2002; Kammen <i>et al.</i> , 2006; Lamari and Belgacem, 2012; Meyer, 2010;

		<p>knowledge flows. They methods include forums, knowledge agents, special experts and capacity builders to meet organisational needs as well as that of the organisational's eco-systems.</p>	<p>Waring <i>et al.</i>, 2009; Hargadon, 2002; Richter and Niewiem, 2009; Sowe <i>et al.</i>, 2006; Holzmann, 2012; Oldham and McLean, 1997; Rivard <i>et al.</i>, 2010</p>
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Table 2.2 - An enhanced typology of knowledge brokers

The knowledge broker assumes various roles as identified and described in table 2.2 have been defined and critically analysed below.

- Bridger

The bridger acts a mediator (Howells, 2006; Meyers *et al.*, 2010; Barnett, 2003; Ward *et al.*, 2009; Hargardon, 1998) connecting separate worlds by liaising various groups through formal and informal networks (Lomas, 2007) and business intelligence by moving knowledge from where it is (from the knowledge producer) to where it is not (knowledge user). The knowledge broker makes use of their cognitive abilities to sense that the application of knowledge from area can be applied to another. In this first role, therefore, the knowledge broker acts as a bridge between two disconnected areas. As the bridger, the knowledge broker identifies the knowledge that can be reconfigured from one group to another (Jones, 2006; Goffin *et al.*, 2010). Their ultimate role is to identify and access relevant knowledge by acting as bridges between two unconnected worlds (Ward *et al.*, 2009; Lomas, 2007). They make use of business intelligence, cognitive abilities and their intuitive capabilities to be able to scan the marketplace and latest evolutions and innovations to identify the relevant capabilities and seize the relevant knowledge.

- Creator

After identifying and accessing the relevant knowledge, knowledge brokers acts as ‘creator’ by innovating existing ideas into novel ones (Hargardon, 1998; Meyer, 2010) by responding to the internal as well as external organisational needs to maintain competitive advantage. They possess creative and entrepreneurial abilities (Waring *et al.*, 2013) to upgrade stale knowledge into up to date ones, highly marketable, commercial and profitable ones. In this role, the knowledge broker has the role of a creator and by embracing the element of calculated risk, has the potential to create

new capabilities that will suit the evolving marketplace with its new demands (Castro, 2015). In simple words, the creator generates innovative ideas. The creator therefore makes use of his creative ability as well as intuitive ability to be able to predict future trends of the business, create and reconfigure old knowledge into new knowledge demanded by the organisation or competitive advantage. Failure to develop the precise knowledge could result in developing organisational capabilities in the wrong direction leading the firm towards losses rather than profit. Therefore, while assuming the role of the creator, the element of risk taking alongside creativity and entrepreneurial skills are vital and interdependent.

- Diffuser

The diffuser disseminates the reconfigured knowledge (Pawlowski and Robey, 2004; Perrin, 2013). Knowledge can be diffused either across one organisation/ one industry or across various organisations/various industries (Callon, 1986). As a diffuser, the knowledge broker should possess good training and development skills (Perrin, 2013) so that knowledge is passed over without distortion. The diffuser also needs to possess good leadership skills (Ward *et al.*, 2009) as the knowledge broker who acts as change agent (Ziam, 2009), has to convince the employee that learning new capabilities are worthwhile for the strategic orientation of the organisation. The diffuser should also be able to convince people that the knowledge change happening is worthwhile so as to be able to have the commitment and dedication of followers towards learning the reconfigured knowledge voluntarily.

- Facilitator

The facilitator is engaged in easing the knowledge absorption within the organisation. They provide support and guidance with respect to building and sustaining the new knowledge capabilities (Rivard *et al.*, 2010) for competitive advantage. In this role, the knowledge broker has

to be open to frequent conversations (Kammen *et al.*, 2006) and training opportunities so that the latter can provide support into developing the new capabilities needed within the organisation. As a facilitator, the knowledge broker also provides support for capacity development (Oldham and McLean, 1997; Holzmann, 2012) as and when it is needed or in situation of crisis as the main knowledge modified has already been transferred by the diffuser. It can therefore, on the basis of this, be concluded that the facilitator plays a lesser role in building capacity, but mostly as support for sustaining the capacity build but a rather more active role in scanning the environment again in view of new challenges. The fact that new capabilities have already been identified and developed within the organisation do not imply that the facilitator cannot or should not continuously pursue its scanning and sensing activities. The more open and continuously active the knowledge broker is with respect to scanning the eco-system, the more the knowledge broker will be able to gauge new potential knowledge that can be reconfigured for the sustainable competitive advantage for the organisation (Rivard *et al.*, 2010). This conclusion, therefore, brings the facilitator's role back to the same starting point, that is the bridge as scanners of new knowledge and opportunities of innovative developments.

Following the transition of roles assumed by the knowledge broker from the bridge to the creator, then the diffuser and lastly the facilitator, it can be deduced that the roles are sequential one after the other forming a cycle. As the facilitator ends with providing support to developing the new capabilities within the organisation, yet still keeping a vigilant eye on the changes of the dynamic eco-systems, the latter is once again brought back to the sensing, seizing capabilities of the bridge. As the knowledge broker has to be constantly open and vigilant about the unexpected influential factors from the dynamic ecosystems that would affect the existing capabilities within the organisation, creating the imperative need of developing new ones, it can be deduced that the

facilitator has to assume the role of the bridger again. This, therefore concludes that the roles of the knowledge brokers can be considered as a cycle of roles repeating itself over and over again as shown in figure 2.2 below.

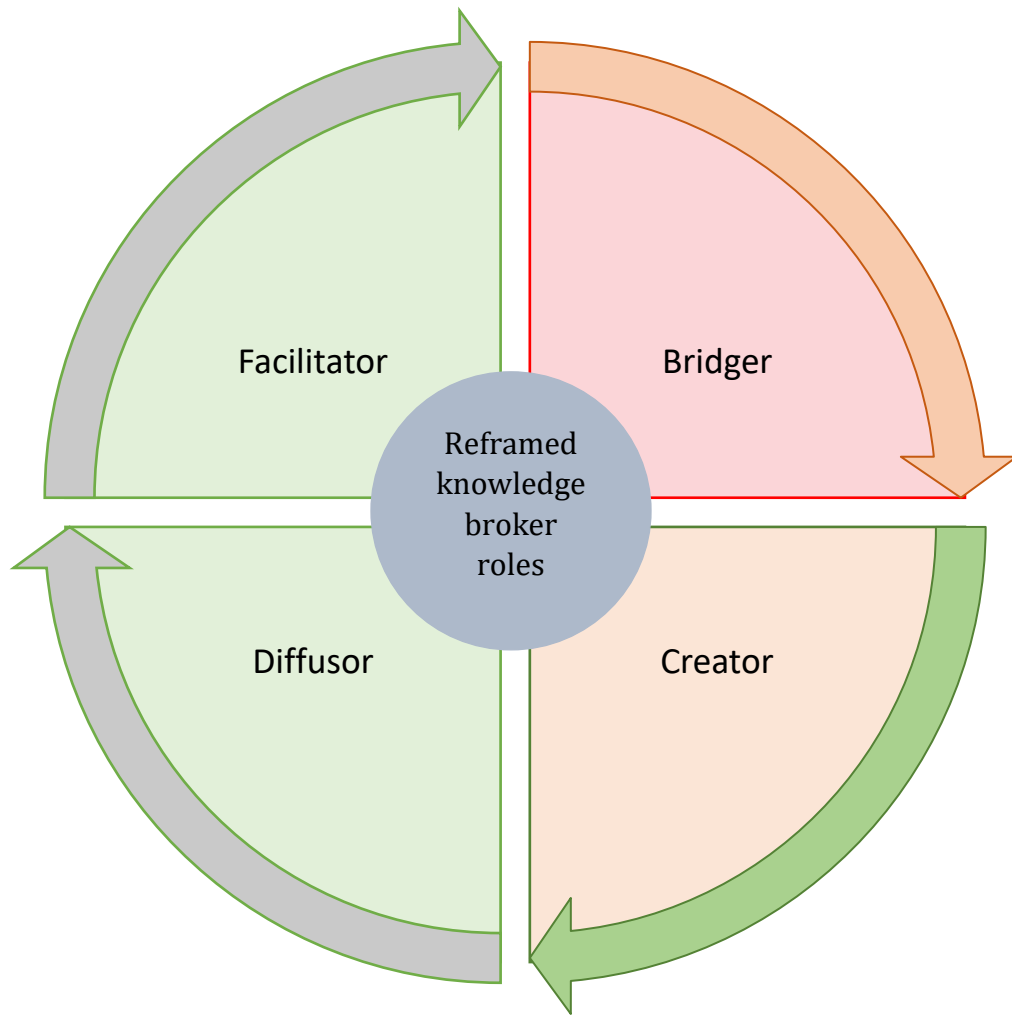


Figure 2.2 - An enhanced typology for knowledge brokering roles

Though the reframed typology of knowledge broker roles developed states that the roles are sequential and end up in a cycle, the knowledge broker can also face situations where they assume various roles of the knowledge broker at the same time, depending on the job they are engaged in. An example could be a knowledge broker accessing information which is part of the role of the

bridger and creating new knowledge as well, which is part of the creator's role. Therefore, the knowledge broker can be in a position of assuming one role at a time or various roles. This statement concludes that there are three ways to consider the typology of the knowledge broker (1) where the roles are assumed in a cyclical sequence, one role after the other, without any overlapping and (2) where the knowledge broker assumes any role of the typology depending on the job being assumed (3) the knowledge broker can assume all of the roles simultaneously.

2.4 Critique of existing models of knowledge brokering

In the last two decades of theories on knowledge brokering has become more tailored to the public sector and several distinct categories or functions of knowledge brokering have lately been developed Ward, (2009). This section of the chapter covers a comparative analysis of the key models of knowledge brokering present within the literature. Abbate and Coppolino (2011) described knowledge brokering as the process that facilitates innovation by combining consolidated knowledge in new different ways: learning through knowledge-sharing, innovation by sharing knowledge in new forms (Hargadon 2002). As early as 1997, Oldham and McLean proposed three frameworks about knowledge brokering for within the public sector. Ziam *et al.*, (2009) proposed the 5-step model of knowledge brokering which was followed by Przybycien's two models of knowledge brokering in 2010. In 2012, Berbegal-Mirabent *et al.*, proposed the knowledge transfer office model followed by the Logic model by Dagenias *et al.*, (2015) and the linking research to practice model by Neal *et al.*, (2015). A total of nine knowledge brokering models have been proposed by various since 1997 onwards.

Alongside the critical analysis of the key models of knowledge brokering, this section of the chapter provides a deepened understanding and analysis of the types of relationships existing within the existing models of knowledge brokering, barriers to knowledge brokering and the

limitations of existing models of knowledge brokering. The focus of this chapter is the provision of a critical analysis of the existing process models of knowledge brokering in view of developing a reframed knowledge brokering process model that is applicable to today's dynamic business organisations. This exercise will further lead to the main theoretical contribution of this research which is the conceptualisation of reframed knowledge brokering process as the lever of dynamic capabilities.

Types of relationships across existing models of knowledge brokering

The types of relationship the knowledge broker is engaged into vary as per the process models. In some of the process models the knowledge broker has dyadic relationship (Przybycien *et al.*, 2010) while in others the knowledge broker develops multiple relationships while operating within networks. In the one to one model, the knowledge broker is at the centre of knowledge and acts as a mediator between both parties. In contrast the many-to-many model involves a knowledge of knowledge producer and knowledge user (Przybycien *et al.*, 2010). Similarly, within the knowledge systems framework, the knowledge broker acts as the one linking the knowledge producer and the knowledge user (Oldham and McLean, 1997). As in the case of the social change framework, the knowledge broker is involved with multiple knowledge producer and user by acting as a bridge between them (Oldham and McLean, 1997).

In the knowledge office transfer model, the knowledge broker uses trust to create trustworthy relationships for the free flow of knowledge (Berbegal-Mirabent *et al.*, 2012). In the logic model of brokering intervention, the knowledge broker create links between knowledge producers and users whether they are individuals or organisations (Dagenias *et al.*, 2015). As for the linking research and practice model, the knowledge broker is engaged in various relationships in gaining and sharing knowledge between various stakeholders (Neal *et al.*, 2015). Though the literature

shows various models and various structure within which the knowledge broker operates, most of the models tend to converge into agreeing that the knowledge broker is at the centre of knowledge and acts as the mediator between the various stakeholders. The knowledge broker is in a privileged position as the latter is in a position to identify, access, hold and reconfigure knowledge, one of the most powerful resources for competitive advantage in dynamic organisations.

Barriers to knowledge brokering

Though some of the existing models of knowledge brokering add value to the types of relationships developed, numerous authors have mentioned about the numerous barriers to knowledge brokering (Bergenholtz 2011, Quartz-Topp 2018, Gerrish *et al.*, 2014). These barriers can be present in terms of technical issues, ties and knowledge spillovers (Bergenholtz, 2011), organizational resistance, policies and procedures, managerial challenges (Quartz-Topp, 2018).

Bergenholtz (2018) is of the view that networks structures and ties influence the opportunities the knowledge broker has to develop new knowledge. A network structure of weak ties means more opportunities for the knowledge broker to act as mediator between the knowledge producer and the knowledge user. Weak ties and weak network structures are therefore potential gateway to new knowledge (Hansen, 1999) and opportunities for search (Ruef, 2002). The knowledge broker is therefore in a much-privileged position while operating in networks with weak relationships.

However, one of the biggest challenges the knowledge broker face is while operating in networks with matrix relationships. In such situations, the knowledge broker will not be in the privileged position to access knowledge as a mediator as the knowledge broker already knows the knowledge user. Other potential challenges that the knowledge broker might face are situations when technological, organisational and industry boundaries have not been crossed (Berhenholtz, 2011). Some studies have showed that if the broker wants to search for knowledge, it should search for it

across organisational, industry and technological boundaries (Tortoriello and Krackhardt, 2010). However, some companies are not in a position to do cross- organisational and cross-industry search due to high costs and are therefore not in a position to gain valuable knowledge and insights to develop into new knowledge. Gilsing *et al.*, (2008) also show that a small technological distance between two collaborative partners has a negative impact on generating new knowledge, therefore implying that moderate or large technological distances have a more positive impact for the knowledge broker. Other challenges faced by knowledge brokers is within closed knowledge networks especially where knowledge is not revealed to external partners. In some search the knowledge broker is exposed to partners who are not willing to share knowledge. The knowledge broker is then not in a position to gauge new knowledge to develop for the knowledge user. This acts as a major challenge for the knowledge broker.

Other difficulties faced by the knowledge broker is in communities of practice as all knowledge brokers and knowledge users do not have the same meaning of the similar knowledge (Gerrish *et al.*, 2011). The knowledge broker should therefore be able to develop similar meaning of the knowledge being required (Quartz-Topp, 2018). On the other hand, some knowledge producers might have the discursive power to prioritise, select and obscure knowledge they want to share depending on their managerial agenda. This hampers the fluidity of knowledge being shared to the knowledge broker on which the latter can capitalise to develop new knowledge for the knowledge user. Jalonen (2014) state that the nature of knowledge to be shared also constitute as a challenge for the knowledge broker. The knowledge broker is in a better situation to sense and acquire the explicit knowledge through technology as it is much easier to share compared to tacit knowledge. Johannessen *et al.* (2001) claim that technology can hamper the proper management of tacit knowledge which can lead to the deterioration or failure of the organisation's knowledge brokering

process (Mitroff,1998). On the other hand, organisations that are more people centered might not have practices of sharing knowledge through technology. In such situations high technological barriers exist and person to person knowledge sharing prevails.

A Comparative analysis of key models of knowledge brokering

A critical analysis of the existing process models of knowledge brokering deems vital. This exercise aids in understanding the processes and steps involved in each of the existing models. The table below explains the critical analysis of the relevant models presented by scholars who have researched about the subject till date. The first column provides the model and the author. The second column describe the type of relationship involved between the knowledge producer and knowledge user. The next column describes the main process components identified in each model. The fourth column emphasises the focus about knowledge creation of each model, followed by the theoretical underpinning of respective models. The next column provides a critical analysis of the limitations of the models and the last column provides the potential benefits and outcomes of each models.

Model	Type	Key process components	Focus	Theoretical underpinning	Limitations	Potential benefits/outcomes
One to One (Przybycien <i>et al.</i>, 2010)	Involves a dyadic relationship between the knowledge producer and user with the knowledge broker acting as the mediator between them	Knowledge broker; identification, assimilation and modification of knowledge generated by the producer. User: application of new knowledge mediated by the knowledge broker	Primary focus on knowledge creation and application as a technical and transactional process.	Lacks a strong theoretical foundation	Overlooks outcomes at group and organisational levels.	Building of trust between producer and user through direct interaction and mediation of knowledge broker. Immediate tangible results at individual level. High commercial value.
Many to Many (Przybycien <i>et al.</i>, 2010)	Involves a multiplicity of diverse knowledge producers and end-users with knowledge brokers at the centre of the knowledge exchange	Knowledge broker; same as for One to one in the identification, modification and application of knowledge generated by producers. But also acts as a bridge or gatekeeper in	Broader focus on knowledge creation and application as a relational process	Shares with the One to one model A weak theoretical foundation	Falls short of a systematic outlook and does not pay enough attention to the whole organisation as an eco-system	Enables trust building across network of producers and users of knowledge. Allows for informed decision making at both individual and collective levels.

		knowledge transfer between multiple producers and users of knowledge.				
Knowledge systems framework (Oldham and McLean, 1997)	As with the many to many model, can involve a multiplicity of knowledge producers and users, with the knowledge acting at intermediary at the centre of the knowledge systems	Knowledge broker; identification, modification and application of knowledge to part of the system where a renewal of existing knowledge or the development of new capabilities is required	Adopts a systematic view of knowledge brokering and adopts a holistic approach that encompasses individual, group and organisational levels	Still a purely conceptual model in need of consistent empirical testing	Underpinned by complex relationships and can be difficult to manage	As with other models can help build trust across the organisation as an eco-system Attention paid to outcomes at the individual, group and organisational levels
Social change framework (Oldham and McLean, 1997)	As in the case of social change framework, involves multiple stakeholders with the knowledge broker acting as a 'bridger' at the core of the social network	Knowledge broker; Acts as a social facilitator within the ecosystem of the organisation – including people, communication and IT Structures	In contrast to the above models, focusses primarily on the role of the knowledge broker in shaping the political system, power relations and relational context of	As in the case with most current knowledge brokering models, lacks robust theoretical foundations	The whole process is still rather blurred without any clear indication of the key steps involved in the production, mediation and application of knowledge	Particular attention given to socio-economic outcomes. Can lead to positive social relationship and supportive mechanisms as a pre-condition for beneficial output of the

			knowledge brokering process.			knowledge brokering process.
Knowledge office transfer model (Bergegal-Mirabent et al., 2012)	With the knowledge office transfer model, importance is placed on creating trustworthy relationships and bring people together to allow free flow of knowledge.	Knowledge broker; is positioned as the mediator between the producer of knowledge and the user of knowledge. Engaged in creation, acquisition, and dissemination of knowledge	This model focuses on internal as well as external factors affecting knowledge.	Still a purely conceptual model in need of consistent empirical testing	This model does not account for strategic competitive advantage important for dynamic business environments	The model of knowledge brokering is applicable organisational level but mostly at the socio-economic level.
Logic model of brokering intervention (Dagenias et al., 2015)	The logic model of knowledge is a holistic one that considers both individual and organisational level. The	Knowledge broker; fosters engagement and trust among the various stakeholders of knowledge, solves problems and identify knowledge.	This model fosters engagement and trusts among various stakeholders of knowledge including the organisational eco-systems.	This model is still very purely a conceptual one and have not been tested yet.	The perspective of knowledge in this model is that it is dynamic in the short term and therefore has to consider the dynamics of the longer term to maintain strategic orientation.	This model is geared towards social policy development and seems to be less appropriate for organisations.

<p>Linking research and practice model (Neal <i>et al.</i>, 2015)</p>	<p>This model explains how multiple processes comprise of communication between research and practice.</p>	<p>The knowledge broker acts as the mediator between the knowledge producer and knowledge user while emphasising on the research-practice relationship. Processes include identifying knowledge, developing and testing interventions and disseminating research outputs.</p>	<p>This model focuses on the fact that knowledge moves between the knowledge producer and the knowledge user where the knowledge broker acts as the bridge between both.</p>	<p>The model is underpinned by the network theory and the small world phenomenon theory as these two models supports knowledge exchange.</p>	<p>The model does not state of the knowledge broker is the sole bridge between the knowledge producer and the knowledge user.</p>	<p>The model emphasises the fact that knowledge is created by both worlds; the researchers and the practitioners. This model therefore encourages the exchange of knowledge between both parties and</p>
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Table 2.3 - Critical overview of key models of knowledge brokering process

The models present various forms of knowledge brokering process models. Some aspects of the models can be seen to be similar across other models whilst some share similarities. The various models of knowledge brokering focuses on different aspects as they have been developed and applied in different fields and industry. Though various authors have described the process of knowledge brokering differently, all the definition acknowledge the knowledge broker as the center-point for the knowledge flow to take place.

The one to one model focus on knowledge creation and application. It is more of a dyadic transactional process. While Przybycien *et al.*, (2010) describe the one to one process of knowledge brokering as a dyadic one involving direct knowledge flows between the knowledge producer and the knowledge user through the broker, the same authors propose a different concept of knowledge flows for the many to many model where knowledge flows emphasises on complex environment with diverse end-users rather than a dyadic one. The many to many model on the other hand has a broader focus on knowledge creation as a relational process. Oldham and McLean (1997), while describing the knowledge systems framework, expand while simultaneously categorise the knowledge brokering process to four different levels; (1) individual (2) group (3) organisational and (4) socio-economic and considers matrix networks as part of the knowledge brokering process.

The knowledge systems framework emphasises on both the tacit and the explicit knowledge which is incorporated and represented by the knowledge broker where the latter constantly improves the best organisation's practices compared to the local and international competitors (Oldham and McLean, 1997). In their second model, Oldham and McLean (1997) identifies the organisation, rather than the individual, as being the knowledge broker linking the knowledge creators and the

knowledge users on the interchange of knowledge and its evolution. Through their third definition of knowledge brokering process Oldham and McLean (1997) places emphasis on the knowledge user focusses on socio-economic outcomes while considering interactions between the eco-system of the organisation as a whole. The social change framework is the only one considering the perspective of user of knowledge (Oldham and McLean, 1997). The social change framework, is the one model that focusses solely on the knowledge broker as the shaper of political systems, power relations and networks of the knowledge brokering process. Most of them focused on the knowledge producer and the knowledge broker who demands the knowledge to be transformed in a specific way.

Berbegal-Mirabent *et al.*, (2012) knowledge brokering process is based on trust between the knowledge producer, the knowledge broker and the knowledge user to promote clear flow of knowledge. While in this model, the brokers hold prestigious positions, they are also responsible for the interpretation, modifying and delivering of the new knowledge. The knowledge transfer model by Berbegal-Mirabent *et al.*, (2012) take cognisance of the importance that both internal and external forces exert on the knowledge capabilities within the organisation assuming that knowledge is volatile and changes according to the forces of nature.

The logic model of brokering intervention, as a holistic model, considers the individual, organisational and societal level at both short-term and long-term level (Dagenias *et al.*, 2015) while relying on relationships of trusts as well. Dagenias *et al's* (2015) model of knowledge brokering on the other hand perceive knowledge to be dynamic and ever-changing in nature and has to keep evolving to maintain strategic orientation and sustain competitive advantage. Ziam *et al.*, (2009) perspective of knowledge focuses on the knowledge broker's ability to develop absorptive capacity, cognitive capacity, experience and social capital at each stage of the process.

Ziam *et al.*, (2009) perspective of knowledge also emphasises on factors such as internal and external forces, to develop capabilities sustaining organisational innovation. The linking research model and practice model by Neal *et al.*, (2015) viewpoint of knowledge supports and encourages the interaction between practitioners and researchers as the shared relationship is value added. While Neal *et al.*, (2015) perspective on knowledge is more that of a collaborative one between the two industries where both industries, research and practice, learn from each other. Their perspective of knowledge is that knowledge is not only created through researchers but co-created with practitioners of the industry. Both the logic model of intervention and the knowledge systems framework consider brokering at the individual, organisational and societal level. The knowledge transfer office model by Berbegal-Mirabent *et al.*, (2012) and the logic model by Dagenias *et al.*, (2015) both places much emphasis on trust as imperative to ensure that knowledge flows between parties. The models, therefore, focusses on many aspects such as the individual, the knowledge broker, the stakeholders, relationships, networks, social and political systems. Most of the models focusses on the creativity and entrepreneurial abilities of the knowledge broker.

Theoretical underpinning of the existing models of knowledge brokering

Out of the models proposed, only one of them have theoretical underpinning. The linking research and practice model (Neal *et al.*, 2015) have been underpinned by the network theory and the small world phenomenon theory. These two theories are in support of the knowledge exchange theory. The model, however, has not been tested. Lamari and Belgacem (2012) states that the social knowledge networks can be used by knowledge broker to disseminate the knowledge in a structured was that is directed towards goal congruency thus supporting organisational challenges such as higher performance, innovation and sustainability. On the other hand, Crosseley *et al.*, (2015) emphasises on social network analysis where a knowledge broker, as an ego net is at the

center of ties and connections, as an underpinning theory for the study of knowledge brokering. The remaining existing models have not been founded on theoretical foundations and lacks theoretical underpinning. This makes most of the models of knowledge brokering to be flawed not having strong foundations as well as for not being tested.

Benefits of the existing models

Though the models possess some flaws, they are also not deprived from their benefits. Some models are based on building trustworthy relationships (Dagenias *et al.*, 2015) between the knowledge producer and the knowledge user as well as the stakeholders. The models provide clarity in terms of decision making to both individuals (Przybycien, 2011) and group levels (Oldham and McLean, 1997). Therefore, it can be assumed that proper knowledge dissemination is taking place. Some of the models are very focused on the knowledge brokering outcomes of the individual, group and organisation (Oldham and McLean, 1997). Further attention is given to socio-economic outcomes (Bergebal -Mirabent *et al.*, 2012) which can develop into social relationships and supportive mechanisms for beneficial output of the knowledge brokering process (Oldham and McLean, 1997). One of the models is geared towards the development of social policy (Dagenias *et al.*, 2015) that seems to be less appropriate to dynamic and competitive organisations but can benefit the society at large.

Limitations of the existing models

As already seen above, most of the models are theoretically flawed and lack conceptual rigour. Some of the models do not consider outcomes at group level, organisational level (Przybycien *et al.*, 2010) and broader aspect such as the eco-systems. Some models are complex in relationships and can be difficult to manage (Oldham and McLean, 1997). Though the model states the various

processes in knowledge brokering, it is not clear as to how it is applied within the organisation at the individual and organisational level (Neal *et al.*, 2015). Most models do not account for strategic orientation (Przybycien *et al.*, 2010), goal congruence, complex relationship (Oldham and McLean, 1997) and competitive advantage (Berbegal -Mirabent *et al.*, 2015) which is primordial for survival in competitive environments. The perspective of knowledge brokering adopted here is that knowledge is volatile, specially within the dynamic business environment, and therefore the dynamics affecting knowledge brokering should be considered while developing the model. Some of the models do not clearly indicate if the knowledge broker is an individual, office, institution (Przybycien *et al.*, 2010) as the mediator between the knowledge broker and the knowledge user.

CHAPTER THREE : Conceptualising knowledge brokering as a lever for dynamic capabilities

3.0 Introduction

This chapter presents the conceptualisation of knowledge brokering as a lever for dynamic capabilities. It starts by reframing the knowledge brokering process by analysing the existing models of knowledge brokering, distilling the models into one main framework suiting the needs for this thesis. At a second stage this chapter aims at conceptualising knowledge brokering as a lever for dynamic capabilities by exploring and linking the roles of the knowledge brokers, the knowledge brokering process and the ability to sense and seize opportunities and reconfigure knowledge to meet the ever-changing demands of business dynamics.

3.1 Reframing of the knowledge brokering process

In the present context of rapid globalisation, the concept of knowledge brokering is taking on increasing importance (Holzmann, 2012). Knowledge brokering is essential for the development of dynamic capabilities (Eisenhardt and Martin, 1997). Dynamic capabilities, inferring to the changing potential, capacity and competencies present in an organisation to meet the demands of its ecosystems (Teece *et al.*, 1997), is developed through proper knowledge brokering process (Abbate and Coppolino, 2011).

However, as discussed in the previous section above, the existing process models of knowledge brokering do not represent a suitable process to assess how knowledge brokers acts as levers of dynamic capabilities due to the various limitations mentioned above. The existing models of knowledge brokering suitably represented the context of that particular research and not the dynamic outsourcing industry which differed in terms of context. The existing models of knowledge brokering were, therefore, not relevant for application to this thesis, hence urging the

need to develop a more suitable knowledge brokering process that was relevant to this industry and also one that would allow the dimensions of dynamic capabilities to be mapped onto. Some process models were too complex to apply or were incomplete as some stages were missing. There was also a lack of clarity and understanding about the existing knowledge brokering processes (Ward *et al.*, 2010) which urged for bringing clarity by designing a clearer and much simpler knowledge brokering model. The unclear existing models of knowledge brokering resulted into the need of bringing more clarity and simplicity in the knowledge brokering process (Clegg and Hoens, 2016) so that it could be easily mapped with the knowledge brokering roles as well as the dimensions of dynamic capabilities (Abbate and Coppolino, 2011). This exercise helped to address clarity issues, develop deeper understanding and simplify the knowledge brokering process, thus addressing the knowledge gap.

Though the models represent some distinctions, it can also be deduced that they share certain similarities between each other in terms of the processes stages which can be distilled and coded into one single process with sequential steps. The key steps were synthesised across various process models are identification and assimilation of knowledge. Most models consist of a stage of assimilation creation and transforming the knowledge received to the needs of the user (Przybycien *et al.*, 2010; Oldham and McLean, 1997; Berbegal-Mirabent, 2012). Some refer to this stage as a reconfiguration of knowledge or renewal of knowledge (Dagenias *et al.*, 2015, Neal *et al.*, 2015) according to the new capabilities required (Teece *et al.*, 1997). Amongst all the existing models, only one of them consider a testing phase within the process. The last phase present in most models is the dissemination phase.

After integrating and synthesising the main themes from the existing models and framework of knowledge brokering, the main themes have been put forward so as to create the knowledge

process for this research. The stages listed below provides a reframed knowledge brokering process in terms of seven sequential key process components of the knowledge brokering that would constitute as the foundation of the main themes in building my own model for this research.

The process steps are as follows;

- 1) Identification of knowledge - At this stage the knowledge broker has to be able to understand the market demands and evolution and identify the required knowledge
- 2) Acquisition and assimilation of relevant knowledge - After identifying the source of knowledge the knowledge broker tries to acquire the required knowledge through links, ties or networks with the knowledge producer. After the knowledge broker has acquire the needed knowledge, the latter learns and assimilates part or whole of the knowledge that is needed to create and develop new knowledge for the knowledge user.
- 3) Creation of knowledge – After assimilating the most important part of the knowledge, the knowledge broker is engaged in creating new knowledge for the knowledge user.
- 4) Reconfiguration of knowledge – The reconfiguration process of knowledge takes place here and the knowledge broker reconfigures the knowledge in line of what the user is in need of.
- 5) Testing the created knowledge – After creating the knowledge, testing the knowledge is a vital exercise to ensure that the knowledge developed is in fact proper to share and implement in the organisation. Irrelevant knowledge is discarded or upgraded and added to the good skills of knowledge developed.
- 6) Disseminating the created knowledge – After testing the knowledge created, the relevant knowledge is disseminated in the organisation.

- 7) Provide support – As the relevant knowledge has been disseminated, the knowledge broker must provide support to the knowledge user to ensure sustainability

These 7 themes were the ones that were mostly present in all the models analysed. These 7 themes were identified and designed so that all the stages within the existing models would be present, thereby not missing any important stage out, while considering the possibility of a flow within the reframed knowledge brokering process model to ensure smooth and sequential stages of the process. The seven stages of the reframed knowledge brokering process model is shown in figure 3.1 below.

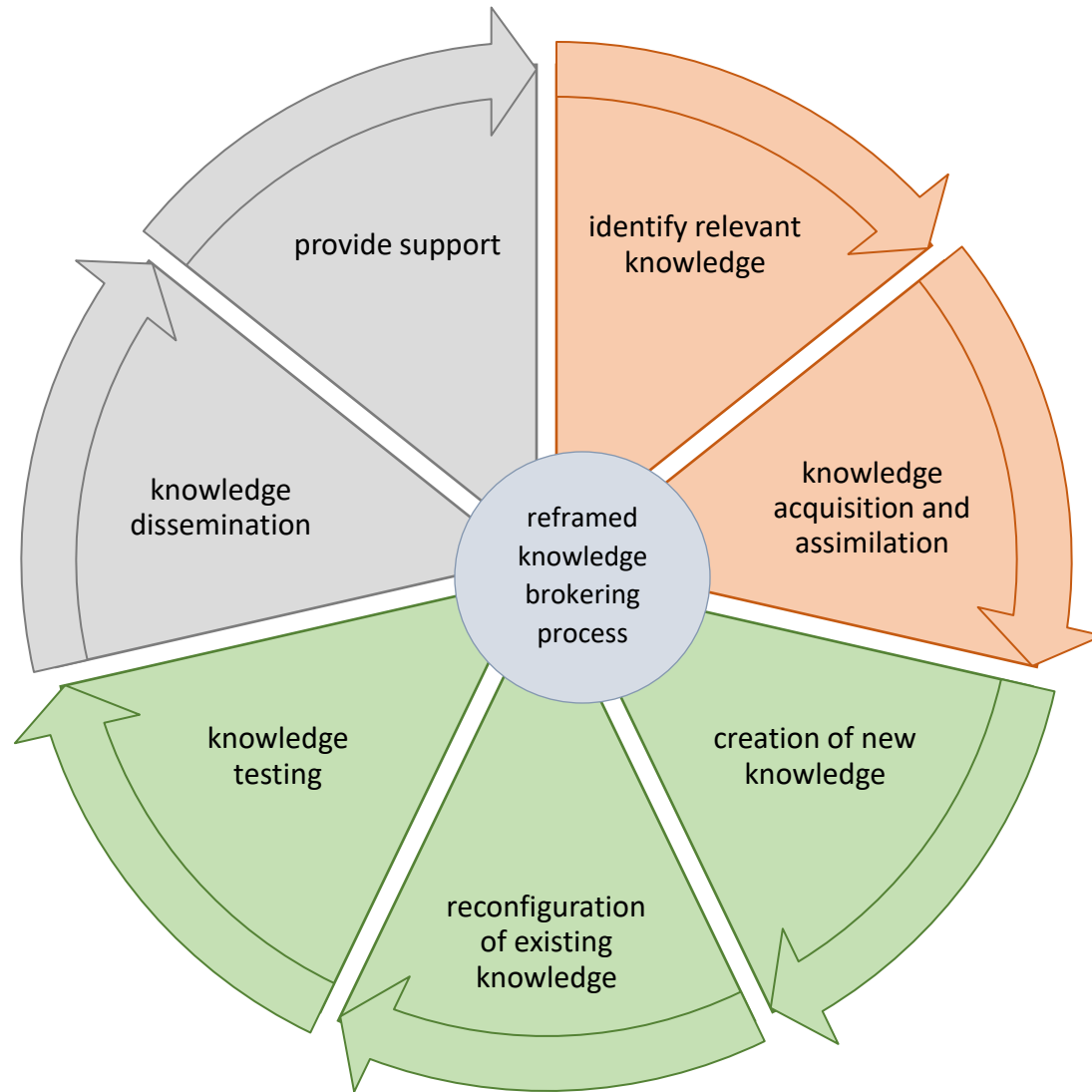


Figure 3.1 - Reframed knowledge brokering process

The difference and main contribution of the reframed model of knowledge brokering in figure 3.1 can be seen within the clear structure and flow of the process. Existing models from the literature provided stages but there was no clear depiction of flows happening within the processes. The existing process models did not provide the necessary structure where the stages would have been easily and clearly mapped to the dimensions of dynamic capabilities whereas the reframed model process provides clarity, is user friendly and gives clear indication of the key steps involved in the knowledge brokering process model. As such the benefits of the stages of the process can be easily identified at individual, job, organisational and industry level which is further expanded in the next section.

Potential benefits of the reframed knowledge brokering process

Knowledge brokers holds strategic positions spanning across multiple industries (Ziam *et al.*, 2009) and exploit their positions to identify new ideas, source them and create new ideas and innovative knowledge to sustain organisational competitive advantage (Eisenhardt and Martin, 2000). The reframed knowledge brokering model developed offers a wide range of benefits compared to the existing models. The benefits of the reframed knowledge brokering process can generate capacity at the following levels; (1) job level (Villarroel, Taylor and Tucci, 2012; Nair *et al.*, 2012) (2) individual level (Neal *et al.*, 2015, Hsu and Lim, 2013) (3) organisational innovations (Ziam *et al.*, 2009) and (4) industry contributions (Nair *et al.*, 2012).

- Potential benefits at the individual level

The reframed knowledge brokering process model reinforce decision making and self-reinforcing capabilities leading to innovative performances (Hsu and Lim, 2013). At the individual level, the knowledge broker is able to make better decisions making authority, understand values (Conklin *et al.*, 2013), identify preferences and attitudes (Hargadon, 2002) and transform research evidence into valuable information and needs (Dobbin *et al.*, 2009). In the longer term the reframed process model leads to knowledge accumulation and increases individual performances (Nair *et al.*, 2012). Frequent exposure to new ideas and learning enlarge the employees' entrepreneurial activity as well as creativity (Hsu and Lim, 2013). Simultaneously, the reframed model induces the cognitive potential of the managers through activities like identification of relevant knowledge and the competencies that empowers the value creation of resources (Nair *et al.*, 2012) for reconfiguration of knowledge. The reframed model urges the individual to develop skills such as agility and promptness in terms of decision-making abilities (Przybycien *et al.*, 2010) to meet the unexpected and turbulent demands of the market. The reframed model supports knowledge brokers to facilitate learning, build capacity (Williams, 2002) to modify knowledge from the producer to the user and increase interpretation of research findings and implication for actions (Dobbins *et al.*, 2009).

- Potential benefits at the job level

The reframed model creates and supports interactions channels and trusts between parties (Przybycien *et al.*, 2010), collective learning (Villarroel, Taylor and Tucci, 2012) thus encouraging knowledge flows between the parties (Neal *et al.*, 2015). As such organisations are in a better position to respond rapidly and flex promptly to respond to the dynamic changes of the market changes (Nair *et al.*, 2012) and reconfigure knowledge. The knowledge brokering activities at the job level, therefore, increase learning interactions (Hargadon, 2002) and discussions which in turn

increases the innovative capabilities at the job level (Villarroel, Taylor and Tucci, 2012) generating an overall impact on the organisational performance. Eventually, the reframed model ends up facilitating knowledge reconfiguration and organisational change by uplifting environmental barriers (Dobbins *et al.*, 2009) and promote organisational culture that support sustainable competitiveness (Russell *et al.*, 2010). While knowledge brokers facilitate knowledge exchange during building rapports with targeted audiences (Dobbins *et al.*, 2009), they forge new connections across domains reinforcing the network within which the organisation operates.

- Potential benefits at the organisational level

The reframed model presents higher potential to inject knowledge at the organisational level (Hsu, 2007) and deepened coordination ability and socialisation ability from knowledge brokering activities (Ziam *et al.*, 2009). Through the reframed model, knowledge brokers would be able to develop the organisational endogenous capabilities in the knowledge absorption process (Ziam *et al.*, 2009) as well as formalisation of new knowledge (Neal *et al.*, 2015) suiting the market demands. They therefore imprint a positive effect on the organisational search patterns over time (Hsu and Lim, 2013) resulting in high commercialisation potential (Przybycien *et al.*, 2010). Simultaneously, organisations develop novel combinations of knowledge critical for innovative performance as well as establishing knowledge brokering routines which eventually is developed into organisational policies (Berbegal-Mirabent *et al.*, 2012), improved business models (Przybycien *et al.*, 2010), organisational action plans and programme implementation (Ziam *et al.*, 2009) and evidence-practice based research (Berbegal-Mirabent *et al.*, 2012). On the longer term, organisations define, develop and recombine interactive search processes from different domains to enact innovation (Hargadon, 2002) and to address new project opportunities (Villarroel, Taylor and Tucci, 2012).

As such organisations possess dynamic collections of specific capabilities (Hsu and Lim, 2013) and diverse resource endowments (Nair *et al.*, 2012) which are likely to take different actions leading to heterogeneous performance and lowering research and development costs (Hsu and Lim, 2013) resulting organisational creativity (Hsu and Lim, 2013) and sustainable advantage (Villarroel, Taylor and Tucci, 2012). From a more strategic perspective, the reframed model supportive of social integration (Ziam *et al.*, 2009) will foster the development of networks (Ziam *et al.*, 2009) and partnership (Hargadon, 2002), quicken the pace of innovation (Kodama, 1992; Hsu and Lim, 2013) mergers and alliances (Villarroel, Taylor and Tucci, 2012) and leverage huge potential to develop cost-cutting partnership with stakeholders, thereby, reducing financial expenses (Nair *et al.*, 2012; Hsu and Lim, 2013). The reframed model equips the knowledge brokers with the necessary tools to leverage knowledge and expertise from one domain bringing it to another (Hsu and Lim, 2013) while tantalising prospects of yielding breakthrough innovations (Hargadon and Sutton, 1997) quickening the pace of innovation for strategic advantage (Nair *et al.*, 2012) and the potential for strategic decision (Hawanini *et al.*, 2003).

- Potential benefits at the industry level

The reframed model represents potential benefits for the industry within which the organisation operates. The reframed model is expected to generate spillover effects in other industries where knowledge is produced and the industry where the knowledge is applied. As claimed by (Hsu and Lim, 2013), through knowledge brokering, organisations actively seek opportunities to reapply knowledge from one domain to innovate in another area spanning innovation across multiple industries and brings higher incentive in extra-mural boundary spanning activities (Nair *et al.*, 2012).

The reframed knowledge brokering stages will enable development teams in one industry to recognise its similarity to other problems and their solutions in different industries and turns innovative concepts from outside industry into innovative and competitive processes by combining them within existing ideas from the industry. Simultaneously, the new knowledge developed and applied in one industry has a spill-over effect on other organisations within the same industry as well as those on other industries. The knowledge brokers therefore develop the ability to capture value networks including all stakeholders within the organisation's ecosystem (Villarroel, Taylor and Tucci, 2012) and develop positive social outcome and impact the industry as a whole (Oldham and McLean, 1997). This eventually leads to the development of social policy making within the industry for a larger social benefit (Berbegal-Mirabent *et al.*, 2012). The development of social outcome is supported by the knowledge brokering abilities of social integration which in turn is developed as a valuable organisational asset for business intelligence activities. Organisations are therefore in a better position to understand customer's needs and tailor-made demands increasing customer satisfaction as a source of strategic competitive advantage (Villarroel, Taylor and Tucci, 2012).

While the contribution and potential benefits of the reframed knowledge brokering process model is expected to be extended at various level most often within the boundary of the industry. But the significant contribution of the reframed knowledge brokering model urges the knowledge broker to seek beyond industry boundaries in search of knowledge that can add an edge to competitiveness. This activity is expected to generate enormous spill over effects across multiple other industry. The benefits of the reframed knowledge brokering model, therefore, transcend the limits that the boundary of one industry offers and the amalgamation of knowledge and intelligence

and novelty across boundary generates the unique competitive advantage that all dynamic organisations are incessantly in quest of.

3.2 Establishing a robust link between knowledge brokering and dynamic capabilities

Dynamic Capabilities

The concept dynamic capabilities first appeared in 1997 in David's Teece paper 'Dynamic Capabilities and Strategic Management' unfolding the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments.

Origins of dynamic capabilities

Elements of dynamic capabilities can be found in Schumpeter (1942), Penrose (1959), Nelson and Winter (1982), Prahalad and Hamel (1990), Teece (1976, 1986, 1988) and in Hayes, Wheelwright and Clark (1988). The dynamic capabilities perspective finds its roots within the basic concepts of resource-based view. The academic literature on dynamic capabilities grew out of (1) the resource-based view of the firm and (2) concept of 'routines' in evolutionary theories of organisation (Nelson and Winter, 1982). The resource-based view has been one of the most influential and cited theories in the history of management theorising specially when it comes to the development of competitive advantage (Kraaijenbrink *et al.*, 2010). The theory explains how the internal sources of a firm sustain competitive advantage. The resource-based view is based on the concept that for a firm achieve a state of sustained competitive advantage, it must acquire and control valuable, rare, inimitable, non-substitutable resources and capabilities and upgrade the organisation's competencies so that it can absorb and apply them (Barney, 1991; 1994; 2002). The resource-based view has been related, shared and have set the foundational research of several other

analyses: core competencies (Hamel and Prahalad, 1994); dynamic capabilities (Helfat and Peteraf, 2003; Teece, Pisano and Schuen, 1997) and the knowledge-based view (Grant, 1996).

The idea of the resource-based view reflects on the beliefs of Penrose (1959) and Rubin (1973) concerning the creation of competitive advantage for an organisation. Peteraf (1993) and Wernerfelt (1984) state that competitive advantage of the organisation lies in the application of a bundle of valuable tangible and intangible resource at the firm disposal. To be able to transform the tangible and intangible resource at the firm's disposal, it is important to convert short-run competitive advantage onto sustainable competitive advantage (Mwailu and Mercer, 1983, Wernerfelt, 1984; Rumelt, 1984; Penrose, 1959). As such resources have to be heterogeneous in nature and not homogeneous (Peteraf, 1993, p180) which translate the organisational resources into valuable and inimitable ones (Barney, 1991). As simple as the foundations of resource-based view are very easily grasped, the model is yet not without its critics.

Limitations of resource-based view

Some scholars (Dosi, Faillo and Marengo, 2008; Williamson 1999; Priem and Butler, 2001) have stated that the resource-based view does not adequately explain how and why certain firms have competitive advantage in fast evolving, volatile and unpredictable change happening in organisations. Numerous scholars have criticised the resource-based view for not providing strong grounding for studies in highly volatile organisations (Foss, Klein, Kor and Mahoney, 2008; Makadok, 2001; Priem and Butler, 2001; Connor, 2002; Miller, 2003; Lado, Boyd; Miller *et al.*, 2003; Helfat *et al.*, 2007). Kraaijenbrink *et al.*, (2010) points out numerous reasons as to why the resource-based view is not supportive of sustainable competitive advantage in fast evolving organisations.

Priem and Butler (2001) state that resource-based view lacks substantial managerial implications and operational validity. The resource-based view points out that managers should develop inimitable resources but it fails to explain how to do it. Lado, Boyd, Wright and Kroll (2006) state that the resource-based view suffers from a tension between descriptive and prescriptive theorising.

Collins (1994) state that resource base view lacks an unlimited number of levels of analysis as well as processes. Gibbert (2006) state that the applicability of resource-based view is too limited and applies only to large firms with significant market power and applies only to firms striving to attain sustainable competitive advantage. Barney (2002) also state that there is a limitation to the application of the resource-based view; it maintains the rules of the games as long as the industry remain fixed. As the market conditions change, the resource-based view cannot evolve to accommodate the ecosystems challenges and demands. Furthermore, some academics (Foss, 1996; Dosi, Faillo and Marengo, 2008; Grant, 1996) argue that the resource-based view is insufficient as a theory of the firm. Makadok (2001) suggests that the possession of resources is not sufficient in the resource-based view and that it is only by being able to deploy these that sustainable competitive advantage can be attained.

Also, as stated by Kraaijenbrink *et al.*, (2010), the definition of resource in the resource-based view is unworkable as it does not differentiate resources as inputs and it does not show any recognition as to how different types of resources may contribute to sustainable competitive advantage in various ways. At the same time, the model fails to take into consideration the impacts of the organisational eco-systems, both the internal and external forces that impact on the resources. Therefore, the resource-based view model has been referred to as being conceptually vague and tautological with inattention to the mechanisms by which resources actually contribute

to competitive advantage (Eisenhardt and Martin, 2000), lack of empirical grounding (Williamson 1999; Priem and Butler, 2000), and questionable to sustain competitive advantage (D'Aveni, 1994).

Resource-based view does not explain how the resources are diffused from one place to the other, what processes are used to diffuse the knowledge and how necessary information is gathered from the organisation's eco-systems. The current literature on resource-based view have not factored in the knowledge broker as a key resource in capturing and modifying knowledge. Furthermore, the resource-based view represents major flaws as it fails to show links, networks, and processes about the diffusion of knowledge. Relationships between the broker and the sources of information and its diffusion are quite obscure and not clearly defined. As such the theory has a major flaw in explaining the diffusion of knowledge and how information is sensed, seized and reconfigured by the actors. Though this theory encourages the development of competitive advantage through the development of competencies, resource-based view has not factored in factors such as how knowledge is accessed, modified and disseminated in a highly dynamic business environment.

The resource-based view, though foundational to many other theories in management represent flaws within its concepts that does not match the requirements of a highly dynamic working environment (Kraaijenbrink *et al.*, 2010). As previously purported, resource-based view does not provide the necessary framework and foundation to sustain the sensing of knowledge and modification of knowledge to dynamic organisational needs. From the light of high velocity and dynamic organisations, resource-based view offered little as to what could potentially allow organisations to evolve rapidly within short lapse of time. The resource-based view model does not offer the potential for sensing opportunities and threats, seizing opportunities to reconfigure internal talent to respond to those in demands. Though the resource base view is fundamental to

dynamic capabilities, the resource-based view is not theoretically strong to support the research question of this thesis due of the limitations to accommodate the dynamics of the fast-evolving business environment. Dynamic capabilities, rooted in resource-based view, provide a more suitable foundation for this study as the theory of dynamic capabilities offer better grounding for the study of knowledge brokering in dynamic business settings. Where resource-based view focuses on sustainable competitive advantage (Barney, 2002), dynamic capabilities emphasises on survival strategies in response to the rapidly changing business context (Teece, 1994). Similarly, this thesis is directed towards continuously developing innovative business strategies to constantly overcome rivals and benchmark them to survive competition and progress in the industry. The resource-based view does not justify the grounds for research for this thesis due to its inability to be responsive to fast changing business context compared to dynamic capabilities.

The dimensions of Dynamic Capabilities

Dynamic capabilities infer to the changing potential, capacity and competencies present in an organisation in order to meet the demands of its ecosystems (Dunning and Ludan, 2008). As markets are constantly undergoing innovation and continuously shifting to respond to the changing business landscape, managers use dynamic capabilities to integrate, build and reconfigure internal as well as external competencies to respond to these market changes as a means of sustaining competitive advantage (Abbatte and Coppollino, 2010). Therefore, the manipulation of resources, in particular knowledge is especially critical in fast evolving markets. Teece *et al.*, (1997) categorises dynamic capabilities to be made up of the following three dimensions;

- 1) Sensing – defined as the ability to identify opportunities for discovery and creation
(Nonaka and Toyama, 2007)

- 2) seizing – defined as the ability to address an opportunity which has been detected to be invested in (Teece *et al.*, 1997) and
- 3) reconfiguring – defined as the successful calibration of technology and market opportunities (Teece, 2003) to be ahead in competition (Zollo and Winter, 2002).

Through his definition of dynamic capabilities, the Teece (2007) points out that such capabilities are constantly evolving and responding to the highly volatile business environment and the ecosystems surrounding it and sustaining strategic competitive advantage. Dynamic capabilities emphasise on a developmental approach in constantly generating and modifying their operating routines to enhance their effectiveness through learning (Zollo and Winter, 2002). Teece (2007) claims that firms require dynamic capabilities to adapt and respond to the changing environment of the ecosystems that they occupy.

Dynamic capabilities enable organisations to renew their competencies to meet changing market requirement and include the ability to integrate, learn and reconfigure internal as well as external skills and resources (Teece *et al.*, 1997) through sensing and shaping opportunities, seizing opportunities and maintaining competitiveness through enhancing, combining, protecting and reconfiguring their intangible and tangible assets (Teece, 2007). Whilst Zollo and Winter's (2002) focus is more on developmental approach, Eisenhardt and Martin (2000) highlight the importance of organisational processes. Likewise, Teece *et al.*'s, (1997) three dimensions of sensing, seizing and reconfiguring are more supportive of developing capabilities that are innovative and highly responsive to the internal and external changes within the organisational ecosystems.

As such Teece *et al.*, (1997) conceptualisation of dynamic capabilities proposes greater equifinality, homogeneity and substitutability across firms as dynamic capabilities exhibit commonalities across effective firms than resource-based view. Eisenhardt and Martin's (2000)

perspective of dynamic capabilities focuses more on organisational value-added processes that create competitive value for firms by manipulating resources into new value creating strategies suitable for dynamic business environments. Intrinsicly, the dynamic capabilities provide a more supportive and integrative foundation to study how knowledge brokers sense and seize business opportunities and transform resources to respond to the demands of the ecosystem within dynamic working environment. Such competences and processes are used by knowledge brokers to sense, seize and reconfigure the resources within the organisation so that it can respond to its ecosystem and maintain strategic intent. Numerous authors have stressed on the importance of sensing market mechanism and adjusting to them to be able to survive competition (Teece *et al.*, 1997, Lindblom *et al.*, 2008; Day *et al.*, 2000).

Figure 4 in section 2.4.2 of this chapter conceptualises knowledge brokering as the levers of dynamic capabilities for organisations operating in past paced and highly volatile working environment.

Conceptualising knowledge brokering as a lever of dynamic capabilities

Knowledge brokers support innovation by connecting, recombining and transferring to new context otherwise disconnected pool of ideas. As such, knowledge brokers play a significant role in the development of dynamic capabilities as they facilitate the interaction among organisations and the combination of complementary assets and capabilities necessary to identify new ideas (Abbate and Coppolino, 2011) for emerging markets as well as adapting core competencies to address the demands of the rapidly changing environment (Harreld *et al.*, 2006). To survive and to prosper in such competitive environment, knowledge brokers must be able to identify and exploit strategic competitive advantage by supporting the organisation's systems and processes to be open to innovation so that they are able to capture markets and competitive advantages (Eisenhardt and

Brown, 1999; Lawless and Anderson, 1996). Eisenhardt and Martin (2000) state that knowledge brokering enhances the dynamic capabilities of organisations in markets characterised by rapid and abrupt technological change.

In these dynamic market context, knowledge creation, integration and re-configuration become vital for sustaining competitive advantage (Teece *et al.*, 1997). Innovative performance in organisations is acknowledged as the ability to recognise, exploit and employ external knowledge (Cohen and Levinthal, 1990) to enhance value creation. To be able to survive and prosper in such competitive conditions knowledge brokers must support firms to react to change (Naman and Slevin, 1993) to build dynamic core capabilities for the generation of new knowledge and innovation and for the development as well as sharing of knowledge embedded innovation (Abbate and Coppelino, 2011).

Therefore, the knowledge broker, as the link between various sources of knowledge, uses his creativity to an open innovation process (Chesbrough, 2003) and identify significant strategic resources that will allow them to differentiate from competitors to sustain existing markets as well as capture new ones (Eisenhardt and Brown, 1999). While the knowledge broker is willing to embrace to open innovation, it allows the latter to interact with the environment and the ecosystems in view of understand competitive forces and responding to that and gain value as internal and external networking opportunities. Therefore, knowledge brokers play a significant role in the development of dynamic capabilities as they facilitate the interaction among organisations by combining complementary assets and capabilities required to identify new ideas for emerging and dominating markets as well as adapting core competencies to address the fast-evolving changing business environment. This argument is further supported by Eisenhardt and Martin (2000) and

Abbate and Coppolino (2011) reinforcing the fact that knowledge brokers enhances dynamic capabilities of organisations in markets characterised by rapid and abrupt technological change.

Though scholars state that knowledge brokers are at the core of developing dynamic capabilities (Mirabent-Berbegal et al., 2012; Meyers, 2010, Eisenhardt and Martin, 2000; Abbate and Coppolino, 2011), the authors do not explain how dynamic capabilities are developed by the knowledge brokers. Though they claim that there is a direct and positive link between knowledge brokers development capabilities, there is no clear role description and process explaining how the knowledge broker develop dynamic capabilities. Through the scholars work present within the body of literature, all of them do not provide clear explanations. Both the capabilities of the knowledge brokers and processes are unclear and untested as a clear description of the possible link that may exist.

While referring to the literature about knowledge brokering and dynamic capabilities many authors such as (Eisenhardt and Martin, 2000), (Abbate and Coppolino, 2011), have discussed whether knowledge brokers can develop dynamic capabilities through cognitive values or from organisational processes. The literature around the subject shows that development of dynamic capabilities by the knowledge broker can take place thorough cognitive values (Nonaka and Toyama, 2007; Lindbloom *et al.*, 2008; Day, 2002; Tsoukas and Mylonopoulous, 2004) or the knowledge brokering process (Eisenhardt and Martin, 2000, Schoenecker and Cooper, 1998; Zahra *et al.*, 2006; Capron *et al.*, 1998; Zollo and Winter, 2002; Maritan, 2001). Therefore, the knowledge broker through his various roles identified such as bridger, creator, diffuser and facilitator are linked to the cognitive abilities of the latter for brokering.

It can, however, be argued that the transfer of knowledge happens through the individual's cognitive, creative and entrepreneurial capabilities which is later translated through organisational

processes. Teece *et al.*, (1997) supports this view that knowledge and its innovation is inherent to the individual through the cognitive competencies of the brain which is later translated and developed into organisational policies through processes.

3.3 Reframing knowledge brokering as a lever for dynamic capabilities

This part of the thesis conceptualises how the knowledge brokering process acts as a lever for the development of dynamic capabilities. The seven stages identified in the reframed knowledge brokering process (in figure 3.1 above) has been mapped on the four roles of the enhanced typology of knowledge brokering (in Figure 2.2) to develop the conceptual framework, depicted below in figure 3.2 for this thesis.

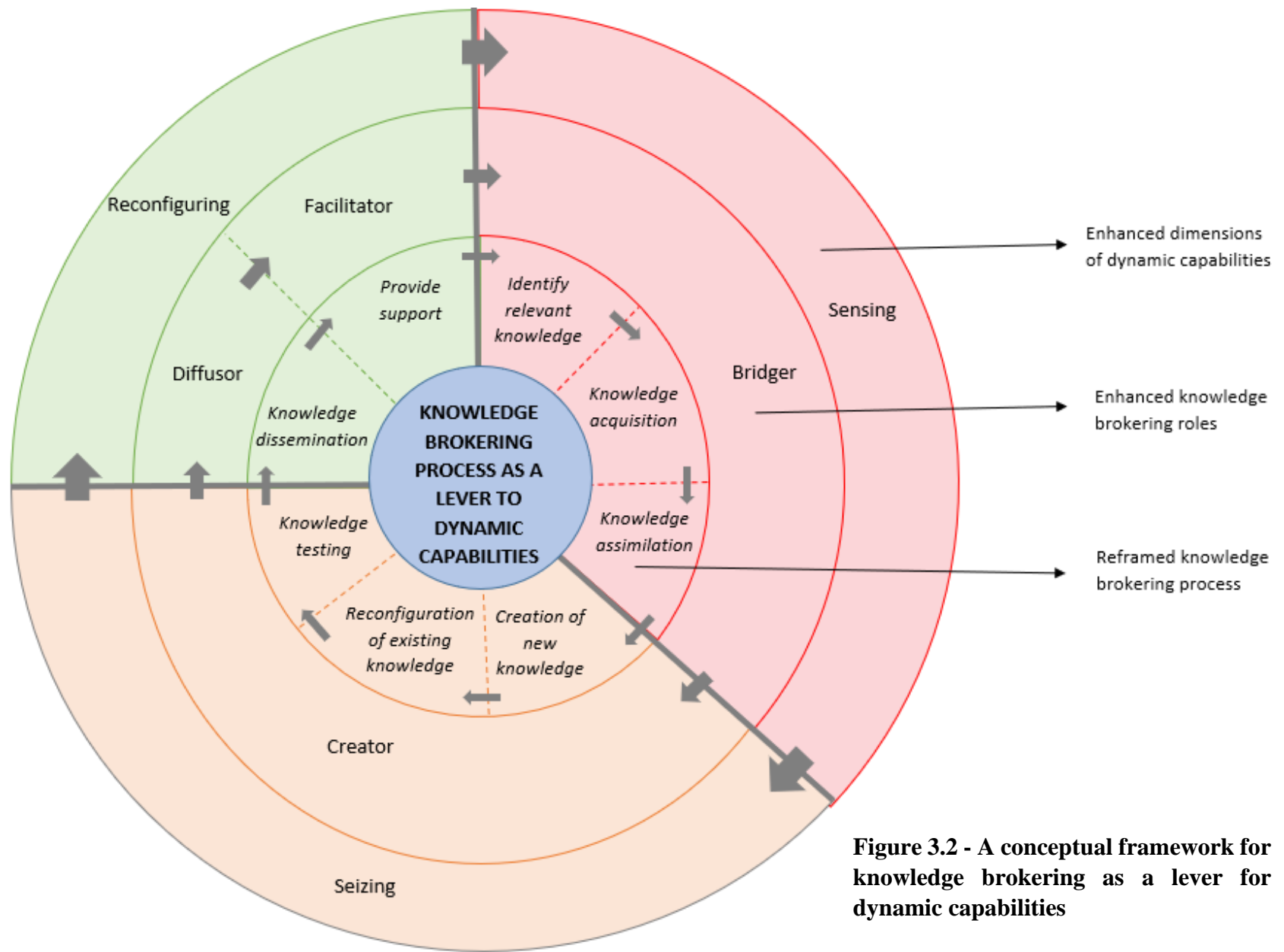


Figure 3.2 - A conceptual framework for knowledge brokering as a lever for dynamic capabilities

Knowledge brokering process as a lever for sensing

The micro-foundation of sensing can be linked to the literature on entrepreneurship (Kirzner, 1973; Slater and Narver, 1995; Shaker *et al.*, 2006; Weerawardena, 2003) where the ability to identify the opportunity for discovery and creation originate from the cognitive and creative brain of individuals (Teece, 2009; Nonaka and Toyama, 2007) as well as through well-established structures and processes embedded within organisations (Teece *et al.*, 2007). The representation of sensing has been attributed by some scholars to the ability to sense the individual (Lindblom *et al.*, 2008; Day, 2002; Tsoukas and Mylonopoulos, 2004) whereas others attributed sensing to the organisational processes (Lindblom *et al.*, 2008; Schoenecker and Cooper, 1998; Zahra *et al.*, 2006).

Amidst all these debates of whether sensing is represented through individual or organisational processes, it is feasible to state that, both individual cognitive abilities as well as organisational processes, plays a vital role in enhancing the sensing capabilities, whether as a cognitive from the individual capability or from organisational structures later transferred and mapped in organisational processes (Teece *et al.*, 2007). Organisational process with mechanisms to identify relevant knowledge for the organisation as well as the ability to acquire and assimilate knowledge is vital for proper deployment, coordination and information gathering for the sensing process to happen Hallin, Andersen, Foss and Tveteras (2012). The conceptual framework (figure 3.2) shows the first three stages, identify relevant knowledge, acquisition and assimilation of knowledge to be vital to support the bridger's ability to identify new opportunities through scanning, search, exploration across technologies and markets both being local and distant to respond to changes within the organisational ecosystems (Teece *et al.*, 1997; Day *et al.*, 2000; Lindblom *et al.*, 2008). The structured knowledge brokering process supports the cognitive competencies of the bridger to acquire knowledge through experience, perception, idea and intuition that will allow them to navigate through the various knowledge

opportunities to sense the required one and capitalise on it. As the bridger, the bridger is therefore in a position to create connections, control resource flows and access the relevant knowledge from the knowledge producer through trust. When such opportunities are identified, knowledge brokers must figure out how to interpret new events (Pawlowski and Robey, 2004) and develop the organisation's ecosystem and which market segment to target to recreate knowledge (Perrin, 2003; Castro, 2015) and innovative strategies. As stated by Abbate and Coppelino (2011) knowledge brokers play a significant role because they facilitate the interactions among organizations and the combination of complementary assets and capabilities necessary to identify new ideas. In agreement with Teece *et al.*, (2007) and Abbate and Coppelino (2011), this research also depicts that the knowledge brokering process is key for knowledge brokering to happen and that the intuitive capabilities of the bridger has a great role in the identification, acquisition and assimilation of the opportunities and knowledge for competitive advantage.

Knowledge brokering process as a lever for seizing

Teece *et al.*, (2007) states that the seizing capability refers to the ability to absorb and integrate knowledge to recreate value from opportunities. The ability to seize relies on the organisational processes (Sawhney *et al.*, 2004; Wernerfelt, 1984) to address an opportunity which has been detected to be invested in, developing trust relationship and fostering employee commitment to be able to seize the opportunities and maintain strategic intent. Where Teece (2007) concept of seizing includes the formulation of a strategic response, Nielsen (2006) concept of seizing, involves the aspect of knowledge exploitation on order to leverage the development of competencies within the organisation. Internal organisational factors such as business models, organisational processes, innovation and technology are factors influencing the seizing capability to accomplish strategic execution for the long term (Davies, 2004; Mathieu, 2001; Gebauer, 2008). While most authors have focused on seizing opportunities within the

organisation through internal systems, organisational processes, technical and technological innovations (Sawhney *et al.*, 2005; Wernerfelt, 1984; Dierickx and Cool, 1989; Davies, 2004; Matthyssens, Vandenbempt and Berghman, 2008), many have neglected the focus on the external environment surrounding the organisation's ecosystems. Through Nielsen's (2006) version of seizing capabilities, the emphasis is mostly on internal organisational processes rather than external ones which do not capture the external dimensions from the ecosystems which shape the seizing activity. To be able to maintain strategic competitive advantage, it is not only important that seizing opportunities are developed within the organisation but as well as across the various stakeholders within the whole organisational eco-systems. Compared to Sawhney *et al.*, (2004), Wernerfelt (1984), Dierickx and Cool (1989), Davies (2004), Mathieu (2001), Gebauer (2008) Matthyssens and Vandenbempt (2008), Teece *et al.*, (2009) argues that seizing capabilities should constitute the consideration for both internal and external stakeholders as major influences on the development of dynamic capabilities which seems to be a better case for achieving and sustaining strategic competitive advantage.

Business models, commercialisation strategy, investment policies, technology and innovation all together with external influences such as political, economic, social and global pressures impact on dynamic capabilities and its development. As environments experience rapid change, activities are not fully decomposable (Teece 2009; pp50), therefore cross functional activities with supportive investment must take place concurrently, rather than sequentially, if enterprises are to cut time to market for new products and processes. In view of responding to the rapid changes of the business's ecosystem, the cognitive, creative and entrepreneurial abilities of the knowledge broker encourage the mobilisation of resources to address any opportunities that they identify and seize which is able to add value to the sustainable advantage of the company. Seizing capabilities relies on organisational process and the knowledge broker's ability to address opportunities that are being taken to be invested in (Teece *et al.*, 1997) in view of

formulating strategic response (Wernerfelt, 1984; Davies, 2004). The knowledge broker, therefore, able to seize opportunities through the processes established within the organisations (Sawhney *et al.*, 2004; Wernerfelt, 1984) as well as external systems to the organisations (Gebauer, 2008; Matthyssens, Vandenbempt and Berghman, 2008) to be able to move to the next stage, that is, reconfigure existing knowledge in view of achieving sustainable competitive advantage.

The organisational process consisting of stages such as creation of knowledge, reconfiguration of knowledge and testing of knowledge supports the creator to generate new knowledge and modify the existing obsolete knowledge followed by the testing stage of the knowledge brokering. Therefore, the creator is at the core of developing new knowledge to new needs of the business through organisational processes and his ability to seize relevant knowledge. This activity has been mapped through the knowledge brokering process as shown in the conceptual framework proposed in figure 3.2.

Knowledge brokering process as a lever for reconfiguring

The last dimension identified by Teece *et al.*, (1997) concerns the reconfiguration of assets. Reconfiguration is needed to maintain strategic evolutionary fitness. Reconfiguration of assets encompasses the successful calibration of technology and market opportunities (Teece. 2003), for strategic organisational transformation (Teece *et al.*, 1997 and restructuring of interests (Zahra *et al.*, 2016) by extending and modifying the organisational's resource base (Helfat *et al.*, 2007) to be ahead of competition (Teece *et al.*, 1997; Zollo and Winter, 2002). Some authors are of the view that reconfigurations take place within the organisation through processes, paths and procedures (Capron *et al.*, 1998; Zollo and Winter, 2002; Maritan, 2001) while others share the perspectives that reconfiguration capabilities have to consider both the internal as well as the external factors impacting the capability, hence considering the

organisational's ecosystem as a whole (Teece, 2007; Teece *et al.*, 1997; Teece and Pisano, 1994; Pisano, 2015).

In terms of developing the capability, Helfat and Peteraf (2003) consider reconfiguration to take place through organisational processes which can be in the form of sharing the capability between the old and the new or the transfer of the capability from one geographical location to another across boundaries. Through the possibility of sharing the old and the new capability together arise the concept of co-specialisation. Co-specialisation is the strategic fit which needs to be continuously achieved (Teece, 2007) through organisational adaptation (Miles and Snow, 2003) to sustain competitive advantage. Porter's (1996) perspective on strategic fit does not consider complementarities nor co-specialisation, when compared to those of Teece (1986), Brandenburger and Nalebuff (1996) and Santoro and McGill (2005) who recognise co-specialisation within the literature of dynamic capabilities.

For dynamic capabilities to be sustainable and strategic, it has to be complementary (Teece, 2009), yet evolutive, maintaining the baseline as the foundation and reconfigure and restructure the base to new capabilities demanded by the eco-system. The old and the new must complement each other. Co-specialisation can therefore be in the form of one asset to another, strategy to structure or strategy to process as supported by Teece (2007). Co-specialisation process is generated through the asset orchestration process by managers' effective decision-making abilities and entrepreneurial activity (Jantunen *et al.*, 2005) to re-invent new business models which respond to the organisational changes in the eco-systems for surviving situations of uncertainty and ambiguity (Santoro and McGill, 2005). Therefore, proper asset orchestration demands that structures, strategic decision making is decentralised and devolved as it brings managers closer to new technologies, customers and the organisational's eco-system.

As supported by Helfat and Peteraf (2003) and Zollo and Winter (2002) organisational processes such as knowledge dissemination support's the knowledge broker's ability to reconfigure and diffuse the knowledge according to the user's needs. The broker then assumes the role of the diffusor and facilitator to successfully calibrate technology and market opportunities (Teece, 2003) for strategic organisational transformation (Teece *et al.*, 1997) by extending and modifying the organisational resource base (Helfat *et al.*, 2007). The diffusor and facilitator then translate, apply the knowledge by making use of creative rescaling and transforming the old knowledge into new ones (Helfat and Peteraf, 2003) by maintaining the co-specialisation (Teece *et al.*, 2009).

As part of engagement with the knowledge, the diffusor clarifies information needs, understand the knowledge and allows the latter to reconfigure the knowledge according to the organisational needs. As such, by making the use of his cognitive abilities, the diffusor is capable of calibrating the capabilities through in-depth engagement with the knowledge successfully and diffuse the modified knowledge to the knowledge users. By making use of his experience and taking risks after thorough and calculated decision making, the diffuser reconfigures the knowledge according to the user's needs.

As the knowledge broker has diffused the modified knowledge to the user, the facilitator eases the learning process by providing support to the knowledge user (Rivard *et al.*, 2010). While making use of his creative, entrepreneurial and cognitive abilities (Slater and Narver, 1995), the knowledge broker within the role of the facilitator is able to support the learning process of the knowledge users for strategic organisational transformation (Teece *et al.*, 1997) and extending the modification of the organisational resource base (Helfat *et al.*, 2007). The facilitator eases the capacity building process through forums, knowledge agents, special experts and capacity builders (Hargadon and Sutton, 1997; Lamari and Belgacem, 2012; Meyers, 2010). Therefore, within the role of the facilitator, the knowledge broker makes use of

his cognitive, entrepreneurial and creative abilities to support the reconfiguration of knowledge into innovative ones. The diffuser's role in dissemination the knowledge and the facilitator's role in providing support to the new knowledge developed as part of reconfiguration is shown in figure 3.2.

Compared to existing knowledge brokering models, the conceptual framework developed well defines the knowledge brokering stages as well as well-defined roles of the knowledge broker which has clearly been mapped on the corresponding dimensions that they can be linked onto. Though it was claimed by Abbate and Coppolino (2011) and Eisenhardt and Martin (2000), knowledge brokers act as levers for dynamic capabilities, no framework was developed so far merging these theoretically related yet distant notions of knowledge brokering and dynamic capabilities. This conceptual framework proposes a first piece of work merging these two distant notions supported by previous academic claims of Abbate and Coppolino (2011) and Eisenhardt and Martin (2000) to bridge the gap in the existing body of literature. The framework provides a platform for the establishment and institutionalisation of knowledge brokering as a lever for dynamic capabilities at Ceridian HCM Inc Mauritius and evolution of the concept at a later stage to ensure the progress of the conceptual framework as well as the application of knowledge brokering and dynamic capabilities at the company. The conceptual framework will be used as a thematic guide for primary research, the terms of which are explained in the following methodology chapter and at a later stage tested and confirmed thereby offering an opportunity for Ceridian HCM Inc Mauritius to inculcate knowledge brokering within the company in context.

Chapter FOUR: Methodology

4.0 Introduction

This chapter presents a detailed account of the methodology developed for the study in view of the research aims and objectives outlined under Section 1.4 in Chapter one. The chapter begins by providing an explanation of the research position anchored in social constructionism along the dimensions of ontological, epistemological and axiological dimension. The chapter then considers the abductive approach adopted which simultaneously supports confirmatory and exploratory questions and verify as well as generate theory within this study. This is followed by a discussion of the case study design and the longitudinal time horizon that underpins the empirical work. The next section describes the data collection process and sampling strategy which comprises primarily qualitative methods and techniques logically sequenced over a period of eighteen months. The chapter proceeds to explain the mode of analysis which is thematic in nature and details the process of making sense and identifying key issues arising from the data. What follows is an evaluation of the credibility of the research findings against a set of criteria including validity, reliability and transferability. The chapter concludes with a brief section on reflexivity a consideration of the ethical issues arising at each key stage of the research process.

4.1 Overview of the research methodology

Saunders *et al.*, (2007) research onion illustrates the stages that must be covered when developing a research. The research onion provides an effective progression through which the philosophical stance, research approaches and methods can be designed for any researcher. The research onion has been applied at every stage and progression of this research depicting the ontological, epistemological and axiological considerations. The stages are not necessarily at odds with each other (May, 2011), but the choice of research philosophy is defined by the type

of knowledge being investigated in this thesis. The research philosophy being applied to the research explains the assumptions inherent in this research and how this fits the methodology being used in this PhD. The research methods, approaches, strategies and techniques have been streamlined with respect to philosophical stance taken for this research. The figure below depicts the various stages of the research onion relevant to this research.

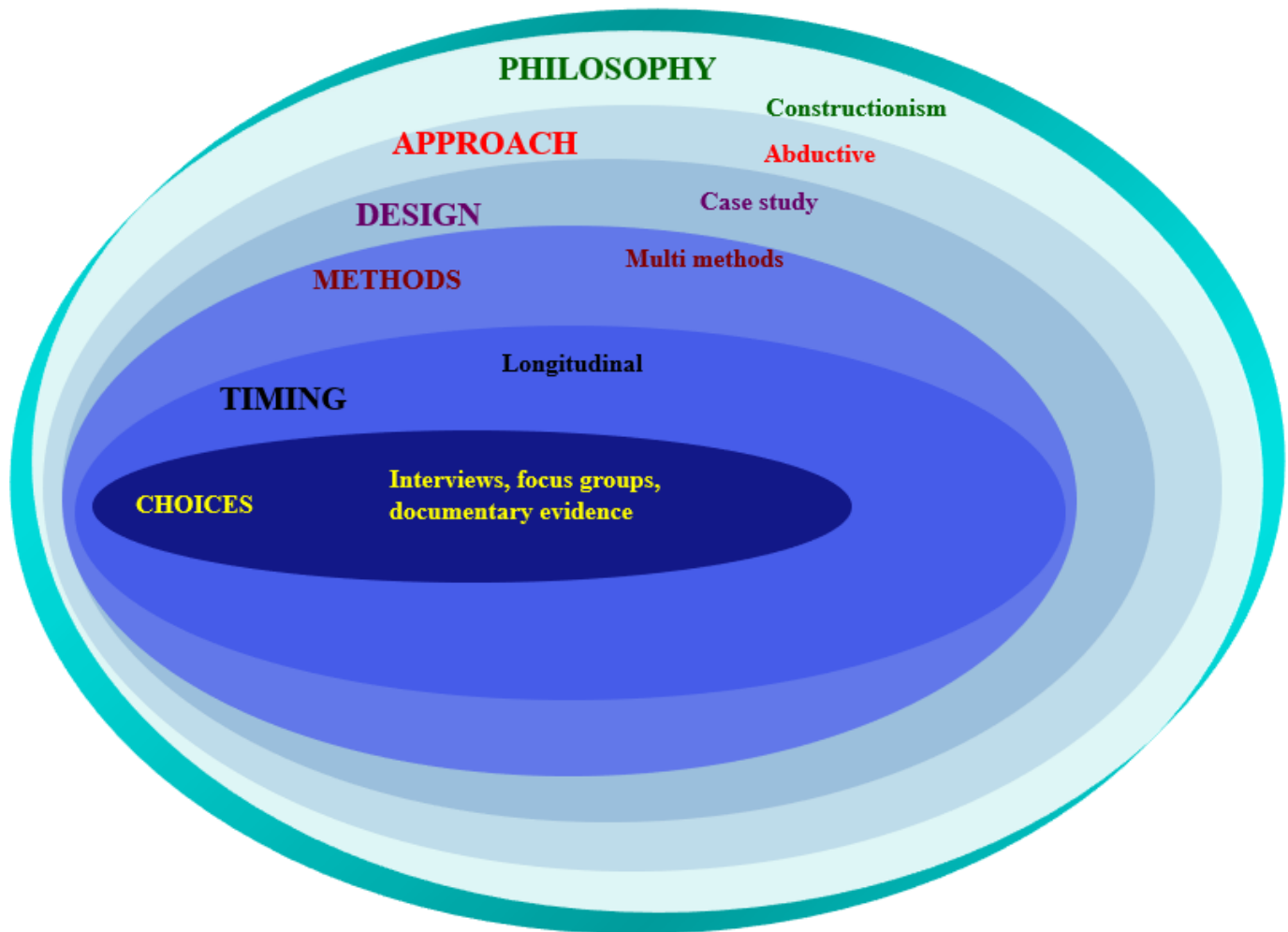


Figure 4.1 - Research Onion detailing the key elements of the research methodology for this thesis

Source: Saunders et al., 2009, pg. 108) [modified]

The first layer of the research onion is the philosophical stance taken by the researcher. It decides the nature of knowledge for the researcher as well as the latter's set of beliefs concerning the nature of reality being investigated (Bryman, 2012). The stance taken for this research is social constructionism, anchored in interpretivism, as this thesis looks at social

phenomenon which is created from the perceptions and consequent actions of social actors (Saunders *et al.*, 2019) surrounding knowledge brokering and dynamic capabilities.

The second layer research approach, for this study is abductive representing both the deductive as well as inductive approaches to empirical work. The abductive approach to this thesis is expressed through the identification of themes from the literature review which leads to the development of a conceptual framework on knowledge brokering as levers of dynamic capabilities which is then followed by field work and confirmation of the framework by the knowledge brokers of the company.

The third layer stage of the research onion is the design used to gather data for this research. Case study was used as part of the thesis as it allows for the exploration, in-depth understanding of the complexities of knowledge brokering in multinationals. Case study supports multi-faceted explorations of complex issues around knowledge brokering in real life setting of the chosen multinational and lends itself well to capturing information on more explanatory '*how*', '*what*' and '*why*' questions of this research Yin (2003).

The fourth layer of the research onion is the method used for the research. This research uses the multiple methods of qualitative data collection methods with more than one method of data collection technique such as unstructured interviews, documentary evidence and focus groups. This multi-method approach adds more in-depth evaluation as well as for a more robust set of results through triangulation data and findings to this research.

The next layer, timing, chosen is longitudinal as it supports the process of social change spanned over a period of time to account for changes in the evolving nature of the object of study (Gershuny, 1998). Longitudinal research enabled a better understanding of the different social processes, spanned over 18 months, that shaped the knowledge brokering activities that acted as a lever for the development of dynamic capabilities at Ceridian HCM Inc.

The last layer of the research onion, choices, used is a combination of unstructured interviews to probe and get a deeper insight about the subject being researched. At a later stage, focus group was used to assess, amend and reconfirm the framework created. This thesis has triangulated various techniques as part of the study.

4.2 Research Philosophy

Research philosophy is of utmost importance as it supports the researcher in deciding which approach works better than other for the research undertaken as well as elucidate research design from data collection to data analysis (Arbnor and Bjerke, 1997). Research philosophy involves philosophical assumptions as well as distinct methods and procedures (Creswell, 2014). The researcher's work is shaped by the numerous assumptions overshadowing it as well as the means to interpret the findings (Crotty, 1998). As part of the research process the researcher makes numerous assumptions (Burrell and Morgan, 1979) which includes nature of knowledge (Saunders *et al.*, 2015) and the theory of knowledge (Benton and Craib, 2001).

Ontology: What exists?

Ontology, as a branch of metaphysics (Clark and Creswell, 2008), can be understood as the science of being in general, embracing issues as the nature of existence and the categorical structure of reality (Honderich, 1995). At a philosophical stance, it concerns the nature of the reality. Ontology is the starting point of all research from which the epistemology and methodology and research methods follow (Grix, 2010). Blaikie (2000) suggests that ontological claims are those claims and assumptions that are made about the nature of social reality, the claims about what is existent, what constructs it and how it interacts with its surroundings. "Ontology is the study of being" (Crotty, 1998, p. 10) and "raises basic questions about the nature of reality and the nature of the human being in the world" (Denzin & Lincoln, 2000). Ontology deals with questions such as 'What is the form of nature and reality and what can be known about it?' (Denzin and Lincoln, 1998). Benton and Craib (2001)

categorises ontology in four main philosophical traditions which are further explained in the table below.

Materialist	State that the world is made up of matter and different characteristics of material objects, human beings, life and social constructs and can be explained in terms of the matter's complexity.
Idealist	Share the view that the ultimate reality is mental or spiritual and believes in experience of their own, conscious life as they can almost ensure of that reality. Therefore, they construct their reality from their own inner thoughts and process by denying the independent materiality of the external world.
Dualism	Considers the mind and the body as two separate entities.
Agnosticism	States that nature of the world exist independently of our subjective experience.

Table 4.1 - The four categories of ontology
Source: Benton and Craib, (2001, p 4-5)

Ontological perspectives vary across the various school of thoughts. Ontological positions of a specific school of thought refer to the philosophical standpoint on whether social phenomena are objective and exist independently of social actors or if they are constructed by the latter's impressions and actions, through interactions and are thus constantly evolving and changing (Bryman and Bell, 2011). Table 3.1 below illustrate and compare four key research philosophies in management research at ontological level.

	Positivism	Realism	Interpretivism	Pragmatism
Ontology (the researcher's view of the nature of reality)	External, objective and independent of social actors Reality as concrete and comfortable to law from a structure independent of the observer	Objective and exist independently of human thoughts and beliefs or knowledge of their existence (realist) but is interpreted through social conditioning (critical realist)	Socially constructed, subjective and may change, multiple Reality as a manifestation of human intentionality	External, multiple, view chosen to best enable answering of research question

Table 4.2 - Comparison of the four philosophies at ontological level
(Adapted from Denzin and Lincoln 1998; Saunders et al., 2009; Arbnor and Bjerke, 1997)

The positivist depicts the position that social entities exist external to the actors concerned with their existence (Saunders *et al.*, 2015) and that findings are measured in a precise, quantifiable way (Bryman and Bell, 2011). In this position social entities exist in reality external to social actors (Saunders *et al.*, 2009) and an apprehendable reality is assumed to exist, driven by immutable natural laws and mechanisms (Denzin and Lincoln, 1998). For the interpretivist, however, realities are apprehendable in the form of multiple and intangible mental constructions (Denzin and Lincoln, 1998), created from the perceptions and consequent actions of social actors (Saunders *et al.*, 2009) and dependant for their form and content on the individual person or groups holding the constructions. The interpretivist avoids rigid structural frameworks, as in positivist research, and adopt more personal and flexible research structures (Carson *et al.*, 2001) which is highly receptive in capturing meanings from social interactions

(Black, 2006) and make sense of what is reality (Carson *et al.*, 2001). Realism argues that we perceive the world as it really is, that cognition is a relation between the social actors and that the existence of one social actor does not depend on the other perceiving it. The realist posits that reality is objective and independently of human thoughts and beliefs or knowledge of their existence but is interpreted through social conditioning (Denzin and Lincoln, 2000). Pragmatism is characterised with efficacy in the practical application of a solution which works best on the issue (Honderich, 1995). This research adopts a social constructionism approach which is rooted in the interpretivist philosophy (Andrews, 2012). As such this thesis is based on the ontological assumptions that phenomenon is created from perceptions, mind and the actions of the social actors (Bryman & Bell, 2011). The ontological beliefs of this thesis are explored and developed at a later stage in section “A Social Constructionist Research position for this thesis”.

Epistemology: How can we develop knowledge about what exists?

Epistemology, also known as the theory of knowledge (Benton and Craib, 2001). Epistemology indicates the researcher’s viewpoint regarding the world and the self, as well as the relation between the two. It is the branch of philosophy that deals with the nature of knowledge, its possible scope, limits and general basis (Honderich, 1995) and relates to the philosophy of knowledge, namely what constitutes personal opinion and what is considered a substantiated view (Jonker *et al.*, 2010). Epistemology is a study of how people or systems of people know things or think they know things (Keeney & Keeney, 2012). It is thus concerned with the nature of knowledge, what constitutes valid knowledge, what can be known and who can be a knower. Epistemology consist of questions that covers: “*What is knowledge?*”, “*Where does knowledge come from?*”, “*How much does the knower contribute to the knowing process?*”. Epistemology deals with the transmission of knowledge (Ozmon and Craver 2003). Epistemology is therefore concerned with philosophical grounding for deciding the types of

knowledge are relevant, adequate and legitimate (Crotty, 1998). There is a wide spectrum of epistemologies from objectivism to constructivism. Objectivism hold the beliefs that reality exists apart from the operation of consciousness. Objectivism pertains to objective truths and claims and its falsity is independent of what anyone thinks or feel about the matter (Honderich, 1995) and attempt to collect data through observations of reality and search regularities and causal relationships to develop law (Gill and Johnson, 2010). The other far end of the spectrum of epistemologies is constructivism. Constructivism rejects objectivism perspective of truth and states that there is no objective truth waiting for us to be discovered (Crotty, 2015). Instead, truth comes into existence when we engage with the realities of the world and there is no meaning without the mind. Therefore, meaning is not discovered but co-constructed between the mind and the world. As such different minds construct realities in different ways (Grix, 2010). Table 4.3 below illustrate and compare four research philosophies in management research at epistemological level.

	Positivism	Realism	Interpretivism	Pragmatism
Epistemology (the researcher's view regarding what constitutes acceptable knowledge)	Only observable phenomena can provide credible data, facts. Focus on causality and law like generalisation, reducing phenomena to simplest elements	Observable phenomena provide credible data, facts. Insufficient data means inaccuracies in sensations (direct realism). Alternatively, phenomena create sensations which are open to misinterpretations.	Subjective meanings and social phenomena. Focus upon the details of the situation, a reality behind these details, subjective meanings motivating actions.	Either or both observable phenomena and subjective meanings can provide acceptable knowledge dependent upon the research questions. Focus on practical

				applied research, integrating different perspectives to help interpret the data
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Table 4.3 - Comparison of the four philosophies at epistemological level
(Adapted from Denzin and Lincoln 1998; Saunders et al., 2009)

While the positivist does not allow the researcher to investigate and explore the problem for better understanding other than the predictions that it makes, the constructivist posits that truth becomes to existence when we are engaged with them. The essence of realism posits that whatever the senses show is as reality is the truth and that objects have an existence independent of the human mind (Saunders *et al.*, 2009). Interpretivism, however, advocates that it is necessary for the researcher to understand differences between humans in our roles as social actors. Pragmatism argues that the most important determinant of epistemology adopted depends much on the research question which is possible to work with variations within epistemology, ontology and axiology.

Axiology: What is the value of knowing?

Axiology is the branch of philosophy that studies judgements about value (Saunders, 2012). The concept of value permeates our life at all steps (Hart, 1971) and we like one thing to another and condemn one thing to another. Such decisions are taken from our beliefs, passions and interests and we therefore attach varying degrees of importance or value to such beliefs and choices. Based on ethical beliefs that is specifically concerned with values, axiology focuses on what can be promoted to achieve knowledge (Honderich, 1995). Axiology involves the researcher at all the stages of research process with value laden questions and decisions (Li,

2016). Honderich (1995) state that values are related to self, self-emotions, sense of self and is centred on questions of what is worth pursuing or promotion and what should be avoided to arrive to answers that constitute knowledge. Hart (1971) state that axiology has been present within our life since man began to reflect on his conditions of life, the structure of reality and man's place in it. Axiology manifest itself in the way the researcher looks at something; whether it is beautiful or ugly, good or bad and right or wrong. As human lives move between alluring and repulsion about our surroundings, researchers are not only valuing but carrying that activity within a scale of values which rest with the degree of quality and satisfaction (Hart, 1971). Axiological assumptions vary from positivist to pragmatist. Table 4.4 below shows a comparison between the four research philosophies at axiological level.

	Positivism	Realism	Interpretivism	Pragmatism
Axiology (the researcher's view of the role of values in research)	Research is undertaken in a value-free way. The researcher is independent of the data and maintains an objective stance	Research is value laden; the researcher is biased by world views, cultural experiences and upbringing. These will impact the research	Research is value bound, the researcher is part of what is being researched, cannot be separated and so will be the subjective	Values play a large role in interpreting results, the researcher adopting both objective and subjective points of view

Table 4.4 - Comparison of the four philosophies at axiological level
(Adapted from Denzin and Lincoln 1998; Saunders et al., 2009)

The positivist's perspective of axiology is value-free (Breen and Darlaston-Jones, 2010) and the researcher is detached, neutral and independent of the subject being researched (Scotland, 2012). Realism perspective on axiology is that research is value laden and the researcher is

biased by world views, cultural experiences and upbringing while for the pragmatists, axiology is primarily focused on values and determined by own experiences (Saunders *et al.*, 2008).

4.3 A Social Constructionist Research position for this thesis

This thesis endorses a social constructionism approach which is anchored in the interpretivist philosophy (Andrews, 2012). The term social constructionism was found its hold in a book called “The Social construct of reality” by Peter L. Berger and Thomas Luckmann in 1966 (Fairhurst and Grant, 2010) but can be traced back to the eighteenth century through the works of the political philosopher Giambattista Vico (Lock and Strong, 2010). Other authors acknowledge the influence of Mead, Marx, Schutz and Durkheim on their thinking (Andrews, 2012). Crotty (1998: p.42) defines constructivism from the social perspectives as "the view that all knowledge, and therefore all meaningful reality as such, is contingent upon human practices, being constructed in and out of interaction between human beings and their world, and developed and transmitted within an essentially social context". Social constructionism is essentially an anti-realist, relativist stance (Hammersley, 1992) where reality assumed by the actor’s approach exist only as a social construction, not independent of us, its observers (Arbnor and Bjerke, 1998). Therefore, reality for the social constructionist is thus regarded as consisting of a number of finite provinces of meaning that are shared by a larger or smaller number of people with shared and social construction of meaning and knowledge (Denzin and Lincoln, 1998). The ontological assumptions, epistemological objectives and axiological commitments for this thesis, anchored in social constructionism are delineated in the paragraphs that follow.

Ontological assumptions

The ontological position taken for this thesis, that of social constructivist, share beliefs that reality is multiple and relative (Hudson and Ozanne, 1988). Lincoln and Guba (2000) state that

these multiple realities are also dependent on other systems for meanings and knowledge acquired in this discipline is socially constructed rather than objectively determined (Carson *et al.*, 2001) and perceived (Hirschman, 1985). The social constructivist believe that that social phenomenon is created from perceptions, mind and the actions of the social actors (Bryman, 2012). The philosophical stance for this thesis is rooted in the fact that methods used to understand knowledge is related to human and social sciences (Pham, 2018) and human interprets their world and acts based on such interpretations (Hammersley, 2013, p. 26). For this thesis, therefore, a relativist ontology had been adopted where a single phenomenon may generate multiple interpretations for this research rather than one truth determined by one process of measurement.

The social constructionist understands the complexities of the world of lived experiences from the point of view of those who live it (Denzin and Lincoln, 1998) and as such this research also aims at understanding the complexities and realities of the knowledge brokering phenomenon from the perspective of the interviewees engaged in the knowledge brokering process. The world of reality and situation-specific meanings that constitute the general object of investigation surrounding knowledge brokering is considered as being constructed by social actors (Denzin and Lincoln, 2008). The social actors take meaning out of events and phenomena through prolonged, complex process of social interaction involving history, language and action. The social constructivist therefore shares the belief that to understand this world of meaning one must interpret it. As part of this research, it is important to elucidate the process of meaning construction and clarify what and how meanings are embodied in the language and actions of social actors. The social constructivist and his participants are interdependent and mutually engaged in interactions (Hudson and Ozanne, 1988) to derive meanings about reality while remaining open to new knowledge through the study and allows it to develop with the help of the social actors. The goal of the social constructivist is to

understand and interpret the meanings in human behaviour rather than generalise or predict cause and effects (Neuman, 2000) as for the social constructionist it is key to understand motives, meanings, reasons and other subjective experiences which are time and context bound (Hudson and Ozanne, 1988). The social constructionist approach is predicated on the assumptions that ‘the terms by which the world is understood are social artifacts, products of historically situated interchanges among people’ (Gergen, 1985).

Over the years, there has been debated around the ontological positions forwarded by various authors in social constructionism (Burkitt, 2003). In the early ontology of social constructionism, the social engagement was considered as reality Harré (1983, 1986) followed by discursive analysis (Andrews, 2012) where Harré (1983) maintained a realist theory of science when it came to physical reality. Another author, Greenwood (1992), also advocated a realist approach to social constructivism. Harré (1983) supported the fact that these two ontological positions, realist and constructionist, are sealed off from one another. Elder-Vass (2012) also supports a realist constructionism.

Amidst all the debates, this thesis supports the constructionist approach rather than the realist one as the aim and objective of this research is to explore the nature of the current knowledge brokering process as well as to identify its main components and agentive roles. With respect to the debates surrounding realist and constructionist approach to social constructionism, this study adopts a more socially constructed approach where people create meanings to the knowledge brokering process through social interactions. The reality sought in this research is deemed to be socially built and meanings created through interactions of the interpreter and the interpreted (Crotty, 1998) about knowledge brokering and dynamic capabilities. The knowledge brokering phenomena studied in this thesis is strongly influenced by the society and meanings from interactions. From a social constructionism perspective, observations are

shaped by the phenomena and societal influences on knowledge brokering and findings will be constructed through interactions with the actors at work with the knowledge brokering phenomena.

Epistemological objectives

Social constructionists argue that rich insights into the complex world are lost through a series of “law-like” generalisation (Saunders *et al.*, 2009) and purports that social actors have a significant role to play in understanding realities of the world. Research from a constructionist paradigm acknowledges that truth or meaning comes into existence in and out of our engagement with the realities in our world (Crotty, 1998). Therefore, the social world can only be understood from the standpoint of individuals who are participating in it (Cohen *et al.*, 2007, p. 19). Social constructionism aims to bring into consciousness hidden social forces and structures. By separating the viewer and the viewed, and acknowledging that meaning comes from the interaction of the two, Charmaz (2008) is indicating the viewed exists outside of the viewers mind and that meaning is dependent on, or relative to, the interaction of the viewer and the viewed. On similar stance this research seeks to explore and understand the phenomenon surrounding knowledge brokering in an organisation through the participation of ‘social actors’. This thesis posits that meaning is created through interactions between the social actors (Crotty, 1998) where the interpreter though not entirely objective, is separate from the phenomena to be observed and the meaning-making interaction is strongly influenced by the phenomena and society (Levers, 2013). It is therefore not only the researcher’s interpretations that will shape the realities and meaning but rather the phenomena surrounding knowledge brokering will affect the interpretation with equal force through mutual creation of knowledge by the social actors and the researcher (Charmaz, 2000). This thesis aims to explore the subject of research so as to develop deeper understanding of the phenomenon surrounding knowledge

brokering as well as the complexity surrounding the subject its unique and unresearched context of business process outsourcing instead of generalising the base of understanding for the whole population (Creswell, 2014).

Axiological commitments

This thesis takes a social constructionist stance at axiological level where research is value bounded (Saunders *et al.*, 2008) and the researcher is part of the subject being researched and can, therefore, not be separated from the subject being studied (Fagan, 2010). This study understands that social reality is created by humans through social interaction through the system created by man, and with the approach of the induction, the knowledge management paradigm axiology according interpretivist not value-free, but instead is loaded with value (Aliyu *et al.*, 2015).

4.4 An Abductive Research Approach

While some scholars strongly opposed mixed methods on the grounds that they are unattainable due to the mixture of paradigms, Guba and Lincoln (2005) brought these boundaries down by cautiously declaring that elements from differing paradigms can be blended together in a study. Amidst all the controversies of mixed methods, Tashakkori and Teddlie (2003), supportive of Guba and Lincoln (2005) standpoint, claim that it is possible to use mixed methods to answer objective-value neutral and subjective-constructivist questions. Moghaddam, (2010) state that research does not stem out of the vacuum but are influenced by the culture of the investigator as well as through social and political agendas. First introduced in 1597 by Julius Pacius to translate the Aristotelian apagoge (Reichertz, 2013) and later developed by Sanders Peirce in his work *Logic of science* (Frankfurt, 1958), a new mode of inference was developed called abduction (Burks, 1946:301). While inductive reasoning is mostly about moving from specific observations to general conclusions and deductive is more about moving from general

assumptions to specific conclusion, abduction is more about moving to the best possible explanation given incomplete observations. Unlike inductive and deductive reasoning, abductive research can explain, develop or change the theoretical framework before, during or after the research process (Dubois and Gadde, 2012).

Therefore, abductive research approach enables the researcher to simultaneously answer confirmatory and exploratory questions and verify as well as generate theory within the same study. The abductive approach fits into this research to develop comprehensively and completely as possible (Tashakkori and Teddlie, 2003) as the approach will not be restricted to mono-methods. With the use of multi methods in this research, it will bring opportunities to answer wider scopes of research for knowledge brokering and dynamic capabilities as well as evaluating the 'goodness' of their answers (Tashakkori and Teddlie, 1998). The research provides a better understanding of the subject through exploratory and theory generation (Punch 1998) in terms of qualitative research as well as confirmatory and theory verification in terms of additional qualitative research than mono-methods. Dubois and Gadde (2012) perceived an abductive research as a possibility to capture and take advantage not only of the systemic character of the empirical world, but also of the systemic character of theoretical models. Unlike the deductive or inductive reasoning, the abductive research approach is more suitable given the nature of the research is to develop or change the theoretical framework before, during or after the research process (Dubois and Gadde, 2002). Figure 4.2 below shows the stages that this research will follow as part of using the abductive research approach.

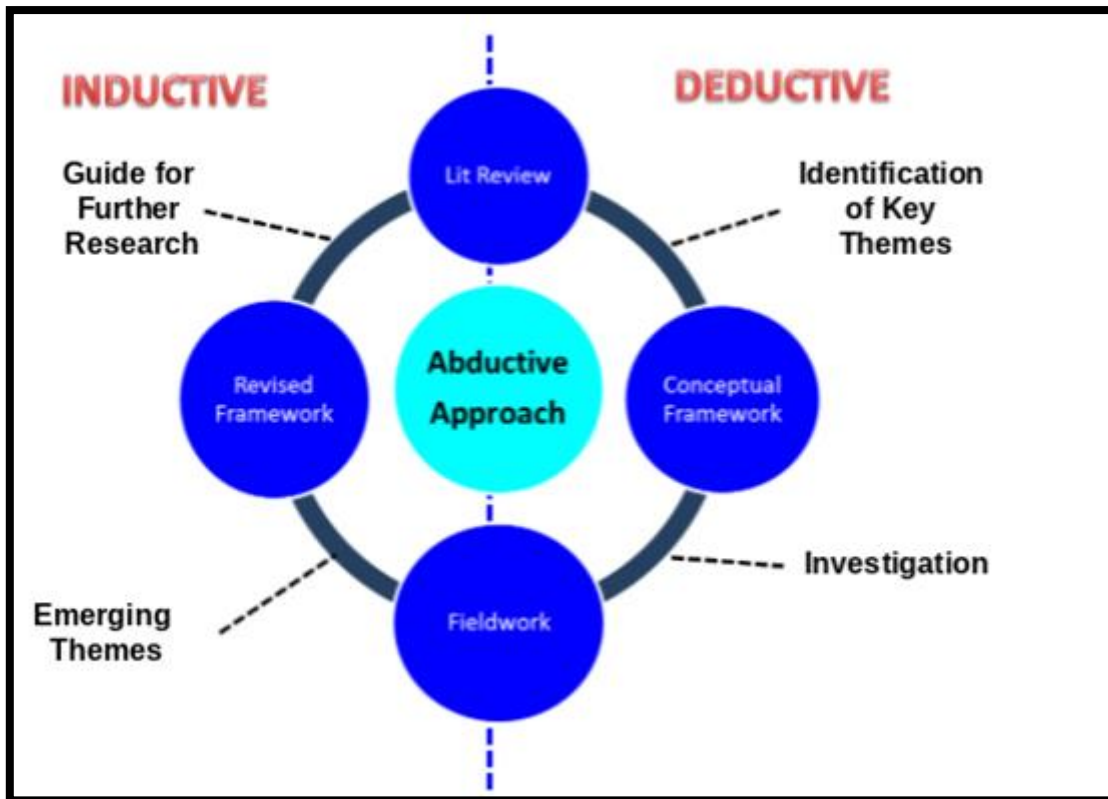


Figure 4.2 - The abductive Research Approach
(Source; Blaikie, 1993)

The applicability of the abductive research approach to this thesis starts from the moment the literature is reviewed to the revised framework. The thesis representing a mix of deductive and inductive approaches begins by a review of the literature review on knowledge brokering and dynamic capabilities to identify key themes from which the conceptual framework of knowledge brokering as a lever for dynamic capabilities is developed. Then a series of multi methods investigation is carried out, through semi-structured interviews, document analysis as well as focus groups are carried out to validate the knowledge brokering framework developed. This is the deductive part of the research approach. The next stage of the research approach, the inductive part, starts with identifying emerging themes from the investigations carried out which is then mapped onto the framework developed for confirmatory analysis.

4.5 Research Design

The research design is the structure of the research that holds the elements of the research together (Cooper *et al.*, 2006). The research design used in this study has been adopted for collecting relevant information and techniques to be used for the analysis while keeping in view the objective of the research aims and objectives. The chosen research design suitable for the nature of research for this thesis is the case study approach which suits well with the deeply entrenched beliefs about perceptions, mind and interpretations of social constructionism (Ridder, 2017). The single case study approach for this thesis, essentially exploratory, combines different techniques and methods of social constructionist paradigm including the use of semi-structured interviews, focus groups and documentary evidence.

Creswell (2014) state that *“The case study method “explores a real - life, contemporary bounded system (a case) or multiple bounded systems (cases) over time, through detailed, in depth data collection involving multiple sources of information and reports a case description and case themes”*.

Robson (2002) definition of case study purports ‘strategy for research involving empirical investigation of a particular contemporary phenomenon within its real-life context using multiple source of evidence’. The case study approach deems most suitable for the study of this thesis as the aim of this research is to gain rich understanding (Saunders *et al.*, 2008) of the context surrounding knowledge brokering and dynamic capabilities and considerate ability to generate valuable insight for and exploratory research. Yin (2003) distinguishes between the four types of case study strategies based on two discrete dimensions;

- Single case v. multiple case
- Holistic case v. embedded case

A single case is used where it represents a critical case or an extreme unique case (Saunders *et al.*, 2008). Multiple cases, that is the use of more than one case, focuses on the need for establishing whether the findings of the first case can occur on other following cases. Holistic versus embedded dimension of case study refers to the unit of analysis (Yin, 2003). If the research is concerned with only one organisation as a whole, the approach is then treated as a holistic case study compared to embedded approach where a number of sub-units are being examined within a single organisation.

The case study approach undertaken for this research is the single case study of a primarily exploratory nature. This approach offers the opportunity to observe and analyse knowledge brokering as phenomenon that have not been considered before. According to Siggelkow (2007), the existence of phenomenon can opulently be described by single case studies. Winegardner (1998, p. 5), state that a researcher's epistemological assumptions are central when classifying case studies (Grunbaum, 2007).

The epistemological assumption for this thesis is rooted in social constructionism where the world and reality are to be understood from the standpoint of individuals who are participating in the knowledge brokering process as well as explore the phenomenon surrounding the subject of study. The case study approach in research has several strengths including the ability to use a variety of research methods (Davies, 2007), the ability to establish rapport with research subjects (Mouton, 2001), to obtain sufficiently rich description that can be transferred to similar situations (Merriam, 2009) and, ultimately, in-depth insight which is in line with the chosen epistemological stance of this thesis, social constructionism and to bring into consciousness hidden social forces and structures.

The defining feature of case study research is its focus on 'how' and 'why' questions (Myers, 2009) and for this reason is appropriate for exploratory studies (Mouton, 2001) around

knowledge brokering and dynamic capabilities. As for answering the ‘why’ question of defining the case study for this particular thesis, this research design deemed appropriate due to the exploratory nature of this first piece of work combining two stand-alone subjects; knowledge brokering and dynamic capabilities. There is a dearth of research combining these two subjects and this thesis offers a first piece of exploratory work to better understand and decipher the phenomenon of knowledge brokering. The case study approach therefore provides the opportunity to investigate a previously inaccessible subject area (Ridder, 2017) thereby exploring in-depth the knowledge brokering process, its components and the roles associated with it. This approach also deepens the understanding surrounding the outputs that the knowledge brokering process is generating in the chosen company and, also, how these outputs can be improved. The ‘how’ of the single and exploratory case study for this thesis is answered by triangulating a range data collection method such as semi-structured interviews, focus groups and documentary evidence deemed suitable for case studies. Dooley (2007) and Ridder (2017) purports that case study researchers usually triangulate their data collection strategy resulting in a detailed case description (Burns 2000).

For creating high-quality theory, Dyer and Wilkins (1991) argue that single case studies are better than multiple cases because a single case study produce extra and better theory and addresses questions surrounding theoretical relationships and explore new ones. With relevance to this thesis, the single case study of exploratory nature which provides deeper understanding of the subject (Dyer & Wilkins, 1991) surrounding knowledge brokering and dynamic capabilities. As the aim of this thesis is to have a deeper understanding and explore the concept surrounding knowledge brokering and dynamic capabilities for the generation of high-quality theory, the single case study approach is best suited (Gustafsson, 2017).

The case study focusses on describing processes, in the case of this thesis then knowledge brokering process mapped with dynamic capabilities dimensions, individual or group

behaviour in the chosen organisation, and the sequence of events in which the behaviour occurs (Stake, 2005). The case method adopted for this research supports both theory development (Yin, 2014) and theory validation and confirmation (Eisenhardt, 1989) surrounding knowledge brokering and dynamic capabilities which is the focus of this thesis. The case study method's support for theory development is particularly useful in this thesis where existing theoretical and conceptual frameworks are inadequate (Chetty, 1996) as well as strengthening theory creation by expanding constructs, concepts by (Ridder, 2017) with respect to knowledge brokering and dynamic capabilities.

Unit of analysis

Grumbaum (2007) and Berg (2001) share some light on the ambiguity in understanding and differentiating between 'case-study' and 'unit of analysis' while Miles and Huberman (1994, p. 25), Patton (2002) make no distinction between both and states that 'cases are units of analysis'. Berg (2001)) shares some light on this confusion and distinguishes between a unit of analysis and a case by arguing that: "The unit of analysis defines what the case study is focusing on, such as an individual, a group, an organisation, a city, a process, and so forth.". The unit of analysis intensity the purpose of the study Grumbaum (2007) and can be an individual, social process or implementation process (Myers, 2009).

The unit of analysis can be identified through the particular individuals as key informants, (Campbell, 1955, p. 339; John and Reve, 1982, p. 519) and in the case of this thesis, the key informants engaged in the knowledge brokering process, that have been purposeful selected because they possess knowledge that can shed light on the phenomena surrounding knowledge brokering and dynamic capabilities. In this thesis, the unit of analysis is the knowledge brokering process which has been mapped on the dimensions of dynamic capabilities producing the conceptual framework depicted on figure 3.2. The unit of analysis for this thesis

has been determined by the purpose of this study through the gaps identified in the literature (Maxwell, 1996) surrounding knowledge brokering and dynamic capabilities which eventually leads to a need for information which can be found among specific individuals, for instance individuals in the organisation such as the knowledge broker and organisational processes (Grumbaum, 2007) such as the knowledge brokering process. The unit of analysis consist, a single and exploratory case study, involves several techniques of data gathering, starting with unstructured interviews which are followed by focus group as confirmatory stage for the knowledge brokering process. Documentary evidence has also been triangulated with the other data collection techniques to reinforce validity of the findings developed as part of this thesis.

4.6 Time Horizons

This thesis adopts the longitudinal approach as this method possess the capacity to study change and developments over long periods of time (Saunders *et al.*, 2009) thereby developing wide insight on the progress on the subject being studied, in this case, knowledge brokering and dynamic capabilities. A longitudinal study is an observational research method in which data is gathered for similar subjects repeatedly over time which can extends over months, years and decades. In this type of research, the same individuals are observed over the period of the study. As longitudinal studies collect data on a long period of time, it is one of the best means to determine patterns over time, therefore, tracking the same people providing more accurate observational changes over time. Ployhart and Vandenberg (2010) define longitudinal research as research emphasizing the study of change and containing at minimum three repeated observations (although more than three is better) which is in the case of this research on at least one of the substantive constructs of interest. The authors went further stating that data can be static or dynamic. Static data can be in terms of cross-sectional designs while dynamic data are those that changes over time (Ployhart and Vandenberg, 2010). The authors went further claiming that longitudinal studies can be descriptive or exploratory.

The longitudinal approach adopted in this thesis offer the opportunity to see change unfold and potentially offer new insights (Caldwell *et al.*, 2005) in the subject of interest for this thesis; knowledge brokering and dynamic capabilities. While descriptive longitudinal studies illustrate how a phenomenon changes over time as well as describe the form of change, this thesis being exploratory longitudinal design seeks to identify the cause of the change process by the use of one or more important predictors or how one variable predicts other substantive variable of interest to have a deeper insight of the subject being researched. This thesis evaluated the views of the knowledge brokers across various spheres of the chosen organisation thereby casting a wide spectrum about the subject being researched to obtain their views and responses as well as a rich picture of their lived change process and experience across time. The longitudinal approach in the context of a single case study to source qualitative data from semi-structured interviews contributes in understanding the evolution Ceridian HCM Mauritius have experienced over a time-scale of 18 months to assess the evolutionary nature of knowledge brokering within the multinational. These 18 months was spanned over three sequential phases, one informing the research focus and method of the succeeding phase.

Phase 1

This phase lasted for six months starting from March 2018 and ended in September 2018. Phase 1 begins with unstructured interview as an exploratory base for knowledge brokering and dynamic capabilities. This dominant technique used in the multi-method quantitative approach so as to have an initial and deeper understanding of the phenomenon surrounding the subject of study. Alongside unstructured interviews, Phase 1 also considered the concurrent triangulation of methods. Part of the data was gathered from documentary evidence in terms of knowledge development and storage practice and policy within the organisation. This phase generated themes that was used for phase 2. A copy of the themes used to explore the subject surrounding this research is attached as Annex I.

Phase 2

The second phase lasted for eight months starting from September 2018 and ending in May 2019 and consisted of semi structured interviews built on the themes identified in phase 1. This phase provided a deeper knowledge and understanding of the findings that emerged from Phase 1. The semi structured questions probed into deeper meanings relevant to the context of knowledge brokering and dynamic capabilities. Findings emerging from Phase 2 was then used in the next phase (Phase 3) to carry out a focus group with 5 knowledge brokers identified. A copy of the semi structured questions is attached as Annex II.

Phase 3

This phase lasted for 4 months. In phase 3 a confirmatory focus group was carried out where the conceptual framework was amended according to the participants feedback based on the emerging themes from the two rounds of interviews so as the framework is validated and confirmed by eight members across departments, as knowledge brokers. This exercise ensured that the framework is relevant for operationalisation and possess the ability to generate capacity within the organisation. A copy of the major themes and questions concerning the confirmatory focus group is attached as Annex III.

4.7 Data collection process

There are three phases in the data collection process: phase 1 consisted of unstructured interviews and documentary evidence, phase 2 a second round of semi structured interviews and phase 3 a focus group to confirm the findings generated with regards to the conceptual framework developed. The data collection process is shown in Figure 4.3 below.

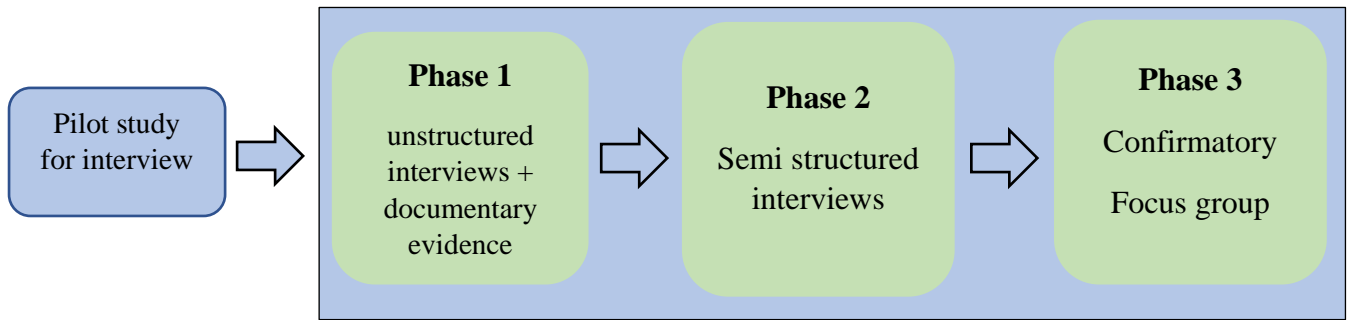


Figure 4.3 - Phases of the multi method data collection process

Phase 1

Unstructured interviews were used as research instrument for Phase 1. This is the dominant method of the multi method qualitative approach. It deemed appropriate to use unstructured interviews in phase 1 as the research was an exploratory piece of work to have a deeper understanding of the phenomena surrounding knowledge brokering and dynamic capabilities. The nature of semi structured interviews allowed the participants to talk openly, without any barriers, about the subject allowing for deeper and broad understanding on the subject. While the interviewees are allowed to relate their experiences about knowledge brokering, the probing technique also supported deepening the conversation and meanings around the subject. Questions of probe stemmed out from the responses of the interviewees itself. Examples include probing about which new technology is being used, how employees learn about them and which training are offered when initially asked about how managers realign existing knowledge with new demands. Other examples include probing questions around how you stay ahead of competition and create new knowledge when initially asked about competition and intellectual property rights from competitors. A last example of probing covers questions surrounding the ability for employees to develop an open mindset and inculcate agility when initially asked about the need to create new knowledge to stay ahead of competition.

Alongside the unstructured interviews, Phase 1 also considered the concurrent triangulation of methods. Part of the data was gathered from documentary evidence in terms of knowledge development and storage practice and policy within the organisation. Document evidence was used so as to capture the formal process and procedures of the company with respect to existing knowledge brokering practices, if any at Ceridian HCM Mauritius Inc. Document evidence considers various textual analytical treatments as sources or objects of study (Karppinen and Moe, 2012). Bardach (2009) states that in policy research, all sources of information fall into two main categories: people and documents. On similar lines, the research of subject for this thesis base itself on its knowledge brokers as people and documented policies to assess practices established within Ceridian HCM Mauritius Inc. that constitute as knowledge brokering practices. Therefore, document analysis has been used as part of an observational study of knowledge brokering practices at Ceridian HCM Mauritius Inc. as corroboration with data from interviews. The use of both interviews as well as document analysis constructed as part of the triangulation strategy that allowed for an in-depth understanding of the policies and practices surrounding knowledge brokering and dynamic capabilities at Ceridian HCM Mauritius Inc. Documents used as part of the documentary evidence were training and development manuals from the repository, excerpts from contracts with stakeholders, E-learning manuals and learning and development policy all deemed confidential and accessed only through consultation within the presence of a staff from the human resource department. As a practice of safeguarding the practices of the organisations no documents were allowed to be taken out of the office space.

A group of 18 identified knowledge brokers were involved at Phase 1 of data collection. Semi structured interviews of 45 – 60 minutes were carried out with the participants identified as knowledge brokers within the multinational. The focus was to explore the phenomenon of knowledge brokering and expand on the qualitative findings to the next Phases; Phase 2 and 3.

The Team leaders and Managers of each department was also requested to submit from documentary evidence in terms of knowledge development and storage practice and policy within the multinational.

Phase 2

The second phase of the qualitative multi-method used is a semi-structured interview that focused on the themes and lacunas identified in Phase 1, that would consolidate and shed more light on the phenomena and probe deeper in the significant themes emerging from Phase 1. These questions were mostly probing questions trying to find more truth on some of the emerging themes that came out of the unstructured interviews from phase 1. Interviews for phase 2 duration was between 45 minutes to 1 hour.

This phase of data collection was more structured as the dominant themes relevant for this study. These themes identified for Phase 2 shaped the research in a more focused direction aligned with the aims and objective of this thesis and better enlightened the subject. The themes for this phase were developed from the findings of Phase 1. Themes that emanated from Phase 1 informed the direction of interviews and was used to develop the semi-structured interviews for Phase 2 emanated from the findings generated from phase. A group of 8 participants were identified to form part of the interviews to gather relevant information to shape the research's aims and objectives.

Phase 3

The last phase of the multi-method qualitative process is a confirmatory focus group with eight identified knowledge brokers in the multinational. The previous phases contributed in better understanding the subject as well as analysing if the conceptual framework was proper for application within the multinational. Therefore, after the conceptual framework has been tested and amended according to the participants feedback, the framework was revised based on the

emerging themes from the two rounds of interviews. The framework was then validated and confirmed by the members of the focus group thereby ensuring that the framework is relevant for operationalisation and possess the ability to generate capacity within the organisation. The eight members of the focus groups were asked to critically assess the framework, confirm if they could identify their roles and involvement in the knowledge brokering process, validate the applicability of the various stages to their national and international operations and assess its operationalisation to their current business settings.

- **Arrangements around interviews at Ceridian HCM Mauritius Inc.**

Various multinationals operating in the outsourcing industry on Mauritius was contacted namely; Accenture Mauritius, Orange Business Services, Infomil Mauritius Limited and Ceridian Mauritius Incorporation. Out of the four companies, only one company replied affirmatively and the Senior Vice President was extremely glad to welcome me for the data gathering as the company values research and development. The rounds of interviews started only under the approval of the Senior Vice President and with strict instructions that the first pilot interview should be carried out with the HR Manager as she will assess if the questions were fine or too risky with a potential of unlocking trade secrets of the company. The pilot interview with the HR Manager was successful and she requested her assistant to schedule additional interviews over the three phases of data collection. All interviews, were carried out at Ceridian Mauritius Inc. office at Ebene in Cyber Tower 1. The Vice President suggested that I use a sound proof room that was closer to the main entrance so that we could maintain privacy as well as not disturb the employees at work while walking on the floor. As for the confirmatory focus group, the session was held in their Board meeting room accommodating the 8 key knowledge brokers of Ceridian Mauritius Inc.

4.8 Sampling Strategy

The sampling strategy used for this research is the purposive sampling. The purposive sampling technique, also called judgment sampling, is the deliberate choice of an informant due to the qualities the informant possesses (Tongco, 2007). This type of sampling enables proper use of judgement in selecting cases the most relevant to the research aims and objectives (Saunders *et al.*, 2009) thereby suitable to work with small but highly relevant and value-added cases that are particularly very informative (Neuman, 2000). The main goal of purposive sampling for this thesis is to focus on particular characteristics of a population that are of interest to add valuable insight on the concept surrounding knowledge brokering and dynamic capabilities. Within the multiple types of purposive sampling, the homogeneous sampling is the one chosen for the purpose of this research. Homogenous sampling focuses on one particular sub-group in which all the sample members are similar thereby enable the study to be more in-depth (Saunders *et al.*, 2009). Therefore, homogenous sampling in this study aims at interviewing a sample of who share the same characteristics who were involved in activities and processes aligned with knowledge brokering and dynamic capabilities. It was therefore imperative to identify who were those engaged in knowledge brokering activities that would form part of the purposive-homogenous sampling.

The knowledge brokers ranged within the levels of Team leaders, Managers, Senior Managers, Vice President and Managing Director. The method used was purposive sampling as the aim was to find those who are engaged in the knowledge brokering process. The proper identification of the knowledge broker was of prime importance as it was the first starting point of data gathering and if the knowledge broker was wrongly identified, it would have flawed the data collection for the remaining two Phases. It was therefore important to set the parameters to select the proper knowledge broker. The purposeful approach helped streamline the sample to the specific criteria that was relevant for the knowledge broker.

Phase 1

Criteria for knowledge brokers for Phase 1 should possess the following qualities;

- 1) The knowledge broker must be involved in knowledge identification, assimilation and dissemination within the following four spheres;
 - a) inter-unit and inter-departmental
 - b) across departments
 - c) within regional reach
 - d) within international reach
- 2) The knowledge broker must be dealing with all the stakeholders within one organisation's ecosystems
- 3) The group to be considered will be team leader upwards as they are the one who are more involved with knowledge brokering within the different levels of the organisation.

As part of phase 1, the following 18 respondents were interviewed. The table 4.5 below shows the number of interviews carried out at different level of the company and Table 4.6 shows the interviewees in more details.

Interviewees at Ceridian HCM Inc. Mauritius	
Senior Vice President and Managing Director	1
Senior Manager	6
Manager	7
Team Leader	4

Table 4.5 - Interviewees for Phase 1

As part of ethical practices, the interviewees have been categorised broadly under their designations and field of work, by assigned labels, to enable a deeper understanding and the potential impact that they can have on the knowledge brokering process. The assigned labels protect the anonymity and reinforces confidentiality of the interviewees’ names and responses.

Designation	Label
Senior Vice President and Managing Director	SVP & MD
Senior Managers	1.People and Culture
	2.Finance
	3.Customer Support
	4.Dayforce Services
	4.Implementation
	5.Product Development
Managers	1.Services Delivery
	2.Research and Development
	3.Implementation
	4.Information and Technology
	5.Customer Support
	6.Research and Development
	7.Wage Team
Team Leaders	1.Implementation
	2.Customer Support
	3.Payroll Services
	4.Dayforce Services

Table 4.6 – Interviewees’ details for Phase 1

Through the interviews with some specific interviewees, broad line findings emerging from Phase 1 pointed to the fact that deeper interviews can be carried out further with staffs from

their department. Some roles contributed more than others in the interview and findings from Phase 1 (from relevant interviews) we used to plough deeper in view of finding more interesting and relevant findings.

Phase 2

The selection for the sample population for Phase 2 was based on the following justifications:

- 1) identification of relevant information from first interviewer mentioning that other job roles in their department would constitute of knowledge brokering practices;
- 2) lower job roles within relevant departments that would add significant findings to the research on top of what Phase 1 interviewees have mentioned;
- 3) identification of roles that would assume part of the sensing capabilities of the dimension.

The interview list for Phase 2 was drawn based on the 3 justifications above. The 8 interviewees approached for phase 2 are as follows;

Interviewees for Phase 2	
1	Team Leader, Implementation
2	Team Leader, Customer Support
3	Team Leader, Payroll Services
4	Manager, Research and Development
5	Team Leader, Dayforce Services
6	Manager, Wage Team
7	Senior Manager, Dayforce
8	Senior Manager, Customer Support

Table 4.7 – Interviewees for Phase 2

These 8 interviewees were part of the second round as they had a significant role in expanding the existing findings.

Phase 3

In this phase the conceptual framework developed was reviewed taking into consideration findings from Phase 2. At this stage, the new model was presented to eight key knowledge brokers across the various department of the multinational and asked if the model now relate to their business system. The reason to select these respondents was;

- 1) to have the senior most opinions and analysis of amended framework
- 2) to have a more holistic approach to assessing the model by considering all the departments and not leaving any department’s perspective out.

Table 4.8 shows the eight respondents selected for Phase 3.

Interviewees for Phase 3	
1	Senior Vice President and Managing Director
2	Senior Manager, Dayforce
3	Senior Manager, Customer Support
4	Senior Manager, Product Development
5	Senior Manager, Implementation
6	Senior Manager, Finance
7	Manager, Implementation
8	Manager, Research and Development

Table 4.8 - Interviewees for Phase 3

In this last phase of the multi-method qualitative process the eight respondents took part in a confirmatory focus group where the conceptual framework was revised based on the emerging

themes from the first two rounds of interviews. The confirmatory focus group also ensured that the conceptual framework is validated and confirmed by the focus group members thereby ensuring that the framework is relevant for operationalisation and possess the ability to generate capacity within the multinational. The confirmatory focus group was identified as the best means to confirm the conceptual framework into a practical one as this method allow participants to relate their own experiences, express their opinions without adhering to a strict set of questions (Adler *et al.*, 2019). The focus group method adds to this research as a qualitative tool as it enables the collection of in-depth data alongside fruitful and deep conversations around the subject of knowledge brokering and dynamic capabilities, thereby providing more profound understanding of the phenomenon under study (Barbour and Kitzinger, 1999).

4.9 Data Analysis

Qualitative data are associated with richness and fullness of data based on the opportunity to explore the subject under research in the most real manner as is possible (Robson, 2002). Qualitative data analysis is a “process of bringing order, structure and meaning to the mass of collected data (Marshall and Rossman, 1995). The data analysis method was mainly informed by the social constructionist research philosophy of this research where the focus was on qualitative data gathering methods to have a much deeper understanding of the phenomenon and complexities of lived experiences (Denzin and Lincoln, 1998) surrounding knowledge brokering and dynamic capabilities from the point of view of those who live it at Ceridian HCM Inc. Mauritius.

During the data analysis process of this thesis, the data collected have been transcribed, familiarised with, grouped and categorised to support meaningful analysis (Saunders *et al.*, 2009). The first stage was the transcription of data from the audio-recorded interviews while

paying specific attention to the tone used and the way it was said (Silverman, 2001). The 18 transcriptions range between 6 to 9 pages depending on the responses gathered. It was noticed that Senior Managers and Vice Presidents interviews were the longest one and most information was linked to the strategy of the business and hence had deeper and longer explanations of the mission they were engaged to. The interviews were recorded on mobile phone on the 'Voice Recorder' application and no issues or complications were faced either technical or permission wise. The permission to interview as well as record was granted by the Vice President as well as the HR Manager at the very first meeting with the company.

The next stage of the data analysis was familiarisation through the Nvivo software for data collected in Phase 1, 2 and 3 and immersion with the data (Green *et al.*, 2007) and transcriptions (Saunders *et al.*, 2009). Immersion was achieved by careful reading of transcripts, listing meaningful recurrent ideas and key issues in the data (Vaismoradi *et al.*, 2016). This exercise led to a preliminary analysis, thus understanding, of the findings that emerged from the transcriptions of Phase 1 and 2 and the confirmatory focus group.

Key coding themes were then developed based on the conceptual framework and emerging themes on knowledge brokering and dynamic capabilities from the findings of the data collection process (Bryman and Bell, 2015). Subsequently, a series of themes were identified attaching them to categories of data which was again split into sub themes (Saunders *et al.*, 2009). This activity led to an emergent structure that is relevant to the thesis to better organise and analyse the data further. This emergent structure eventually facilitated the identification of pattern and evidence by the extraction of meaning from rich sources while aligning data to theoretical propositions (Trochim, 2000). This activity then led to the development of the key findings of this thesis and ended with conclusions concerning the thesis. These stages are further explained through the flowchart in figure 4.4 below providing more insights on the data analysis process applied in this thesis. The coding template used is attached as Annex IV.

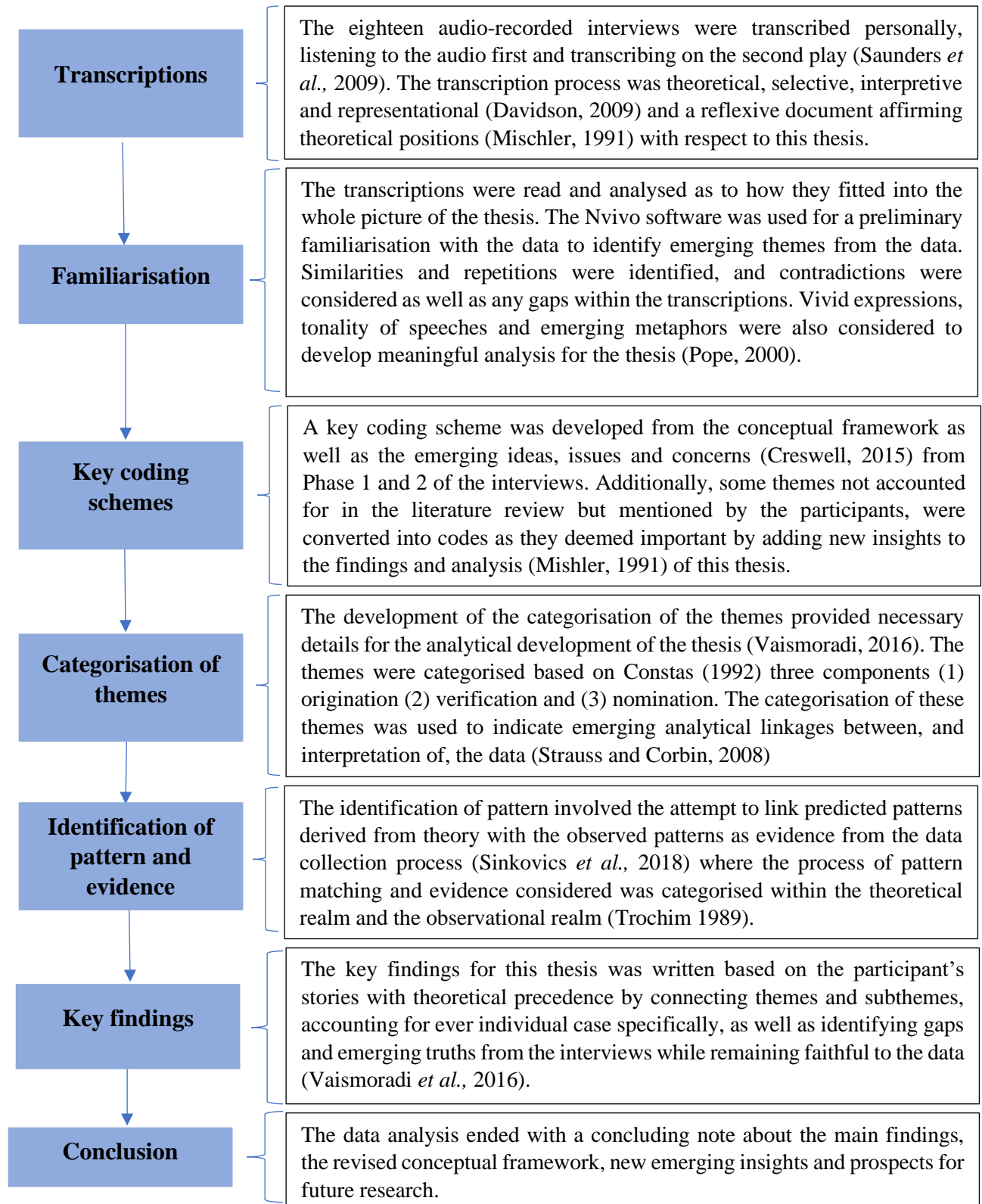


Figure 4.4 - The data analysis process of this thesis

4.10 Validity, Reliability, Transferability

Redefining validity and reliability for qualitative research

Although validity and reliability are deeply rooted in the positivist stance, Golafshani (2003) is of the view that both qualitative and quantitative researchers need to test and demonstrate that their studies are credible. Many qualitative researchers avoid the terms validity and reliability and use terms such as credibility, trustworthiness, truth, value, applicability, consistency and confirmability, when referring to criteria for evaluating the scientific merit of qualitative research (Lincoln & Guba 1985). Authors such as Creswell and Miller (2000), Davies and Dodd (2002) and Stenbacka (2001) have provided a series of arguments as to why positivists beliefs of validity and reliability is not suitable for interpretivist research which stands as follows: qualitative research is not based on universal laws, mathematical data, deduction (Winter, 2000: Brink, 1993).

This situation therefore demands for a redefinition of validity and reliability (Stenbacka, 2001) for application in interpretivist research. In view of redefining validity and reliability, Creswell and Miller (2000) posit that validity is the researcher's perception of what validity is, Davies and Dodds (2002) state that subjectivity and reflexivity are key while Lincoln and Guba (1985) are of the view that validity can be in terms of credibility, neutrality or confirmability, consistency or dependability and applicability or transferability are to be the essential criteria for quality. Mishler (1991) states that trustworthiness is important while establishing good quality studies through reliability and validity in qualitative research, stating that the "trustworthiness of a research report lies at the heart of issues conventionally discussed as validity and reliability" (Seale, 1999, p. 266). To ensure reliability in qualitative research, examination of trustworthiness is crucial. Seale (1999), while establishing good quality studies through reliability and validity in qualitative research, states that the "trustworthiness of a

research report lies at the heart of issues conventionally discussed as validity and reliability” (p. 266). Lincoln and Guba (1985, 2005) offer an alternative set of criteria designed for assessing validity and reliability for qualitative research based on truth value for validity, consistency and neutrality for reliability and applicability for generalisability used for this thesis.

Validity

Validity refers to the integrity and application of methods and the precision in which the findings accurately reflect the data (Noble and Smith, 2015) and the “appropriateness” of processes (Leung, 2015). Validity in qualitative research is concerned with the accuracy and truthfulness of scientific findings (Le Comple and Goetz 1982: 32). Truth in qualitative research is using all appropriate means to arrive at deep understanding of the participants’ world as they perceive it, and the meanings they ascribe to the elements of their world (Court and Abbas, 2013) where this pursuit of truth turns inward towards participants’ contextualised meanings which exist in multiple realities (Brink, 1993) outlining personal experiences and viewpoints (Noble and Smith, 2015).

In line with these definitions for validity in qualitative research, this thesis ensures that research has ensured ‘truth value’ (Smith, 2015) by accepting that multiple realities surrounding knowledge brokering exist and that there has been an attempt to present the personal experiences and viewpoints of the knowledge brokers clearly and accurately. Throughout the thesis work, Mishler’s (2000) trustworthiness has been ensured by including rich and thick verbatim descriptions of respondents to support findings as well as using triangulation whereby different methods and perspectives help produce a more comprehensive set of findings (Smith, 2015). Through triangulation, this thesis seeks to ensure validity “by searching convergence

among multiple and different sources of information to form themes or categories” (Creswell & Miller, 2000, p. 126) in this thesis.

The truth value of this thesis can also be proven through the confirmatory focus groups organised with the knowledge brokers where they were asked to validate the findings and comment on the research findings and themes. Additional validity was ensured by repeatedly revisiting the audio-recorded interviews as well as transcriptions to remain true to the participants testimonies and perspective of the subject being researched in this thesis. It can be concluded that validity for this thesis is high as the criteria set for qualitative research for validity has been respected alongside when it comes to the findings. Validity for the literature review is also high as it has been built strong foundations based academic definitions and theories and research already approved by the academic community.

Reliability

Noble and Smith (2015, p.2) defines reliability as the consistency of the analytical procedures, including accounting for personal and research method biases that may have influenced the findings while Stenbacka’s (2001, p.551) perspective of reliability in qualitative study has the purpose of “generating understanding” (Stenbacka, 2001, p. 551). Brink (1993) on the other hand links reliability with consistency, stability and repeatability of the informant’s accounts as well as the investigators’ ability to collect and record information accurately (Selltiz *et al.*, 1976:182). Researchers are therefore expected to develop consistency in responses and habits over repeated testing periods.

As part of ensuring reliability as part of this thesis, this research ensures that ‘consistency’ and ‘neutrality’ has been maintained at the stages concerned. Consistency has been maintained by respecting the trustworthiness by which the methods for this thesis have been undertaken and the extent to which the researcher’s decisions concerning this thesis is clear and transparent.

Simultaneously, it was ensured that the respondent's consistency, stability and repeatability was maintained at all times during the interview and that data was properly and accurately collected (Stellitz *et al*, 1976, pg. 182). As part of the research it became primordial that the research methods used yield consistently the same results over repeated testing periods, consistent responses and habits were maintained and factors related to the elucidations of the knowledge brokers were managed to reduce measurement error. As stated by Brink (1993), one of the key factors affecting reliability is error, inherent to all investigations and is not void in this thesis either. Therefore, as a means to ensure that reliability is maintained, this thesis addresses the following errors identified by Brinks (2013);

- 1) the researcher
- 2) the subjects participating in the project. In the case of this thesis, the knowledge brokers
- 3) the organisational context
- 4) the methods of data collection and analysis.

The strategies used to minimise the reliability errors are explained in Table 3.9 below.

As for neutrality, the second dimension of reliability, Noble and Smith (2015) states that it centres on acknowledging the complexity of prolonged engagement with the participants and that the methods undertaken and the findings are intrinsically linked to the researcher's philosophical positions, experiences and perspectives. As part of this thesis, this has been accounted by ensuring that there have been transparent and clear descriptions of the research process explained to the knowledge brokers from the start of the process. At the same the emerging themes from the findings were discussed with the knowledge brokers that led to a more engaged and deepened understanding of the findings and consensus reached through the confirmatory focus group.

Type of error		Strategies adopted to reduce errors
1. The researcher for this thesis	Researcher bias and interviewing competence (Field and Morse, 1985: Patton, 2002)	Undergoing extensive interviewing practices before meeting the knowledge brokers for the actual interview to ensure that the necessary interviewing, probing and analytical skills were developed Recording interviews and transcribing to ensure accuracy, completeness and comprehensiveness of coverage of responses
	Reactive effects and abnormal behaviours from knowledge brokers (Le Comple and Goetz, 1992)	Spending time with the knowledge brokers and the management team so we could build a relationship of trust to encourage them to speak openly about knowledge brokering and dynamic capabilities at their organisation
	Research position with knowledge positions (Leninger, 2002)	Move from a stranger or distrusted person to a trusted and friendly person before, during and after the interviewing and confirmatory focus group. Leninger (2002) model for “Stranger to Trusted Friend Enabler” was used to develop rapport and trust with the knowledge brokers to access credible, true and accurate information. This document is attached in appendix as Annex V.
2. The knowledge broker	Misunderstanding the research subject, aims and objectives (Brink, 2013)	Explaining clearly the research aims and objectives and going through deep explanation and simplification of terminologies

		and conceptual framework and inviting questions for clarifications
	Limiting varying responses for same question from the same knowledge broker (Leninger, 2002)	Ensuring that the responses were similar for the same question being asked at different times of the survey and cross questioning in case discrepancies were found
3. The Organisational context	Venue for the interview (Mc Grath <i>et al.</i> , 2019)	Ensuring a comfortable and trustful venue for the knowledge broker to feel at ease to answer the questions. Also, senior management requested to use a soundproof meeting room to reassure the knowledge brokers of confidentiality
4. The methods of data collection and analysis	Presenting vague accounts of research methods used in the research (Brink, 1993)	Clear description of the sequential exploratory methods used for this thesis, explaining to the knowledge brokers and the management team the rationale for each method used and what is expected from them at each stage of the method.
	Sample biasness – over presenting or underrepresenting samples and ensuring verification of additional samples (Miles and Huberman, 1984)	The knowledge brokers forming part of the purposive sampling strategy of this thesis have been decided according to well-selected criteria as described in section 3.9 of this chapter. The first stage of unstructured interview revealed the verification of data with additional samples which have been carried out in Phase 2 of the data collection phase.

	Missing theoretical sampling (Brink, 1993)	Continuing to select themes for investigation according to the findings that emerge in the course of the study and persisting with theoretical sampling until saturation is reached
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Table 4.9 - Strategies to reduce errors in reliability

Transferability

Transferability refers to the degree to which the results of qualitative research can be transferred to other contexts with other respondents. It is the interpretive equivalent of generalizability (Bitsch, 2005; Tobin and Begley, 2004). According to Bitsch (2005, p.85), the “researcher facilitates the transferability judgment by a potential user through ‘thick description’ and purposeful sampling”. This means that when the researcher provides a detailed description of the enquiry and participants were selected purposively, it facilitates transferability of the inquiry. Transferability concerns the aspect of applicability (Korstjens and Moser, 2018) and the degree to which the results of qualitative research can be transferred to other context or settings with another independent researcher (Sim and Sharp, 1998). The researcher facilitates the transferability judgment by a potential user through thick description (Lincoln and Guba, 1985).

As part of this thesis, transferability has been ensured by providing thick descriptions of the knowledge brokers interviews so that it possesses transferability judgement. Shenton (2004, p.69) argued that “without the insight that thick description provide, it is difficult for the reader of the final account to determine the extent to which the overall findings “ring true”. Therefore, an attempt has been made to provide thick descriptions elucidating all the research processes from data collection, context of study to the development of findings so that other researches replicate the study with similar conditions in other settings (Anney, 2015). As such, transferability is ensured in this thesis, the thick data will offer opportunity and grounding for other researchers to compare this context to their context of research where transfer might be contemplated in order to make a judgment about it fitting in with other possible contexts (Guba, 1981, p. 86). Other readers and researchers should feel that the findings of this thesis should be easily understood and transferable to their settings (Merriam and Grenier, 2019) of research.

As a means to maintain generalisability in the thesis, this work seeks to develop deep understanding of the findings (Delmar, 2010; Morse, 1999) while inferring to potential extrapolations of the results on the basis of both the theoretical analysis and the effects of the context (Yin, 1994). The contextual effects crucial in this qualitative thesis, seek to understand the phenomena surrounding knowledge brokering and dynamic capabilities by unfolding naturally specific environments (Patton, 2002) declaring the philosophical tradition underpinning this thesis (Carminati, 2018).

4.11 Ethical considerations

The protection of human subjects or respondents in any research study is imperative (Orb, Eisenhauer and Wynaden, 2001). It is therefore the duty of every researcher to ensure that all participants are unmistakably protected from harm by the application of appropriate ethical principles (Miller, Mauthner, Birch, and Jessop, 2012). Ethical issues in qualitative research can be in the form of, but not limited to, intrusion and disrespect of privacy, misinterpretations, dishonest and lack of consent in interactions (Van den Hoonaard, 2002).

In view of minimising ethical harm, protecting participants as well as the relevant stages of the research, a number of ethical practices have been implemented in this thesis. This research applies the six norms of Scientific research as described by The Belmont Report (1978) in view of protecting human aspects in social research. A summary of the 6 norms of scientific research and ethical principles for this research is described and explained in the table below.

1	Valid research design	it has been ensured that the research design and instrument is of valid importance with respect to the research aims and objectives
2	Competence	it is ensured that the researcher is competent to carry the research
3	Consequences	the consequences of the research have been identified. Therefore, potential risks such as non-respect to privacy and confidentiality have been minimised
4	Appropriate sample selection	it has been ensured that the sample selection best fits the study in a sufficient manner
5	Voluntary informed consent	all respondents considered for this research have expressed voluntary participation in the research
6	Compensation harm	respondents have been informed that participants will be compensated in case there has been any harm

Table 4.10 - The 6 norms of principles considered as part of this research

Simultaneously, the three ethical principles of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research (1978), has identified three ethical principles, beneficence, respect and justice was also respected as part of this thesis.

As far as the respondents were concerned, their privacy was respected, all participations were voluntary and consensual. The knowledge brokers were also mentioned that they have the right to remove themselves partially or completely from the interview if they felt that the interview was too probing or they were uncomfortable with the questions being asked. These practices are further explained through the flowchart in figure 4.5 below for all the relevant processes.

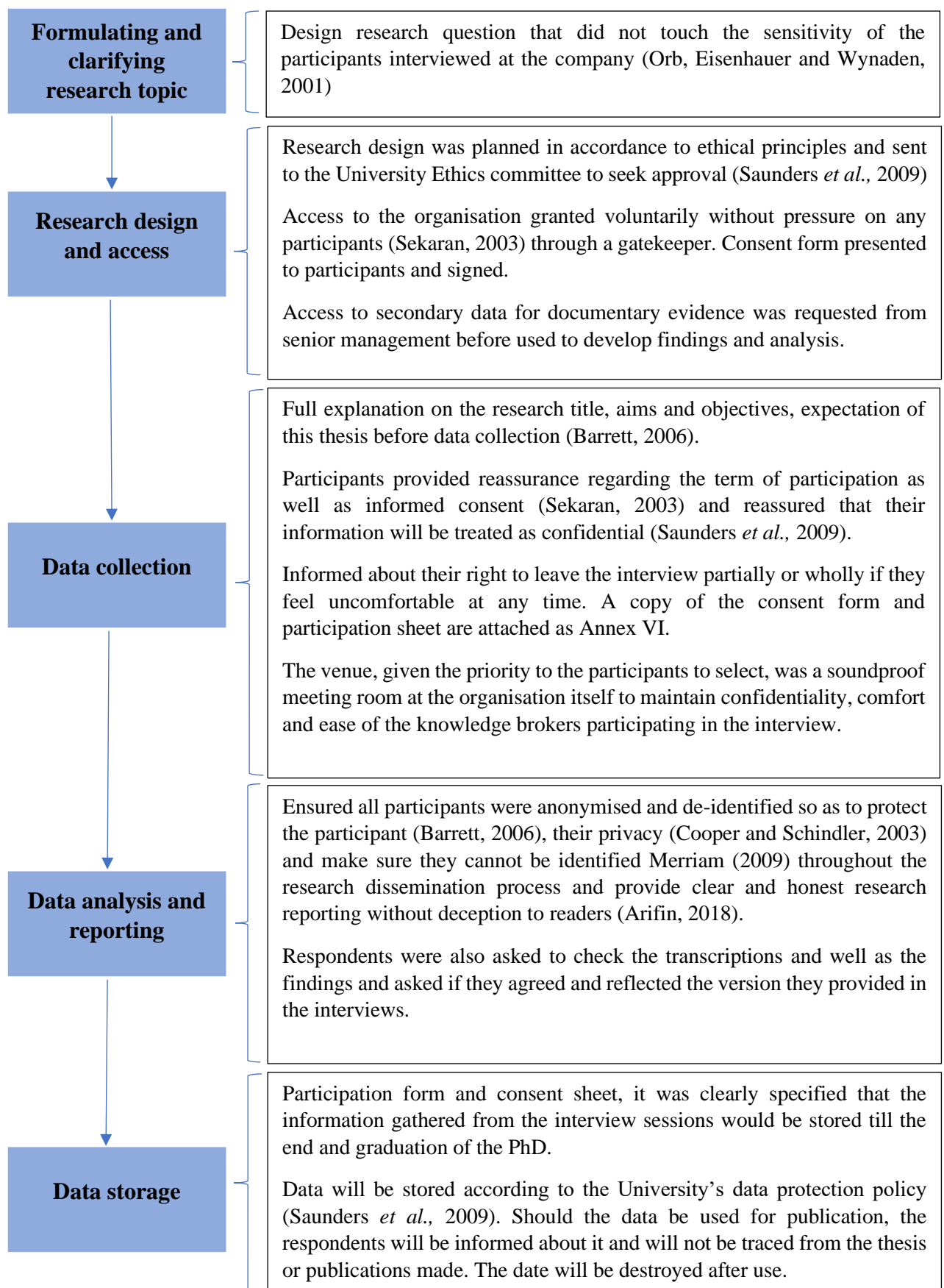


Figure 4.5 - Ethical considerations at various stages of the thesis

4.12 Reflexivity

Denzin (1994) states that in social sciences, there is only interpretations and nothing speaks for itself. Reflexivity involves the researcher's awareness of his effect on the process and outcomes of research based on the premise that 'knowledge cannot be separated from the knower' (Steedman, 1991). Reflexivity for this thesis emphasises on the key concerns and challenges faced as a researcher. Some of the issues encountered were access to organisations for surveys. Some companies were not reluctant to collaborate for the study as part of their organisational policy impeding them to do so or simply with fear of revealing their company's knowledge on competitive advantage.

As part of the interview process, the main challenge encountered was the unawareness of the participants to the two core notions of this study: knowledge brokering and dynamic capabilities. The notions, definitions, core concepts and the conceptual framework seemed quite complex to them, therefore I had to explain multiple times ensuring that they had a clear understanding of the subject. On multiple times I had to rephrase the explanations in more simple language so as to facilitate the assimilation and understanding of the concepts and the themes that was being explored as part of the semi structured interviews. As part of coding and analysis, I used the template analysis to categorise the pattern of evidence more effectively. I am concerned that my research reflects true views and testimonies applied to the findings and therefore essential that I ensured faithful reporting of the findings, reconfirmation and validation of findings from the participants. Validity of responses was ensured through the confirmatory focus groups as well as through the approval of the interview transcriptions.

Chapter FIVE: Findings

5.0 Introduction

This chapter presents a thematic analysis of the data collected from the interviews, documentary evidence and confirmatory focus group. The chapter begins by explaining how the conceptual framework developed from the literature review was used as an initial analytical framework to identify and develop the main thematic axes which are used to structure the data analysis. The thematic analysis starts with unpacking the themes surrounding knowledge brokering and comprises of the following (i) knowledge (ii) the broker and the knowledge broker (iii) reframed typology of knowledge brokering roles (iv) dimensions of dynamic capabilities (v) reframing knowledge brokering as a lever for dynamic capabilities and lastly (vi) emerging themes and key issues. Emerging themes discovered through the data analysis consisted of long-term commitment to learning and development, risk assessment before investing in an acquisition, relevance of importance and tools and complex global procedures, to name a few. The data analysis also introduces sub-themes, interprets the key findings supported by the presentation of relevant evidence through the whole thematic analysis.

5.1 The Analytical framework

Abbate and Coppolino (2011) states that knowledge brokers play a significant role in the development of dynamic capabilities as they facilitate interaction among organisation and the combination of complementary assets and capabilities necessary to identify new ideas. Therefore, knowledge brokers are in a position to identify and exploit strategic competitive advantage so that they are able to capture markets and competitive advantage (Eisenhardt and Brown, 1999) which is then successfully calibrated through technology and market opportunities (Teece, 2009) for strategic organisational transformation (Teece *et al.*, 1997).

In an attempt to show that knowledge brokering acts as a lever for dynamic capabilities, a conceptual framework was developed by identifying relevant concepts and key themes from the literature. The conceptual framework being used for analysing data and identify implications for further development can be considered as an analytical framework. The analytical framework analyses the roles of the knowledge broker, stages of the knowledge brokering process and the dimensions of dynamic capabilities in one model. The analytical framework has been developed by integrating, synthesising and distilling the main themes from the existing literature review for further analysis and advancement of the concept. The first level of the framework illustrates the stages of the knowledge brokering process sequentially which has been mapped onto corresponding roles identified in the enhanced typology of knowledge brokers. The stages of the knowledge brokering process and the roles of the knowledge broker has then been mapped onto the corresponding dimensions of dynamic capabilities. As such, the first three stages of the knowledge brokering process, mainly identifying knowledge, acquire and assimilate knowledge has been identified to be aligned with the role of the bridger and which is related to the sensing dimension of dynamic capabilities. The three stages of the knowledge brokering process knowledge creation, reconfiguration and testing have been mapped onto the role of the creator which has been linked to the seizing dimension of dynamic capabilities. The seventh stage of the knowledge brokering process, diffusing knowledge and the last stage of the knowledge brokering process providing support has been mapped onto the diffusor role and facilitator role respectively. These last two stages have been linked with the reconfiguration dimension of dynamic capabilities.

The analytical framework will therefore explain how knowledge brokering act as a lever for dynamic capabilities for implementation and further development at Ceridian HCM Inc Mauritius and similar organisations.

5.2 Theme 1: Unpacking the key elements of knowledge brokering

This theme unpacks knowledge brokering in context as identified in the literature which introduce very briefly the notion of knowledge followed by an analysis of the understanding of the key roles of the broker and the knowledge broker. After follows an analysis of the stages of knowledge brokering process assessing the extent to which these stages are relevant to the context being researched. The thematic analysis then proceeds with an engaged discussion unravelling the presence and relevance of the three dynamic capabilities, sensing, seizing and reconfiguring at Ceridian HCM Inc Mauritius and explains the numerous strategies to engage in dynamic capabilities. The next stage of the thematic analysis is engaged in a detailed and in-depth analysis and discussion with respect to the reframed knowledge brokering in acting as a lever for dynamic capabilities with respect to sensing, seizing and reconfiguring. The last part of the thematic analysis emphasises the emerging insights as part of this exploratory study that are of significant value for knowledge brokering as a lever for dynamic capabilities. The elements of knowledge brokering have been analysed and expanded in the paragraphs that follows.

Knowledge

Currie and White (2012) share the perspective that knowledge is more of the connection between ‘knowing’ and ‘doing’ as being embedded within each other rather than being separate from learning and practice (Gherardi and Nocilini, 2002; Orlikowski, 2002). Similar thoughts emerged from the findings that knowledge in the business process outsourcing is more related to hands on experience in applied knowledge that gives bigger insights, prospects and understanding to business opportunities. The concept of knowledge in the business process industry is considered as core to the essence of business process outsourcing to maintain competitive advantage with respect to the voluminous traffic of knowledge across the eco-

system of the company. Most respondents were very confident about the meaning and essence of knowledge that applied specifically to the industry they operate in. Some of them stated that “*Knowledge is power in our business*” understanding that knowledge is essential for surviving competitive business environment.

Though definitions and understanding of knowledge into the outsourcing industry might vary to a minimal range, the commonality between all the knowledge brokers were that knowledge in their industry is pivotal and must be value added, constantly evolving and come from various stakeholders within the company’s eco-system. This is evidenced by the following responses which are representative of the wider perception around the importance of applicable knowledge as a critical success factor for maintaining competitive advantage;

“Knowledge is power in our business. The more you have access to updated and latest information, the more you will survive in business, but you must choose the right information for the business.” – Senior Manager, Finance

“Knowledge is everything that come across our minds that can be applied to our business to make a difference to the value we provide to our customer.” – Senior Manager, Product Manager

However, though most of the knowledge brokers interviewed, might have slightly different meaning of knowledge, have all agreed that knowledge in their industry is pivotal and must be value added, constantly evolving and come from various stakeholders within the company’s eco-system as evinced by the following cluster of evidence:

“When we scan the market, there are some information out there that are essential, or even pivotal to our business. This information that we select to incorporate in our business must bring some additional value to our customer as we exist because of them.” – Senior Manager, Implementation

We are in the outsourcing, what define knowledge for this industry is what is ever changing to suit our business needs as this industry is constantly evolving. – Senior Manager, People and Culture

Some of the respondents however seemed not sure about how to describe knowledge as they said that change is permanent, therefore they found it “*difficult to pin the word knowledge to a fixed set of a few words*”. In fact, as stated by Bosjch-Sijtsema, Fruchter, Vartiainen and Ruohanaki (2011), organisation can sometimes be systems with uncertainty about knowledge, especially when they operate within dynamic eco-systems. A senior manager did not find it appropriate to express a meaning of knowledge by stating that “*knowledge is always changing*”. This can be attributed to the ever-changing nature of the industry in which the meaning of knowledge is being understood and may therefore be inappropriate to fix the meaning of knowledge within that particular industry to a fixed set of words, but rather to allow it to evolve with time, opportunities and innovation that comes in.

The Broker and the Knowledge Broker

While Ward *et al.*, (2009) provides a more general definition of brokers as middlemen, intermediaries, interpreters, messengers or agents acting as negotiators Gould and Fernandez categorises the brokers in five distinct roles such as gatekeeper, representative, coordinator, cosmopolitan and liaison. The commonalities between the numerous definitions provided is that the broker has a pivotal role in acting as a mediator between two or more parties. The term ‘broker’ being quite a common term in the stock exchange, participants from the interview were mostly aware of the term stock broker and could not easily establish another type of brokerage activity, or if they did, they were not very sure of it. Though the interview participants understood that the term brokerage meant moving things, products or services from one place to another, they tried to use the same ideology for knowledge brokering and guessed its meaning. Knowledge brokering was a new term for most of them and they were vaguely

able guess what it meant, asking me to clarify at some instances. Some excerpts below are illustrative of the lack of clarity and understanding surrounding the respondents understanding of the brokering and knowledge brokering.

“I guess a knowledge broker would do what a stock broker would do, that is moving knowledge from one place to another.” – Senior Manager, Research and Development

“I have heard of the term stock broker, but knowledge broker is totally new to me. If I am not wrong, would that be moving or selling knowledge around?” – Senior Manager, Finance

“I know more of a stock broker, never heard of knowledge brokering before.” – Team Leader, Payroll Services

From the knowledge brokers feedback, it was noted that they were not very much aware of the terminology of knowledge brokering and the activities or stages that it involves. The knowledge brokers were engrossed in the technical part of their jobs, that they did not have much time to realise that they were actually engaged within the knowledge brokering activity. They would term or see activities of brokering as simply training and development sessions happening within their organisations, whether country wise or across subsidiaries. When the definition of brokering was explained to them, and the stages simplified, most of the knowledge brokers could identify the stages of brokering to their day to day activities, but were just not aware that the activities they were carrying out were actually enacted in their day to day roles and that they actually fit into the roles described by Gould and Fernandez (1989).

They could situate themselves within the various roles of the broker such as the gatekeeper, representative, coordinator cosmopolitan and liaison identified by Gould and Fernandez (1989), specially within the network of subsidiaries that they operate (Simmel, 1950). The table 5.1 below shows some of the excerpts from the interviewees about how they fit into the brokering roles described by Gould and Fernandez’s (1989) but were totally unaware of the

fact that they were enacting as brokers moving knowledge from one place to another. The variance in the perceptions about the brokering roles and the inability to relate to the various roles of the broker proves that there is a lack of clarity and understanding surrounding knowledge brokering at Ceridian HCM Inc Mauritius which is evidenced in the table below.

	Role of broker	Definition of the role (Gould and Fernandez, 1989)	Excerpts from Team Leaders, Managers, Senior Managers and Vice President
1	Gatekeeper	The gatekeeper acquires knowledge from a member from another group and disseminate the knowledge to members of his own groups.	<p><i>“When our clients have request, they log their call on our AHA portal online. Our employees sort the systems out and allocate the requests to his team members to implement the changes.”</i> – Team Leader, Implementation</p> <p><i>“The Executive Summits and Ceridian HCM. Inc annual conference called Insights is organised by another department. However, we attend every year and meet business stakeholders as well as sponsors and gather valuable information from them and feed it back to our respective teams to improve the work we are currently doing.”</i> – Senior Manager, Implementation</p>
2	Representative	The broker acquires knowledge from a member of his group and disseminate the knowledge to the member of another group.	<i>“My team scans the market for business opportunities and carry out their research and investigations as to how we can improve business and when we have something concrete to present to the</i>

			<i>implementation teams, we share the relevant information to that department.” – Manager, Implementation</i>
3	Coordinator	The knowledge broker acquires knowledge from a member of his group and disseminate the knowledge to another member of his group.	<i>“Though my team is physically based here, we work in collaboration with our North America team mates. When they have changes to do on the payroll, they send the changes to the Payroll specialist in my team.” – Team Leader, Payroll Services</i>
4	Cosmopolitan	The knowledge broker acquires knowledge from another group member and disseminate it over to another member of the same group as the knowledge producer.	<i>“We normally receive request for testing from the implementation team which we carry on and then send back out feedback to the implementation team again.” – Senior Manager, Product Development</i>
5	Liaison	The knowledge broker acquires knowledge from another group member and disseminate the knowledge to a member of another group.	<i>“As the VP, I am part of the senior management team and we normally work on the strategic vision of the organisation. Sometimes additional information is obtained from the North America team, which I then have to cascade down to my management team in Mauritius” – Senior Vice President and Managing Director</i>

Table 5.1 - Excerpts from interviewees assuming the various roles of the broker

After clarifying the roles of the knowledge brokers, the participants were able to identify themselves with the various roles described by Gould and Fernandez (1989) also confirm the fact that they assume various roles at the same time, depending on the nature of the tasks that they are assuming. As some of the roles assume more internal roles, they are exposed to knowledge within the company itself. Two senior managers, however, are exposed to further opportunities of knowledge as they are connected not only within the various departments of Ceridian HCM Inc but more importantly with external stakeholders such as potential customers from the Insight Summit where they propose their new ideas on the existing services of the company. The Ceridian HCM Inc. Annual Conferences also provide resourceful insights on further business opportunities on which Ceridian HCM Inc. capitalise on to meet business demands. This is further evidenced by the illustration below from a senior manager.

“Insights regroup all our stakeholders. The Annual Ceridian Conference does the same. This is the opportunity for us to meet all our stakeholders and clients including sponsors where we talk openly about what are the trends, what might be the future demands and we get to know what is happening on the market ... within the industry we operate in as well as in industries that might be relevant to our businesses.... These external events bring additional insights, not available from AHA other internal systems which help us to finetune our customer service as well as maintain proximity with the customer base.” – Senior Manager, Customer Support

These findings support the claim made by Chiambaretto *et al.*, (2018) that brokers within the same group will not add considerable knowledge but those not within the same circle will introduce fresh ideas and unique innovation processes completely unknown to existing members within the organisation (Wegener, 2015), thus adding more value to the knowledge brokering process. This statement is further supported by the findings from Team Leader – Customer Support stating that *“Insights is open to non-Ceridian people because we want to hear from them as we want to tap on the information that is not accessible within.”* These

statements are in line with Gould and Fernandez (1989) who are of the view that brokerage between rivals in the network reinforce the importance of brokerage while those connected to each other and not rivals add little value to the brokerage process.

The enhanced typology of the Knowledge broker

The roles of brokers set by Gould and Fernandez (1989) now assessed, the findings confirmed the presence of brokerage activity happening within Ceridian HCM Inc. It was the first stepping stone set to further build onto assessing the existence of the enhanced knowledge brokering roles of bridger, creator, diffusor and facilitator at Ceridian HCM Inc. Mauritius.

As they were unaware of the fact that they could be knowledge brokers, it became vital to explain the definition and process of knowledge brokering to the interviewees which is evidenced by the excerpts below.

“So I relate a lot to the reconfiguration part because we receive requests from clients to do specific changes on the software.” – Manager, Implementation

“Yes, we do these stages, the acquisition, assimilation, reconfiguration, testing and reconfiguration... I was not aware that I am a knowledge broker. Here in the company, it is just a routine thing that we do and I did not pin my tasks down to knowledge brokering.” – Senior Manager, Product Development

These findings confirmed that the knowledge brokering process was well established within Ceridian HCM Inc. but the interviewees became aware of the fact after they were introduced to the various terminologies and processes associated with knowledge brokering. The participants were asked if they could relate to the roles and if they find themselves within some of the roles of the knowledge broker or all of them and the paragraphs that follows reveals the findings with respect to the bridger, creator, diffusor and facilitator at Ceridian HCM Inc. Mauritius.

- The Bridger

The bridger acts a mediator (Howells, 2006; Meyers *et al.*, 2010; Barnett, 2003; Ward *et al.*, 2009; Hargardon, 1998) connecting separate worlds by liaising various groups through formal and informal networks (Lomas, 2007) and business intelligence by moving knowledge from where it is (from the knowledge producer) to where it is not (to knowledge user). From the Manager, Implementation response the role of the bridger, most of them relate to the fact that they do carry out tasks associated with the bridger by stating that *“It is, yes we are acting as a bridger as well sharing information with other teams and our stakeholders and gauging information from them as well.”* Team Leader, Dayforce Services stated assuming the role of the bridger they have their *“weekly meetings with the North American team and acquire knowledge about new technology as well as the strategy of the organisation.”* The following quotes are illustrative of knowledge brokers at Ceridian HCM Inc. Mauritius being engaged with the role of the bridger.

“You gauge the necessary information from your client about the deductions that you have to do, so this a form of knowledge for you and your team. Similarly, information related to US tax, payroll with respect to legal deductions such as child support, state levy, federal levy is also relevant for our business. This information is captured by our teams and passed on through online AHA system which is also accessible to clients to log in their requests to be treated on payroll.” – Team Leader, Payroll Services

“One source of input is when we interact with our customer, so we have a mechanism where we get customer feedback about the service they have received. We identify potential information from the feedback but also call them and this is where we get the information on the service that we have been providing and we then use the feedback to improve the business services. And I think there is an opportunity here and we assess at the amalgamation of the business and turn it into an opportunity. That resonate quite well that we are all involved in the

roles of the bridger. Assimilation though, would be more of the creator's job, right before they start creating the new knowledge.” – Senior Manager, Customer Support

“There is a lot of networking that happens within Ceridian alongside our stakeholders and connected industries. We have the Annual Ceridian Conference and the Insight where we meet all the stakeholders as well as business partners in technology, services and marketing. We talk a lot to our clients to understand their needs. We also keep updated of the latest developments in the field and have a dedicated team for business intelligence, research and development. We also have an online software where we create links with the providers of information. There is also a lot of networking happening at international level and also some community of practice happening at national level with other business process outsourcing companies.” – Senior Vice President and Managing Director

These thick and rich excerpts advocate the fact that the knowledge brokers at Ceridian HCM Inc. Mauritius are engaged in the bridger's role of identifying and accessing relevant data (Castro, 2015), thereby holding a pivotal role as the gateway to scan the environment (Rivard *et al.*, 2010) and capture valuable knowledge (Ward *et al.*, 2009) to sustain evolution and innovation within the organisation.

At other instances, another team would identify the relevant knowledge from their stakeholders as stated by (Goffin *et al.*, 2010) through emails, portals and executive meetings and cascade down major decisions to the knowledge users, that is the Junior Associate of the Finance department. These activities very much support the fact that the knowledge brokers at Ceridian HCM Inc. do carry out the role of bridger in creating links between the unconnected (Meyers, 2010) through Insights and the Ceridian Annual Conference, thereby identifying and accessing the relevant knowledge (Castro, 2015) and developing links to control knowledge flows from the knowledge producer (Pawlowski and Robey, 2004) thereby holding a pivotal role as the gateway to scan the environment (Rivard *et al.*, 2010) and capture valuable knowledge (Ward

et al., 2009) to sustain evolution and innovation within the organisation. The findings revealed that there are two main types of strategies that are used by the bridger to connect the separate worlds;

- (1) external strategies – that consisted of strategies that was external to the Ceridian HCM Inc. and involved mostly global processes, conferences with non-Ceridian business stakeholders, client meetings or softwares gauging information from clients.
- (2) internal strategies – that consisted mainly of strategies that were within Ceridian HCM Inc. including department and team meetings.

The two types of strategies adopted by the knowledge broker to identify and assess relevant knowledge has been depicted in Figure 5.1 below. Interviewees’ responses to the strategies

THE BRIDGER				
<p>Networking</p> <p><u>External</u></p> <ul style="list-style-type: none"> -Insight -Ceridian Annual Conference <p><u>Internal</u></p> <ul style="list-style-type: none"> -Management Meeting -Department and Team Meetings 	<p>Technology</p> <p><u>External</u></p> <ul style="list-style-type: none"> -AHA Repository -Business Intelligence Softwares <p><u>Internal</u></p> <ul style="list-style-type: none"> -Portal and intranet -Emails - Microsoft Team Foundation Server 	<p>Processes</p> <p><u>External</u></p> <ul style="list-style-type: none"> -Global specifications -Global Research and Development <p><u>Internal</u></p> <ul style="list-style-type: none"> -Departments and Teams 	<p>Surveys and Feedback</p> <p><u>External</u></p> <ul style="list-style-type: none"> -Net Promoter Survey -Phone calls <p><u>Internal</u></p> <ul style="list-style-type: none"> -Performance Meetings -Training needs analysis -Observations 	<p>Meetings</p> <p><u>External</u></p> <ul style="list-style-type: none"> -Stakeholder’s meeting -Client meeting <p><u>Internal</u></p> <ul style="list-style-type: none"> -Leadership meetings - Team and Managers meetings

Figure 5.1 - Strategies used by the bridger to identify and access relevant knowledge

used to create links between the knowledge producer and the knowledge user was mapped into five main categories; networking, technology, processes, surveys and feedback and meetings. The most prominent strategy to identify and capture relevant knowledge by the bridger was through networking. External opportunities such as Insights and the Ceridian Annual Conference were pivotal for understanding the market trend and customer demands. Internal networking strategies such as *“meetings were used to brainstorm on the needs of the business to sustain competitive advantage”* to understand customer’s needs.

Technology also had a great role to play in identifying and capturing relevant information for the business (McLaughlin, 2017). As stated by Manager, Implementation *“we operate in the IT sector and we automate to make life easier, but also to be able to have a quick response to our clients.”* In certain cases, technology acts as a lever for the bridger, specially through the AHA repository, where customers log on their request or change, they would like to see in the service. The AHA repository therefore becomes the platform that interacts between the employees of Ceridian and the customers connecting the knowledge user and the knowledge producer. Online business intelligence softwares are also used to check on latest trends and watch on the moves of competitors. The Product Development team uses another software, called Microsoft Team Foundation Server, to be able identify and capture business needs. The Microsoft Team Foundation Server is *“used to maintain new product requirements, which are information for our team. The team also gather data from enter-exchange files and they use Microsoft team which is a communication tool where we can create virtual team and replicate your team and share documents and screenshots or other relevant information.”* As part of internal technological strategy, knowledge is identified from emails and portals as well as intranets.

Organisational processes are a source of identifying and capturing data for business needs (Eisenhardt and Martin, 2000), as supported by one of the interviewee’s statement *“in my*

department, we have processes that we call standard operating procedures that will help me identify the business needs.” These processes can be internal in the form of departmental and teams’ processes, for example a new joiner laptop requisition, or external in the form of international standards. External processes include *“international laws that the company require to comply with, for example the International Financial Reporting Standards that require us to comply with and therefore we need to identify the relevant information for feed to the international processes. ... such processes are not within Ceridian’s HCM Inc hands but are external to our business to which we have to comply.”* The Research and Development team evidenced that they are engaged in *“scanning the environment for business opportunities and create links with the producers of knowledge, we use business intelligence to do that, capture the information, reconfigure it to the needs of our business and present it to the team.... research and development are vital and constantly needed to ensure we are diligently ahead of competitors through research and development that leads to innovative solutions to our business”*

Interviewees’ stated that much of the external information needed for business improvements are gathered from surveys to clients through phone calls and through the formal feedback meeting called Net Promoter Survey. The Senior Manager, Customer Support stated that the Net Promoter Survey *“is a where we ask a client about the service they receive on a specific case and capture information on that particular case. If the client isn’t happy about the service, the manager has to recheck the client and identify what we can do quickly to enhance their experience. It is a medium where I am able to gather feedback from clients about why they are unhappy about this process, unhappy about the way that their cases have been handled, the cycle time and even the behaviour that my employees interacted with the client.”* Another way to access information is *“where I pick the phone and talk to the client and collect information about the service.”* Internal strategies to gather relevant data for the business is through

performance meetings where the managers “*identify key improvement and training needs areas through the Performance Appraisal*”, and observations by “*watching and keeping an eye on strugglers and slow performers and new joiners. As such I am able to identify any training needs for them to uplift their skills.*”

The last strategy that emerged from the interviewees’ about identifying and capturing relevant data for Ceridian HCM Inc. is through external and internal meetings. Stakeholders meetings “*help us identify future opportunities for our business as well as collaborate on developing new services to better serve our customers*”. Simultaneously, client’s meetings “*introduce us to new concepts and ideas that they would like us to implement in our service and confirms to us what they are happy with. These become valuable information for us to identify new business formulas if need be.*” As part of internal strategies Leadership meetings, departmental and team meetings “*are good sources for us to know what is happening and what new opportunities can be captured.*”

- The Creator

Knowledge brokers act as creators by innovating existing ideas into novel ones (Hargadon, 1998; Meyer, 2010) by responding to the internal as well as external organisational needs to maintain competitive advantage. The act of creation is carried out through creative and entrepreneurial skills (Waring *et al.*, 2013) by embracing the element of calculated risks to create new capabilities that will suit the evolving marketplace with its new demands (Castro, 2015). While going through the roles of the creator, the Senior Manager, Product Development stated that “*I have seen myself doing all of this, the work of the creator where parts are being created to make the turnaround quicker or creating work instructions documents.*” This testimony confirms that the knowledge brokers at Ceridian HCM Inc. are indeed engaged in the creator’s role.

Findings revealed that creators are supported by three main pillars for the creation of knowledge at Ceridian HCM Inc. The three dimensions depicted in figure 5.2 that support the creators to assume its roles are 1) the organisational culture, 2) the employee and 3) the leadership team with trust and mindset being the binding factor between the employees and the leadership team.

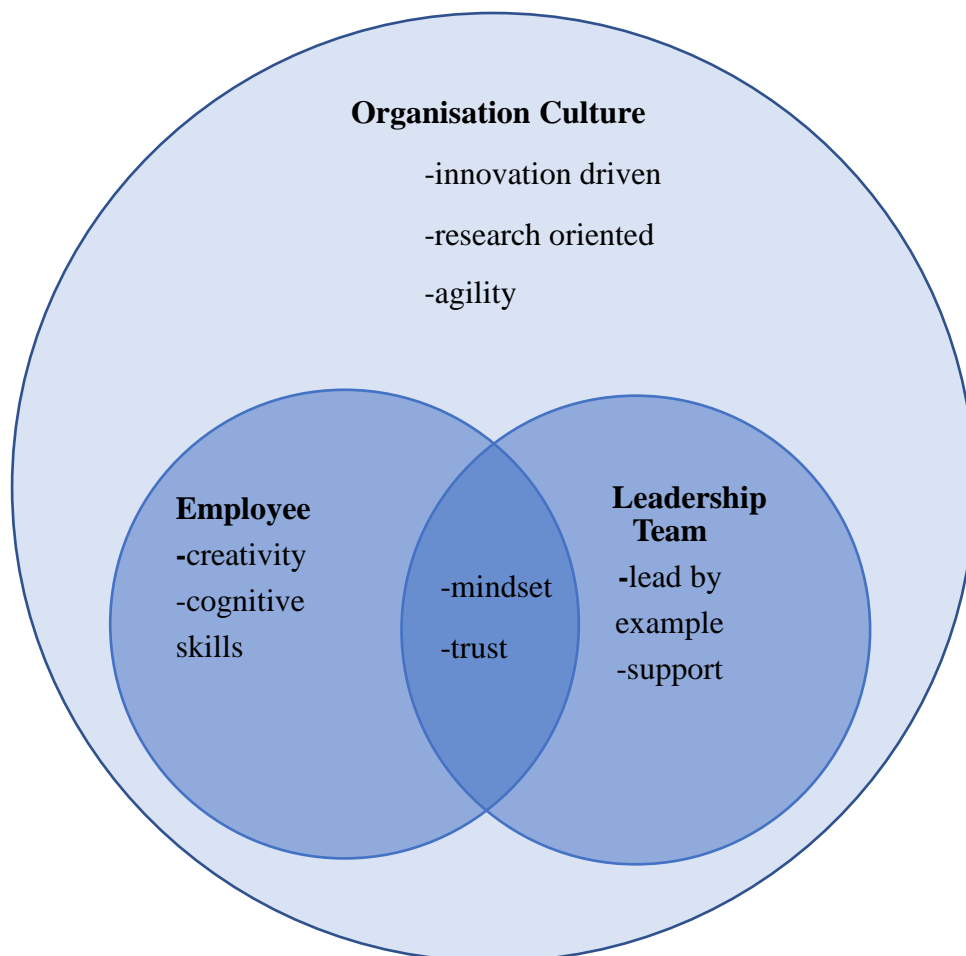


Figure 5.2 - Strategies supporting the creation of existing ideas into novel ideas

The organisational culture being the overarching dimension that keeps the employees and the leaders focused to sustain competitiveness through the innovative and agile business culture. As stated, the Senior Manager Finance *“the organisation has built a culture such that, the moment you join in, change and innovation becomes part of your DNA. We have to be exceptional in knowledge growth, mobility, agility through training and development. As you*

identify a business opening you should be able to grasp it and translate that into innovative opportunities and outweigh our rivals.” Similar findings have been highlighted Senior Manager, Implementation mentioning that *“the organisation is entrenched in innovation, we are a company that focusses on innovation and we have to build the necessary organisational culture that will allow all of us, at all levels to innovate and thrive.”* Such findings confirm the undebatable need for innovation to be existent in organisations so that the creator is able to generate new ideas which can be found in Castro (2015) stating that the creator has the potential to develop new business ideas in innovative business settings.

Another important fact that emerged from the data is the importance of developing a research and development-oriented organisation. Findings revealed that Ceridian HCM Inc. has a long history of relying on research and development to improve their services. In fact, the company have dedicated research and development teams in various subsidiaries that commute and work together to identify and test new opportunities which is evidenced by the excerpt illustrated below.

“The creators can be in every department but mostly in the research and development team constantly doing research for the development of innovative business solutions. Research and development are the gateway to new ideas and is a constant exercise at Ceridian HCM Inc. and it is not merely creation of knowledge! We need to find something new relevant for business opportunities and embed it within your existing knowledge to make something more attractive to your clients. Research has a huge role to play in this. All our applications should fit usable by disabled person, so these kinds of thing force us to develop in such a way that everyone can use it. These types of issues force us to create services in such a way so that everyone can use it and such developments can only happen when we have a strong research culture.” –
Manager, Research and Development

Ceridian HCM Inc. Mauritius has a dedicated culture towards research and development that is one of the main pillars of the company to sustain new ideas for innovative services which in fact is a necessity for the industry in which they operate in.

Agility emerged as one of the findings for organisational culture. As claimed by the Senior Manager, Implementation *“one of the most important competencies needed is business acumen to translate agility. The employee should be able to consider and assess an issue from multiple perspectives at micro and macro level, carry out an internal and external scanning of the ecosystem as a whole.”* Indeed, as revealed in the interviews agility to adapt to change is one of the key competencies. Agility is also one of the core values of Ceridian HCM Inc Mauritius and can be deduced to have been well embedded in its people and the organisational culture as stated by Team Leader, Implementation that *“we want our people to develop the ability to think, understand and move quickly.”* Perrin (2013) and Meyers (2010) also share the views that good knowledge creators need to possess agility to be able to promptly adapt to change, specifically in a dynamic business setting.

Knowledge brokers make use of their creativity to develop novel ideas (Meyers, 2010) and transform existing concepts into innovative ones (Neal *et al.*, 2015). Such claims have also been supported by the senior management team where they stated that *“we insist, support and encourage our employees to develop creativity and to think outside the box while being goal congruent.”* Another claim by Manager Research and Development point to the fact that *“at Ceridian HCM Inc. we are keen to encourage creativity, altogether with innovation as it opens the door for new opportunities.”* On similar grounds, Eisenhardt and Martin (2000) states that creativity is a good competency to fuel innovation which is key for Ceridian HCM Inc. to achieve competitive advantage and benchmark rivals.

As stated by Teece (2009) and Nonaka and Toyama (2007) the ability to create new knowledge originate from the cognitive and creative brain of individuals. Similar findings emerged from the data collected and revealed that *“training is provided to employees so that they are able to*

develop strong mental capabilities involving complex understanding and reasoning and problem solving.” The development of cognitive abilities is further evidenced through the statement of the Senior Manager People and Culture that *“when you join Ceridian, you undergo rigorous induction sessions where the company’s expectations in terms of cognitive abilities are explained to them. It is very much part of our culture to be enhance mental capability, thinking potentials and reconfiguration of knowledge”* In line with these views Teece *et al.*, (1997) also purports the fact that innovation and creation is inherent to the individual through the cognitive competencies of the brain.

Ceridian HCM Inc. prides itself in its strong leadership values and roles model that they display to the younger and junior employees. To ensure that employees are able to create new knowledge, the leadership team finds that *“it is key that we are close to our people set the example for them and walk the talk when it comes to knowledge creation and innovation.”* Furthermore, as stated by the Senior Vice President and Managing Director *“as Senior Managers we have to lead by example and set the right premise for our employees to follow our steps. We are very engaged with whatever is happening in our eco-systems and want our employees to be as alert as us and share innovative news or opportunities with us.”* These findings are very much in line with Krogh, Nonaka and Rechsteiner (2012) claims that leadership role models are key for the development of knowledge within an organisation.

Saifi *et al.*, (2016) state that management support is key in organisation that want to flourish in terms of knowledge creation and innovation. Findings indicate that *“top and middle managers play a significant role in supporting knowledge creation through training and encouraging learning whether it be our online system or through Ceridian wiki.”* Manager Services Delivery points to the fact that *“learning has to be constant, if we are to stay upmarket, innovate and create new knowledge and opportunities.”* Barlett, (2001) is of the same view that leadership support in team building session, training and development supports the

upliftment of barriers and encourage employees to learn, gain deeper understanding of the organisational needs and put knowledge into practice and innovate thereby driving knowledge creation.

Mindset and trust are the two important dimensions that binds the employees and the leaders together. Findings revealed that as long as the leaders share the mindset to train and empower the employees, they will be delivering to the best levels. In fact, the leaders trust their employees in delivering impeccable service to the clients and teams and the trust from the employees' behalf towards the leaders encourage them to work diligently. Some of the excerpts below from the knowledge brokers testify the relationship that exist between the mindset and trust to ensure that they work collaboratively to achieve the company's objective.

“We insist, support and encourage our employees to develop creativity and develop a mindset where they constantly outside the box while being goal congruent. To create, it is key that we are close to our employees and support them to constantly to trust themselves, their judgement and abilities to deliver to their best.” – Senior Manager Dayforce Services

“As a senior manager, I feel accomplished when I see that my employees have been able to developed the mindset needed to work at Ceridian HCM Inc and that they are completely autonomous and possess the ability to reconfigure the services to our customers' needs. We want to foster a mindset that is open and wide as the opportunities we have and we trust the training and effort that we put into them for good decision making.” – Senior Manager Customer Support

Such testimonies evidence the trustworthy relationship that binds the leaders and the employees together thereby developing a lasting and supportive working relationship allowing the employees to be more open to each other and free at developing novel and innovative ideas to sustain competitive advantage.

- The diffuser

The diffuser disseminates the reconfigured knowledge (Pawlowski and Robey, 2004, Perrin, 2013) and ensures that knowledge is passed over without distortion while convincing the employees that the new capabilities are worthwhile for strategic orientations for the organisation. On similar note, the interviews revealed that knowledge brokers at Ceridian did relate to the roles of the diffuser and they have assumed such roles through various mediums such as technology, face to face training sessions, through emails and communications, social media and repositories which are further depicted in Figure 5.3 and explored in the paragraphs that follow.

The commonest method used by the diffusers for disseminating knowledge is through technology. This was very much expected as Ceridian HCM Inc. is primarily a business process outsourcing company that uses technology as a lever for the services that it offers to its clients. Senior Manager Services Delivery confirms that *“in my department we are mostly engaged with the diffuser level where we pass on information as well as services to other departments. We use a lot of national and international video conferencing, forums, e-learning platforms to diffuse knowledge. We carry out training with employees as well as our clients.”* Interviewees mentioned about using technology such as online platforms, e-learning, forums, cloud-based services and portals for disseminating knowledge.

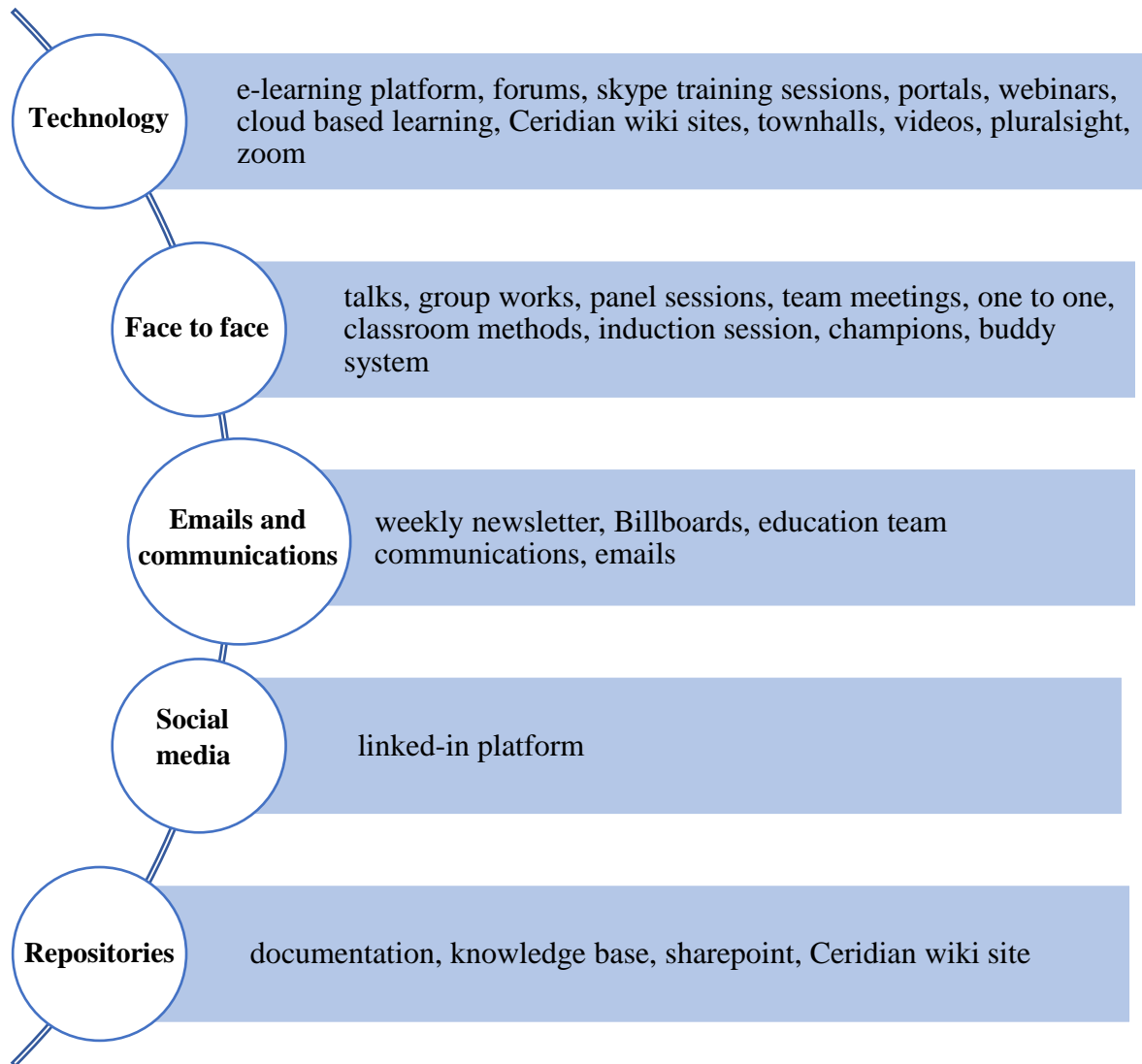


Figure 5.3 - Strategies to diffuse knowledge

Other technological methods used by the diffuser is the *“portal which is used across the globe within the Ceridian HCM Inc. family.”* and *“the team actually fun webinars with front line customer to teach them how to use our products and services.”* Gupta *et al.*, (2015) shares the view that companies engaged in outsourcing business normally make higher use of technological methods for diffusing knowledge compared to other traditional methods. The thick excerpts below evidence additional technological methods of knowledge diffusion used at Ceridian HCM Inc. Mauritius.

“At organisation wide level, we use our own dedicated wiki site to diffuse knowledge. This site is used by North America, Mauritius and other locations as well. The same knowledge is diffused to all of us, irrespective of the location we are based in to allow for homogeneity between the jobs and roles. This link provide access to ‘How to Guide’ for even a new joiner to access knowledge.” – Team Leader Customer Support

“Knowledge is also diffused through Townhalls which comes from the leadership team. Townhalls provide the most strategic information that is accessible to everyone irrespective of their designation in Ceridian, this ensuring the message from the Leadership team is diffused and shared with everyone in the company.” – Senior Vice President and Managing Director

“We provide our employees access to the Pluralsight where the platform helps us to diffuse date with respect to the technical capabilities of our teams and close skills gaps while aligning our training needs to the company objective.” – Team Leader Implementation

Though Ceridian HCM Inc. is highly technology based, the face-to-face method is also very much in use by the diffusors of knowledge. Findings revealed the use of traditional classrooms, talks, group works, panel sessions, team meetings, one to one session, classroom methods, induction session, champions, buddy system are also very much practical for diffusing knowledge. As stated by Team Leader Implementation, *“We use a lot of talks to diffuse knowledge, group works, face to face sessions on my team to diffuse knowledge. It is better sometimes to sit in front of people and interact rather than sitting in front of a machine and learn without interaction. Well, some training can be done online but, in my team, we rather do brainstorm session and face to face.”* Other methods widely used by the diffusors of knowledge is the *“champion system or the buddy who works great for new joiners, specially if they are shy in nature. They have someone they can always turn to when they need some information or need to get a question answered. This system works well with the new joiners and they also tend to bond and become good team members.”* Brown and Liedholm (2002)

share similar views concerning face to face training stating that in certain cases face to face learning deem better than technology-based training, but it depends on the type of knowledge that is being diffused.

The other method used by the knowledge diffusers are emails and communications. One of the middle line manager states that they sometimes use conditional marketing tools like panels or billboards which are different mechanism to reach a wider audience specially when it concerns clients. The use of these conditional marketing tools is an effective way to inform non-Ceridian people, specially customers, that the company will be introducing new products with enhance features soon thereby arousing interest about the product before it comes on the market.

The Senior Manager Product Development mentions the use of social media, more specifically the use of linked in to diffuse knowledge to employees stating that *“Linked-in is the world’s largest professional platform and also one of the most influential social media networks. You can create discussion topics and pages there and share knowledge as well as acquire knowledge from people who are within the same expertise as you. Linked-in is an excellent way to diffuse knowledge to your teams as well as Ceridian wide population that allows for social learning and sharing.”* This type of knowledge diffusion was mentioned by one senior management member only and not by any other. It appears that this senior manager is the only one exploiting the benefits generated by social media for diffusing knowledge as well as promoting social learning.

The last method emerging from the findings about knowledge diffusion is the use of repositories. Numerous authors have mentioned about the importance of repositories as a safe way of diffusing knowledge. Ceridian has developed its own repository system, called Ceridian wiki, where updated information is diffused through the knowledge users. The IT department also use the share-point as well as documentation to diffuse necessary information to the

Ceridian HCM Inc. employees. The diffuser therefore uses a blended medium between technology and face to face training sessions to assume his role.

- The Facilitator

The facilitator is engaged in easing the knowledge absorption within organisation and provide support and guidance to building and sustaining the new knowledge capabilities (Rivard *et al.*, 2010). Findings emerging from the interviews concerning the strategies used by the facilitator was mostly similar to the strategies used by the diffuser as explained and described above. However, there was a more frequent use of the buddy system as well as the champion to provide support after the knowledge has been diffused. Figure 5.4 below shows the strategies used for facilitation and support which includes the training sessions that was used by the diffuser explained above and the buddy system and the champion as two most important strategies.

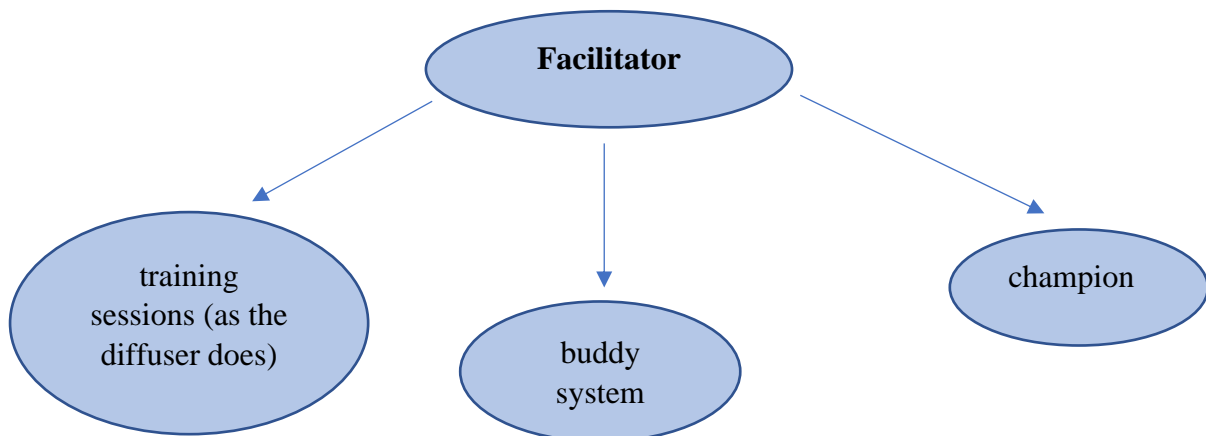


Figure 5.4 - Strategies used by the facilitator to provide support

Team Leader Customer Support stated that “*numerous repositories and online learning mediums, employees could consult same in case they needed further support and assistance. Therefore, the company did not have many options as facilitator but the ones the most used*

and helpful was the buddy system and the champions who would provide additional advice as and when needed.”

This last of the roles from the typology, the facilitator, also uses the blended mode between technology and face to face learning to provide support to the system user. The role of the facilitator is quite limited as most of the training support is online and in case employees need additional information, same can be found on the Ceridian HCM Inc. Mauritius repository system, that limits the role of the facilitator.

Reframed knowledge brokering process

The reframed knowledge brokering process model was explained to the managers, senior managers, team leaders and vice president before the interview sessions started and all their doubts and questions were cleared. Some of the respondent could find themselves assuming all the stages of the process model while others would relate to only part of it depending on their designation as well as the teams, they were operating in. The paragraphs that follow explore the nature of the reframed knowledge brokering process model within Ceridian HCM Inc and present thick and rich relevant excerpts in certain cases.

- Stage 1- Identify relevant knowledge

All the knowledge brokers interviewed at Ceridian HCM Inc. confirmed undergoing the stage of identifying some type of knowledge in their respective departments and job, whether for administration or development of new services. The research and development team seem to be more connected with the identification of knowledge. The following quote is illustrative of this statement.

“While our main objective in Mauritius is to acquire talent compared to North America, we are also very much engaged in identifying business opportunities through research alongside the North American team. We have meetings about this often and we discuss about what we

have gathered as relevant knowledge that can potentially lead to a new product or enhancing the existing service to our customers. The research team though split across various locations, do put heads together to talk about opportunities. Infact, Dayforce is an example of successful identification of business potential.” – Manager Research and Development.

While some of the were more involved in identifying relevant knowledge for the business opportunities, others were not so much involved in this stage as their departmental focus was different. While Senior Manager People and Culture stated that they are indeed engaged in the identifying business opportunities, Senior Manager Dayforce Services expressed disagreement and contradictory feedback to the fact and very intelligibly elucidated the type of business opportunities they could potentially identify by stating *“Okay, we have to be clear here, we identify knowledge for our day-to-day business, but we do not identify big business opportunities. These big business opportunities with big clients, exp Gartner, Marriot, Pace Industries are contracted by the team in North America. The team in North America will identify those big business opportunities and present those projects to us, on which we work.”*

The testimony from the senior manager pointed to the fact that as knowledge brokers here in the Mauritian subsidiary they had limited ability to identify big business opportunities which was mostly carried out at the head-office that is North America. The contradictory feedback from the interviewees urged for deeper clarification where Senior Manager Implementation testified in the thick excerpt that follows.

“I give you one example where we have identified a business opportunity. In one of the senior management meeting with my North American colleagues, through a conversation that we were having, one of the managers in North America stated that we cannot work with this particular client as we do not possess these skills in the North American branch. This is when I was thinking, but wait, we do have this skill in Mauritius and the project could be outsourced here. So, I had this conversation with them, we started with one and now we have a team of 18. This

is an example where my team was able to identify relevant knowledge for that project, else we are not engaged in big contracts, they come to us.”

The statement supports the fact that Ceridian HCM Inc. Mauritius is not engaged in identifying huge business potential but in smaller ones. This can be understood from the perspective that the branch that was set up in Mauritius initially started as the outsourcing back office where the projects received from the head office in North America would be allocated to the back-office teams in Mauritius. It has therefore, since long, not been the practice for the North American head-office to delegate the Mauritian branch to look into potential clients.

As the findings concerning identification of knowledge were quite contradictory, it was of more interest to probe into the question with other participants to identify other similarities or contradictions. Therefore, Senior Manager Product Development was approached and questioned about the possibility of identifying relevant knowledge who added another dimension by stating that she is not involved with the identification of knowledge for new business contracts. Her testimony below validates another worthwhile dimension to the identification of knowledge at Ceridian HCM Inc. Mauritius.

“My team is not involved at all for the identification of knowledge for business opportunities as we receive the data already processed that we have to test for developer. Therefore, the kind of information or knowledge we have to identify is mostly who will work on flexi time next week, or who is on the work schedules for next week and so on or merely the key performance indicators from performance appraisals, but we are not involved in identifying relevant business opportunities with big revenues for the company. My team's work starts at other stages of the process.” – Senior Manager Product Development

This revelation points to a different understanding of knowledge as for this team knowledge is valuable when it deals mostly with information such as work plans, performance indicators which is mostly administrative by nature and not directly linked to the knowledge needed for

the development of a new service. However, even if the type of knowledge needed in this department is not relevant for innovating the services of clients, it represents valuable potential to support the administrative duties of those who operate in the innovating teams and the type of knowledge to be identified supports the administrative tasks of the other teams.

Senior Manager Customer Support and Team Leader Payroll Services contributed a completely different tangent to this first stage of knowledge brokering. Both mentioned that they are not involved in identifying big contracts, but only day to day information for business running and that the big contracts are outsourced to them after having been negotiated and signed in North America. The additional revelation from another department elucidated the fact that their teams operate differently where the following quote is illustrative of this statement.

“Our team do not identify information first on our own. The information comes to the team, readily available and we have to work backwards from your proposed reframed model and try to make sense of the knowledge we have in front of us and see how and what we will use from the whole lot. Assimilation becomes the first stage of our team, as the creator, and not identifying opportunities which will be more the role of the bridger.” – Senior Manager Product Development

This statement shed light on another piece of truth concerning identification of knowledge at Ceridian HCM Inc. Mauritius. While the previous testimony stated that the teams were not engaged with identifying knowledge for business contract but mainly administrative, the last testimony revealed that identification of knowledge is not the first stage for this team. This evidences the fact that, through identification of knowledge is part of the knowledge brokering process at Ceridian, it is not in all cases the first stage of the knowledge brokering process for all the departments. Though the stage is present in the operations it might not necessarily be the first stage in all teams. The research and development team were the only team to be fully engaged in identifying relevant knowledge irrespective of the location they were in, whether

North America or Mauritius. The team in Mauritius as well as in North America work on research and development breakthrough together to identify opportunities for Ceridian HCM Inc. to invest in.

- Stage 2 - Knowledge acquisition

All the participants interviewed confirmed undergoing through this stage, knowledge acquisition, in their day to day work. Ceridian HCM Inc. practice formal and informal ways to acquire relevant knowledge with respect to their business opportunities depicted in figure 5.5 below.

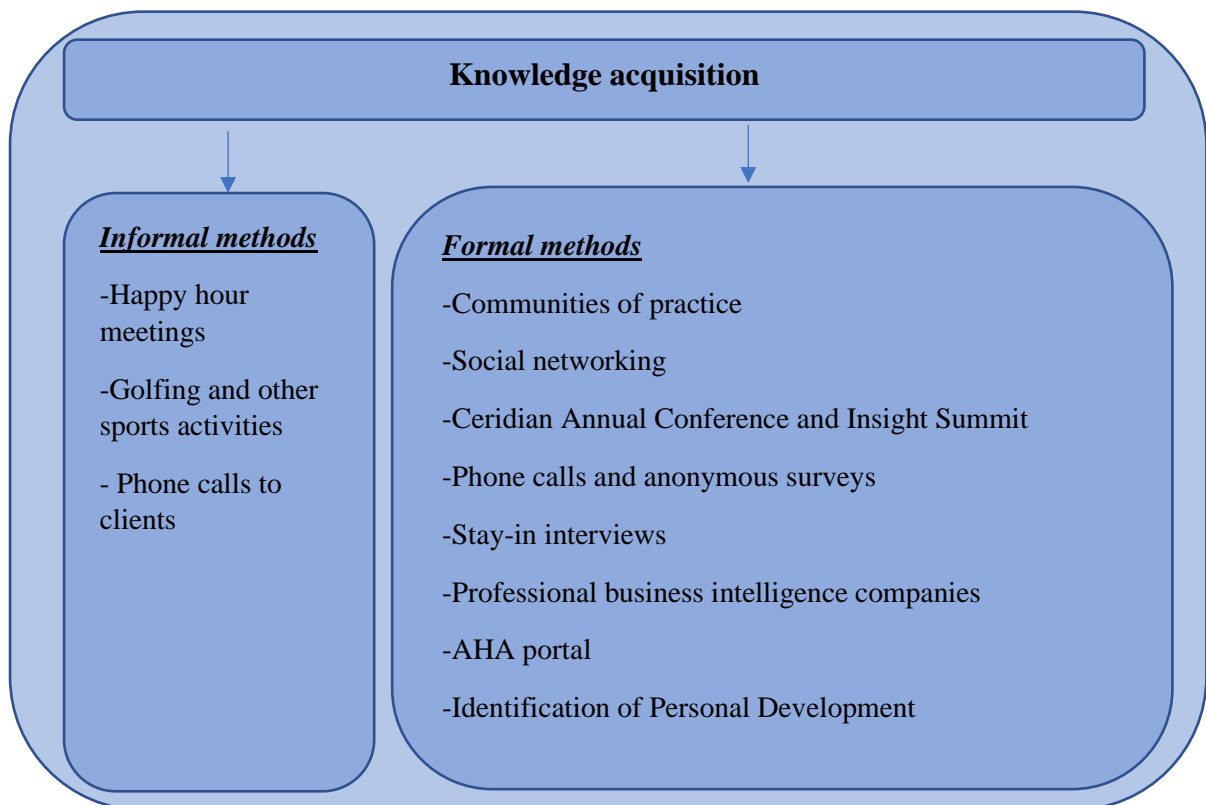


Figure 5.5 - Strategies adopted for knowledge acquisition

Senior Manager Information and Technology states that the company “uses networking a lot to be able to acquire the relevant knowledge for our business needs. This can be in terms of social platform, like communities of practice, informal get together with colleagues from rival

companies or other industries, but we sit and talk about issues and help and support each other.” The aim, as provided by the respondent, is *“to maintain a positive competition, understand the direction the industry is taking, similar issues we are facing and probable solution we can find.”* The senior managers have chosen to *“adopt a supportive attitude that will help the industry grow as a whole rather than not sharing and staying aloof and not understanding the trends of the industry.”* The AHA portal plays a tremendous role in providing teams with the type of information they need for business needs. We also use the internal Identification of Personal Development system to acquire information from our clients and better understand their needs.

The excerpts below are illustrative of the informal methods of acquiring knowledge practised by the managers and team leaders through phone calls and informal meetings.

“We talk to clients. We pick the phone and ask them if they are happy or if there is something they would like to change or some additional services they would like us to offer to them. This is how Ceridian HCM Inc. created Alexia service for our clients. There had issues with identifying work shifts, so we have created a device for the, where they can talk to the device and question them about their working shift for that day and that week.” - Manager Research and Development

“We learn a lot through meetups, happy hour time, golfing or other sports activities. When we engage with a client and the project is long term, we try to build a rapport alongside the working relationship that we have. We talk about the project and business culture to better understand their needs.” – Team Leader Customer Support.

The Insight Summit and the Ceridian Annual Conference are two other much awaited sources of knowledge acquisition for the company. These two events offer *“colossal opportunities for roping with business stakeholders all together and talk about what is new on the market and how these can be developed into prospects for our clients”* as stated by the Senior Vice

President and Managing Director. The Annual four-day Conference offers networking and training sessions to Senior Executives, departmental experts, functional experts and business stakeholders to align future direction of the business by exploiting knowledge in terms of latest trends and predicting forthcoming trends. The conference offers a platform for social networking to learn about services alongside the key speakers and trusted sponsors of the conference. At the same time, the Conference also provides a platform, known as the Ceridian's Women's Network, for women to create links and propose new solutions to existing business ventures or develop new opportunities. The Conference and the Summit are opportunities for the senior executives to link and acquire knowledge for innovative ideas for Ceridian HCM Inc. Mauritius, thereby developing innovative solutions to meet the demands of their clients.

Team Leader Customer Support mentions that *“sometimes our employees have ideas and they are normally the ones who are passionate with the latest trend and they can see how these breakthroughs can be translated to opportunities, but just feel shy to express. The clients are also requested to provide their feedback and we acquire knowledge from them as well.”*

Anonymous engagement surveys are administered internally to the employees as well as to clients to acquire information. Ceridian HCM Inc. also offer stay in interviews which is a strategy that not only tracks early signs of resignations but also the *“reasons as to why employees want to resign. These meetings help us to gather information that would have been otherwise lost if we would not have carried out such meetings. We sometimes learn that they are having better pays or using other programming languages.”* The companies do their best to retain these employees by counter offering or shifting them to other departments or other jobs. However, the company is not always in a position to counter offer as salary scales are approved globally and therefore too complex and time consuming to have global approval. In certain cases, counter offers will not be approved at all.

The Senior Vice President and Managing Director states that *“we pay consultants in business intelligence companies to understand the industry dynamics and evolution of the business acumen. We do it ourselves sometimes, but we are sometimes unable to find or acquire specific information, which is why we call for expert business intelligence services.”* As Ceridian HCM Inc. Mauritius is a company that deals with technology, the nature of business is subjected to constant change all the time. Therefore, the company has inculcated a culture of constantly scrutinising the market through professional business intelligence services so as to stay ahead of rivals in terms of competitiveness.

- Stage 3 - Assimilate knowledge

Ceridian HCM Inc. prides itself on its organisation culture that supports continuous learning and developing the best talent through an unbeatable competitive mindset. The company ensures that a mindset of continuous learning and development is inculcated within its employees within the induction sessions itself. The organisation culture is at the centre point to ensure that a learning culture is developed in the company as well as the employees' mindset the respondents acknowledge that this stage of the process is one of the most crucial steps in the knowledge brokering process at Ceridian HCM Inc. The figure below shows how the learning culture binds the learning culture as well as the mindset to support knowledge assimilation within the company.

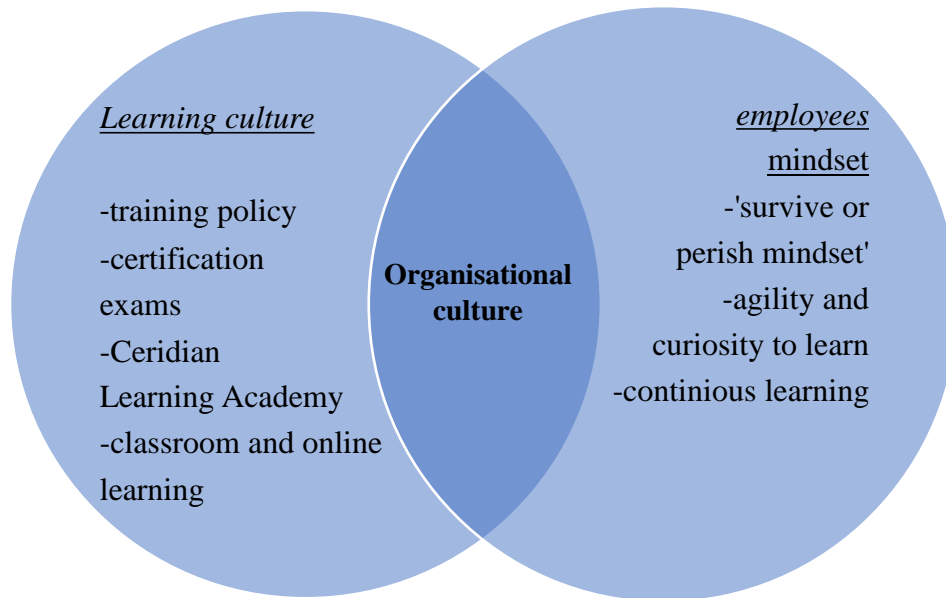


Figure 5.6 - Knowledge assimilation

Ceridian HCM Inc. organisation culture is very much centered towards self-learning and development, growth and *“upgrading technical skills through professional certifications. Furthermore, these technical skills upgrades are part of the performance objectives and considered as one of the milestones for promotion.”* By doing so, Ceridian ensures that learning an assimilation is ongoing within the company while fostering a learning organisation at the same time. Similar views are shared by Przybycien *et al.*, (2010) stating that knowledge should focus on both soft skills and technical skills while encouraging the presence and development of a learning culture within the organisation.

In view of developing a continuous learning culture, the company has developed its own learning centre, Ceridian Learning Academy, alongside a well-defined policy, where employees undergo training to assimilate new knowledge and develop skills required on the market. The employees of the company proud themselves in having a dedicated centre for quality learning that constantly fuel talents of their teams. Numerous types of trainings, soft-skills as well as technical, are carried out at Ceridian Learning Academy. The company also

offers classroom training and encourages self-paced online trainings and emphasises that employees adopt a self-developmental approach to learning. Dagenias *et al.*, (2015) emphasises on the development of learning organisations, self-paced learning and relationships that brings people together to allow flow of knowledge. The following quotes are illustrative of the fact that the organisational culture emphasises a lot on developing the right mindset as well as inculcating a culture of change to respond to the fast-evolving demands of the business.

“Developing the right mindset so that employees are flexible to change. Ceridian demands agility and needs employees who are not scared to face challenges, adaptable to change and curious to learn.” – Senior Manager Finance

“Change is in our DNA, agility is part of us and curiosity is what fuels our passion to learn more and upgrade our talents. As an employee of Ceridian, you should choose to either Survive or Perish, and the choice is obvious.” – Senior Manager Dayforce Services

All the respondents have acknowledge undergoing this stage as part of their job and state that knowledge assimilation is a big part in the volatile and fast evolving industry that they operate in. Knowledge assimilation can take any of the forms mentioned above but the most prominent remains the learning culture that constantly encourages the employees to continuously learn and develop new skills to respond to the demands of the organisation.

- Stage 4 - Creation of new knowledge

Interviews revealed that creation of knowledge happens in two ways. Firstly, knowledge created for administrative works for day to day running of the business and secondly strategic knowledge for business needs and the advancement of competitive advantage. Though knowledge creation happens in two types, all participants mentioned undergoing this stage at work. Knowledge created for administrative works are in the form of work plans and work rosters for the week or the month. The senior manager went on saying that she is not engaged

in creating knowledge for products and services that they sell, but she creates information for administrative purposes only. On the other hand, most interviewees mentioned being engaged with the creation of knowledge stage.

With respect to those senior managers who expressed that their teams have a significant role in the creation of knowledge for competitive advantage, two main dimensions appear to be repetitive in the interviews; creativity and business acumen knowledge. Senior Managers Finance, Dayforce Services, Implementation and Product Development purported the fact that for *“valuable knowledge to be created in the outsourcing industry, it is imperative that the employees possess creativity alongside strong sense of business acumen leads to the development of business solutions with good outcome.”* Figure 5.7 below shows the balance between creativity and business acumen to develop updated, refined and practical knowledge for business. When creativity is fueled with sound knowledge of business acumen, employees then possess the best combination of capabilities to devise smart and proper solutions quickly as they possess refined and updated skills to create the required knowledge.

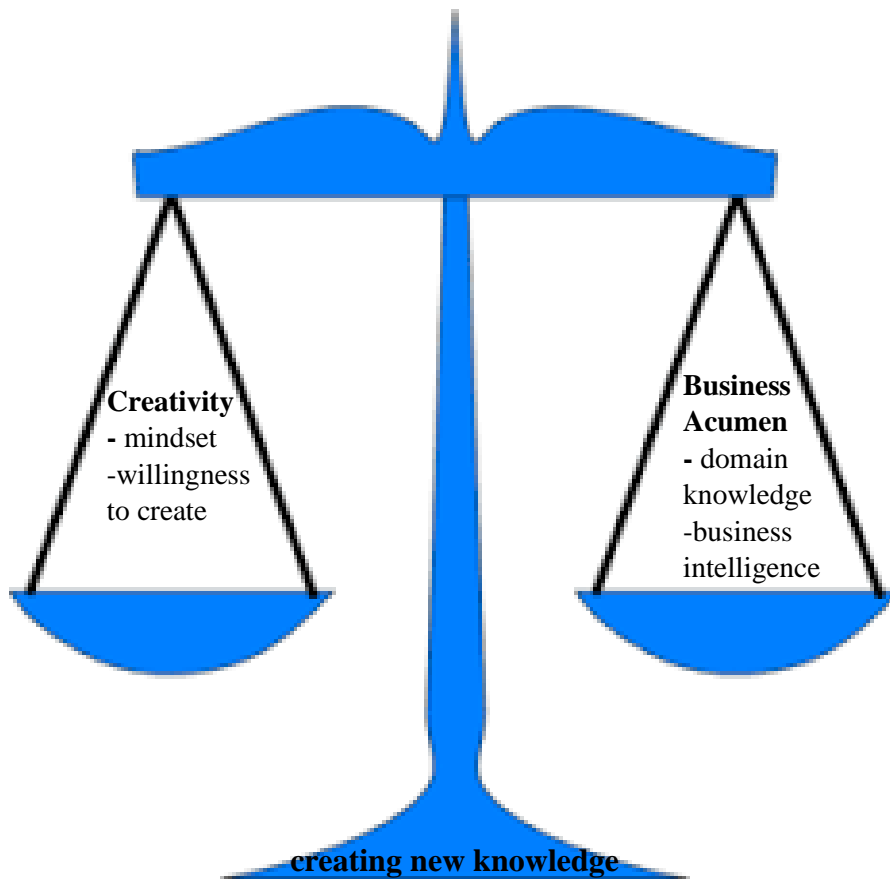


Figure 5.7 - The relationship between creativity and business acumen to create new knowledge

In such cases developing business solutions that are tailormade for the services to the client and responding to the fast-evolving urges of the business market cannot unequivocally be missed. Some think and rich excerpts from the senior managers and middle line managers testifying that creativity and strong business acumen are essential for the creation of new knowledge.

“We ensure that our employees possess strong business acumen to translate business needs to business solutions with agility. We want them to look at the issue from various perspective and an open mindset, understanding the eco-system we operate in to think for solutions outside the box while being goal congruent.” – Senior Manager Implementation

“We expand in the market we already are efficient in, that is we build and upgrade on our core capabilities. As we possess the core competencies of the business we are in, updated business knowledge fuelled with the appropriate training and creative culture we encourage, it is not difficult for us to find prompt solutions for our clients.” – Senior Manager Dayforce Services

“Creativity and agility are in our DNA. Our employees are trained as such that they possess the required mind frame to dig and drive fast solution for the business, else we will not survive. Here, we want our people to be creative while respect the business acumen. This is when you strike the right balance.” – Senior Manager Product Development

“Willingness, agility and creativity is what we demand from our employees to stay top-notch, so we stay top on the market. They should be able to flex and adapt to changes when the company needs them to. I might be in a team now, but asked to shift to another. The employee must then be able to plug and play, create and deliver. With this mindset, you can change and adapt and survive. These mentalities and values, we develop when we join Ceridian HCM Inc.”

– Team Leader Implementation

These testimonies concerning the need for creativity and strong business acumen resonate strongly with the Miller *et al.*, (2004) stating that organisations that foster creativity within its core values will see improved or new products which suits the demands of the market specially when employees have sound business acumen of the industry they operate in, coupled with domain knowledge (Bollinger and Smith, 2001) which is very specific to the outsourcing business and business intelligence capabilities.

- Stage 5 - Reconfiguring knowledge

This stage has been acknowledged to be done by all the interviewees, some in larger extent and some lesser. The implementation team as well as the testing team are the two teams who are the most engaged with the reconfiguration stage as it is the main purpose of their department. One essential findings emerged from the interview, that is quintessential for reconfiguration to take place, management support, which is the overarching dimension that allows for proper reconfiguration to take place as this activity demands for resources from various parties; employees, training, clients' portfolio, softwares and tools needed to implement the reconfiguration and assessment of technical feasibility as well as risk assessment. Figure 5.8 below depicts the reality of the reconfiguration stage where management is the primordial dimension supporting the others.

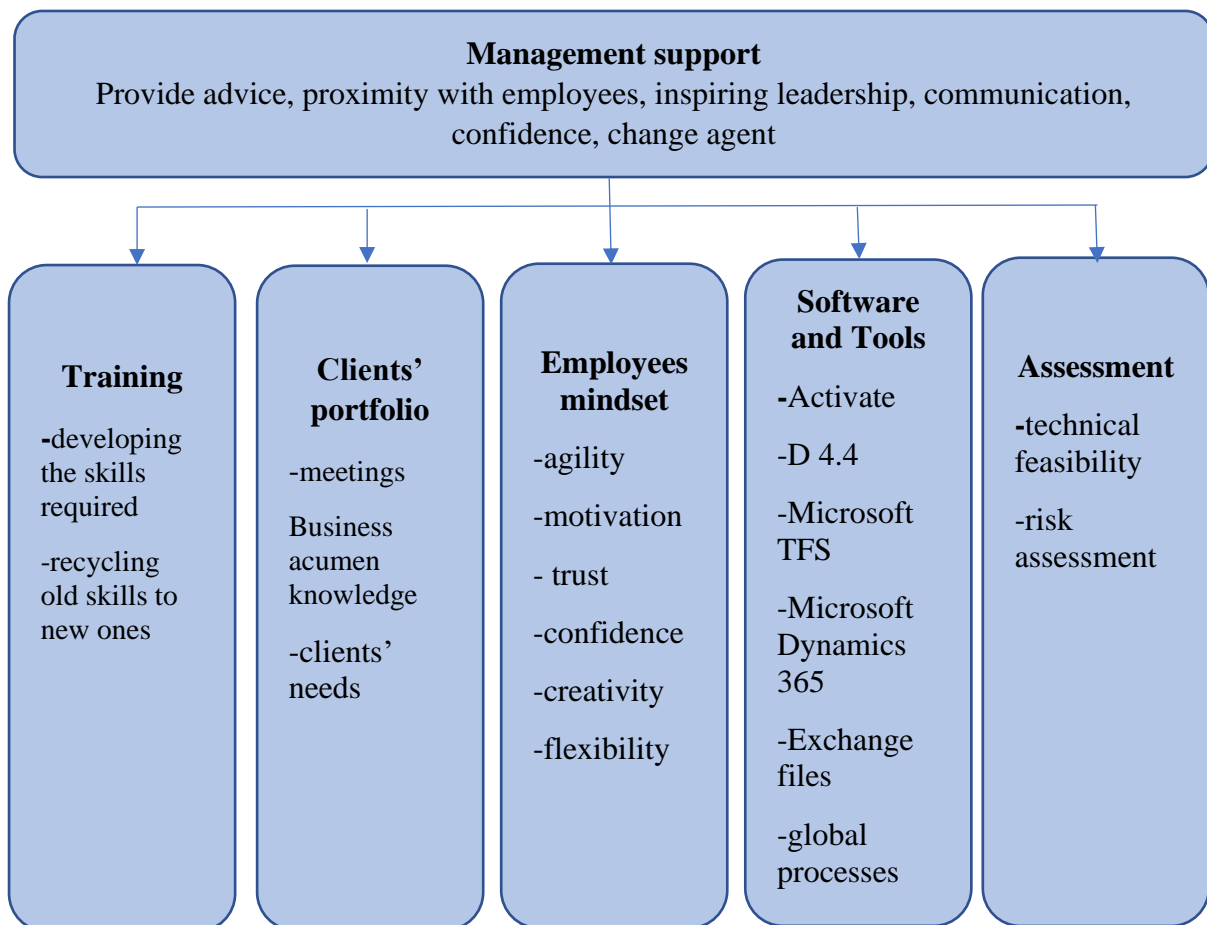


Figure 5.8 - Reconfiguration of knowledge

All respondents mentioned that management support is key to ensure that reconfiguration takes place in the best conditions possible to better serve the clients. Senior managers *“choose to stay within proximity with their employees and provide their best advice for reconfiguring the services efficiently within the least time possible to provide prompt service to the clients.”* It is essential to *“lead by example and inspire the employees to continuously learn, appreciate their reconfiguration abilities that generates confidence in them. This creates trust within our employees and we can also trust them to reconfigure efficiently.”* Team Leader Implementation mentioned that though they maintain proximity with the employees to ensure that reconfiguration happens in the best way, they also try to develop confidence within in the employee so that he or she can reconfigure independently with time, that boost self-confidence of the employee. *“Communication is key, how we talk to them is important, our instructions must be clear to them as required by the client, else the reconfiguration goes wrong and they have to do it again”* stated the Team Leader. Senior Managers Customer Support and Implementation stated that we have to be change agents for them and inspire them to change and reconfigure according to the needs of the client.

Training and development are essential to upgrade skills and develop new ones to be able to reconfigure existing knowledge to new knowledge demanded by the market. Ceridian HCM Inc. prides itself in its learning culture and *“provide necessary training to employees whether online, or traditional classroom style or self-directed on our online platform.”* The Senior Vice President and Managing Director of the company mentions that *“recycling, reengineering and upgrading skills is essential to ensure that reconfiguration takes place in its correct form.”*

All respondents mentioned that understanding the clients’ portfolios are key to reconfigure effectively as it allows us to *“understand their needs and directionality in which the reconfiguration must go.”* Meetings are set up between the senior management and middle management staffs to discuss about the reconfiguration needs which are then transferred to the

programmers who would actually undergo the reconfiguration. The programmers are therefore in a position to understand the clients' needs to reconfigure the old knowledge to the new required one. The knowledge brokers also mentioned that employees also need to possess business acumen knowledge to have an understanding of the type of reconfiguration they have to do.

Ceridian HCM Inc. entrust its employees to induction sessions where they are trained to develop the mindset needed to learn, work, thrive and deliver within the business conditions they work in. The fact that Ceridian HCM Inc deals with companies which operate in highly dynamic sectors, employees *“need to develop an open mindset, ready to accept challenges and possess the motivation to deliver to the level required”* with much *“trust and confidence”* that allows for *“creativity and provide space for flexibility to try different options to meet the reconfiguration needs.”* The employees are the most important asset in this stage of the knowledge brokering process as without them there will be no reconfiguration happening for the clients. Software and tools are primordial when an organisation operate in the outsourcing sector which possesses fast changing business needs. Ceridian HCM Inc. has its own global processes for reconfiguring data as well as the software it uses for reconfiguration of data such as Activate, D4.4, Microsoft Dynamics 365, Microsoft Team Foundation Server and Exchange files.

Senior Manager Implementation purported the importance of assessment before we decide to acquire a new project or reconfigure an existing project as evidenced by the excerpt below.

“The project was acquired with so many complexities as the project is disconnected between the IT, marketing and other teams. Therefore, it amplifies the problem specially if the bases set for that software are complex. It is not straightforward to reconfigure and the teams do not know the intricacies of the product. The technical feasibility was not assessed before the

acquisition, but as it was already bought, it took a lot of time to reconfigure and get the project up and running and connect the different modules.” – Senior Manager, Implementation

This excerpt evidences the fact that assessment is important before opting to buy a new product from scratch so as to understand the implication and impact on the reconfiguration of knowledge for business purposes. Abrupt investment without sound assessment could delay projects and impact on the service delivery towards customers.

Manager Research and Development also mentioned about another potential issue that arise with reconfiguration is risk assessment where *“risk analysis, risk planning and risk monitoring should be carried out as risks can be in terms of tools, organisation, technology, patents.”* Poor risk assessment would be difficulties or the inability to reconfigure the new knowledge properly this providing unsafe reconfiguration services and softwares to clients.

- Stage 6 - Testing the reconfigured knowledge

All the respondents mentioned that the work of their department goes through a testing phase. The customer service department has script and services that undergo a testing process. The department the most exposed to testing is the software implementation team. There is in fact a full-fledge team responsible for the testing of software development programs. Senior Manager Product Development responded that *“In-depth testing is a critical part of implementation. We ensure that the solutions we provide meet the delivery requirements and business expectations. Software testers are exposed as to how to develop test cases for each business function and the execution process. Then the results are validated to ensure that the solution designed and reconfiguration carried out are performing to the standards set.”* The rich and thick excerpts below evidence the presence of the testing stage as part of the knowledge brokering process.

“It is the responsibility of the Tester to ensure that the quality of the deliverables throughout the agile methodology for testing the reconfigured knowledge. The tester works alongside the

Quality Assurance Analyst and Software developers to understand the design as well as the implementation while focusing on complex scenarios aiming at developing quality codes.” – Senior Manager Implementation

“The tester has to be able to ensure quality improvement for the services with both automated and manual testing. Tracing bugs, break the code, analyse test results, track failures and improve areas and develop test automation initiatives are part of the expectations we have with respect to testing the reconfigured knowledge.” – Senior Manager Product Development

“Our Test Analyst are expected to follow the SDLC (Software Development Life Cycle) to analyse, design, test, automate and support and work closely with product teams to define testing strategy, raise quality related risks, debug, review cases and improve quality and efficiency. The aim is to build and sustain robust, unfailing and scalable automation test suite. Test scripts are expected to validate the quality of knowledge reconfigures of the software product. The tester is continuously engaged in integration, testing, failure analysis and deployment.” – Manager Implementation

“As a top-rated multinational, we have quality standards to respect and it ensures we maintain the high-level service that we offer to our customers. At Ceridian HCM Inc. we have the QA CoE (The Ceridian Quality Assurance Centre of Excellence) that ensures that the services we offer to our clients meets the quality assurance charter we have developed.” – Manager Customer Support

Ceridian HCM Inc. Mauritius has a very structured department with structured roles for the testing activity to take place. This proved the high level of importance that is attached to the testing phase in ensuring that the services are of excellent quality while being delivered to clients. The company is also engaged with very well detailed Software Development life cycle processes and stages to ensure that the testing stage is carried out to perfection. The company also have a dedicated centre of excellence to ensure that the services being delivered are being

tested before offered to clients. This proved that Ceridian has a very strong culture towards this stage of the knowledge brokering process.

- Stage 7 - Disseminating the reconfigured knowledge

Once the testing phase has been carried out and the reconfigured knowledge has passed the quality assurance tests, the knowledge is passed over to the employees and clients. All interviewees have confirmed undergoing through this stage of knowledge brokering in their department. Though knowledge dissemination happens in the same way as explained within the roles of the broker as diffusor, this particular stage of the knowledge brokering process (that is, disseminating the reconfigured knowledge) can be broken down in two main categories (1) for clients and (2) inhouse to employees. Communications for clients vary from that to inhouse employees in the sense that, more technology-based training systems are offered to them. The rich and deep quotes are illustrative of the practices Ceridian HCM Inc Mauritius engages into as part of disseminating knowledge to its employees.

“We disseminate knowledge with clients a lot through technology, especially due to geographic locations. We do not always move, but then we have technology, simply like skype sessions. We sometimes use webinars as well and use remote control access for training sessions as well.”

– Team Leader Payroll Services

“We also provide client access to our repositories, specially Ceridian wiki where they can better understand our business or access our database of information, but they have a controlled or limited access to that database.” – Manager Customer Support

Plural site is helpful. We can share documents and videos with them there and it makes communication easier. – Team Leader Payroll Services

At organisation level, we use our own dedicated wiki site to diffuse knowledge internally. This site is used by all internal staff whether be North America, Mauritius and other locations as

well. The same knowledge is diffused to all of us, irrespective of the location we are based in to allow for homogeneity between the jobs and roles. This link provide access to 'How to Guide' for even a new joiner to access knowledge. – Manager Wage Team

“Internal knowledge is also diffused through Townhalls which comes from the leadership team. Townhalls provide the most strategic information that is accessible to everyone irrespective of their designation in Ceridian, this ensuring the message from the Leadership team is diffused and shared with everyone in the company.” – Senior Vice President and Managing Director

“We provide our employees access to the Pluralsight where the platform helps us to diffuse data with respect to the technical capabilities of our teams and close skills gaps while aligning our training needs to the company objective.” – Team Leader Implementation

Ceridian HCM Inc. Mauritius has invested massively in technology-based dissemination of knowledge as it is easier to follow through self-paced learning and easy to access. This can also be due to the fact that the company deals with technology and already have the core platform to host learning opportunities rather than non-technology-based learning systems. Figure 5.9 below categorises the types of methods being used at Ceridian HCM Inc. Mauritius to disseminate the reconfigured knowledge to employees and clients.

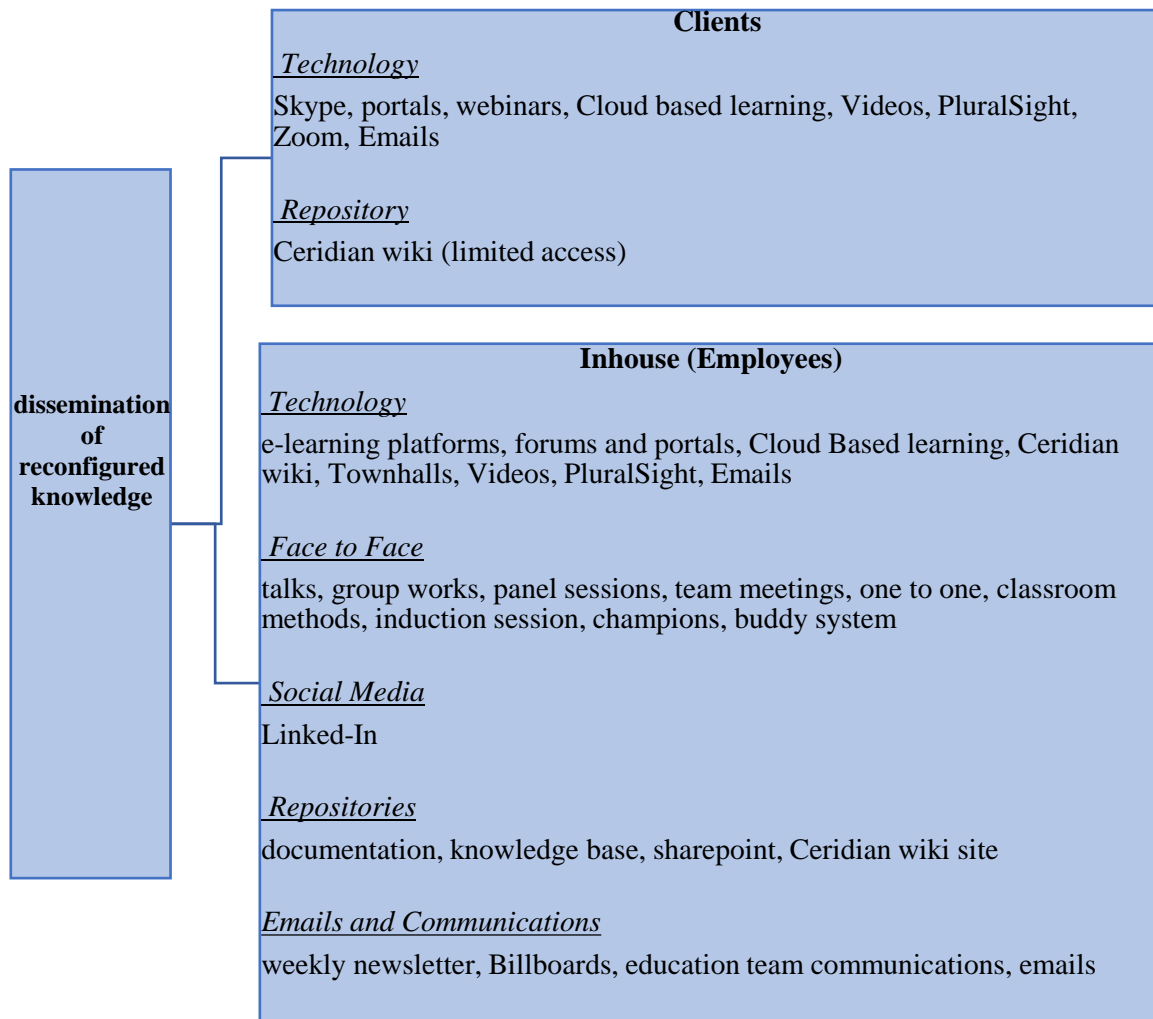


Figure 5.9 - dissemination of reconfigured knowledge

Disseminating knowledge for inhouse employees range from technological mediums to face to face, social media, repositories, emails and communications. Employees have more access to *“internal materials compared to clients. We use repositories a lot. Ceridian Wiki is specific to Ceridian HCM Inc but accessible to the whole community of Ceridian HCM Inc. in which ever location you are. The same knowledge is disseminated in the same way for all inhouse staff”* as part of knowledge dissemination in the company.

- Stage 8 - Provide support

All participants from interviews confirmed that they do provide support to their respective teams after employees have been trained on new knowledge or reconfigured knowledge. The following rich and deep excerpts are illustrative of this statement.

“The company uses numerous databases, repositories and online medium that support the learners after training. We also provide manuals for them to refer to.” – Team Leader Customer Support

“Normally disseminating the knowledge is the biggest part of the training, so we do not have much support to provide, only on a few cases. However, we have the buddy system or the champions system to offer support later on, if there really is a bug, but normally all trainings end with a question-and-answer sessions and practical sessions where assimilation is assessed. Therefore, we do not need much support to provide.” – Manager Implementation

“We want our employees to be agile, successfully and quickly, therefore, they try to grasp the concepts within the training sessions itself and practice through the training sessions that we offer. We do not have much intervention during the support phase, though we have some experts who stand by. But then the buddy system also works well, specially in the case of new joiners or fresh graduates.” – Senior Manager, Dayforce Services

Though this stage is present within the company, it is not very much used as the dissemination stage already covers most of the training with practical sessions, therefore additional support is not often requested by employees. In case support needs arise for coaching a new joiner, the buddy system works well to train and support the new joiner.

All respondents have acknowledged undergoing some or all of the reframed knowledge brokering process developed for this research. Though some stages are present through all the departments, there are some stages that are not relevant for other departments, depending on the nature of their job, which is more administrative in nature. However, all respondents agreed

with the flow of the process as well with the sequential stages of the reframed knowledge brokering process.

5.3 Theme 2: Dynamic Capabilities

Sensing

The foundations of sensing can be traced back to the literature on entrepreneurship (Kirzner, 1973; Weerawardena, 2003) where the ability to identify opportunities for discovery and creativity originate from the cognitive and creative brain of the individual (Teece, 2009). The knowledge brokers interviewed at Ceridian HCM Inc stipulated that sensing is part of every body’s job and it is a daily routine in the work that they do and the business environment they operate in. The Figure 5.10 below shows the skill sets possessed by the knowledge brokers for sense business opportunities.

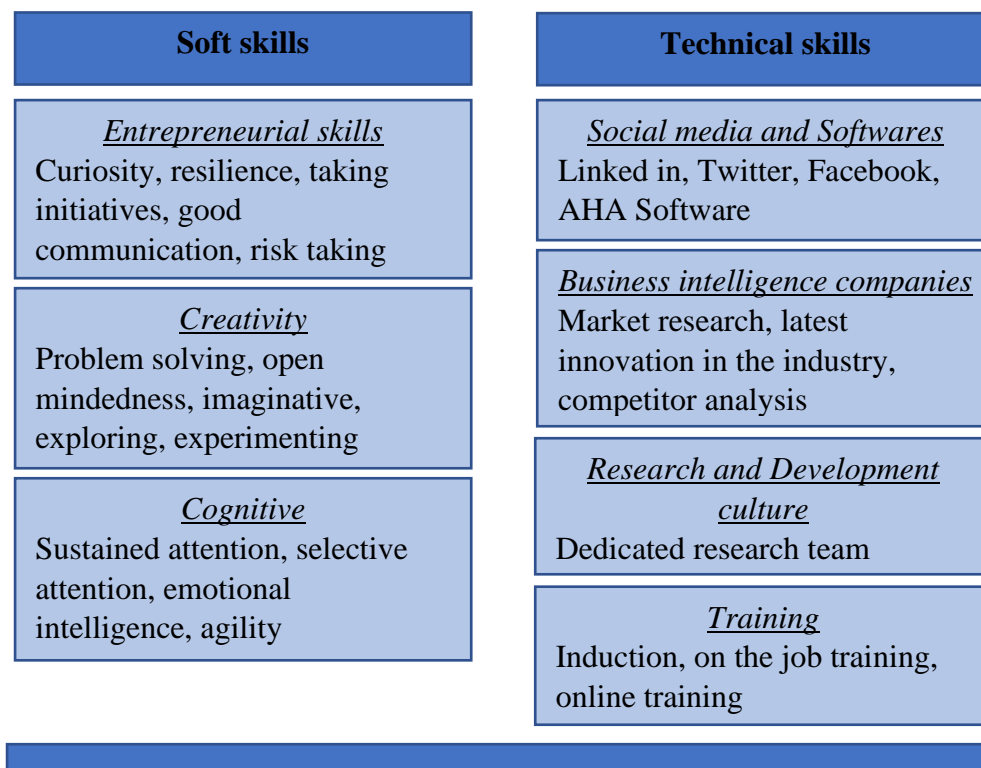


Figure 5.10 - Sensing dimension

Findings emerging from the interviews showed that knowledge brokers skills-set to sense opportunities can be categorised in two main skills; soft skills and technical skills. Possessing both skills are as important as the other and needed simultaneously alongside each other to be able to sense business opportunities. The standout rich and deep evidences that follow testify the existence of sensing dimension as an embedded quality within every employee as well as the organisational culture.

“We want people who are keen to take risks and come up with profitable solutions for our business. Ceridian HCM Inc. training give them the necessarily competencies to be able to be brave enough to adapt to change when identifying opportunities and take initiatives as well. Our culture here is built on constant change.” – Senior Manager Implementation

“While joining Ceridian HCM Inc., a new joiner is told that we are exceptional in knowledge growth which is has to be fuelled by curiosity and a passion to grow that curiosity. We grow our employees professionally by developing skills such as mobility, risk taking coupled with resilience so that they can face a brighter future. Sometimes clients can be very hard you know and the client being the client we cannot displease them. So, then resilience becomes your survival shield. You become bulletproof. Any person at the company is then willing and ready to grab and seize opportunities as they present themselves, they are not scared and do not doubt themselves. These skills set that inculcate in them goes in their DNA and you just do the work as it comes to you and you improve and become more and more independent. Creativity is intelligence having fun.” – Manager Customer Support

As proven by the testimonies, the employees have been trained with a culture to sense opportunities which is in fact of significant importance specially to survive the competition in which the company operates. These findings resonate with Kirzner (1973) and Weerawardena (2003) who advocate that the importance of entrepreneurial skills to be able to sense opportunities has also been well supported by which is aligned with the findings of this research.

The second soft skills that emerged from the interviews is the ability to possess a creative mind to sense business opportunities. Below are some rich and thick excerpts from the interviews confirming the ability to create being important for sensing business opportunities.

“We insist, support and encourage our employees to develop creativity and to think outside the box while being goal congruent. At Ceridian HCM Inc. we are keen to encourage creativity, altogether with innovation as it opens the door for new opportunities.” – Senior Manager Product Development

“As a senior manager, I feel accomplished when I see that my employees have been able to developed the mindset needed to work at Ceridian HCM Inc and that they are completely autonomous and possess the ability to take decisions for the company. We want to foster a mindset that is open and creative and wide as the opportunities we have and we trust the training and effort that we put into them for good decision making” – Senior Manager Implementation

“Valuable knowledge to be created in the outsourcing industry, it is imperative that the employees possess creativity alongside strong sense of business acumen which leads to the identification of business opportunities.” – Manager Research and Development

As stated by Teece (2009) indeed creativity does reinforce the sensing abilities of the knowledge broker and thus identifying business opportunities which is very much in line with the findings of this research. All the knowledge brokers interviewed at Ceridian HCM Inc. Mauritius have on numerous occasions confirmed that creativity is one of the greatest talents which they keep emphasising and ensure that their employees develop. Within an organisation like Ceridian where knowledge and the ability to innovate knowledge for business solutions is key, creativity indeed has a great role to play to ensure that employees are able to develop new ideas from their creative minds.

Cognitive values are vital in ensuring that employees are able to identify opportunities and develop business solutions with agility. The standout rich evidences below are illustrative of this statement with respect to cognitive abilities and agility.

“In the business outsourcing industry, the employees must have the ability to think quickly and find quick, fast and efficient business solutions and answers when they identify a business opportunity. The speed with which they identify business opportunities and business solution is key for the industry we operate in. For such industry agility is one of the top skills our employees as well as managers should develop.” – Senior Vice President and Managing Director

“Employees also undergo training on how to maintain sustained attention and selective attention on assignments. Each client assignment is different and demands different type of focus, mental process and understanding. Some projects demand sustained attention with the ability to focus on one task or project over a long period of time. Some projects are more demanding than others for example Dayforce, as it was a huge project with numerous modules and assessment issues. Other smaller projects are not as colossal as Dayforce, example Powerpay. The smaller projects require less man hours and less cognitive abilities as well but more of a selective attention approach where they focus on the project for a limited time not paying attention to other projects around them. They are dedicated to that work only and it allows their cognitive abilities to develop and work much better.” – Senior Manager Dayforce Services

Cognitive abilities are essential for developing better solutions within short span of time specially within dynamic environment. Emotional intelligence is another key competency, pointed out by the Senior Manager Customer Support, our employees and managers as well should possess as they continuously deal with customers. It is *“imperative that we are able to handle our customers in a courteous way sand engage in conversations with them so that we are alert of any conversation that may turn out into a future business opportunity. Such an*

example is the Alexia we have developed for our customers regarding working schedules and the apple technology inspired 'wallet' for bitcoins."

The second set of skills that knowledge brokers develop when they join Ceridian are very specific to the nature and business in which the company operate in. A series of technical skills are inculcated in the employees as well as managers to be able to work according to the Ceridian HCM Inc. was of doing things.

Interviewees responded that they make use of technical sources such as social media and software, business intelligence companies, the research and development team and training to be able to sense business opportunities. These findings differ to Kirzner's (1973) claim that sensing can be traced to entrepreneurship skills and Teece (2009) statement that the ability to identify opportunities for discovery originate from the cognitive brain. Existing literature does not mention the use of technical sources at any point for the identification of business opportunities. Though Kirzner's (1973) and Teece's (2009) claim stands true as to what this research has also proven above, it is worthwhile to claim that sensing abilities can be carried out by through the various sot skills mentioned above as well as through technical skills. The paragraphs that follow present excerpts pertaining to the contribution of technical skills to sense business opportunities.

Manager Implementation responded that social media and softwares support their ability to sense business opportunities in a way where *"being subscribed to groups and blogs on social media, example Linked-in Learning Blog, allows us allows us to be exposed to latest news feeds and wall updates about the industry we operate in. Such blogs are dedicated to latest technology developments. Whenever there is an update or a new article that appears on the web, we receive a notification. Social medias are learning tools in the industry we operate."*

Manager Research and Development stated that *"there is the Twitter Developer Community*

where we learn a lot about what others are doing. It is a site where we can learn about latest developments happening in our industry. We also visit the websites of our competitors from time to time to see and learn the opportunities they are grabbing and the areas they are venturing into. Facebook communities also provide us information about such updates, we register or join their groups and we can actually see what is going on. We learned that some of our competitors have set up Facebook recruitment pages as almost everyone is on Facebook nowadays.” The AHA software which is widely used across Ceridian HCM is also a successful way for the managers to sense business opportunities. AHA Software is a “*good database of customer’s feedback and scanning through their comments, likings and dislikes is an indication if we need to change things we do, improve or build a new service from scratch*” as stated by Manager Services Delivery.

The use of business intelligence companies is very helpful to Ceridian HCM for the identification of business opportunities for profitability and sustainability. One of the interviewees very clearly pointed out that the company has been making use of market intelligence services for quite a long time to learn about the ventures their competitors have been engaged in. The rich excerpt below is supportive of this statement.

“The industry we operate in, it is impossible not to carry our business intelligence exercise. We always have to stay abreast of developments on the market that can be considered as opportunities for us. Normally we are all engaged in one way or other in carrying our business intelligence activities and market research, we are all trained for that, irrespective of the levels we operate in. But there are some very sensitive and crucial information that we are not able to access, because we are external to the organisation and also because we wear uniforms of the company we work for, in a sense, so our competitors know who we are and will not divulge all the secrets to us. This is where hiring professional expertise comes in to play. We pay a consultant to do that job for us. The consultant will work on specialised market research reports giving us reports on the subject being researched on our numerous competitors. This is where

we use this information to sense and decide if these opportunities can be tailor made to our business needs to be profitable and sustainable.” – Senior Vice President and Managing Director

“In view of driving Ceridian’s global growth strategy and execution to ensure that the flagship Dayforce program remains innovative, at all times, by using Agile best practices and latest technologies and in the research and develop team our employees are expected to plan, organise and conduct research to respond to client’s request and identify potential solutions for those request from available resources within the existing repositories, existing pre-populated database, research files, Internet, archives, collections, print directories and zip code books. If the solution is not available then from our business intelligence companies. Such research request can range from child care, work issues, eldercare to emotional well-being.”

– Senior Manager Dayforce Services

The excerpt above testify Ceridian HCM Inc. Mauritius dedication in getting hold of the latest information to be able to leap as opportunities present itself as well as dedicated teams who are committed to the research and development. As such the company is able to stay abreast of all innovation and maintain competitive advantage. Ceridian HCM Inc. pride itself in the research and development culture that it has inculcated in the organisation as a whole.

Learning and development is an essential pillar of Ceridian HCM Inc. In fact, the company has its own learning centre, Ceridian Learning Academy, where employees undergo training; both soft skills as well as technical skills. The interviewees take pride in the rigorous Ceridian induction training that they have put in place for new joiners stating that *“A new joiners undergo rigorous and enriching induction session as they join. The aim is to expose them to the Ceridian mindset that we want them to inculcate and possess if they wish to stay in Ceridian. We teach them that we are exceptional in knowledge, growth and self-development through research and continuous learning. They are trained to have their eyes and mind open to be*

able to gauge some opportunities that we might have missed. They sometimes come to us with good and valuable new ideas from their research activities and we are happy of that. The mindset inculcate a culture of research and self-learning and you are aware that the onus to improve rest on yourself. We make them ready so that they can seize any opportunities that present itself in front of them.” Other knowledge brokers interviewed mentioned that employees are provide on the job training and exposed to business intelligence and sensing abilities while they are at work, especially junior staffs, so that they grow professionally and technically in their jobs as well as develop abilities to understand the market trend and sense opportunities.

Findings direct to the fact that employees’ role in sensing is quite limited for business projects as most of the projects are cascades down from North America and therefore the Mauritian subsidiary is not very much engaged in this activity, as it is not the nature of business in the Mauritian subsidiary. The only type of sensing they would be engaged is mostly for operational services or identifying issues to improve an issue on an existing service or small projects. They are not very much engaged in the identification of big clients of signature of a big contract. Most of the sensing part at Ceridian HCM Inc happens mostly in the North American branch and is cascaded down for implementation in Mauritius. There was only one exception to the sensing situation where a senior management team member was able to sense a potential for outsourcing a project which he did and they are total a total of 8 working in that team.

Seizing

Seizing defined as the ability to address an opportunity which has been detected to invest in (Teece *et al.*, 1997) and there is not much opportunities to capture new ventures at the Mauritian subsidiary of Ceridian HCM Inc. as most of this exercise is carried out in North America. The marketing team based in North America extends the contracts to the clients and as the deal is

signed, they cascade the project to the Mauritian branch. The seizing dimension applicable at Ceridian HCM Inc, Mauritian branch, can be depicted in the figure below.

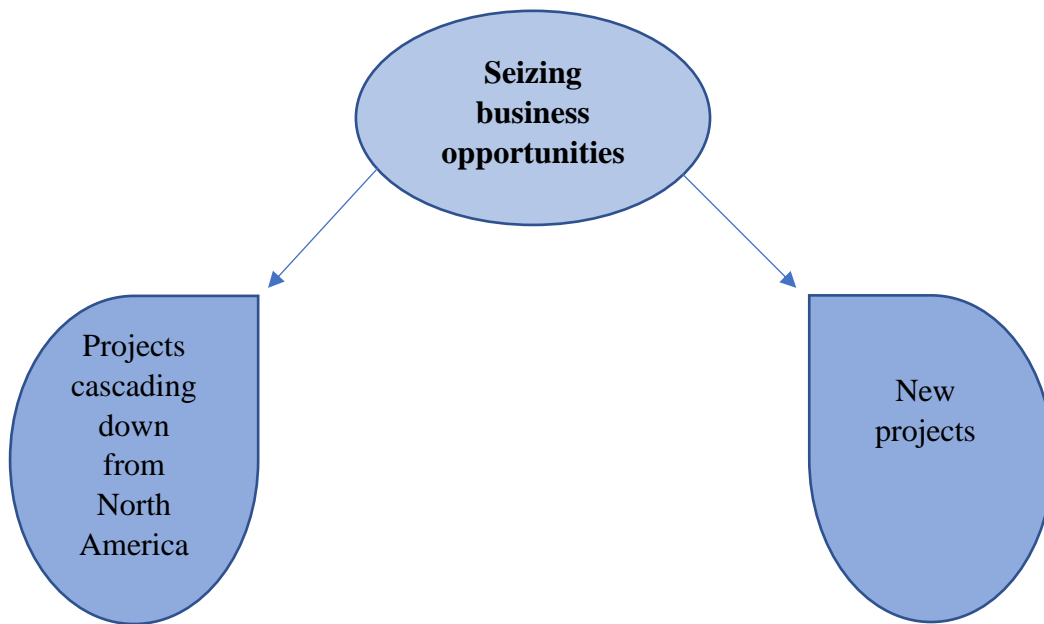


Figure 5.11 - Seizing opportunities at Ceridian HCM Inc, Mauritius

Concerning projects that are cascades down from North America, one of the senior managers pointed out to the fact that business deals and business opportunities are discussed with the business partners in North America and discuss opportunities collectively with the Mauritian team after which they agree about the opportunities North American team would cascade to Mauritius. The opportunities are not identified by the Mauritius team and they are informed about the possibility of a project where both teams discuss the needed resources in terms of talent, skills and logistics to carry out the project. Through that meeting if the Mauritian branch gives the go-ahead, then both teams sign the project and the project is cascaded to the Mauritian team. The excerpt below is an evidence as to how project is cascaded down from North America to Mauritius not giving much opportunities to the Mauritian team to seize big business opportunities.

“All new contracts with clients are signed in North America, we do not sign the contracts. So, when an opportunity is identified, the North American team would seize that opportunity to

outsource to us. Our seizing happens from this time onwards, that is understanding what the project is to be able to reconfigure same for the demands of the client. This is where we step in. So, we seize the business needs that has already been captured by our North American offices. The seizing is mostly in understanding the business needs, skills needed, type of project we need to develop and create the project alongside skills needed develop.” – Senior Manager Implementation

The second type of seizing opportunities that happens at Ceridian HCM Inc. Mauritius branch is capturing business opportunities from scratch. The second type of seizing opportunities consist of seizing the identified opportunities and informing Ceridian HCM Inc. North America that we have identified a potential project and would like to discuss the feasibility of the project and sign the contract if North America head office are into agreement with the opportunity. From all the 18 interviews carried out, there has been only three case where Ceridian Mauritius Inc. has identified and seize a business opportunity. It is a rather odd one, not within the normal routine where projects cascade down from North America, but the situation of the project brought the opportunity to Ceridian HCM Inc. Mauritius to seize that business deal. The Senior Manager Implementation was therefore questioned deeper, for the first case to understand how this unique situation arose. His reply testifies the following excerpt below.

“Normally, we receive projects already seized by our North American branch. We were having our weekly meeting with our North American colleagues when we heard someone talking about the possibility of losing a new client because they do not possess the skills that the client was looking for in North America. When our colleagues in North America informed us about the project and the skills they needed for the project, we informed them that we had those skills in the Mauritian database, but from another team. It was not a widely used skill in Ceridian Mauritius and we thought that there was possibility of bringing those skills to Mauritius. It was obvious that the North American colleagues were not much aware of all the skills set we possessed as they were mostly aware of the skills their staff possessed under their project and

not other projects. So, we spoke about having the resources here and they dealt with the client and the contract from their sign in North America and we had the project. We started with 1 employee and today this is a team of 18 employees working on that project.”

This statement again reinforces the fact that Ceridian HCM Inc Mauritius has a very limited role in seizing opportunities the ones that happen are merely incidences and unplanned. Two other situations where the Mauritian branch identified and sensed business opportunities is the case of wallet for bitcoins and alexia for work roaster for clients. This statement is further evidenced by the excerpts below.

“Our client, dealing with bitcoins, was having issues and we sensed an opportunity there and we offered to create a mobile app that overcome the handicap of a desktop wallet. Alexia came out of a conversation I was having with my client concerning a project we used to work on. Through that conversation our client informed us that they were having issues with their roaster planning. So I sensed an opportunity there and we seized that opportunity and developed a program for them.” – Senior Manager Research and Development

Another manager confirmed that these were the very few opportunities where the Mauritian branch could identify a new business opportunity. The Mauritian branch do not normally seize business opportunities as the subsidiary has been set up as a back-office for processing outsourcing business.

Reconfiguring knowledge

Reconfiguration of knowledge defined as the successful calibration of technology and market opportunities (Teece, 2003) to be ahead in competition (Zollo and Winter, 2002) is a stage that definitely take place at Ceridian HCM Inc. Indeed, all the interviewees acknowledge going through this phase and having their own means and ways to reconfigure knowledge according

to their departments. Reconfiguration of knowledge is a major part of Ceridian HCM Inc Mauritius as it is the major reason for this branch’s existence. Other than providing customer support some of the major clients’ project they have, the implementation team is very much engaged in the reconfiguration process. Reconfiguration at Ceridian HCM Inc happens in three main categories which are as important as the other. To ensure that proper reconfiguration of knowledge happens at Ceridian HCM Inc., the three dimensions: training, mindset and technology are equally important to co-exist as they complement each other for the proper execution of the reconfiguration exercise as shown in the figure below.

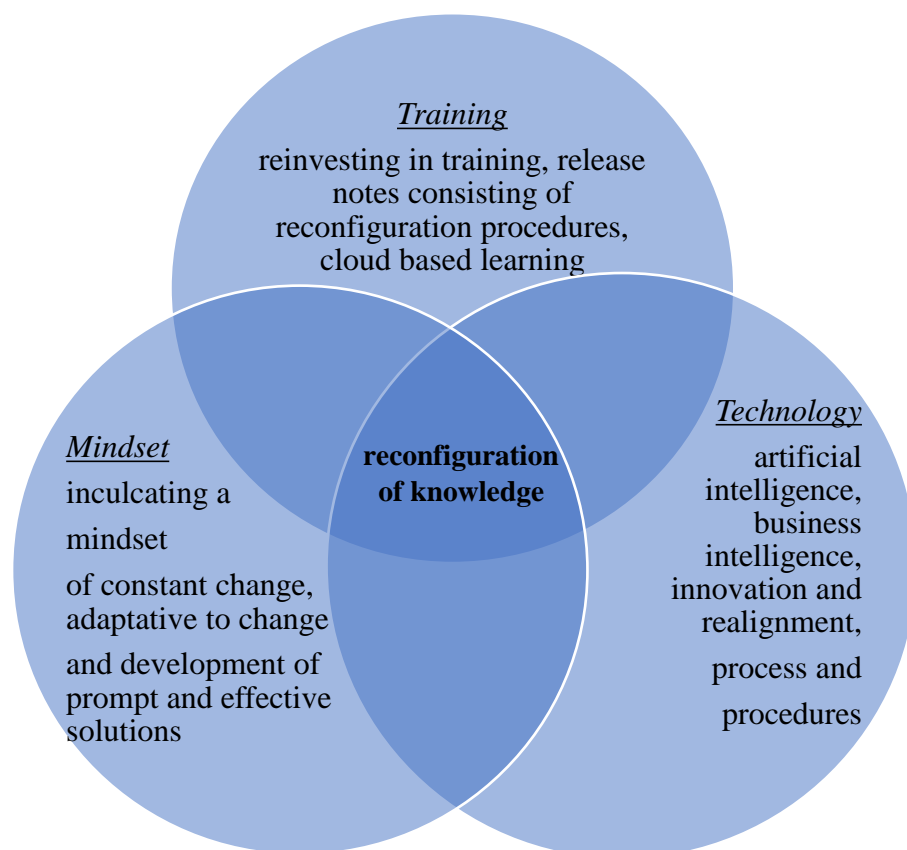


Figure 5.12 - Strategies adopted for reconfiguration of knowledge

The first approach that has been agreed by all the departments concerning reconfiguration of knowledge is through training. The Team Leader Implementation evidenced this dimension of dynamic capabilities happening within Ceridian HCM by testifying the following quote.

“Training is very strongly part of our DNA. We have a learning centre for that. Emphasises a lot on training. As part of reconfiguring existing knowledge to the new one, we use cloud training which is self-paced but with a deadline before the project goes live and we do practical lab sessions. The focus is to reinvest in our employees. We do this whenever we have a new technology to migrate to or to bring changes to a client’s service. So, training happens first with the client so that we understand their needs and expectations. After that those needs and expectations are translated into training modules with practical sessions.” – Team Leader Implementation

Senior Manager Implementation and Services Delivery supported the fact by stating that the time between the capturing of relevant knowledge and the execution of the task is very short. It’s a very short cycle and at Ceridian HCM Inc., a fruitful idea is transformed into execution in very short time. The business moves and evolves rapidly and they should all move accordingly. Cloud technology makes the execution of the changes and reconfiguration easy. *“Speed is key”* reinforced the Team Leader Implementation. They come up with solutions from observing the market and using their cognitive abilities but then, the execution is carried out quickly through technology. Ceridian HCM Inc. build a *“Dayforce culture is a passionate one for driving change and staying ahead as the best HCM in the world. The training undergone by joiners give birth to passion in our genes that are constantly looking for thrill do something challenging, like updating their skills, upgrading technology platforms, improving the needed mindset and implementing changes effectively”* stated Team Leader Dayforce Services. All four team leaders (Implementation, Customer Support, Payroll Services, Dayforce Services) mentioned that their department issue release notes with all the reconfiguration that have to be carried out which is stored in the repository. Ceridian HCM also have processes and procedures approved at Ceridian global level that supports the reconfiguration process. The process and procedures emanate from the global procedures designed and is tailor made to fit the subsidiary’s context while maintain the core concept of the process and procedures. These

procedures and process are then transformed into policies within Ceridian HCM Inc. Such a policy used as part of data gathering for this thesis is the global learning and development policy that was tailor-made to suit the context of the Mauritian subsidiary. The need for reconfiguration is supported alongside by cloud-based training, classroom training and practical labs.

The mindset developed through induction sessions for new joiners and the constant innovative culture of Ceridian HCM Inc. is one of the most valuable and significant investment made by the company in its human asset. The required mindset is a compulsory support that fuels the changes that are constantly taking place within the business environment of the company. All Team Leaders, the Senior Managers and the Senior Vice President and Managing Director of the company have numerous times pointed to that fact that the proper mindset by the employees is a huge driver to implement change which is evidenced by the thick and rich quote below.

“The nature of our business demands that we have to be ready for change and reconfiguration at any time, whether it be reconfiguring the software for the needs of our clients or finetuning and upgrading our skills to meet new expectations of the customer’s demands. We are all trained to welcome and accept change and reconfigurations and not be scared about it.” – Manager Implementation

“The essence of our survival since the existence has been that we have always adapted to the changes of our ecosystems and reconfigured knowledge as and when it was needed. Knowledge is power in our business and reconfiguration at the right time is the essence of our survival. This we say it again and over again to our new joiners as well as our existing employees till it forms part of our genes.” – Senior Manager Services Delivery

“Employees should possess on the tip of their finger solutions for our clients’ problems. We train them to think independently so that they are able to identify solutions by themselves. This demands strong decision-making capabilities. But when things are too complex for them considering reconfiguration, they will then seek advice from those higher up.” – Team Leader Implementation

The company inculcate the habit of prompt and efficient decision-making abilities within its employees. Ceridian HCM Inc. uses technology as a platform to run its business. Technology therefore plays a very important role in the day to day running of the business and as evidenced by one of the senior managers below, their business is highly dependable on technology to deploy and reconfigure those opportunities in achievable business solutions.

“We operate in information and technology and we should be able to master it on the tip of our fingers, know what are the latest technology and trends with respect to the platforms we use and exploit how these opportunities can add to and be beneficial for our business. A lot of the reconfiguration is done by tapping on those opportunities we identify and for the moment the current what is taking information technology-based companies by storm is artificial intelligence. We are currently sponsoring employees who are interested in doing short courses or even masters programs in artificial intelligence as this is going to be the world of tomorrow and it will shape the world we work in.” – Senior Manager Customer Support

When questioned deeper to probe about the significance and ways artificial intelligence was helping to drive reconfiguration services, the respondents in full support of artificial intelligence as a determinant of innovation testified as illustrated below.

“We got into artificial intelligence since last year. Artificial intelligence is nearly maturing and through technology can be quite disruptive we are drawing on its

potential to improve our internal services to reconfigure services towards our clients. Ceridian seeks to develop high level world class artificial intelligence functions with scalable infrastructure to reconfigure promptly and efficiently and progress as the most trusted source of competitive knowledge for our clients.” – Senior Manager Customer Support

“Artificial intelligence on Dayforce, for example, combines data with predictive technologies to identify key information for each of the processes we have thereby allowing us to track the metrics we have over time and quantifies the benefits that can be generated by recommending there to focus to reconfigure and hence maximise value creation. The aim is to constantly realign, innovate and reconfigure obsolete knowledge to new required ones.” – Team Leader Dayforce Services

It remains an undeniable fact that the industry in which Ceridian HCM Inc, Mauritius operates, it is quintessential that all the employees master the latest technology on the tip of their fingers as well as getting engaged with inculcating artificial intelligence in business solutions to respond to the needs of the business, else their competitors will drive them out of business. These findings resonate with Teece *et al.*, (1997) stating that technology has a main role to play in ensuring that reconfiguration takes place in fast evolving organisations.

5.4 Theme 3: Reframing knowledge brokering as a lever for dynamic capabilities

This section of the chapter aims explaining and clarifying the conceptual framework that has been tested and its applicability and relevance to Ceridian HCM Inc Mauritius. The aim of this exercise is to assess the practicability of the framework geared towards optimising the process of knowledge brokering within Ceridian HCM Inc. Mauritius and other similar organisational settings.

After interviewing the knowledge brokers and developing the findings from the second phase of interview, a focus group was held with eight knowledge brokers to validate and confirm that the framework is relevant for operationalisation at Ceridian HCM Inc. Mauritius and transferability to other organisational settings. The confirmatory meeting revealed some significant insights with respect to the practicability of the framework. Taking into consideration the theoretical developments and the empirical insights that emerged from the findings, the framework has been amended, with consultation with the stakeholders, so that it represents the practicality of the business world as well as the potential of transferability to other business settings. Some of the main considerations underpinning the practical framework of knowledge brokering are the emerging findings concerning the stages of knowledge brokering process, the roles of the knowledge broker, the dimensions of dynamic capabilities and the level at which the processes take place which is an important criterion for outsourcing business operating at national and international level. For this thesis, national will be Ceridian HCM Inc. Mauritius and international will be the North American head office.

Figure 5.13 (on page 213), the practical framework, shows the amendments that have been made on the conceptual framework to a practical framework while considering all the emerging insights from the data collection and the confirmatory focus groups. The paragraphs that follow provide explanations concerning the changes that have been implemented on the conceptual framework to turn same into a practical framework that responds to the needs of Ceridian HCM Inc Mauritius as well as other organisational settings.

Knowledge brokering as a lever for sensing

All the knowledge brokers interviewed confirmed that identification, acquisition and assimilation of knowledge support their ability to identify and acquire business opportunities. In relation to the three stages of identification and acquisition of the knowledge brokering

process, they act as bridger that supports their sensing abilities to identify business opportunities. Though the interviewees stated that the identification and acquisition of knowledge supports their sensing abilities, they were very clear about the two types of opportunities that they were able to seize. These opportunities can be categorised in the following;

- 1) Sensing opportunities to enhance the features of an existing project
- 2) Sensing completely new business opportunities in terms of new projects

The interviewees agreed with the fact of having the ability to sense business opportunity to enhance a feature of an existing project that they are already working on. They therefore assume the role of the bridger in identifying those opportunities by bridging the gap between the knowledge producer and the knowledge user. Within the role of the bridger, the knowledge broker is able to identify business improvement opportunities through the various channels used at Ceridian HCM Inc, example networking, technology, meetings, processes, surveys and feedback. When the knowledge brokers were asked as to how far they relate to the conceptual framework designed, all of them acknowledged that *“the stages and process is the same”* and *“yes, I undergo the same processes and relate to the steps.”* The rich and thick excerpts evidenced by the managers are illustrative of the sensing dimension in terms of identification and acquisition being executed in the company as a means of identifying business opportunities.

“This is what we do as bridger then through the identification and acquisition of knowledge. Within the role of the bridger, we connect with the industry and our stakeholders through networking in the form of our annual conference and Insight Summit. This exposure allows us to act as bridgers and sense relevant business opportunities or new business opportunities and engage in conversations with our stakeholders to identify potential clients. The role of the bridger allows us to connect with our eco system and acquire relevant information that we feed

back to the organisation and with our North American teammates and discuss whether the opportunity is an improvement on existing modules or completely new modules. Though sensing opportunities is a bit everyone responsibility, we also have a research and development team who is dedicated to identify opportunities and I think they are the best example of bridger for sensing the opportunities.” – Manager Services Delivery

“As the research and development team we act as the bridger by scanning the environment to identify business opportunities and create links with the producers of knowledge to acquire the knowledge to be able to pass it over to the respective teams, or creators to assimilate and reconfigure the knowledge. These acquired information can either be to enhance an existing module of the service we provide and in lesser case to extend new contracts to clients. We make use of various methods to identify, acquire the relevant knowledge; the use of business intelligence, technology, processes and cognitive abilities as the bridger to connect to the ideas.” – Manager Research and Development

These testimonies evidence the fact that the sensing takes place within Ceridian HCM Inc Mauritius and employee are very much aware of this dimension which is confirmed in Figure 5.13. Though the respondents are unaware that they are knowledge brokers, the research culture at Ceridian HCM Inc. Mauritius plays a vital role in ensuring that the bridger is able to sense the business opportunities through the identification and acquisition stage and create links to acquire the knowledge to develop innovative business solutions. These findings resonate with Abbatte and Coppolino (2011) statement that knowledge brokers play a significant role in the development of dynamic capabilities as they facilitate the interaction among organisations and the combination of complementary assets and capabilities necessary to identify new ideas for emerging markets as well as adapting core competencies to address the demands of the rapidly changing environment (Harreld *et al.*, 2006).

Amidst all the confirmations concerning the existence of sensing abilities at Ceridian HCM Inc Mauritius, there were some few stand out testimonies that were contradictory of the

emerging findings above. One of the senior managers pointed to the fact that his team did not had much opportunities to sense new business opportunities but that it happened haphazardly while having a conversation with the managers in North America. The excerpt below is illustrative of this statement.

“Okay, so let me drive you through a situation when I have at hundred percent assumed the role of the bridger and undergone through the identification, acquisition and assimilation of a potential opportunity for the company. In one of the senior management meeting, we had with our North American colleagues, we heard them talking about a project that they might lose because they did not the talent pool required in North America. This is when I intervened, sensing that this is an opportunity for us, in the Mauritian subsidiary. So, I had another conversation with them to acquire more information on the project they thought unable to work on, assimilated the requirements and informed them that it was possible for them to outsource to Mauritius. It was a small project, we initially started with one person as a pilot, but it has now grown to what we know a team of 18 people working with that client now. This is an example where my team was able to identify relevant knowledge for that project, else we are not engaged in big contracts, they come to us.” – Senior Manager Implementation

In this situation, the respondents had the possibility to sense and acquire a completely new contract. This testimony is in agreement with the literature as stated by Teece *et al.*, (2007) and Abbate and Coppolino (2011) that the knowledge brokering process is key for the bridger to be able to identify and acquire the opportunities that the market represent. Normally the role of the bridger for new clients and the sensing dimension happens mostly at North American level with consultation with the Mauritian group where the work will be outsourced. Else, the projects with contracts signed are normally cascaded down from North America to the Mauritian teams. Such practices have been supported by Low and Pasadilla (2016) stating that it is a normal practice for head offices to outsource their business operations in back offices and reasons to do so evolves around lower costs, expertise workforce, efficiency considerations

and network economies. Similarly, Ceridian North America deemed it feasible to outsource their project to Mauritius back office team due to the sustainability of outsourcing relationship in terms of competitive costs, talent pool and knowledge retention (Lacity, Willcocks and Rottman, 2008)

On another occasion, the Senior Manager Product Development stated that she does relate with the process, as the stages of the knowledge brokering process happens a bit differently for her per her testimony below.

“I am not involved in identifying knowledge as the first stage. Actually, all the information comes directly to me and it becomes my duty and my team’s as well to acquire all the knowledge and then identify and sort out the relevant knowledge for the job that we have to do. We receive lots of information but not all of the information is relevant to the team. Therefore, in my case, the acquiring of the information happens first and then the identification of the relevant ones and the non-relevant ones.” – Senior Manager Product Development

The case of this manager is the only one which do not start her role as the bridger from identification of relevant knowledge but by stage three of the knowledge brokering process, that is knowledge assimilation due to the nature of the team she works in. The first stage of her team’s job is to acquire the relevant knowledge and sort out the required ones and the non-required ones. From there her team will then be required to identify to which department or team the identify knowledge is relevant. So, in this case, though the identification of knowledge is not the first stage, it still is part of her team’s work and part of the process, but in a different order.

Findings about sensing reveals that the bridger identifies and acquire knowledge as part of the sensing capabilities. The respondents interviewed revealed that they would not consider assimilation as part of the role that they play as part of sensing at Ceridian HCM Inc. The sensing dimension for them limits to identification and acquisition of knowledge and not

assimilation of knowledge. Assimilation would rather be part of the seizing dimension. These findings differ to what has been proposed in the conceptual framework which considered identification, acquisition and assimilation of knowledge as being part of the sensing dimension. As this statement was in line with most of the respondents' perspective of sensing, the necessary amendments have been made to the practical framework to consider only the first two stages of the knowledge brokering process, identification and acquisition of knowledge, as part of the bridge's role and sensing dimension. These changes have been implemented in figure 5.13 above to depict the true essence of knowledge brokering as a lever of dynamic capabilities.

As per the emerging findings, sensing happened at both national when Ceridian HCM Inc. Mauritius identified and acquired the three projects and international level which is the routine with North America identifying the projects and cascading it down to the Mauritian branch. The nature of the business is such that multinational corporations with head office in developed countries outsource their business to lesser developed countries due to cost issues and language opportunities. Similarly, Ceridian HCM Inc. North America outsource its projects to Ceridian HCM Inc. Mauritius which is the nature of business within outsourcing multinationals. The element of operations happening across boundaries while still being very connected to other location is a feature of the outsourcing business that happens at both national and international level. It is therefore essential that the framework capture the sensing capabilities happening at both national and international level which has been changed and integrated in Figure 4.5 to represent a more truthful and practically realistic framework applicable to Ceridian HCM Inc Mauritius and similar settings.

Knowledge brokering as a lever for seizing

Teece *et al.*, (2007) state that the seizing capability refers to the ability to absorb and integrate knowledge to create value from opportunities to accomplish strategic execution for long term (Gebauer, 2008). Nielsen (2006) shares the view that seizing happens through internal organisational processes and Teece *et al.*, (2009) argues that both internal and external stakeholders should be considered for seizing opportunities. Other authors share the view that internal systems and technical innovations (Sawhney *et al.*, 2005) are essential for seizing business opportunities. Team Leader Customer Support shares similar views as these authors stating that *“the organisation is entrenched in innovation, we are a company that focusses on innovation and we have to build the necessary organisational culture that will allow all of us, at all levels to innovate and thrive”* supporting (Sawhney *et al.*, 2005; Vandembemt and Berghman, 2008) claims that technology and innovation is key for the process of seizing to happen. Simultaneously, Manager Wage Team stated that *“The employee should be able to consider and assess an issue from multiple perspectives at micro and macro level, carry out an internal and external scanning of the eco-system as a whole”* in agreement with Teece *et al.*, (2009) statement that both internal and external stakeholders should be considered. These findings from are much aligned with the literature review that both internal and external stakeholders should be given consideration when it comes to assessing seizing business opportunities to develop innovative business solutions.

However, the knowledge brokers also added new insights as to how they seize opportunities as creators to assimilate and reconfigure the obsolete knowledge into new knowledge. The finding of this research revealed numerous strategies not mentioned in the literature, such as agile mindset, artificial intelligence, creativity, research and development, testing and assessment used by the knowledge brokers to be able to seize opportunities as creators and create new knowledge, reconfigure the existing knowledge and test the new knowledge. The rich and deep

excerpts that follows evidence the existence and practice of the seizing dimension at Ceridian HCM Inc. Mauritius with regards to knowledge creation, reconfiguration and testing.

“I have seen myself undergoing the processes of the knowledge brokering model, the work of the bridger in identifying relevant information and then the creator to be able to seize and assimilate, create programming codes and then we write new codes and develop new softwares to embed the changes and then we test the software that will be reconfiguration. The process is somewhat similar to what we do as well. Normally people omit the testing and assessment part, but it is good to see it here in the framework.” – Senior Manager Product Development

“The organisational culture is such that, the moment you join the team, you are aware of the expectations we have from you. The moment you become a Ceridian staff change and innovation and an agile mindset becomes part of your DNA. We see ourselves and our employees in the skin of the creator, bridger, diffusor facilitator from time to time and undergoing through the various phases of the process. They can be assuming only one of the roles, for example a software engineer will be doing more of reconfiguration and less of sensing and identifying of opportunities but more of seizing with respect to reconfiguration. A test engineer on the other hand will be much more engaged with the creator role as tester and the knowledge testing phase of the knowledge brokering process. A team leader from the implementation department for example will be engaged in all the roles and all the stages, I guess, due to the nature of the work. So, it can be all the roles and process or part of the roles and the process.” – Senior Manager Implementation

“We need to find something new relevant for business opportunities, so this the creator’s part and embed new knowledge within your existing knowledge to make something more attractive to your clients, then that becomes the reconfiguration part. Now coming to reconfiguration, some of it is done by the research team. But we also have a team which is fully dedicated to reconfiguration, that is the implementation team. So, for the implementation team to do this, we need to play the role of the diffusor and disseminate the research knowledge we have

identified to them. So here, the process does not follow the same stages as your model. We identify and acquire the research knowledge as the bridger and then enter into the role of the creator to assimilate and then the diffuser to disseminate the knowledge to them, so we do not do the reconfiguration part much. When we diffuse the knowledge to the implementation team, they then act as bridger, then acquire and assimilate the knowledge we have diffused to them and then enter into the role of the creator and create new knowledge and reconfigure the old knowledge to the new one. So the roles that we assume and the stages of the knowledge brokering process are the same but not in the same order as shown in your framework, as the company is set up in such a way that normally each team assume a role as described on the framework'. Senior Manager Product Development

"The wallet for bitcoin project and the alexia project. So, I learned that the client was having issues on their work roaster. If I apply your framework to the situation, this is where I was acting as the bridger, as when I heard that our clients were having issues with their work roaster. So through the conversation I identified the relevant knowledge, and acquire the relevant information and assimilated the information in terms of the issues they were having, the complexity of the problem and proposed about some options. So, after assimilating the info from the client I went back to my team and the CEO and informed them about that opportunity. We signed the contract and then with all the information we had acquire, we entered the role of the creator and started creating Alexia, and testing the app. When the app was done, we had to train our clients to use it, so we assumed the roles of the diffuser and the facilitator. Another case is the apple technology inspired wallet for bitcoin users. Our clients, dealing with bitcoins, were having issues and sensing an opportunity there we offered to serve them a mobile app that overcome the handicap of a desktop wallet. So, we went through the same process as above and offered our clients the services the needed from us by undergoing through the roles depicted here and the stages of the process in the framework." – Manager Research and Development

These three projects, quite minor, were the ones where Ceridian HCM Inc. Mauritius has been able to assume all the roles of the knowledge broker, all the stages of the knowledge brokering process and the dimensions of dynamic capabilities from beginning till the end.

Emerging insights from the findings stipulated that the seizing dimension would include knowledge brokering stages such as assimilating, creating, reconfiguring and testing knowledge. Compared to the conceptual framework developed, assimilating knowledge was not part of the seizing abilities of the knowledge broker but that of the sensing dimension and the role of the creator which is responsible to assimilate the knowledge before starting to create new knowledge, the creation of new knowledge is therefore a follow-up of the previous stage (assimilation) from which stems the creative process of upgrading old knowledge to new ones. All the respondents added new insight to the seizing dimension by purporting that assimilation is the job of the creator as assimilation is linked with understanding, creating and integrating the new knowledge and therefore not linked with bridger and sensing but rather seizing. These insights, based on the respondents' validation have been considered while developing the practical framework reflecting the truth of the knowledge brokering process at Ceridian HCM Inc. Mauritius and have been amended as part of seizing as can be seen in figure 5.13.

Knowledge brokering as a lever for reconfiguration

The last dimension identified by Teece *et al.*, (1997) is reconfiguration of assets, needed to maintain strategic evolution and the successful calibration of technology and market opportunities (Teece, 2003). Interviewees acknowledge undergoing through the knowledge reconfiguring as part of their daily job. Some authors pointed the fact that reconfiguration takes place through organisational processes and procedures (Zollo and Winter, 2002; Maritan, 2001) which have also been supported by the findings from this research. The learning and

development policy of Ceridian HCM Inc, Mauritius branch, is very much detailed with the procedures and processes to capture the reconfiguration stages. The findings however revealed some additional strategies used by Ceridian HCM Inc Mauritius to reconfigure knowledge such as social media, technology, training and the buddy system. The following quotes are illustrative of the additional and new strategies used by Ceridian HCM Inc. Mauritius to carrying out the reconfiguration dimension.

“In my department we are mostly engaged with diffusing knowledge as part of the knowledge brokering process and reconfiguration process. We use a lot of national and international video conferencing, forums, cloud-based technology, e-learning platforms to diffuse knowledge. We carry out training with as part of knowledge dissemination and provide support after as facilitator to our employees as well as our clients.” – Team Leader Implementation

“Ceridian make use of the portal which is used across the globe within the Ceridian HCM Inc. family to diffuse knowledge and the team actually carry out webinars with front line customer to teach them how to use our products and services and provide support later on, of any kind.

We use a lot of talks to diffuse knowledge, group works, face to face sessions on my team to diffuse knowledge. It is better sometimes to sit in front of people and interact rather than sitting in front of a machine and learn without interaction. Well, some training can be done online but, in my team, we rather do brainstorm session and face to face. – Senior Manager People and Culture

“The company have numerous repositories and online learning mediums; employees could consult same in case they needed further support and assistance. Therefore, the company did not have many options as facilitator but the ones the most used and helpful was the buddy system and the champions who would provide additional advice as and when needed. So, across the framework you are proposing I can see my team acting as the diffuser and the facilitator towards our clients internal and external.” – Manager, Customer Support

Most of the interviewees agreed with the conceptual framework, the enhanced knowledge brokering roles and the reframed knowledge brokering process. However, interviewees had a very different approach to the model and expressed their contradictory views with respect to the conceptual framework proposed. The enhanced typology of knowledge brokering roles were relevant to their tasks, the stages of the knowledge brokering process was also relevant to their daily task, the contradiction was not in the roles or the stages but the order in which they were presented. The following testimony is illustrative of this contradictory nature.

“I am thinking about the reconfiguration of existing knowledge as part of the knowledge brokering process. I would consider that as part of the reconfiguration dimension of dynamic capabilities. The role of the creator for my team would be the following two stages, knowledge assimilation and creation of new knowledge and not the reconfiguration and testing part. I would still consider that to be under the reconfiguring dimension of dynamic capabilities.” – Manager Customer Support

Amidst these contradictions, the need to explore and understand the root underlying these discrepancies became vital. Therefore, the issue was brought up during the confirmatory workshop with the interviewees. They were asked to explain and clarify their process again in view of understanding their perspective and applicability of the process to their respective department. Through the confirmatory meeting, Senior Manager Customer Support reinforced the contradiction expressed above which is illustrative in the quote that follows.

“For us the stage consisting of the reconfiguration of existing knowledge does not happen through the seizing dimension but through the reconfiguring dimension itself. We reconfigure the project ourselves and disseminate the knowledge to our clients. We consider the creator to be the one assimilating the knowledge and creating the knowledge as part of seizing. We also consider the creator to be the one reconfiguring

the existing knowledge and testing the knowledge but within the dimension of reconfiguring and not seizing.” – Senior Manager Customer Support

“If I apply your framework to my team, the bridger would eventually do the sensing with knowledge brokering process concerning identification and acquisition of knowledge. The assimilation and creation of knowledge is eventually carried out by the creator within the seizing dimension. But the reconfiguration and the testing stages of the knowledge brokering process does not happen within the seizing dimension but within the reconfiguring dimensions altogether with the roles of the diffuser and the facilitator.” – Senior Manager Implementation

The remaining respondents shared similar views as the two above. Reconfiguration of existing knowledge and testing of new knowledge that was part of the creator’s role and the seizing dimension in the conceptual framework is now, after considering findings from the respondents, is now part of reconfiguration capabilities but still under the creator’s role. Evidence from the findings suggested that knowledge reconfiguration and testing is still part of the creativity mind and is therefore still part of the creator’s role, but as reconfiguration and testing of knowledge is more of reconfiguration as a dynamic capability rather than seizing. Actually, the creator is the only role of the knowledge broker that transcend between two different dynamic capabilities; the seizing and the reconfiguration. Findings revealed that the creator now assumes the following four stages of the knowledge brokering role; knowledge assimilation, creation of new knowledge, reconfiguration of existing knowledge and knowledge testing.

Respondents confirmed that which reconfiguring the old knowledge to the new one, both the old knowledge and the new knowledge exist at the same time. As they are reconfiguring the old, which is in fact building on their core competencies, they are engaged in exchanging that

old core knowledge into the new knowledge. The old and the new always exist and Ceridian HCM Inc. Mauritius has always been able to thrive in competition as it has always built on its core competencies, where the company is already good at, and not investing in a new competency. The old and the new knowledge was complementary, yet evolutive, where the old complements the new. These findings are in line with Helfat and Peteraf (2003) and Teece *et al.*, (2007) claims that reconfiguration takes place between the old and the new that give rise to the concept of co-specialisation, which is strategic fit that has to be continuously achieved. It can be concluded that Ceridian HCM Inc. Mauritius has very successfully till date carried out their reconfiguration services, however very unaware that they were enacting knowledge brokering roles and dynamic capabilities dimensions.

One of the senior managers stated that though sensing and seizing opportunity is not a huge potential for Ceridian HCM Inc Mauritius, the company intend to invest in such competencies in the future as its strategic plan is to penetrate the African market. With the current situation as to where the company stands, it is not in a position to sense and seize opportunities leading to tremendous losses for the local branch. Therefore, if Ceridian HCM Inc. North America intends to increase market share and penetrate the African market, it would deem more profitable that decision making for investment is decentralised bestowing the ability to sense and seize opportunities to the Mauritian branch so that the company can grow as a whole. This statement can be supported by the claims of authors such as (Santoro and McGill, 2005) and (Jantunen *et al.*, 2005) purporting that proper asset orchestration demands that structures, strategic decision making is decentralised and devolved as it brings managers closer to new technologies, customers and the organisational's eco-system. As such decentralising the sensing and seizing abilities for Ceridian HCM Inc. Mauritius will bring additional projects and increase the customer base of Ceridian HCM Mauritius thus benefiting the North American head office as well.

Another key finding reveals that seizing dimension takes place at the national level as this is where the work is outsourced and the creator is assimilating and creating new knowledge. Reconfiguration and testing can happen both at national level as well as international level specially for testing as software testers in North America also have access to the cloud-based technology where they also carry out some test alongside software testers in Mauritius. These changes have been taken into consideration while creating the practical framework and is illustrated in figure 5.13. As for the diffusor and the facilitator, their role is still part of the reconfiguration dimension which happens both at national level and international level which has been considered when redesigning the new practical framework to suit the reality of knowledge brokering at Ceridian HCM Inc. Mauritius.

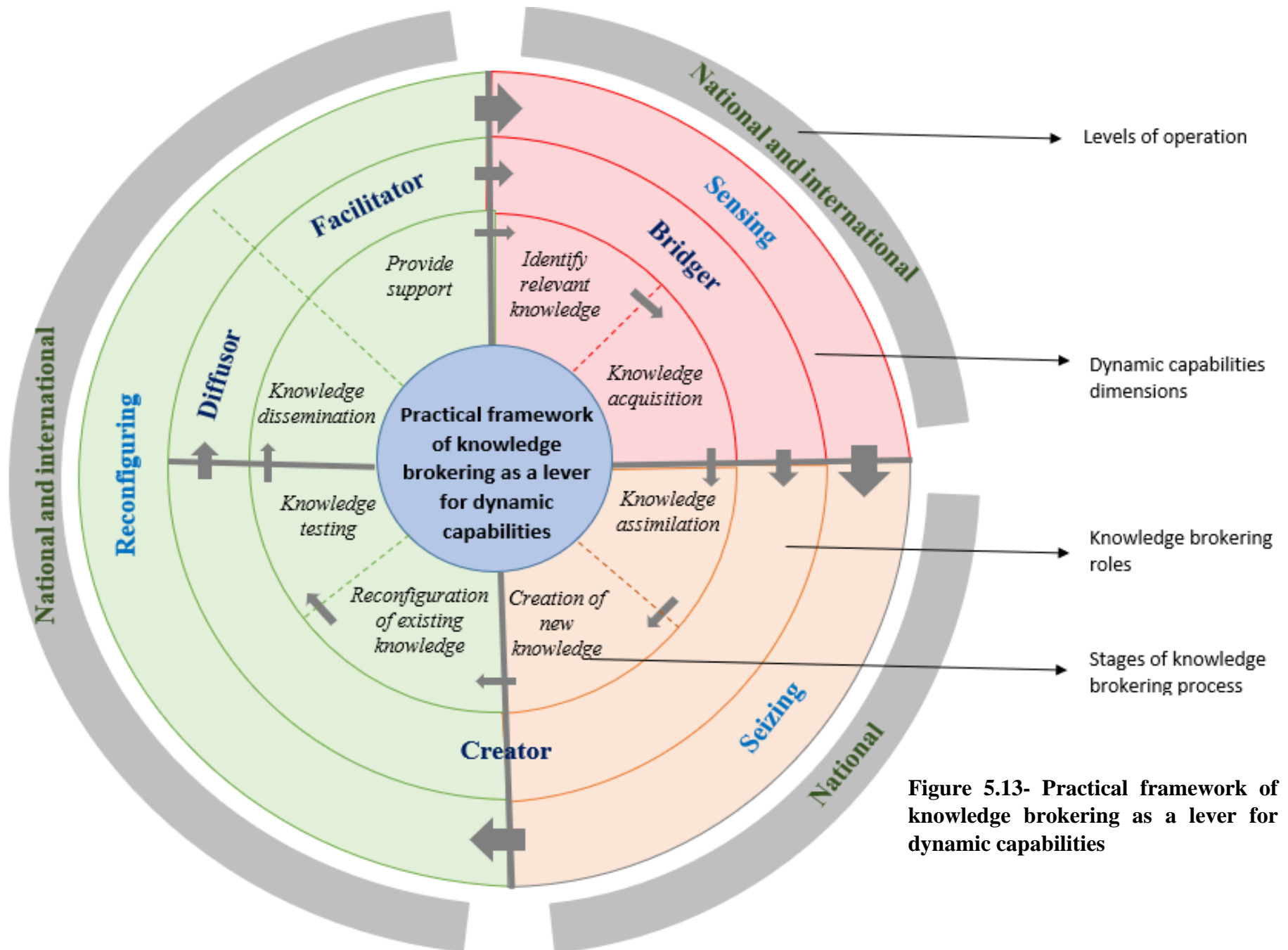


Figure 5.13- Practical framework of knowledge brokering as a lever for dynamic capabilities

Discussion of findings

This section presents a discussion of the findings by further distilling the key ideas that emerged from this chapter and the practical framework. Core findings reveals that Ceridian HCM Inc Mauritius which operates in a dynamic environment is constantly exposed to different meaning of knowledge over time. Knowledge in this industry, considered as power, is the most important and valuable asset in the outsourcing industry which is constantly subjected to new sources of knowledge. The knowledge brokers were unaware that they were enacting the roles and stages of knowledge brokering. Their unawareness about the fact that they were enacting the roles as well as the stages of the process were not inculcated and embedded within the organisation.

Knowledge brokers were engaged in the process as bridger within the two first stages of the process namely; identifying and acquire relevant knowledge within the sensing dimension of dynamic capabilities. These activities were carried out both locally within Ceridian HCM Inc. Mauritius and Ceridian North America. Findings revealed that the next role of the knowledge broker, the creator, is engaged in both seizing and reconfiguring. However, seizing happens only at Ceridian HCM Inc. Mauritius within the stages of knowledge assimilation and creation. The creator is the only role of the knowledge broker that cuts across two dynamic capabilities; seizing and reconfiguring. The creator is then engaged with the stages of reconfiguring and testing the new knowledge within the reconfiguration dimension of dynamic capabilities at both national and international level. The last two stage validated by the knowledge brokers is that of the diffuser who disseminate the knowledge and the facilitator who provide training to the new users both at national and international level.

Knowledge brokers did not actively participate in the sensing and seizing activities of Ceridian HCM Inc. Mauritius due to the fact that the Mauritian subsidiary is more of a back-office

service provider and limited access for identifying and seizing opportunities. Technological disruptions pose one of the main challenges faced by Ceridian HCM Inc Mauritius with a risk of disrupting the business in case an opportunity is unidentified. Other challenges faced by Ceridian HCM Inc. Mauritius is the unavailability of talents in programming and artificial intelligence to work in the industry. In spite of the efforts to create a learning centre, challenges of talent supply still remain a challenge. The knowledge brokers at Ceridian are also faced with complex and lengthy procedures which act as demotivators for them to inform the North American office about new business opportunities identified. Table 5.2 below further distils the key findings while engaging in a discussion and identify possible causes with relevant explanations for each of the key findings.

Themes and Sub themes	Key findings	Possible causes
<i>Theme 1: Unpacking the notions of knowledge brokering</i>		
Knowledge	-Knowledge is power and considered as quintessential in the outsourcing sector and constantly subjected to change, thus not appropriate to pin its definition to a set of word but to allow it to evolve.	-The industry is dynamic, therefore the meaning of knowledge change very fast. -There traffic of knowledge in the outsourcing is massive and the right meaning of knowledge should be understood.
The Broker and Knowledge Broker	-The respondents were not aware that they were actually knowledge brokers already enacting the various roles in their day to day job.	-Lack of understanding about knowledge brokering and the roles that they can assume.
The enhanced typology of the Knowledge broker	-The knowledge brokers were clearly not aware of the roles they were assuming as knowledge brokers and were not aware of the terminologies either.	-Lack of awareness about knowledge brokering that resulted into confused, blurred and fragmented identification of the roles they assumed as knowledge brokers at Ceridian HCM Inc.

	<p>-Few engagements with identifying big projects for big clients. However, the knowledge brokers are Ceridian HCM Inc, have been using many innovative strategies (such as conference, open mindset, agility, social media), not mentioned in the literature, to assume their roles.</p> <p>The role of the creator cut across the dimension to seize and reconfigure.</p>	<p>-Business set up is such that knowledge brokers are not engaged in identifying opportunities due to the back-office nature of multinationals.</p> <p>-the creator's role does not stop with only creation and reconfiguration but testing is also part of the creator's job.</p>
<p>Reframed knowledge brokering process</p>	<p>-The respondents were not aware that they were engaged in knowledge brokering activities until they were introduced to the concepts.</p> <p>-Many of the knowledge brokers do not assume all the stages of the knowledge brokering process or part of it.</p> <p>-The two first stages of the knowledge brokering process, identifying and acquiring knowledge, does not happen much at Ceridian Mauritius Ltd.</p>	<p>-Lack of awareness about knowledge brokering and the stages involved due to dedication towards the technicalities of the job as well as non-institutionalisation of the concept</p> <p>-Identifying and acquiring knowledge did not happen much at Ceridian Mauritius due to the business nature where Mauritius operates as a back office providing support to North America office</p>

<i>Theme 2: Dynamic Capabilities</i>		
Themes and Sub themes	Key findings	Possible causes
Sensing	-Lack of engagement with the sensing dimension and opportunities to identify new projects -knowledge assimilation is not part of sensing but that of seizing	-Business set up is such that knowledge brokers are not engaged in sensing opportunities due to the back-office nature of multinationals. -assimilation is directly linked with the ability to capture and learn and therefore more of the creator's role rather than the bridge and more of seizing than sensing
Seizing	Lack of engagement with the seizing dimension and opportunities to identify new projects	-Business set up is such that knowledge brokers are not engaged in sensing opportunities due to the back-office nature of multinationals.
Reconfiguration	Technology has a main role to ensure timely, accurate and effective implementation of the reconfiguration dimension at Ceridian HCM Inc. Mauritius.	-Ceridian HCM Inc. operates in the outsourcing industry, therefore operating on technology platform is eminent to ensure that services are delivered according to business needs and standards required.

Theme 3: Reframing knowledge brokering as a lever for dynamic capabilities

Themes and Sub themes	Key findings	Possible causes
Knowledge brokering as a lever for sensing	<p>-Knowledge brokering acts as a lever for sensing when the knowledge broker assumes the role of the bridger and identifies as well as acquires relevant knowledge.</p> <p>-Assimilation is not part of this dimension, but of seizing. This role is mostly carried out by the North American branch.</p>	<p>-Within the role of the bridger, the aim of the knowledge broker is to identify and acquire the relevant knowledge through sensing abilities to maintain competitiveness.</p> <p>-There is limited access to sensing opportunities as these roles are carried out by North American offices which is the nature of contract set up between head office and back office service.</p>
Knowledge brokering as a lever for seizing	<p>-Knowledge brokering acts as a lever for seizing when the knowledge brokers assume the roles of the creator by assimilating and creating new knowledge for business competitiveness. This role is carried out mostly at national level, that is Mauritius back office.</p>	<p>-Within the role of the creator, the aim of the creator is to assimilate and create new knowledge so that the services towards clients are bug-free.</p>
Knowledge brokering as a lever for reconfiguration	<p>-Knowledge brokering acts as a lever for reconfiguration when the knowledge broker assumes</p>	<p>-Within the role of the creator, diffusor and facilitator, the aim is to reconfigure and offer quality services to clients.</p>

	the roles of the creator, diffusor and facilitator to deliver new knowledge for competitive advantage.	
<i>Theme 4: Emerging Themes and Key Issues</i>		
Themes and Sub themes	Key findings	Possible causes
-Minimal exposure to sensing and seizing dimension for new projects	In spite of the fact that knowledge brokers are engaged in numerous activities to sense and to seize business opportunities, their roles are quite limited to sensing and seizing big projects as most of the projects are cascades down from North America and therefore the Mauritian subsidiary is not very much engaged in this activity.	-Established business set up and agreement to act as back office with Ceridian North American head office
-Technology as a main disruptor	Technological disruptors have direct impact on the knowledge brokering process as it affects the ability to predict future market trends which can destabilise the business. Such disruptive challenges constantly engage the knowledge broker on the stress of seeking new	-Fast paced innovation and inability to upgrade responsively across Ceridian global - No or limited inhouse talent to respond to the fast-evolving technology in Ceridian head office and back offices

	<p>opportunities or reconfiguring existing technologies</p> <p>else they would miss the opportunity and can be driven out of business.</p>	
<p>-Lack of talent and human capital in artificial intelligence</p>	<p>As universities were unable to produce talents needed by the outsourcing industry, the company developed its own learning academy. However, in spite of these efforts, the learning center has been struggling to meet the challenges of the upcoming surge of technologists.</p>	<p>-Outdated syllabus and no certification programs in artificial intelligence from Universities</p> <p>-Inability to find resource person to train employees with latest technology at Ceridian Learning Academy</p>
<p>-Complex procedures leading to loss of new projects</p>	<p>The procedures for starting new projects identified by Ceridian Mauritius Inc are too complex and lengthy acting as a demotivator for employees to voice out their interest in bringing a new project to Mauritius. The Mauritian branch is viewed as a back-office center for support and not necessarily a marketing center, therefore interest coming from the Mauritian branch are not considered seriously.</p>	<p>-Global process requirements at Ceridian head offices that are tedious and time consuming</p> <p>-Existing culture where the Mauritian branch has no say on new project and opportunities</p>

<p>-Compatibility of Dayforce flagship program with respect to risk assessment</p>	<p>On one of the acquisitions, the reconfiguration process had many failures and retrials as many failures and retrial phases as the teams were unaware of the intricacies of the product. The technical feasibility was not assessed before the acquisition, but as it was already bought, it took a lot of time to reconfigure and get the project up and running and connect the different modules.</p>	<p>-Poor risk assessment practices and no proper training and experience in risk assessment due to lack organisational commitment and awareness about the importance of risk assessment</p>
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Table 5.2 Summary of key findings

Potential benefits of institutionalising the practical framework of knowledge brokering at Ceridian HCM Inc.

The application and institutionalisation of the confirmed practical knowledge brokering framework will effectively enhance the knowledge brokering activities at Ceridian HCM Inc. Through the confirmatory workshop it was discussed as to how the current process of knowledge brokering can be effectively enhanced through the reframed concept of knowledge brokering contributing to numerous benefits to the company. These discussions are expanded in the paragraphs that follow.

Enhancing the ability to sense and seize opportunities at Ceridian HCM Inc. Mauritius

So far, the knowledge brokers have mentioned various complexities, demotivation as well as the inability to seize business opportunities when they have been identified. The enhanced knowledge brokering process is expected to equip the knowledge brokers in Ceridian HCM Inc. Mauritius with better sensing abilities thereby increasing opportunities for the Mauritian branch to identify and seize business opportunities. Moreover, the reframed knowledge brokering process will train the knowledge brokers to develop their cognitive abilities to identify and sense business opportunities and seize such opportunities, especially for the near future with the possibility of penetrating the African market. The well-defined roles of the knowledge broker will clarify the roles and very precisely identify the stages of knowledge brokering that the knowledge brokers are involved in, thus eliminating the loss of potential projects.

Enhancing the ability to turn disruptive technology in an asset

The concept of knowledge brokering represents all the considerations to be taken while operating in a dynamic business environment, from the roles to be assumed and the stages of the process. The concept applied to Ceridian HCM Inc. will ensure in keeping the company

abreast of all the changes happening within the industry as well as develop predictive abilities to sense future potential opportunities hence minimising the complexities that disruptive technologies might bring. The knowledge brokering process therefore will support Ceridian HCM Inc in identifying future changes that disruptive might cause and pro-actively devise counter strategies to survive disruptive technologies as well as exploit such opportunities to stay ahead in competition.

Enhancing the talent base of Ceridian HCM Inc.

Findings revealed that the company has been facing dearth of talent to meet the demands of fast faced technology such as artificial intelligence, robotics, blockchain and internet of things. The reframed concept of knowledge brokering will therefore support Ceridian Learning Academy with predictive ability concerning current and future needs to develop a strong talent base sustaining the demands of disruptive technology. The learning academy will then be in a position of offering new courses and develop the required talents so that the knowledge brokers are equipped with skills ranging from artificial intelligence, robotics, internet of things and business acumen, sustaining competitive edge through its human resources. As such the learning centre will be able to predict and identify training needs ahead of time and stay abreast of competition.

5.5 Theme 4: Emerging themes and key issues

This section of the thesis deals with the emerging themes and key issues identified from the findings. The findings revealed some significant emerging themes that are key for this research. Similarly, the findings exposed some key issues and difficulties faced by Ceridian HCM Inc. as part of the knowledge brokering process. This section identifies, explore and explain the numerous emerging themes first which is followed by the key issues identified as part of the research.

Emerging themes

- Long term commitment towards research and development

Ceridian HCM Inc. has since long inculcated a culture of within the head office and cascaded down to the subsidiary. The dedication towards research and development can be seen from top management and executives themselves whether within Ceridian HCM Inc. Mauritius or international branched. The Research and Development department of the company is responsible to design, develop and test all the applications developed by Ceridian, all cloud based HCMs namely Dayforce and Powerpay and Bureau Solutions. Ceridian HCM Inc. core values is based on beliefs that the modern cloud technology, agile design and development methodology and efficient software deployment process should enable them to be innovative and respond to the ever-changing innovative trends of the industry.

The very strong headed research and development culture that Ceridian HCM Inc invested in over more than a decade has proven to be significant and worthwhile as the research and development investment in the company has proven to be fruitful as it supported Ceridian HCM Inc. to be constantly aware of market changes and adapted successfully to survive and grow and the achievements can be confirmed through its success story, invincible ability to adapt to change and survive, top rankings and distinguished awards from numerous international bodies. The dedication of the company towards research and development has been recognised and valued on March 2019 by Constellation Research, an award winning strategic advisory and futurist analyst form that advises leaders on leveraging disruptive technologies to achieve business model transformation. Other prestigious rewards won by Ceridian with respect to research and innovation within the industry is the Ventana Research 2019, another prestigious award in the field of digital marketing, as Gold Medalist and the Technology – Great place to Work 2019 award in the field of digital leadership. The research and development culture of

the company has, so far, supported Ceridian's constant need to adapt, innovate and respond to market changes.

- Risk assessment before and while investing in innovation

Ceridian HCM Inc. takes risks assessments very seriously before and while investing in a project. At the very start, the HCM Dayforce acquired by Ceridian HCM Inc. represented numerous hurdles and challenges due to complexities in terms of technology and disconnections the marketing and the other teams. The HCM seemed very appealing and interesting before purchase but when the reconfiguration process started the team undergo many challenges and hurdles. Today the cloud based HCM Dayforce is up and running providing the best services to customer on a highly scalable platform, but there has been numerous failures and difficulties to tailor made the product to suit the needs it serves now. This experience has been very enriching and developmental to the Ceridian HCM Inc. team and they have learned from the hard experience they went through and now take consideration of risk assessment before they invest into a new project, specially an acquisition. Today for any new project and acquisition, the company ensures that they have carried out a proper risk assessment whether feasibility, analysis, planning and monitoring in terms of tools, organisation and patents. The Dayforce experience has reinforced the risk assessment practices within the company with dedicated department working on risks concerns.

- Ceridian based global repositories for knowledge diffusion

Ceridian HCM Inc. has developed its own cloud-based wiki where employee as well as clients can have access to the knowledge repository. Clients have limited access to the Ceridian HCM Inc. repository whereas clients have limited access to the site. As stated by Manager Wage Team *“at organisational level, we use our own dedicated Ceridian wiki site to diffuse knowledge accessible to all in all subsidiaries and head offices. The wiki enables us to diffuse*

the same knowledge to everyone across the company irrespective of location and this allow for more understanding and applicability towards job commitment.” Ceridian is one of the few companies that invested in its own wiki site acting as a repository for Ceridian HCM Inc global family, making knowledge access to maintain competitiveness boundaryless.

- Dedicated Learning Centre

Ceridian HCM Inc. prides itself in its learning and development culture and developed one of its own; Ceridian Learning Academy alongside well-defined policies, where employees undergo training to develop the skills required by the fast-evolving markets. Learning and development is an essential pillar of Ceridian HCM Inc. In fact, the company has its own learning centre, Ceridian Learning Academy, where employees undergo training; both soft skills as well as technical skills. The managers and employees pride themselves in having *“dedicated centre for quality learning that constantly fuel talents to our teams. Numerous types of trainings, soft-skills as well as technical, are carried out at Ceridian Learning Academy”* as stated by Manager Information and Technology. The company has invested in a culture where employees are responsible for self-development and self-improvement to be able to sustain the urges of the business market and deliver with customer service excellence. Such approaches to learning and development are supported by Dagenias *et al.*, (2015) where the development of learning organisations, self-paced learning and relationships that brings people together to allow flow of knowledge and sustaining profitability. Ceridian HCM Inc. is one of the few companies in the outsourcing industry possessing a full-fledge learning centre striving continuously to upgrade the skills of its employees and senior management team to stay ahead of competition.

In the wake of disruptive technologies, Ceridian HCM Inc. set up its own learning centre *“due to a lack of manpower in artificial intelligence, block chain and internet-of things. Universities*

are also not able to produce the talent and skills that the market is looking for. Therefore, through Ceridian Learning Centre, we are able now to build the talent needed to meet the growing demand of this industry” as stated by the Senior Vice President and Managing Director. As much as disruptive technologies are present in the outsourcing, they are also present in the educational field on the form of Massive Open Online Courses (MOOC). Ceridian HCM Inc. found an opportunity to develop a MBA program with Ducere Business School and University of Mauritius using the MOOC platform. The program is tailor-made to suit Ceridian business needs and responds to the urges of the industry in terms of disruptive technology. Ceridian HCM Inc. is one of the few companies that have developed an MBA program of its own to equip its employees and senior management with the required skills.

- Turning disruptive business models into a winning game

“In our business, technology is our biggest ally but the biggest disruptor as well” – Senior Vice President and Managing Director

Ceridian HCM Inc. recognises the importance of aligning their services and support systems to the technology industry and the global economy as a whole. Ceridian HCM Inc. has developed the potential to identify opportunities from the disruptive business models to stay ahead of competition. Ceridian HCM Inc. has been successful in incorporating disruptive thinking into all its business processes including the knowledge brokering process within the company. The agility developed by the company through the knowledge brokering process and have thus sensed opportunities for the business and seized them and hence successfully embraced the disruptive business models. When business models of rivals are being subjected to rapid displacement, disruption and destruction, Ceridian HCM Inc. has been reframing beliefs, working styles and knowledge and testing their beliefs and knowledge base to ensure they could meet the demands of the fast-evolving industry. Ceridian HCM Inc, has been able

to change the power of disruption into a key business driver where disruptive models in the case of the company is the road to growth, profit, knowledge and competitive advantage.

- New strategies adopted by Ceridian HCM Inc Mauritius as bridger, creator, diffusor and facilitator

The literature review about the roles of the knowledge broker has stated the various roles assumed by the knowledge broker. However, the literature did not make it clear as to which strategies the knowledge broker was using to assume each of the role. This research has shed light and emerging findings as to what strategies are used by each of the roles assumed by the knowledge broker.

Findings revealed that the bridger make use of networking strategies such as Conference and summit, technology such as repositories and business intelligence softwares, processes such as global specifications, surveys and feedback through the traditional phone calls as well as IT-based surveys and formal and informal meetings. For the creator, the organisational culture, coupled with employee support and leadership team revealed to be important so create the ne knowledge. The organisational culture at Ceridian promoting the creator to assume its role is one that is innovation driven, research oriented, fostering agility alongside exemplary leadership support, creativity and cognitive skills. The diffusor at Ceridian HCM Inc. used strategies such as cloud-based platforms, face to face training, emails and communications, social media and Ceridian's repositories. Lastly, findings revealed that the facilitator used strategies such as the face to face and online training, the buddy system and champions to provide support.

The findings also revealed that the various roles of the broker can be assumed by one person only or by various person, or by one person in different roles. One person can be a bridger in a case but then assume the roles of the diffuser in another case, so one person assumes more than

one role and in certain cases assumes all the roles. In other situations, the findings revealed that the role of the brokers are assumed by departments; for example, the research and development team would act as bridge and diffuser in certain cases and the implementation team would be the creator. Interviewees also mentioned that though they assume various the various roles depending the task they are assigned to; the typology operates as a circle. If a knowledge broker is engaged in the four consecutive roles of the knowledge broker, the employee comes back to the starting point and assume the role of the bridge again, so the typology operates in a loop as well as much as the roles are assumed independently and scattered.

- New strategies adopted by Ceridian HCM Inc Mauritius during the stages of the knowledge brokering process

The knowledge brokers interviewed at Ceridian HCM related much with the knowledge brokering process presented to them. Most of the respondents agreed undergoing through the phases of identifying, acquiring, assimilating, creating, reconfiguring, testing, disseminating and support the knowledge brokering process. Some respondent though mentioned assuming only part of the process due to the nature of departmental segments at Ceridian HCM Inc. A few respondents mentioned that the process operates in different orders for them and a handful were not engaged at all in the creation of knowledge for business opportunities, but rather for administrative works. Though everyone acknowledges to go through the stages at some point in time, the knowledge brokering process is very versatile in the way it applies to Ceridian HCM Inc.

Some meaningful insights were also shared by the interviewees about the strategies they would use to be able to carry out the knowledge brokering process. Though the literature scarcely mentions about strategies such as organisational processes, creativity and cognitive abilities, this thesis has been able to identify numerous strategies used by the knowledge broker across

each and every stage of the knowledge brokering process, other than process, creativity and cognitive abilities. Numerous ways of acquiring knowledge has been identified through the research such as formal methods including communities of practice, social networking, Conferences and Summits and informal methods such as happy hours, golfing and sports. Findings revealed that the organisational culture had a great role to play in the assimilation of knowledge. Knowledge assimilation, constantly supported by a learning and development environment, had its roots deeply engrained in the organisational culture through the Ceridian Learning Academy and employees' mindset to constantly learn to improve. Creativity was cited as one of the most significant capability to be able to create knowledge. The findings revealed similar findings but coupled with knowledge in business acumen, more precisely domain knowledge and business intelligence. Reconfiguration of knowledge at Ceridian HCM Inc. takes place through recycling the old skills, understanding client's portfolio, developing the proper mindset for the employees, using necessary software and tools and doing risks assessments.

- Learning and development

Learning and development is an essential pillar of Ceridian HCM Inc. In fact, the company has its own learning centre, Ceridian Learning Academy, where employees undergo training; both soft skills as well as technical skills. The interviewees take pride in the rigorous Ceridian induction training that they have put in place for new joiners, employees and senior management team. Ceridian HCM Inc. organisation culture is very much centered towards self-learning and self-development. Dagenias *et al.*, (2015) emphasises on the development of learning organisations, self-paced learning and relationships that brings people together to allow flow of knowledge. The company uses a combination of online learning system such as cloud technology as well as face to face learning.

- Organisational culture

The organisational culture being the overarching dimension that keeps the employees and the leaders focused to sustain competitiveness through the innovative and agile business culture. Ceridian HCM Inc. ensures that the company culture is driven by innovation, research led business solution and agility through the mindset and processes. The organisation culture is built such taking into consideration that the employees develop competencies such as creativity, entrepreneurial and cognitive abilities, trust and a broad and open mindset. Agility is also one of the core values of Ceridian HCM Inc and can be deduced to have been well embedded in its people and the organisational culture as stated by Team Leader Customer Support that *“we want our people to develop the ability to think, understand and move quickly.”* Perrin (2013) and Meyers (2010) also share the views that good knowledge creators need to possess agility to be able to promptly adapt to change, specially in a dynamic business setting. Ceridian HCM Inc. organisational culture focusses on developing the right mindset so that employees are flexible to change, not scared to face challenges and flexible to change. The mindset is upheld with values such as *“Change is in our DNA”*, *“You either choose to survive or perish”*, *“Creativity is intelligence having fun”* that have become the motto of the employees including the senior managers stated Senior Manager Finance. The organisation also does not face resistance to change as the willingness to change and improve is very strong. This shows that Ceridian HCM Inc. has indeed been able to build a culture that fosters self-development and self-learning.

Findings revealed that the organisational culture at Ceridian has a great role in promoting the creator to assume its role is one that is innovation driven, research oriented, fostering agility alongside exemplary leadership support, creativity and cognitive skills and supporting the assimilation of knowledge. The company supports the development of a creative mindset coupled together with business acumen competencies, business intelligence and domain knowledge, which is a significant combination to sustain competition.

- Technology and Tools

Many of the roles and jobs takes place through technology at Ceridian HCM Inc. Software and tools are primordial when an organisation operates in the outsourcing sector which possesses fast changing business needs. Ceridian HCM Inc. has its own global processes for reconfiguring data as well as the software it uses for reconfiguration of data such as Activate, D4.4, Microsoft Dynamics 365, Microsoft Team Foundation Server and Exchange files. Reconfiguration of knowledge at Ceridian HCM Inc. takes place through recycling the old skills, understanding client's portfolio, developing the proper mindset for the employees, using necessary software and tools and doing risks assessments. Similarly, the company makes use of business intelligence softwares to keep abreast of their rivals moves. Business needs demanded that Ceridian HCM Inc. move from human capital management softwares to cloud based solutions which is more scalable and responsive to the fast-changing business environment the company operate in. Without the tools and technology that the company is loyal towards, Ceridian HCM Inc would not have been able to achieve the competitiveness it has gained over time. In this industry therefore, technology and tools are quintessential and primordial for sustaining competitive advantage.

- Business acumen knowledge

When creativity is fueled with sound knowledge of business acumen, employees then possess the best combination of capabilities to devise smart and proper solutions quickly as they possess refined and updated skills to create the required knowledge. In such cases developing business solutions that are tailormade for the services to the client and responding to the fast-evolving urges of the business market cannot unequivocally be missed. Organisations that foster creativity within its core values will see improved or new products (Miller, 2004) which suits the demands of the market specially when employees have sound business acumen of the industry they operate in, coupled with domain knowledge (Bollinger and Smith, 2001) which is very specific to the outsourcing business and business intelligence capabilities. One of the

most important competencies needed at Ceridian HCM Inc. is business acumen to translate agility which provides the employee with the necessary competencies to assess issues and identify opportunities from multiple perspectives at micro and macro level and carrying out internal and external scanning of Ceridian HCM Inc. eco-system as a whole.

Emerging Key Issues

- Minimal exposure to sensing dimension for new projects

The foundations of sensing can be traced back to the literature on entrepreneurship (Kirzner, 1973; Weerawardena, 2003) where the ability to identify opportunities for discovery and creativity originate from the cognitive and creative brain of the individual (Teece, 2009). Though the research is in agreement with Weerawardena (2003) and Teece (2009) statement, this research has identified new insights supporting the ability to sense business opportunities such as technical skills consisting of the use of social media and softwares, business intelligence companies, research and development.

Though numerous successful strategies are used by the knowledge brokers to sense business opportunities, their role in sensing is quite limited for business projects as most of the projects are cascades down from North America and therefore the Mauritian subsidiary is not very much engaged in this activity. The Mauritian subsidiary has been set such that, its main role is to provide manpower to be able to drive the projects for clients situated in North America, UK, Australia and the Pacific. The privilege of making business propositions and extending contracts to clients is not the nature of business for the Mauritian subsidiary.

Ceridian HCM Inc. Mauritius operates more as a back -office service provider. The only type of sensing they would be engaged is mostly for operational services or identifying issues to improve an issue on an existing service. They are not very much engaged in the identification of big clients for signature of big contracts. Most of the sensing part at Ceridian HCM Inc

happens mostly in the North American branch and is cascaded down for implementation in Mauritius. There were only a few exceptions to the sensing situation where a senior management team member was able to sense a potential for outsourcing a project which he did and they are total a total of 8 working in that team. Two other instances where knowledge brokers in Mauritius could sense the possibility of extending the contract was the Alexia and Wallet project. Mauritius has a very minimal role in extending contracts to clients, this is normally done by North America. Though the Mauritian subsidiary has not been set up to bridge business opportunities with potential clients, findings revealed that the Mauritian branch could be engaged in doing so, in the near future as Ceridian North America intends to source clients from the African continent in the near future. Mauritius would then be used as the hub to transition to Africa and lead the role of the bridger in the African market. Therefore, though sensing is not a huge part of the Mauritian subsidiary at this point in time, it will be in the near future and the subsidiary is preparing its talent pool to be able to assume the role of the knowledge broker in the near future.

- Technology as a main disruptor

The Senior Vice President and Managing Director stressed numerous times how technology was beneficial for the business they operate in but also a huge inconvenience as a disruptor. The digital disruptor affects fundamental expectations in a culture, market, industry, technology or process that is caused through digital capabilities, specially technology. Traditional diligence methods provide a comprehensive view of a business but there is an opportunity to also consider the existential threats posed by technology. As far as technology can be an enabler in the business process outsourcing sector, it is a challenge for Ceridian HCM Inc. as well to maintain with disruptive business models. The technological disruptor has a direct impact on the culture, market, industry and the knowledge brokering process that is caused through digital capabilities. As such, knowledge brokers are constantly engaged in

assuming the four roles of the knowledge broker, bridger, creator, diffusor and facilitator, while applying the stages of the knowledge brokering process for seizing, sensing and reconfiguring the knowledge to ensure that they are constantly on top of the market to capture the relevant knowledge and develop innovative solutions.

Ceridian HCM Inc. has constantly undergone the threat of being affected by disruptive technology, hence putting more pressure on the employees as well as the executives to keep with the pace of innovation. Through the company has inculcated a culture of agility, the inability to predict the fast- changing face of technology can destabilise the business. Ceridian HCM Inc. has constantly undergone the threat of being affected by disruptive technology, hence putting more pressure on the employees as well as the executives to keep with the pace of innovation. The disruptive technology permanently engages the knowledge broker along the knowledge brokering process and they constantly have to seek new strategies for business as if they miss one opportunity their competitors can benchmark them and they are driven out of business.

Ceridian HCM Inc, stand upfront with their Disruption Diligence team as a shield to bring actionable, commercial and profitable insights relating to disruptive technologies. The diligence team employees, comprising of technologists, artificial intelligence and robotics experts have been providing extensive support through the knowledge brokering process in providing innovation, digital and due diligence services. This process can be quite tiresome and daunting on the employees as time scales tend to be short term as technology is constantly changing or upgrading and they have to keep abreast of all those changes.

- Lack of talent and human capital in the field of Artificial Intelligence

As universities were not able to produce employees who would possess the skill that the industry demanded, the company therefore founded its own Ceridian Learning Academy where

tailormade programs for the company was offered. Knowledge brokers at Ceridian HCM Inc. has been since long been faced with a shortage of artificial intelligence trained specialists, data scientists and engineers in the fast -evolving business environment Ceridian HCM Inc. operates in. Ceridian HCM Inc.'s disruption diligence team has been acting as knowledge brokers for sensing and seizing the latest demands from the market and translate that information into business needs for talent. Yet, in the upcoming surge of technologists, the existent talent pool has not been able to supply resources to carry out tasks demanded by the clients. The company is therefore finding itself in short of talents in the role of bridgers to be able to sense business sensitivity and dangers and might not be able to move as fast as it required to keep up with the pace of disruptive technologies.

- Complex procedures leading to loss of new projects

As a multinational Ceridian HCM Inc. has structured and lengthy procedures for the approval of new policies, business strategies and business decisions. Respondents mentioned that procedures are too cumbersome and lengthy process that all subsidiaries have to abide for if they would like to put an idea forward. In some cases, it might take two years to be implemented fully across Ceridian global. The complex and time-consuming procedures and starting a lengthy research by the research and development team and is a demotivator for knowledge brokers to come forward with ideas and express them, specially when it comes from a back office support centre like Mauritius, However when changes comes from the top, it is more easy to implement as research has already been conducted by dedicated teams, the necessary support structures have already been provided and Ceridian HCM Inc will not hesitate to invest in such projects. These complexities do not encourage the knowledge brokers to voice out their ideas in spite of the fact that they have sensed business opportunities and would like to seize it. Such complexities therefore undermine the concept of knowledge brokering and does not allow knowledge brokering to happen in its best way. In many cases knowledge brokers in

Mauritius who have sensed opportunities felt discouraged and did not voice out their interest and lost new projects. Such complexities are not conducive for knowledge brokering to take place. The Mauritian branch is viewed as a back-office centre for support and not necessarily a marketing centre, therefore interest coming from the Mauritian branch are not considered seriously. However, if Ceridian intends to expand across the African market as its strategic plans point out, it will have to provide access to Mauritius to sense and seize business opportunities in Africa due to the fact that Mauritius can increased competitive advantage as it is already aware of the geo-political and invest opportunities in Africa better than North America. Simultaneously, Mauritius being part of the regional block of Sub-Saharan African countries, it already has preferential business linkages and benefits that the North American market does not possess.

- Compatibility of Dayforce flag ship program

Findings revealed the importance of assessment before we decide to acquire a new project or reconfigure an existing project. In one of the cases, a software was acquired by Ceridian HCM Inc. Mauritius with so many complexities as the project is disconnected between the IT, marketing and other teams which amplified complications as the bases set for that software were complex and not compatible. The reconfiguration process was undergoing many failures and retrial phases as the teams were unaware of the intricacies of the product. The technical feasibility was not assessed before the acquisition, but as it was already bought, it took a lot of time to reconfigure and get the project up and running and connect the different modules. Similarly, the team has failed to carry risk analysis, risk planning and risk monitoring should be carried out as risks can be in terms of tools, organisation, technology, patents that gave rise to issues in relation to reconfiguration. Poor risk assessment would be difficulties or the inability to reconfigure the new knowledge properly this providing unsafe reconfiguration services and softwares to clients. It therefore becomes primordial that knowledge brokers are

equipped with the necessary skills to be able to assess potential risks and test same for an existing project as well as new project.

Chapter Six: Conclusions

6.0 Introduction

The primary purpose of this chapter is to distil the key findings arising from the data analysis presented in the previous chapter. First, the chapter revisits the research aim and objectives set out at the beginning of the study to explain how these have been effectively achieved. Second, it provides a discussion of the key findings which are synthesised into a thematic table which accounts for both themes derived from the literature review and those emerging from the research context. Importantly, the table adds another layer of interpretation to consider the possible reasons and causes underlying the issues and concerns that are of particular relevance here and that are used as a platform for the development of the recommendation in the following chapter.

6.1 Achievement of aim and objectives

The aim of the thesis is to reframe and consolidate the concept of knowledge brokering and consider how it can be used as a lever for dynamic capabilities within the context of a business process outsourcing organisation based in Mauritius. The paragraphs that follows conclude on the achievement of the objectives set at the beginning of this thesis.

Objective 1

Based on objective one, a critical review of extant literature on knowledge brokering and expand its theoretical dimensions as a lever for dynamic capabilities has been conducted and various notions unpacked to clarify the concept of knowledge brokering into its simplest components. This review exercise clarified notions about the importance of knowledge, very detailed stages of the knowledge brokering process, a well-defined typology of knowledge, critical analysis of the existing theoretical foundations about knowledge brokering and distilled

existing models to develop a conceptual framework for knowledge brokering as a lever of dynamic capabilities to inform primary research of this thesis.

Objective two

Objective two has been defined as exploring the nature of the current process of knowledge brokering within Ceridian HCM Inc. Mauritius to identify its main components, agentive roles and to consider its key challenges and outputs. One of the key components identified from the findings is the importance and meaning that knowledge has in a fast-evolving company as Ceridian HCM Inc. which in fact is key for ensuring the continuity of business in the dynamic environment. Other crucial components such as the agentive roles of the knowledge brokers, as bridger, creator, diffusor and facilitator, are central in supporting the knowledge brokering practice within Ceridian HCM Inc. Mauritius.

The main stages for the knowledge brokering process tested and confirmed relevant to constitute as essential components and are the stepping stone for the engagement of knowledge brokering for acting as a lever for dynamic capabilities. Knowledge brokering cannot be achieved as a stand-alone and additional relevant component such as organisational support in terms of leadership, learning organisation and individual components such as cognitive abilities, open mindset are key enhancing the knowledge brokering process as a lever for dynamic capabilities. Emerging findings revealed that technology can be a major challenge to keep up to date or upgrade too fast as well as limited ability for sensing and seizing business opportunities from Ceridian HCM Inc. Mauritius due to the nature of the business established, thus leading to losses of potential clients and projects. The main outputs emphasise the contribution of knowledge brokering in terms of enhanced output to meet business demands faster as well as respond to clients changes more effectively to maintain competitive advantage.

Objective 3

Objective three aims at examining, in consultation with key stakeholders, how the current process of knowledge brokering can be effectively enhanced via the reframed concept of knowledge brokering. Since the concept of knowledge brokering was existent within Ceridian HCM Inc. but not well defined and clarified, a confirmatory analysis was carried out with the stakeholders to identify means and ways that the current knowledge brokering process could be enhanced at Ceridian HCM Inc. This exercise contributed to the proper applications of the concepts of knowledge brokering so as to set clear and defined knowledge brokering roles as well as familiarisation with the stages of the knowledge brokering process. The knowledge brokering roles are now much clearer and the application of the knowledge brokering process clarified the stages that the knowledge brokers were engaged in through the familiarisation of the stages and roles of the knowledge broker. This brought clarity and understanding in their roles as well as a better understanding as how they should deal with the dynamic business environment. The applicability of the knowledge brokering concept now at Ceridian HCM Inc supports the knowledge brokers to pin down the roles clearly where the stages of the knowledge brokering process does not go missing compared to previous practices where they were unaware of their role and contribution as knowledge brokers and haphazardly assuming the roles without clarity.

The knowledge brokers are now aware that they can fit into one role, various roles or all the roles depending on the department in which they situate. They are also now much more aware of the various stages they should consider to be able to sense, seize and reconfigure knowledge for competitive advantage. As the knowledge brokers were now more familiar with the concepts of knowledge brokering, the confirmatory analysis group agreed on developing a knowledge brokering policy in view of embedding the concept within the organisation. The knowledge brokering policy included streamlined knowledge brokering roles and stages of

knowledge brokering process taking into consideration that the roles and stages assumed can vary from person to person and department to department. In the case of sensing, the policy made it clear that some level of sensing would happen at both; international and national level with a larger emphasis on sensing coming from international subsidiaries for the moment till the Mauritian subsidiary is mature enough to act as bridger with the African market and sense business opportunities for investment. Ceridian HCM Inc. being a multinational with well-structured policies, the agreement of the knowledge brokering policy make take some time as it has to undergo numerous departments before it is implemented.

Objective 4

Objective four aims at developing, on the basis of the theoretical development and empirical insights generated in this study, a practical framework geared towards optimising the process of knowledge brokering within Ceridian HCM Inc. Mauritius and other similar organisational settings. As part of this objective, the practicability of the framework was assessed to develop one geared towards optimising the process of knowledge brokering within Ceridian HCM Inc. Mauritius and other similar organisational settings. Findings concluded that some of the main considerations underpinning the practical framework of knowledge concerns the stages of knowledge brokering process, the roles of the knowledge broker, the dimensions of dynamic capabilities and the level at which the processes take place which is an important criteria for outsourcing business operating at national and international level. Sensing abilities were concluded to take place more at international level, while seizing took place at both national and international level whilst reconfiguration happened at national level. The analytical framework has been amended, with consultation from the stakeholders, so that it reflects the practicality of the business world as well as the potential of transferability with other business settings at both national and international level. The findings form objective four was further

used to draw conclusions and recommendations to enhance the effectiveness of knowledge brokering within Ceridian HCM Inc. and similar settings.

6.2 Contribution of research

Theoretical

This research has successfully explored and expanded the concept of knowledge brokering as a lever of dynamic capabilities. Though authors such as Massingham, (2014), Eisenhardt and Martin (2000), Abbate and Coppolino (2011) purported that knowledge brokers are key for the development of dynamic capabilities, no research merging both concepts have been conducted till date. This thesis is the first piece of work that contributes not only in merging the two stand-alone subjects, knowledge brokering as a lever for dynamic capabilities, but has also developed a conceptual framework later tested, confirmed and upgraded to a practical framework possessing generative capacity for Ceridian HCM Inc. The framework also provides opportunities for transferability into similar business settings, within developed countries but more specifically to developing countries within the East African context. Amongst the scarce researches conducted on knowledge brokering within the East African context, World Health Organisation (2020) launched an online platform within the Eastern African region to promote the exchange of experiences across countries within that region. So far knowledge brokering research has been carried out within the health sector in East African context, more specifically Kenya (Van Kammen *et al.*, 2006), and the framework from this thesis can be applied to countries within similar context. Furthermore, this research has contributed to the theoretical field by developing a very clear typology of the roles of the knowledge broker from the confused and blurred existing literature about the roles that the knowledge bridger assumes. These roles and process stages can be contrasted with the knowledge brokering roles and process stages within the East African context and assess similarity or differences present. Another layer of contribution is the clearly presented, simple and well-defined knowledge brokering process and its respective sequential stages that ease the understanding of knowledge brokering for any other reader on the subject. This thesis has also pointed out the enablers and

key challenges that organisations should consider if they intend to engage in knowledge brokering activities to ensure they are surrounded by the essential components for its effective implementation.

Empirical

Research on knowledge brokering and dynamic capabilities have been carried out in multiple industries such as manufacturing (Danneels, 2008), accountancy (Doving and Gooderham, 2008), energy generation (Helfat, 1997), technology (Kor and Mahoney, 2005) and health and medical (Pablo, Reay, Dewald and Casebeer, 2007). The limited research conducted on the information and technology field by Kor and Mahoney (2005) and Rudolph (2017) in web services has focused solely on dynamic capabilities. Till date, no research has surfaced combining knowledge brokering and dynamic capabilities in the outsourcing sector but more specifically in the East African context. This thesis presents a first piece of research combining dynamic capabilities and knowledge brokering in the outsourcing sector within the East African context. Additionally, most stand-alone research on either knowledge brokering or dynamic capabilities have been conducted in the United States, United Kingdom or developed countries. The fact that the world is shifting business more and more towards lower cost economies, it is essential to understand how business is happening in such low-cost countries within the East African region where numerous multinationals outsource their business.

Existing literature shares knowledge about knowledge brokering and dynamic capabilities from developed economies, but this research bridges the gap about knowledge brokering and dynamic capabilities that exist in Mauritius, an upper middle-income economy (World Bank, 2020) ranked amongst the best ones within the East African context. This is the first piece of research merging knowledge brokering altogether with dynamic capabilities in the outsourcing sector and in an upper middle-income economy amongst all the East African countries. As the

trend in outsourcing nowadays is to invest in lower cost economies, this trend will prevail in the long term mainly due to lower cost implications within countries in Africa where multinationals are keen to invest. Therefore, it becomes essential to understand the phenomena of knowledge brokering and dynamic capabilities in middle income economies within the East African context which this research empirically contributes to with Mauritius as the focus of this study. This research has therefore contributed empirically in decreasing the knowledge gap and has set the perfect grounds to explore and expand knowledge brokering as a lever of dynamic capabilities in the business process outsourcing industry in an economy where this subject has not been researched before within the East African context.

Practical

This thesis has contributed to practice by developing a conceptual framework which has then been tested, confirmed and updated according to documentary evidence, confirmatory focus group and interviews conducted to be developed into a practical framework. The practical framework possesses applicability, relevance and generative capacity within Ceridian HCM Inc. to generate capacity within the company to improve competitive advantage. Such framework contributes to understanding the practicality of knowledge brokering and dynamic capabilities within Mauritius and similar business setting with the African region, more specifically the East African part where multinationals are investing massively. Simultaneously the same practical framework can be transferred to similar business settings in developed countries but mostly within East African countries in view of improving knowledge brokering as a lever for dynamic capabilities for sustainable competitive advantage or tailor-made to suit their business needs. This thesis has contributed by producing a first practical framework of potential value and competitiveness for companies. Last of all, but not the least, the practical framework has been used as foundation to develop an operational framework so that Ceridian HCM Inc Mauritius and similar organisations can implement knowledge brokering as a lever

for dynamic capabilities for generating competitive advantage and sustain innovation in business. One of the major contributions of the practicality of the framework points out to the fact that Ceridian HCM Inc. North America is interested to invest in Africa in the future and this practical framework can be the foundation for setting up business within East African region and understand the phenomenon of knowledge brokering and dynamic capabilities within Ceridian's potential future investment.

6.3 Implications for further research

Recommendations for future research posits that more longitudinal studies over years that can be carried out so as to examine how knowledge brokering impacts dynamic capabilities over time. As this research has been tested and confirmed in one business process outsourcing company, the confirmed practical framework can be tested and applied to other companies in business process outsourcing or diverse industries, national and international context so that the applicability of the practical model can be assessed. Additionally, very few researches have been conducted on knowledge brokering and dynamic capabilities in business settings and middle-income economies. For better understanding of the subject as well as the progress of the body of knowledge on the subject, additional research can be conducted as to better understand the micro-foundations of the subject.

As knowledge brokering possess the abilities to act as a lever for the development of capabilities, it would be worthwhile to research on how the additional means and ways to turn disruptive technology into an asset that could lead to competitive advantage. Additionally, one avenue for further research would be to carry more research is needed to explore the components that tie knowledge brokering and dynamic capabilities to competitive advantage. These components will reinforce the relationship between knowledge brokering acting as a lever for dynamic capabilities.

Chapter Seven: Recommendations

7.0 Introduction

This chapter develops a set of recommendations on the basis of the key findings and conclusions presented in the preceding chapter. The recommendations set the parameters for a concrete line of action and provide guidance as to how to achieve them through an operational framework that can be institutionalised at Ceridian Mauritius Inc. Mauritius and organisations of similar settings. The operational framework presents a set of recommendations to address the key issues considering the timeline highlighting the key agents driving those recommendations as well as the intended benefits that can be of significant contribution to the researched and similar organisations.

7.1 A practical framework for optimising knowledge brokering as a lever for dynamic capabilities

This thesis identified several root causes of the issues and challenges that emerged from the findings with respect to knowledge brokering and dynamic capabilities. The aim is to reduce these issues and challenges so that Ceridian HCM Inc Mauritius as well as other organisations which could be in a position to face similar complexities do not undergo similar challenges and have a smoother integration of the practical framework in their organisations. The table 7.1 below proposes a series of recommendations to address the possible causes identified as part of this research. These recommendations can be adopted by Ceridian HCM Inc. Mauritius and North America in view of minimising these complexities and allow a proper, complete and more efficient integration and application of knowledge brokering practices within the company that would act as a lever for dynamic capabilities, this driving competitive advantage.

	Key Issues	Possible causes	Recommendations
	Respondents were not aware they were engaged in knowledge brokering roles and activities	-lack of awareness about the concept of knowledge brokering	-Increase awareness about knowledge brokering and institutionalisation of the knowledge brokering strategies at Ceridian HCM Inc, Mauritius specially since the practical knowledge brokering process has many contributions to offer to the fast-paced industry.
	Minimal exposure to sensing dimension for new projects	-No established business set up and agreement to act as back office with Ceridian North American head office	-Negotiate new business set up so that the Mauritian branch can have more access to sense business opportunities. -Decentralising decision making, especially if Ceridian North America's policy for the Mauritian branch is to be the platform to penetrate African markets in the future.
	Technology as a main disruptor	-Inability to cope with fast paced innovation and skills upgrade across Ceridian global	-Develop faster learning methods and continuously innovate around core software driven processes which demands faster feature release and shorter development life cycles.

		- Limited inhouse talent to respond to the fast-evolving technology in Ceridian head office and back offices	Devise efficient mechanism for timeous delivery of training through on the job learning with experts in the field or compact short courses quicker to assimilate -Initiate contract with stakeholders, especially with the technology being used, so that as a new technology feature is released, the stakeholder provide training before the technology becomes available to all competitors.
	Lack of talent and human capital in artificial intelligence	-Outdated syllabus and no certification programs in artificial intelligence from Universities	-Redevise the way Ceridian Learning Academy operates to design Bachelor's or Master's program specially meeting the needs of Ceridian. -Link with Universities to provide online learning tools so that the employees can upgrade their skills.
		-Inability to find resource person to train employees with latest technology at Ceridian Learning Academy	-Develop technology contracts with the technology user and request for consultants for the technology company to deliver inhouse training.
	Complex procedures leading to loss of new projects	-Tedious and time-consuming global process requirements at Ceridian head offices	-Decentralising decision making so that Ceridian Mauritius can take its own decisions. Making Ceridian Mauritius the head office for African markets, thereby providing same status as Ceridian North America with autonomy on decision making.

		- Limited opportunities for the Mauritian branch voice out intentions on new project and opportunities	-Negotiate business set up so that Ceridian Mauritius is autonomous and responsible and accountable for their decisions, thus avoiding losing opportunities.
	Compatibility of Dayforce flagship program with respect to risk assessment	-Poor risk assessment practices and no proper training and experience in risk assessment due to lack organisational commitment and awareness about the importance of risk assessment	-Develop, inculcate and nurture a culture of risk assessment at all levels

Table 7.1 – Recommendations

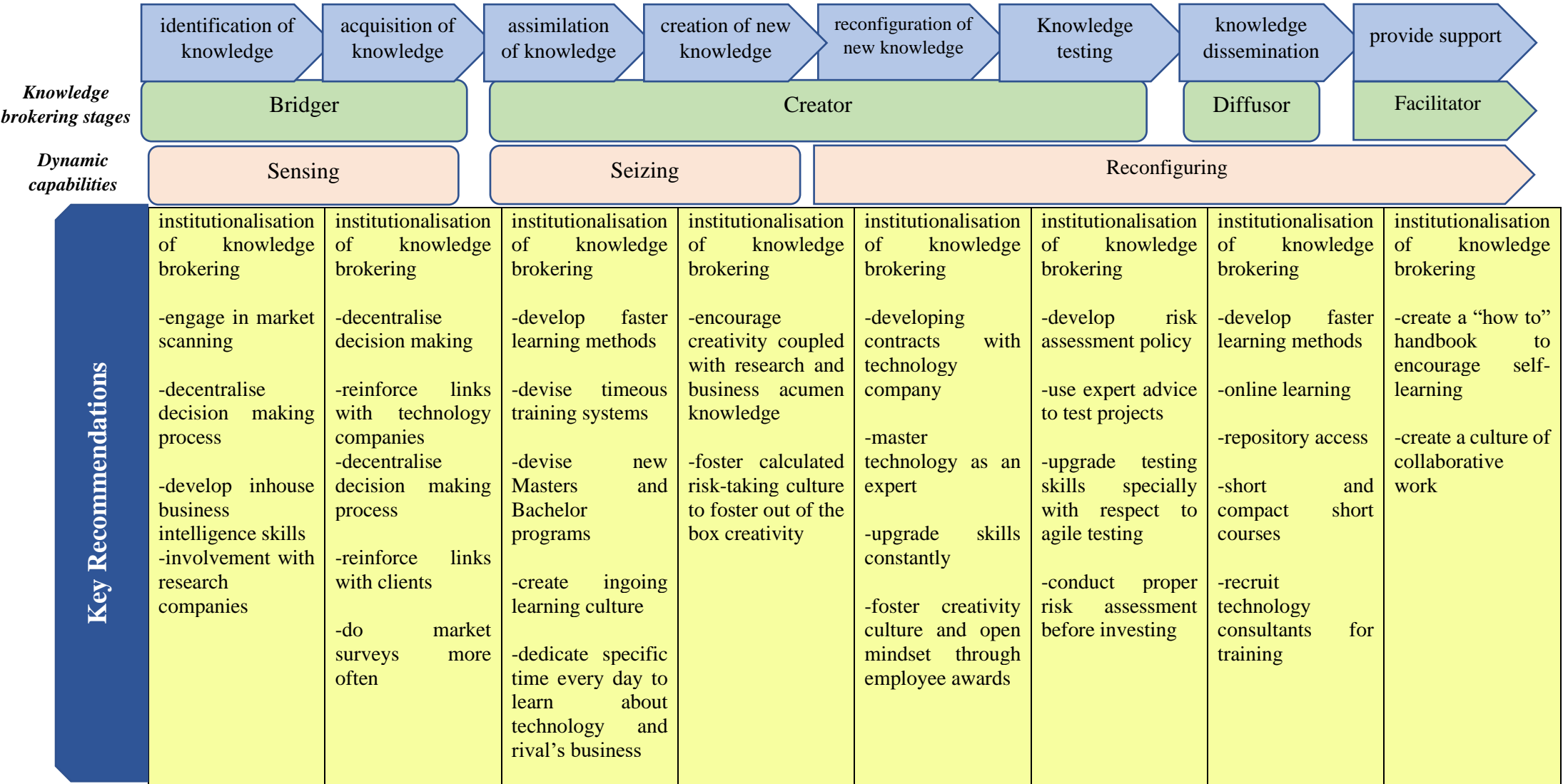
The proposed recommendations could help solve the key issues and challenges that Ceridian HCM Inc Mauritius is facing as part of knowledge brokering and developing dynamic capabilities. Many of the recommendations deals with establishing new working agreement with Ceridian HCM Inc North America where the Mauritian branch is not very autonomous in decision making. As North American head office plans to integrate the African market which present a huge potential for business opportunities, the Mauritian branch could be used as a more autonomous platform to manage business expansion in the African continent. Table 6.2 below presents an operational framework detailing the various stages for application within the organisation.

7.2 An operational framework for implementation at Ceridian HCM Inc. Mauritius

This section of the chapter develops and presents an operational framework that has been devised to facilitate the application and integration of the practical framework tested and confirmed by the managers, senior managers, team leaders and vice president of Ceridian HCM Inc. Mauritius. Though the company has been operating on a learning and developed policy, it would be beneficial to introduce a knowledge brokering policy as the policy would formalise some of the key components of knowledge brokering ensuring that the culture prevails. The institutionalisation of the knowledge brokering policy is key as it ensures that talent pool is upgraded accordingly, the right knowledge is captured at the right time and reconfigured with minimal lapse time and that employees' skills, creativity and cognitive abilities are elevated at all times to achieve competitive advantage.

The operational framework in figure 7.1 below will address the needs of Ceridian HCM Inc Mauritius and bridge the gap between existing knowledge brokering practices and the recommendations proposed to enable the integration of the practical framework. The

operational framework also shares strategies as to how it will be implemented coupled with the strategies to implement them, the identification of who will be responsible to implemented such strategies, the reason as to why these strategies should be implemented and when should be implemented. The operational framework offers a systematic work plan for organisation to that the practical framework can be easily deployed at Ceridian HCM Inc. Mauritius. Simultaneously, the operational framework establishes robust links between knowledge brokering and dynamic capabilities in practice by emphasising on key recommendations, time frame to be implemented, key roles responsible to assume each and every role as well as the intended benefits of the proposed solutions. These solutions can be part of a long-term agenda for embedding and institutionalising the process at Ceridian HCM Inc. Mauritius for competitive advantage.



Intended benefits	<ul style="list-style-type: none"> -to gauge opportunities as it presents itself -to develop the ability to predict trends and be the trend setter -to maintain competitive advantage 	<ul style="list-style-type: none"> -to upgrade talent according to business demands -to thrive and benchmark competitors with respect to talent pool 	<ul style="list-style-type: none"> -to be able to deliver the products and services demanded by the market -to develop the ability to create and innovative solutions 	<ul style="list-style-type: none"> -to stay abreast of competition and earn competitive edge -to upgrade talent base to be more responsive to client's demands 	<ul style="list-style-type: none"> -to upgrade old knowledge to the new ones to maintain competitiveness 	<ul style="list-style-type: none"> -to ensure that the services that we are offering to the customers have undergone rigorous quality standards and will not fail 	<ul style="list-style-type: none"> -to ensure that all employees are trained on latest knowledge so as to sustain competitiveness 	<ul style="list-style-type: none"> -to be available to employees in case they need help or support to deliver the job effectively
Time Frame	<ul style="list-style-type: none"> -continuously short, medium and long term to keep an eye open at all times for opportunities 	<ul style="list-style-type: none"> -mostly short term as the new knowledge is on market 	<ul style="list-style-type: none"> -mostly short term as knowledge change fast in the industry 	<ul style="list-style-type: none"> -short term as the knowledge created is soon obsolete and has to be created again 	<ul style="list-style-type: none"> -short term as reconfiguration as and when needed and will have to be upgraded soon 	<ul style="list-style-type: none"> -short term as and when knowledge is reconfigured 	<ul style="list-style-type: none"> -short term for specific training -long term for maintaining a continuous learning culture 	<ul style="list-style-type: none"> - short term as and when needed for diffusing the training

While continuously considering national and international context to implement the recommendations

Figure 7.1 – Operational framework

The operational framework explains what the application of the practical framework entails and the various stages involved within. The implementation starts with institutionalising the knowledge brokering process at Ceridian HCM Inc Mauritius, the rest follows the stages of the knowledge brokering process to be embedded within the organisation. The key agents responsible for identification and acquisition of knowledge is the bridger who will be engaged in the sensing dimensions. The creator then assimilates, creates, reconfigures and tests the new knowledge to carry out the seizing and reconfigure dimension. The diffusor will share the knowledge and the facilitator provide support to the teams where these two agentive roles are part of the reconfiguration dimension. The institutionalisation of knowledge brokering is recommended at all levels so that employees are well acquainted with the concept and ensure that they apply the notion on an everyday basis, eventually becoming innate to the way they operate and think.

The key recommendations are essential to carry out the knowledge brokering process effectively. The bridger as the key agent identified knowledge by engaging in market scanning, developing inhouse business intelligence skills rather and getting involved with research companies to keep informed about the latest evolution on the market so as to benefit from greater competitive advantage. The environmental scanning and business intelligence activity is a long term and permanent commitment that Ceridian HCM Inc. Mauritius has to ensure to of engaging with the seizing dimension so as to always keep abreast of competition. This can be ensured by decentralising decision making thereby allowing the Mauritian branch to engage in their own decisions concerning business opportunities. Similarly, the bridger is expected to reinforce links with technology companies and clients and engage with market surveys more often so as to upgrade talent pools according to the business demands and therefore thrive in business. This activity is mostly short term as knowledge in the outsourcing industry change

very rapidly and therefore there is a need to learn new knowledge and acquire new ones. This stage is a repetitive one with short span of time supporting the sensing dimension.

The next stage of implementation by Ceridian HCM Inc Mauritius is the assimilation and creation of new knowledge through the seizing dimensions of dynamic capabilities. The key agent for these two stages is assumed by the creator. Recommendations for institutionalising the knowledge brokering process at the stage includes knowledge assimilation through an ongoing learning culture that fosters ongoing learning as well as scanning the market to keep up to date with rivals' latest technology thereby generating potential benefits to create innovative solutions to deliver timely products to clients' demands. Simultaneously the company can be engaged in developing faster learning methods, ensure timeous training systems and devise new Masters and Bachelor programs with Universities to ensure that the employees possess the skills to carry out the job effectively. These are short term recommendations as knowledge in the industry changes very fast and hence have a shorter life cycle for existence. The next stage the creator has to engage into is the creation of knowledge where solutions proposed encourages creativity alongside the ability to do research to enlighten knowledge as well as develop sound business acumen. Knowledge brokers at Ceridian HCM Inc. Mauritius will then be more equipped with the necessary skills to be able to engage more fruitfully into calculated risk-taking decisions and develop the ability to create innovative and novel ideas. These decisions are expected to equip the knowledge brokers with the skill set to stay alert and abreast pf competition, urging the talent pool to be more creative and responsive to client's demands and earn competitive edge.

As part of the reconfiguration dimension, the knowledge broker is expected to upgrade old knowledge to new ones. Creators are therefore expected to master technology as an expert and to keep updated of all technological advances in the field and constantly upgrade skills to foster creativity and an open mind set by organising awards and contest that promote value added

creativity. The company can also develop contracts with technology companies, primarily this in the supply chain, to ensure that they have access to new knowledge as the technology company devise them. The next stage the creator is engaged into is the testing of knowledge so as to ensure that the service or product respect the quality standards before reaching the clients. Recommendations for this stage include the use of expert advice to test projects and to conduct proper risk assessment before and while investing into an acquisition. Knowledge brokers can also undergo training to upgrade their skills specially with respect to agile testing.

Next the knowledge broker, assuming the role of the diffuser as key agent, is expected to upgrade the learning and development policy and adopt more innovate and fast learning platforms. Strategies such as online learning, repository access, short and compact courses and the use of technology consultants to train employees are the propositions made to speed up the learning process. The intended benefits of using fast and effective mediums of learning are that the employees are able to upgrade their skills very fast thereby minimising the time lapse for new products to enter the market, maintaining the client base.

The last role for the knowledge broker, that of the facilitator provide support to learners in case they face difficulties in implementing the new knowledge imparted. The facilitator, acting as the key agent, can provide support by creating manuals to encourage employees to find answers by themselves therefore developing a more autonomous approach to their learning as well as creating a collaborative culture for work they can nurture themselves while learning from each other. The intended benefit of this agentive role is to ensure that help and support us available to the employees in case they need help or have queries to answer customers efficiently.

Implementing the proposed recommendation, it is expected that the Ceridian HCM Inc Mauritius will be able to institutionalise knowledge brokering as a lever of dynamic capabilities and benefit competitive advantage and stay ahead of invention and sustained competition.

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Annexes

Central Themes / Sub Themes – Unstructured questions for Phase 1

Annex I

CENTRAL THEMES	Key theoretical issues	Unstructured/Open exploration	Key findings to be carried forward to Phase 2
Knowledge brokering	Roles of knowledge broker	<ul style="list-style-type: none"> - Bridger - creator - diffuser - facilitator 	
	Nature of relationships	<ul style="list-style-type: none"> - dyadic - multiple - matrix 	
	Operational levels	<ul style="list-style-type: none"> - individual - group - organizational - socio-economic 	
	Limitations of existing models	<ul style="list-style-type: none"> - lack conceptual rigourness - do not consider outcomes within the eco-systems - complex relationships that are difficult to manage 	

		<ul style="list-style-type: none"> - do not account for strategic orientations - confusion about the knowledge broker being an individual or office 	
	Barriers to knowledge brokering	<ul style="list-style-type: none"> - technical issues and strong network ties - organizational resistance/reluctance to share knowledge - managerial challenges - technological boundaries/industry boundaries - difference in meaning of knowledge 	
	Benefits of existing models	<ul style="list-style-type: none"> - trustworthy relationships - clarity in decision making - consider socio-economic outcomes and development of social policy 	

	Reframed knowledge brokering process	<p>The process below shows a distilled and simpler version of knowledge brokering process. has been developed through the 7 steps as shown below.</p> <ul style="list-style-type: none"> - identification of relevant knowledge - knowledge acquisition - knowledge assimilation - creation of new knowledge - reconfiguration of existing knowledge - knowledge testing - knowledge dissemination and support 	
Dynamic capabilities	Dimensions	<ul style="list-style-type: none"> - Sensing - Seizing - Reconfigure 	
	Key theoretical perspectives	<ul style="list-style-type: none"> - Resource based view - Human capital - Social network 	

<p>Impact of reframed knowledge brokering on dynamic capabilities</p>		<ul style="list-style-type: none"> - greater clarity of the multidimensional and dynamic role of the knowledge broker along the knowledge brokering process - clearly demonstrate the link between knowledge brokering process and dynamic capabilities - enhanced capability for sensing, seizing and reconfiguration of relevant knowledge - generative capacity and application for employees to engage with the organisation and improve business outcomes - enhanced outcomes at individual, job, organizational and industry level 	
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Additional Comments (Issues/Practices... New)	
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Phase 2 – Semi Structures questions (identified from Phase 1)

1. DYNAMIC CAPABILITIES

Sensing

- How do you identify and assess opportunities? / How do you pioneer a new market with new opportunities?
- What are the factors that help you to determine that these opportunities are easy to embed in the organisation?
- What are the cognitive abilities that you use to be able to identify opportunities?
- How do you use technology to realign the existing knowledge with the new demands of the business?

Seize

- How do you capture the relevant opportunities?
- How do you anticipate competitor's reaction and defend your intellectual property rights?

Reconfigure

- How do you realign the obsolete knowledge to create new knowledge?
- How do you align existing capabilities and invest in additional capabilities?

2. KNOWLEDGE BROKER

- What are the roles of the knowledge broker in your organization?

Bridger

- How do you create connections/links to the knowledge producer to access the relevant knowledge to your organisation?
- How do you access the relevant knowledge from the knowledge producer?

Creator

- What are the skills needed to create new knowledge?
- What are the skills needed to modify the old knowledge to the new required knowledge?

Diffuser

- What are the strategies used to diffused the new knowledge?
- Is there are knowledge management database in place?

Facilitator

- What types of support do you provide to the employees after they have been trained on the new knowledge?

3. KNOWLEDGE BROKERING PROCESS

- Do you have a knowledge management process in your company?
- Can you elaborate on the various steps involved in the knowledge management process?

SEMI STRUCTURED QUESTIONS FROM THEMES – for phase 2

Knowledge brokering

- Understanding of knowledge
- Understanding of knowledge broker
- Possible roles of broker in org
- Types of relationship between knowledge brokers and departments/subsidiaries
- Levels that brokering happens (individual/team/departmental/head office and subsidiary)
- The stages in the process of knowledge brokering
- Limitations of existing knowledge brokering practices
- Benefits of such models
- Barriers to knowledge brokering

Dynamic capabilities

- Understanding of dynamic capabilities
- Understanding the dynamic capabilities dimensions
- Identification of dynamic capabilities in the org system and culture

The framework

- Do you relate with this model? (whole/partly)
- Which role do you find yourself assuming/or your department assuming/or the Mauritian branch as a whole assuming?
- How does this model benefit your company?

Validation and confirmation of the framework (revising the framework) – focus groups

- Would it be okay to separate the sensing part from the compact circle?
- The model does not show the nature of outsourcing that is across boundaries to show national level stage of the process and international stage of the process (probe further)
- Arising themes and issues

Phase 3 – Confirmatory focus group

Typology of knowledge brokering roles:

Does these findings, strategies and issues reflect what you actually shared during the interview?

Does this reflect the reality for the roles of the bridger, creator, diffusor and facilitator?

Stages of the reframed knowledge brokering process:

Do these stages reflect the ones you are engaged into? You are welcome to expand your thoughts on the subject.

Do these stages relate to the particular roles of the knowledge broker? Do you assume the same responsibilities with regards to the stages of the knowledge brokering process? You are welcome to expand your thoughts on the subject.

Is there anything else you would like to add?

Conceptual framework:

Do you relate to the changes that have been made to the framework according to your interviews? Is the framework reflecting the true nature of the process happening at Ceridian HCM Inc now?

Would you confirm that the amended version of the conceptual framework responds to the situation of the company? What would you like to add on the conceptual framework?

So, do you confirm that the amended framework is now true, correct and applicable to your business context?

Emerging themes:

The findings signalled some potential issues and emerging benefits. Some challenges and issues that arose, as well as good practices. Do you relate with these issues happening at work or have you not really noticed them? Can we talk about those in more depth?

Closing conversation:

Is there anything you would like to say, add or ask me?

CODING SCHEME

Annex IV

	Main themes from literature/Conceptual Framework	Sub Themes	Code	Data Source 1	Pattern of evidence	Emerging Themes	Key findings	Conclusions
1	<i>Understanding the concepts underlying knowledge brokering</i>	I) broker	Brkr					
		ii) brokering	Brk'g					
		iii) knowledge brokering	KB'g					
2	<i>Roles of the knowledge broker</i>	i)bridger	Role_B					
		ii)creator	Role_C					
		iii)diffuser	Role_D					
		iv)facilitator	Role_F					

		v)general	Role_G					
3	<i>Types of relationships in the knowledge brokering process</i>	i)dyadic	Rel_D					
		ii)multiple	Rel_Mu					
		iii) matrix	Rel_Ma					
4	<i>Levels at which knowledge brokering is happening</i>	i)individual	Lvl_I					
		ii)Group	Lvl_G					
		iii)organisational	Lvl_O					
		iv)socio-economic	Lvl_SoEco					
5	<i>process of knowledge brokering and stages</i>	i)identification of knowledge	Prce_Iden					
		ii)knowledge acquisition	Prce_Acq					
		iii)knowledge assimilation	Prce_Asm					
		iv)creation of new knowledge	Prce_Crea					

		v)reconfiguration of existing knowledge	Prce_Recon					
		vi)knowledge testing	Prce_Test					
		vii)knowledge dissemination	Prce_Dis					
		viii)knowledge support	Prce_Sup					
6	<i>limitations of existing model/practice of knowledge brokering at Ceridian</i>	i)does not consider ecosystems	Limit_Eco					
		ii)complex relationships to manage	Limit_Comrel					
		iii)does not account for strategic orientations	Limit_Strat					
		iv)confusion about knowledge broker being individual or office	Limit_Conf					
7	<i>Benefits of the existing systems at Ceridian</i>	i)trustworthy relationships	Benfts_Trust					
		ii)clarity in decision making	Benfts_Clarity					

		iii)consider socio-economic outcomes and development of social policy	Benfts_SoEco					
8	<i>Barriers to knowledge brokering</i>	i)technical issues and strong network ties	Bar_TechNet					
		ii)organisational resistance/reluctance to share knowledge	Bar_Res					
		iii)managerial challenges	Bar_MgtChlng					
		iv)technological boundaries	Bar_TechBoun					
		v)difference in meaning of knowledge						
		vi) others	Bar_DifMean'g					
9	<i>Dynamic capabilities</i>	i)sensing	DC_Sens'g					
		ii)seizing	DC_Seiz'g					
		iii)reconfiguring	DC_Reconf					

10	<i>Impact of enhanced knowledge brokering on dynamic capabilities</i>	i) Bridger identifies, acquire and assimilate relevant knowledge	CF_B/Ac/Asm					
		ii) creator develops new knowledge, reconfigure and test new knowledge	CF_C/Ac/Asm					
		iii) diffuser disseminate the new knowledge	CF_D/Dis					
		iv) facilitator provide support	CF_F/Sup					
11	<i>Impact of enhanced knowledge brokering on dynamic capabilities</i>	i) identifying relevant knowledge linked to sensing	CF_Iden/Sens'g					
		ii) knowledge acquisition and assimilation linked to seizing	CF_Ac/Asm/Seiz'g					
		iii) creation, reconfiguration and testing linked to reconfiguration	CF_Crn/Recon/Test/Reconf					
12	Organisation	Does the organisation have a knowledge brokering model?	Org_KB'gMdl					

		If yes, what are the stages involved in it?	Org_Stages					
		If no, what is the closest description of knowledge brokering within your organisation?	Org_No					
13	Relevance of CF to your organisation	i)wholly	CFinOrg_Whol					
		ii)partly	CFinOrg_Part					
14	Potential benefits of knowledge brokering on dynamic capabilities	i)individual	BenKBDC_Indv					
		ii)Job	BenKBDC_Job					
		iii)organisational	BenKBDC_Org					
		iv)industry level	BenKBDC_Indt					

Annex V

The purpose of this enabler is to facilitate the researcher (or it can be used by a clinician) to move from mainly a distrusted stranger to a trusted friend in order to obtain authentic, credible, and dependable data (or establish favorable relationships as a clinician); The user assesses him or herself by reflecting on the indicators as he/she moves from stranger to friend.

Indicators of Stranger (Largely <i>etic</i> or outsider's views)	Date Noted	Indicators as a Trusted Friend (Largely <i>emic</i> or insider's views)	Date Noted
Informant(s) or people are: <ol style="list-style-type: none"> 1. Active to protect self and others. They are "gatekeepers" and guard against outside intrusions. Suspicious and questioning. 2. Actively watch and are attentive to what researcher does and says. Limited signs of trusting the researcher or stranger. 3. Skeptical about the researcher's motives and work. May question how findings will be used by the researcher or stranger. 4. Reluctant to share cultural secrets and views as private knowledge. Protective of local lifeways, values and beliefs. Dislikes probing by the researcher or stranger. 5. Uncomfortable to become a friend or to confide in stranger. May come late, be absent, and withdraw at times from researcher. 6. Tends to offer inaccurate data. Modifies 'truths' to protect self, family, community, and cultural lifeways. <i>Emic</i> values, beliefs, and practices are not shared spontaneously. 		Informant(s) or people are: <ol style="list-style-type: none"> 1. Less active to protect self. More trusting of researchers (their 'gatekeeping is down or less'). Less suspicious and less questioning of researcher. 2. Less watching the researcher's words and actions. More signs of trusting and accepting a new friend. 3. Less questioning of the researcher's motives, work, and behavior. Signs of working with and helping the researcher as a friend. 4. Willing to share cultural secrets and private world information and experiences. Offers most local views, values, and interpretations spontaneously or without probes. 5. Signs of being comfortable and enjoying friends and a sharing relationship. Gives presence, on time, and gives evidence of being a 'genuine friend.' 6. Wants research 'truths' to be accurate regarding beliefs, people, values, and lifeways. Explains and interprets <i>emic</i> ideas so researcher has accurate data. 	

*Developed and used since 1959: Leininger.

Information Sheet for Potential Participants

Title; Reframing the role of knowledge brokers as levers of dynamic capabilities in fast evolving multinationals

I am Indravidoushi C. Dusoye, a doctoral student from the Business School of Edinburgh Napier University. As part of my research, I am conducting a survey with team leaders, managers and directors of your company. My research is entitled '*Reframing Knowledge Brokering as a Lever for Dynamic Capabilities: Early Insights into a Business Process Outsourcing Company in Mauritius*'.

I am investigating how team leaders, managers and directors assumes various roles of the knowledge broker to leverage dynamic capabilities. As my research's is qualitative in nature, I have devised a conceptual framework with relevant themes to be explored through unstructured interviews. The company chosen to carry out the survey is a multinational operating in dynamic business environment.

The findings of the project will be useful to ascertain whether there is a direct link between the knowledge brokers and the development of dynamic capabilities. The findings will also reveal if the conceptual framework built is applicable to the organisation considering any amendments thereon. The results of the study can be used to identify, develop and reinforce dynamic capabilities within organisations.

As part of the research, the respondents have to be in positions where they are in communication (verbal or written) with business stakeholders (internal or external) with the organisation's

business community such as suppliers, government, society, customers. The respondent acts as the broker of knowledge, moving it from one place to other. They can be in the form of technical managers/directors or technical team leaders.

If you agree to participate in the study, you will be asked to fill out an online questionnaire. The researcher is not aware of any risks. The whole procedure should take no longer than 30-45 minutes. You will be free to withdraw from the study at any stage without providing any reason if you do not feel comfortable to. If you want further information, you are cordially invited to contact me (i.dusoye@napier.ac.uk).

All data will be anonymised. Your name will be replaced with a pseudonym, and it will not be possible for you to be identified in any reporting of the data gathered. Any data that could identify you as a participant will be destroyed. The data will be kept until the end of the PhD examination process (i.e. graduation) and then destroyed. The results will be published in a doctoral thesis.

If you would like to contact an independent person, who knows about this project but is not involved in it, you are welcome to contact Dr Janice McMillan. Her contact details are: j.mcmillan@napier.ac.uk and she can be reached via phone on the +44 (0) 131 455 4340.

If you have read and understood this information sheet, have no further questions and would like to participate in the study, please see the consent form.

Consent Form

Edinburgh Napier University Research Consent Form

Title; Reframing Knowledge Brokering as a Lever for Dynamic Capabilities: Early Insights into a Business Process Outsourcing Company in Mauritius.

Edinburgh Napier University requires that all persons who participate in research studies give their written consent to do so. Please read the following and sign it if you agree with what it says.

1. I freely and voluntarily consent to be a participant in the PhD research project on the topic '*Reframing Knowledge Brokering as a Lever for Dynamic Capabilities: Early Insights into a Business Process Outsourcing Company in Mauritius.*' By Indravidoushi C. Dusoye, who is a doctoral student at Edinburgh Napier University.
2. The objective of this research is to identify how knowledge brokers are levers of dynamic capabilities. The context is fast evolving organisations, more specifically multinationals. A conceptual framework has been developed with a series of questions that will be teased out of the themes. The method used for data gathering is unstructured interviews that allow for deeper understanding of the subject. The aim is to look at how the knowledge broker develops dynamic capabilities (sensing, seizing and reconfiguring) through knowledge brokering roles as well as through the knowledge brokering process. The interview might range between 30-45 minutes.
3. I have been told that my responses will be anonymised. My name will not be linked with the research materials, and I will not be identified or identifiable in any report subsequently produced by the researcher.
4. I also understand that if at any time during the survey I feel unable or unwilling to continue, I am free to leave. My participation in this study is completely voluntary and I may withdraw from it without negative consequences. However, after data has been anonymised or after publication of results it will not be possible for my data to be removed as it would be untraceable at this point.
5. In addition, should I not wish to answer any particular question or questions, I am free to decline.

6. I have been given the opportunity to ask questions regarding the survey and my questions have been answered to my satisfaction.
7. I have read and understand the above and give my consent to participate in this study. My signature is not a waiver of any legal rights. Furthermore, I understand that I will be able to keep a copy of the informed consent form for my records.

Participant's Signature

Date

I have explained and defined in detail the research procedure in which the respondent has consented to participate. Furthermore, I will retain one copy of the informed consent form for my records.

Researcher's Signature

Date