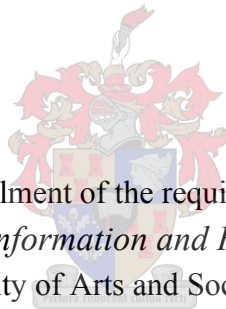


# A Sensemaking Perspective on Collaborative Learning as the Driver of Innovation

by

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Thesis presented in fulfilment of the requirements for the degree of  
*Master of Philosophy (Information and Knowledge Management)*  
in the Faculty of Arts and Social Sciences  
at Stellenbosch University

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**March 2016**

## **Declaration**

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## **Opsomming**

Die tesis ondersoek die konsep van organisatoriese innovasie as synde 'n proses van kollaboratiewe leer. Die vertrekpunt is die sensemaking teorie van Karl E Weick. Deur hierdie lens word die stappe in 'n innovasieproses belig en in verband gebring met innovasiebestuur.

Hoofstuk 1 sit die skopus en fokus van die tesis uiteen. Begrensing, aannames en keuses van teoretiese invalshoeke word gemotiveer.

Hoofstuk 2 ondersoek verskeie skole van denke oor innovasie, asook die rol van diffusie in die innovasieproses.

Hoofstuk 3 verduidelik Weick se sensemaking in besonderhede en beklemtoon veral 4 kenmerke, die omstandighede vir sensemaking en die verskillende woordeskatte van sensemaking.

Hoofstuk 4 bespreek die verskillende skole van denke met betrekking tot organisatoriese leer en bring dit in verband met kennisbestuur.

Hoofstuk 5 definieer die konsep van kollaborasie en bespreek ook kollektiewe intelligensie, aksie en praktyk.

Hoofstuk 6 bied die gevolgtrekkings aan wat gemaak is uit die ondersoek van innovasie.

## **Summary**

The thesis explores the concept of organisational innovation as a process of collaborative learning. It takes its point of departure the sensemaking theory of Karl E Weick. Through the this lens the thesis highlights the steps involved in the innovation process and how relevant they are to innovation management.

Chapter 1 introduces the scope and focus of study, highlighting the delimiters, assumptions and theories for research.

Chapter 2 explores different theories on innovation that have been presented over the years. It also discusses the process of diffusion that innovation goes through.

Chapter 3 explains Weick's sensemaking theory in detail. It singles out four of the properties of sensemaking, occasions for sensemaking and vocabularies of sensemaking.

Chapter 4 discusses different schools of thought in the area of organisational learning and links this knowledge management as a complementary theory to organisational learning.

Chapter 5 defines the concept of collaboration and discusses collective intelligence, collective action and communities of practice.

Chapter 6 presents thoughts on the implications of the research with regard to organisational innovation.

## **Acknowledgements**

This thesis is dedicated to my father, Mr. Lewis M. Kunda (RIP) whose wise counsel and support always inspires me to be a better man. I would also like to thank my wife Christabel whose support and love pushed me across the line. To my family and friends I say thank you!

I wish to express my sincere gratitude to my supervisor Professor J. Kinghorn for his dedication and selfless support throughout the journey; and to Mr. N. Baines whose editing and honesty improved the final output.

God Bless

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## *Chapter 1*

# Making Sense of Innovation Management

### **1.1 About Innovation, Learning and Collaboration**

Innovation management is one of the key areas of contemporary management debate, yet discussions around the concept do not arrive at a consensus even within organisations. The popularity of the term “innovation” has made it a major corporate buzzword which does not arrive at the same definition when articulated by the various schools of thought. If the word in itself does not provide us with a consensus, how then can it be expected of organisations to implement the phenomenon effectively? Despite the efforts of management thinkers, the concept of innovation management remains vague and is surrounded by conceptual confusion.

The criticality of innovation to an organisation is without question important in contemporary conceptualisations of the “organisation”, as by nature contemporary organisations have to be dynamic adaptive systems to cope with constant change. For that reason the topic and practice of learning in organisations have also become very important. Change go hand in hand with learning. Without it agility is impossible.

But learning (in organisations) does not happen in isolation. The very nature of an organisation is that it “combines” people into groups of interactivity. Collaboration is, therefore, an equally critical component of being an organisation. This applies to the learning process too. If the multiple actors in an organisation do not link up with each other in the change process, and learn in a way that mutually reinforces their organisational activities the organisation cannot be agile.

Talking about innovation, then, necessarily involves learning and collaboration.

## **1.2 Thesis Objective**

While it is relatively easy to see that the notions of innovation, learning and collaboration are interconnected, it is far less clear what the interconnectedness consists of. In fact each of the three concepts are in themselves disputed and perhaps murky concepts. The conceptual confusion around the notion of innovation, stated above, starts with a the lack of conceptual clarity with respect to learning and collaboration. And if the constituent concepts are disputed, it follows that the nature of the link-up between them will be even less clear.

Given the need to promote innovation in organisations, we have to ask how can we grow a deeper understanding of each one of the concepts, an understanding that goes beyond slogans? And how can we conceptually get a grip on how they relate? The answers to these questions obviously has a decisive impact on the practice of organisational management of innovation.

As is evident in the chapters that follow, there already exists a large volume and variety of perspectives on the notions of innovation, learning and collaboration. What can this thesis contribute to the body of literature that brings a new perspective?

In the following chapters it will be clear that, with the exception of learning theory, the three connected notions are mostly approached from a practical perspective. Innovation and its support functions are predominantly seen as a matter of effective and efficient moves by an organisation to ensure competitive relevance. Precisely for this reason very little attention is paid to understanding the nature of the concepts.

This thesis is an attempt to penetrate to a more satisfactory grasp of the nature and essence of the notions of innovation, learning and collaboration (in organisations). In so doing the thesis starts from the premise that *innovation and its support functions – learning and collaboration – is in essence and primarily a knowledge activity.*

## **1.3 Research Focus and theoretical Foundation**

Based on the premise above the research focus of this thesis is to bring to light the knowledge activities that characterise innovation, learning and collaboration in organisations. The focus is on the knowledge activities that are dominant in each of these phenomena themselves, but also on how these knowledge activities work together to link them up in a way that allows for innovation to occur.

A secondary focus of the thesis is on the organisational management of the innovation

process. If, as the premise states, innovation is a knowledge process, organisational innovation management ought to be well aware that it is in fact managing a knowledge activity. That insight should hold important implications for the practical management process.

To do this the sensemaking theory of Karl E Weick as well as general reflections on organisational learning provide the lenses through which knowledge in the interaction between innovation, collaboration and learning is investigated. Relevant aspects of Weick's theory are discussed in Chapter 3. Here it is only necessary to point out that innovation requires some sort of breakthrough. Some new insight is needed for innovation to occur. The strong point of Weick's contribution to cognitive theory is the fact that his sensemaking theory focuses specifically on that "moment" of breakthrough. This is evident in the notion of *sensemaking*. Weick's sensemaking theory is, however, not a comprehensive theory of cognition, and for that reason it needs to be amplified by broader perspectives from learning theory.

*This thesis, then, focuses on innovation, learning and collaboration in organisations, in as much as the application of Weick's sensemaking theory, supported by perspectives from organisational learning, allows us to gain a deeper insight into the nature of the knowledge activity which occurs in the pursuit of organisational innovation .*

#### **1.4 Research Delimitations**

Innovation, learning and collaboration happen anywhere and potentially at any time. This thesis restricts its attention to these phenomena as they present themselves inside organisations. With the organisational habitat of innovation comes certain constraints, such as the necessity to follow routines and to adhere to preset targets and objectives. In fact the need for collaboration is one such constraint, even though it may also be a source of creativity.

The second delimitation of this thesis is the focus on the knowledge dimension inherent to the three concepts. Each of them comprise more than knowledge activity. Collaboration, for example, requires interpersonal skills, emotional intelligence and proper communication practices. Innovation is indeed an exercise in efficiency and perhaps increased profit. This thesis, however, focuses only on the knowledge dimension inherent to the three concepts.

The third limitation lies in the theoretical framework which was selected for the thesis. Sensemaking theory, as expounded by Weick is, by now, widely accepted as an important and very sophisticated contribution to our understanding of human thinking. It is, however,

not a theory that pretends to provide a comprehensive, all inclusive, theory of knowledge or even cognition. It is a theory that zooms in on a vital, but partial aspect of the human thinking process. For that reason, the use of Weick in the thesis means that the already abstracted dimension of knowledge is reduced to the further abstraction of sensemaking inherent in the knowledge process.

### **1.5 Methodological Considerations**

The thesis reports on a *conceptual* study. The notions and phenomena of innovation, learning and collaboration are abstracts. Attempts to grasp them in their abstract state can only be made conceptually.

To do so the sensemaking theory of Weick is used as the conceptual framework with which to analyse the notions of innovation, learning and collaboration in organisations to identify that dimension of the knowledge activity in each of these which provide the spark of creativity which eventually results in innovating outcomes.

The core methodological thrust of the thesis can, therefore, be described as a conceptual analysis. The subject of analysis is in turn learning and collaboration as they are the drivers in the process that leads up to innovative outcomes. In each case the intention is to show how learning and collaboration appears when analysed from the vantage point of sensemaking theory. The conceptual analysis as described above, in the end provides a platform on which conclusions are drawn about innovation and innovation management in organisations.

The compositional logic of the thesis is illustrated in the following graph:

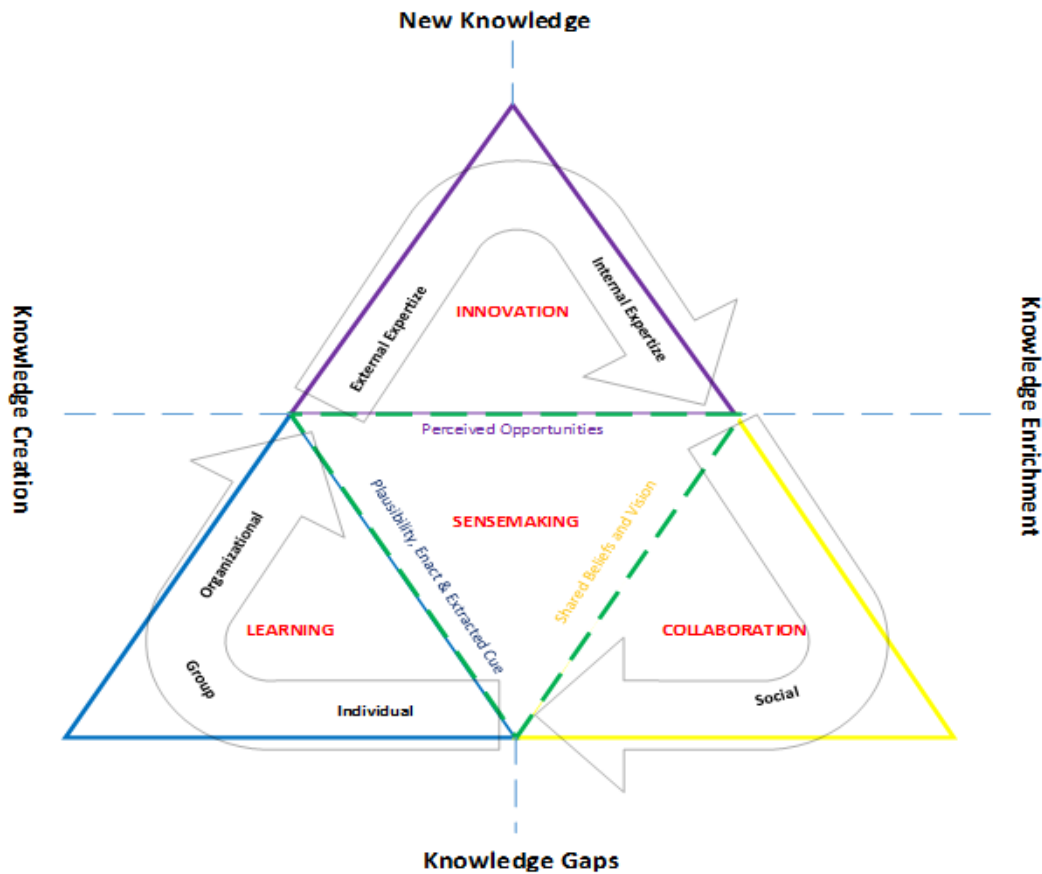


Figure 1: Conceptual Framework

## 1.6 Thesis Outline

Chapter 2 discusses the concept of innovation.

Chapter 3 outlines the basic tenets of sensemaking theory as formulated by Weick.

Chapter 4 presents an overview of selected organisational learning theory.

Chapter 5 investigates literature on collaboration theory.

Chapter 6 offers a view on innovation in light of the preceding conceptual analyses and proposes a sensemaking-based framework for innovation management.

# Chapter 2

## *Innovation*

### **2.1 Background on Innovation**

Innovation theory has over the years matured from being a linear process that was focused on invention, into a model that is multi-dimensional, which focused on productivity and efficiency in organisational processes and product development.<sup>1</sup> This shift in theoretical focus has placed innovation to be not only a buzzword but a relevant organisational phenomenon that business leaders must engage in and enshrine in their organisation. According to Lee et al., organisational innovativeness can be the thin line between organisational survival and collapse. The point they make highlights the fact that an organisation is never “too big” to fail if it does not create knowledge that renders it relevant in its environment (the market).<sup>2</sup> Understanding the conceptual building blocks of innovation as an organisational concept would assist organisations with understanding what innovation entails and the various articulations of it. The different theories offered on innovation position it as a process that seeks to respond to real world events that either threaten the organisation or present it with an opportunity. The sensemaking view of innovation presents it as a process that is driven by context, reason, meaning and socialisation of knowledge assets in order to create new knowledge. This view further highlights innovation as being a process that

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<sup>1</sup> McKinsey Center for Business Technology 2012. Perspectives on Digital Business

<sup>2</sup> Lee et al. 2003. The effect of new product radicality and scope on the extent and speed of innovation diffusion: 759 - 768

constitutes distinct yet related phases, which include conceptualising the idea, refining the idea, developing the innovation and diffusion of the innovation.

Studies conducted on innovation show that innovation in an organisation requires a systematic and deliberate diffusion process to be in place for any success to materialise. Ineffective diffusion processes in organisations are among the factors that contribute to the failure of innovation. Making sense of the innovation process facilitated by collaborative learning can provide clarity on how it affects the success of innovation in organisations. This thesis explores organisational learning and collaboration as theories for unpacking learning in organisations, and more importantly learning for innovation.

This chapter discusses the concept of innovation. Various definitions of innovation are presented in the literature, and this chapter discusses some of the major theories. The chapter is aimed at establishing the conceptual background that informed this thesis.

The chapter discusses the concept of innovation, giving the foundation of the theory. It begins by establishing the history and background of innovation, exploring the significance of innovation to organisations.

The chapter then moves on to identify various scholars who have contributed to the innovation theory. It explores the Schumpeterian school, Abernathy's contribution, OECD's view, the knowledge creation view and finally the open innovation view.

The chapter concludes by discussing the diffusion of innovations. The chapter explores Rogers' work on diffusion of innovation in order to establish how individuals and organisations adapt to innovations.

## **2.2 Innovation Theory**

The term innovation is derived from a Latin verb comprising the two words "in" and "novatio" which means "the introduction of new things, ideas, or ways of doing something".<sup>3</sup> The combination of words implies a deliberate ordered set of actions leading to production of something new or change in the way something is done.

Innovation is undoubtedly one of the most important economic and social phenomena that is dynamic and has historically attracted an array of definitions.<sup>4</sup> The common theme that resonates through the different definitions and concepts is one of competitive advantage and

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<sup>3</sup> "Innovation" Collins English Dictionary – Complete and Unabridged. (1991, 1994, 1998, 2000, 2003). Retrieved January 3 2015 from <http://www.thefreedictionary.com/innovation>

<sup>4</sup> Atalay et al. 2013. The Relationship Between innovation and firm performance: 226-228

ultimate survival of the innovative organisation. According to Gross, innovation theory is not aligned to a specific discipline or school of thought but has been developed from various academic areas, disciplines and areas of practice.<sup>5</sup> Sundbo argues that theories of innovation evolve to an extent where older theories “wither away” as new ones are formulated with reference to the older ones.<sup>6</sup>

### **2.3 Classification of Innovation Types**

The Schumpeterian theory of innovation is credited as being somewhat of a genesis to the concept of innovation and as such is reviewed first. According to Leger et al. models of innovation that were presented in the past (including Schumpeter’s) depict innovation as a linear process with disparate modules and also focus on economic aspects of the innovations.<sup>7</sup> This school of thought was pioneered by Joseph Schumpeter in the 1930s and 1940s. Schumpeter is arguably the father of modern innovation theory, and understanding his contribution to the theory is important for the present analysis. Schumpeter considered innovation as part of the economic process built on capitalist desires for cost reduction. Schumpeter articulates possible sources on innovation in firms. The first comes through what he referred to as “state of equilibrium”, where a firm or business seeks new investment opportunities globally, thereby bringing a balance in the economic scales. The second is the “state of disequilibrium” (his most important contribution to the innovation theory). He attributed this to actions of profit-seeking entrepreneurs who introduce new products, markets and new organisational forms as the source of disequilibrium.<sup>8</sup> This concept was considered by Schumpeter as an influential factor of capitalism and the innovation process. In his view innovation occurs when the nature of production processes changes, not just by changing factors influencing the process. This implied a fundamental change to the product. He regarded innovation as substantial changes to the entire identity of a product that give rise to new markets, capital and competition.<sup>9</sup> Leger in his articulation of Schumpeter suggests that innovations are important in Schumpeterian theory because the cycles of capitalist progress

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<sup>5</sup> Gross, R. 2010. Innovation presentation:1

<sup>6</sup> Sundbo 1998. The Theory of innovation: 3

<sup>7</sup> Leger et al. 2007. Innovation Theories:2

<sup>8</sup> Schumpeter 1939. Business Cycles

<sup>9</sup> Schumpeter 1975. Capitalism, Socialism, and Democracy:10



depend on them.<sup>10</sup>

Schumpeter alludes to innovation as “creative destruction” driven by an entrepreneur, that renders old ideas, technologies, inventions and skills obsolete.<sup>11</sup> In Schumpeter’s view innovations are not meant to maintain or administer existing structures but rather to totally destroy them as this produces continuous progress. From this ideology he presented five distinct types of innovations:<sup>12</sup>

- Introduction of new products
- Introduction of new production methods
- Opening of new markets
- Development of new raw material sources
- New industry market structures

Schumpeter articulated the distinction among invention, innovation and diffusion. He describes innovation and diffusion as economic application or adaptation of inventions, while invention is described as intellectual creativity with no direct economic impact on its own.<sup>13</sup> He argued that innovation can be decoupled from invention, pointing out that innovation is possible without inventions. Key to his distinction is his argument that having invention does not imply innovation.<sup>14</sup> Schumpeter in his later work explored the economising of inventions for eventual translation into innovations. Central to this discussion is the ability by an entrepreneur to exploit scientific capabilities for economic gain. He regarded entrepreneurs as agents of “creative destruction” that influence the market from the outside in the process flouting the rules that govern the markets and maintain balance in the economy.

The second school of thought explored, builds on the Schumpeterian theory of innovation. Abernathy et al. categorise innovation in four different groups: <sup>15</sup>

- Regular
- Architectural

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<sup>10</sup> Leger et al. 2007. Innovation Theories: 6-8

<sup>11</sup> Schumpeter 1942. Capitalism, Socialism, and Democracy: 18

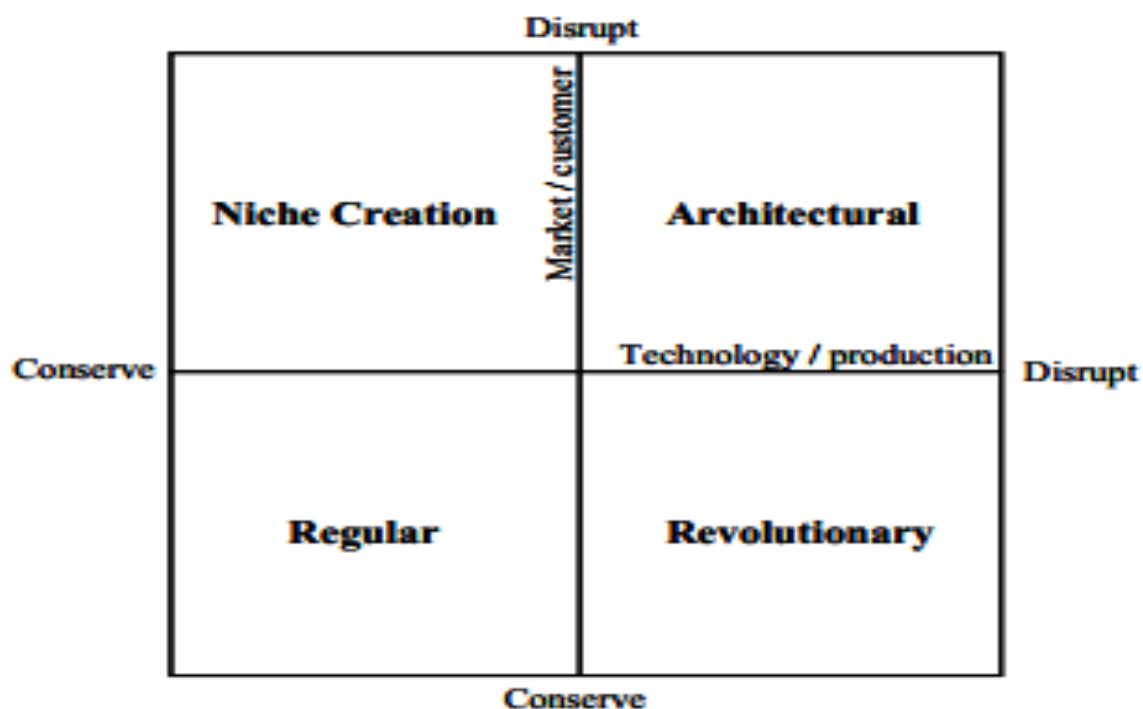
<sup>12</sup> Schumpeter 1939. Business Cycles: 84

<sup>13</sup> Schumpeter 1939. Business Cycles: 85

<sup>14</sup> Schumpeter 1939. Business Cycles: 85

<sup>15</sup> Abernathy et al. 1985. Innovation: Mapping the winds of creative destruction

- Niche
- Revolutionary



**Figure 2: Abernathy and Clark's Transilience Map of Innovation**

Abernathy et al. utilise the groupings which they refer to as the transilience map to explain the competitive advantage drawn from innovation in organisations. They argue that competitive advantage is attained by realising customer value and providing a product or service that stands out from that of other providers. They use transilience to explore the different types of innovations by representing customers along the Y-axis and technology/production on the X-axis.

According to Abernathy et al. architectural innovation represents new technology that opens up new links between the markets and the firm, thereby creating new industries as well as reviving the old.<sup>16</sup> The niche type opens up new market opportunities by using existing technology. The regular type presents changes that build on established technology and apply it to existing markets, while revolutionary innovations tend to disrupt or make obsolete existing technologies in an industry. From these classifications one can deduce that

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<sup>16</sup> Abernathy et al. 1985: 8

Abernathy et al.'s contribution to the theory of innovation focused more on technological and production advances as opposed to the Schumpeterian focus on the economic value of inventions.

The third school of thought explored, is one presented in the OECD Oslo manual articulating innovation as being either product, process, organisation or marketing driven.<sup>17</sup> Core to this characterisation is found in their introduction on types of innovations:<sup>18</sup>

A firm can make many types of changes in its methods of work, its use of factors of production and the types of output that improves its productivity and/or commercial performance.

According to the manual, product innovation involves the introduction of a new or significantly improved good or service. The improvement must be representative of the product's functional characteristics, intended use, technical makeup and usability. Process innovation represents the introduction of new or significantly improved methods of production or delivery. The manual points out that the intention for implementing process innovation includes decreasing production costs, increasing quality and improving goods or services.<sup>19</sup> To understand process innovation it is important to understand the distinction between production and delivery methods as presented in the manual. It points out that production methods entail techniques, equipment and software used in production while delivery methods refer to the logistics attributed to equipment, software and techniques.<sup>20</sup> Marketing innovation represents the introduction of new marketing methods that are targeted at surfacing the changes in product design, packaging, placement and pricing. This type of innovation is aimed at addressing customer needs, opening up of new markets or strategic positioning of the firm in the market.<sup>21</sup> Organisational innovation refers to the implementation of new organisational methods in the firm's business practices. This can be to increase a firm's performance through cost reduction in areas of administration, transaction, sourcing supplies and labour productivity. Key to this school of thought is the articulation of

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<sup>17</sup> OECD and Eurostat 2005. Guidelines for collecting and interpreting Innovation Data

<sup>18</sup> OECD and Eurostat 2005: 16

<sup>19</sup> OECD and Eurostat 2005: 48

<sup>20</sup> OECD and Eurostat 2005: 48

<sup>21</sup> Atalay et al. 2013. The relationship between innovation and firm performance: 228

marketing innovation as this presents a fresh perspective on how firms interact with the consumer end of the environmental spectrum. This is a clear distinction to the other schools of thought discussed in this thesis.

The fourth school of thought explored, articulates innovation as the creation of knowledge. Core to this school of thought is the understanding that innovation consists of two dimensions, these being idea formulation based on knowledge and the implementation of the ideas, again based on knowledge. The focus is based on how organisations develop new ideas for problem solving and organisational renewal associated with the learning and organisational knowledge creation processes. This theory of innovation is founded on Nonaka et al.'s model of knowledge creation in organisations.<sup>22</sup> Acknowledging Nonaka et al.'s perspective, Tekic et al. argue that key to innovation is clear utilisation of the knowledge resource in an organisation. They pinpoint knowledge creation as having more influence on innovation compared to the other knowledge processes.<sup>23</sup>

To understand the knowledge creation theory of innovation, it is important to understand Nonaka et al.'s concept of knowledge creation.<sup>24</sup> The epistemological foundation of the concept is that knowledge exists in two forms, namely tacit and explicit. Nonaka points out that even though knowledge is created by individuals, the socialisation of knowledge in organisations can develop and refine it. He describes knowledge creation rather than just information processing as being more important for organisational innovation. To validate this argument he present a spiral model in which tacit and explicit knowledge are in ongoing social conversations through various interactions, leading to enhancement and clarification of the knowledge. Nonaka presents four modes of knowledge conversions in the spiral; these conversions include socialisation which he describes as being a conversion from tacit to tacit; externalisation which represents tacit to explicit, then combination, which is from explicit to explicit and finally internalisation being explicit to tacit. According to Nonaka et al. after internalisation the process of conversion continues to a different level of the spiral.<sup>25</sup> The conversion process is usually referred to as the SECI model.

Nonaka argues that for individuals to acquire knowledge the individual must have a direct

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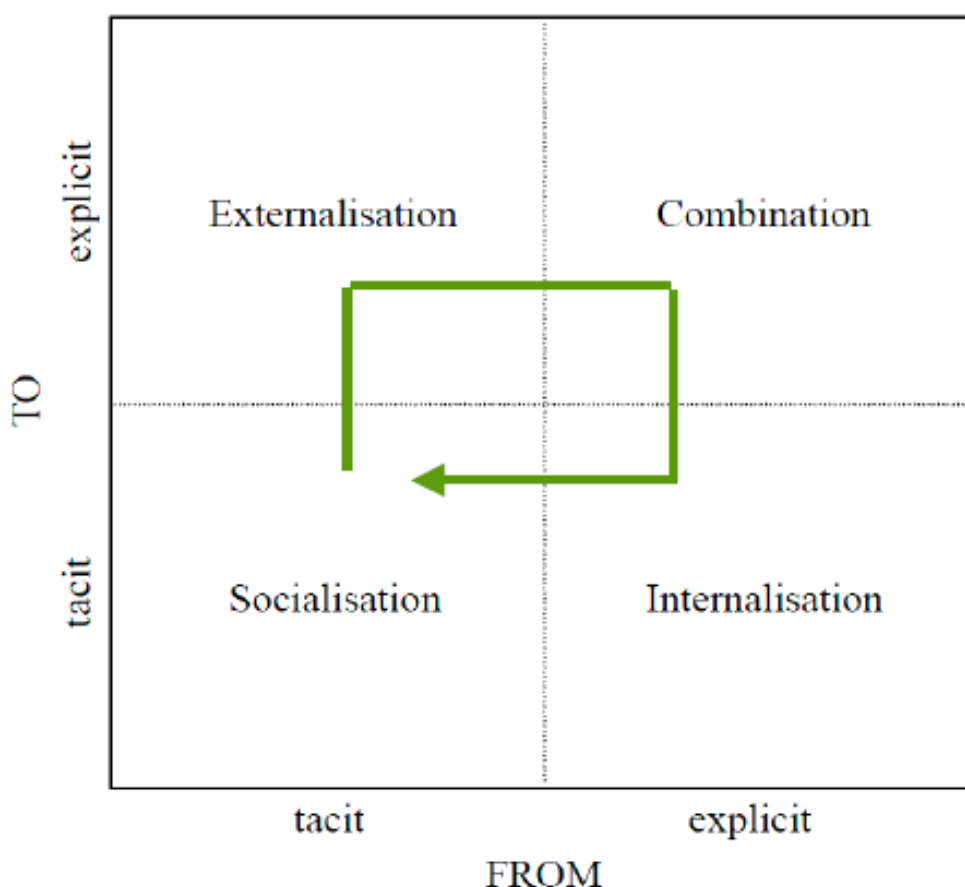
<sup>22</sup> Nonaka et al. 1995. *The Knowledge Creating Company*: 16-17

<sup>23</sup> Tekic et al. 2012. *The Missing Link – Knowledge Creation and Innovation*: 230-231

<sup>24</sup> Nonaka et al. 1995. *The Knowledge Creating Company*: 16-91

<sup>25</sup> Nonaka et al. 1995 *The Knowledge Creating Company*: 71-89

intention to be receptive to the new knowledge. This intention is vital in the value realisation process and interpretation of the information supplied. This implies that individuals have a vital role to play in the knowledge creation process and ultimately the innovation process. Individuals in the organisation must be receptive to the idea of innovativeness if an organisation is to succeed at being an innovator. Therefore Nonaka argues that prior knowledge, perceptions and ideologies held by individuals are cardinal to the meaning they assign to the new knowledge and in turn the innovation. Not only individuals but also the autonomy of the group the individuals find themselves in is important to the level of absorption.



**Figure 2: The Knowledge Creation Spiral**

Nonaka's SECI model does not acknowledge the mechanistic view of the organisation that advocates for training as an intervention for double-loop learning and therefore innovation.<sup>26</sup>

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<sup>26</sup> Nonaka et al. 1995. *The Knowledge Creating Company*: 77-91

The social effect of face-to-face communication allows for co-development of ideas and thereby reinforcement of an organisation being established as a knowledge creator collectively. According to Nonaka the traditional top-down and bottom-up approach of management structure does not encourage knowledge sharing and therefore presents a barrier to knowledge creation and learning.

Quintane et al. build on Nonaka's theory as they argue that past literature has always depicted innovation as being knowledge intensive and that knowledge plays an important role in how organisations perceive knowledge.<sup>27</sup> They argue that innovation by nature will always produce new knowledge and as such a product from a knowledge-based perspective. To unpack this argument they present innovation as an artefact that contains the knowledge that individuals or organisations need to understand its creation and evolution.<sup>28</sup> This implies that from their perspective innovation is an echo system of its own that requires management with full cognisance of its knowledge capacity. They further argue that not all new knowledge leads to innovation and a distinction must be drawn between new knowledge per se, and that which leads to innovation. They present characteristics that distinguish knowledge creation that leads to innovation. The first characteristic is duplicability. They argue that for knowledge to lead to innovation it must have an element of being easy to replicate its results without having to replicate the knowledge generation process. The next characteristic is that it has to be new to the context it is introduced to. They argue that an innovation does not necessarily have to be entirely new to the world but the application of it must be new in its current form. The next characteristic is that it must have demonstrated usefulness. This assertion is deduced from Dosi et al.'s statement: "Usefulness relates to the capacity of an innovation to improve an existing situation."<sup>29</sup>

Dosi et al. use the usefulness factor to distinguish between an innovation and invention. They argue that an innovation will not guarantee success in relation to the investment but the implementation thereof cannot occur if it is not useful. They attribute social constructs as also playing a vital role into how people perceive the usefulness of an innovation. These characteristics sum up the shared view of the knowledge-creation school of thought.

The fifth and final school of thought explored, articulates innovation as an open system that

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<sup>27</sup> Quintane et al. 2011. Innovation as a Knowledge Based Outcome: 15-16

<sup>28</sup> Quintane et al. 2011. Innovation as a Knowledge Based Outcome: 17

<sup>29</sup> Dosi 1988 and West and Farr 1990. As cited by Quintane et al. 2011: 19

covers the innovator, the environment and the relationships established during the innovation process. Chesbrough first explored the theory in his paper “The Era of Open Innovation”.<sup>30</sup> Chesbrough defines open innovation as a process that commercialises internal ideas that were previously not pursued using internal research and development activities and leveraging external ideas or innovations. Chesbrough argues that as the theory of innovation evolved so did the emphasis on research and development in organisations, making a shift in the logic of how to create and capitalise on innovation. According to Chesbrough the rise of open innovation can be attributed to the desire for organisations to increase their innovative reach beyond the boundaries of the organisations; part of this desire is the need to transform business models to those that utilise external talent, knowledge and expertise. Chesbrough’s seminal enquiry involved organisations that transformed or were in the process of transforming their innovation model in the twentieth century. His finding was that the research and development (“R&D”) direction in organisations was moving into a new paradigm that involves a new type of approach to how innovations are created and diffused and how organisations generate profit from them. He argues that the old approach to innovation that he refers to as “closed innovation” conducted research and development activities in-house and was considered to be a specialised function of the organisation requiring necessary expertise and knowledge to be acquired. According to Chesbrough this narrative was predominant throughout the industrial era of the twentieth century, when firms retained experienced individuals for long periods and in some cases their entire career. This innovation narrative gradually changed as the economic and knowledge landscape evolved and more and more professionals were trained worldwide.<sup>31</sup>

Open innovation presents organisations as having boundaries that allow interactions between internal and external knowledge assets.<sup>32</sup> This interaction, according to Chesbrough, allows for organisations to create value from internal ideas and commercialise them and also create spin-off ventures and licence agreements from past organisational campaigns. This characteristic also allows internal knowledge and research and development to be complemented by accessing external knowledge.<sup>33</sup> He argues that this characteristic has

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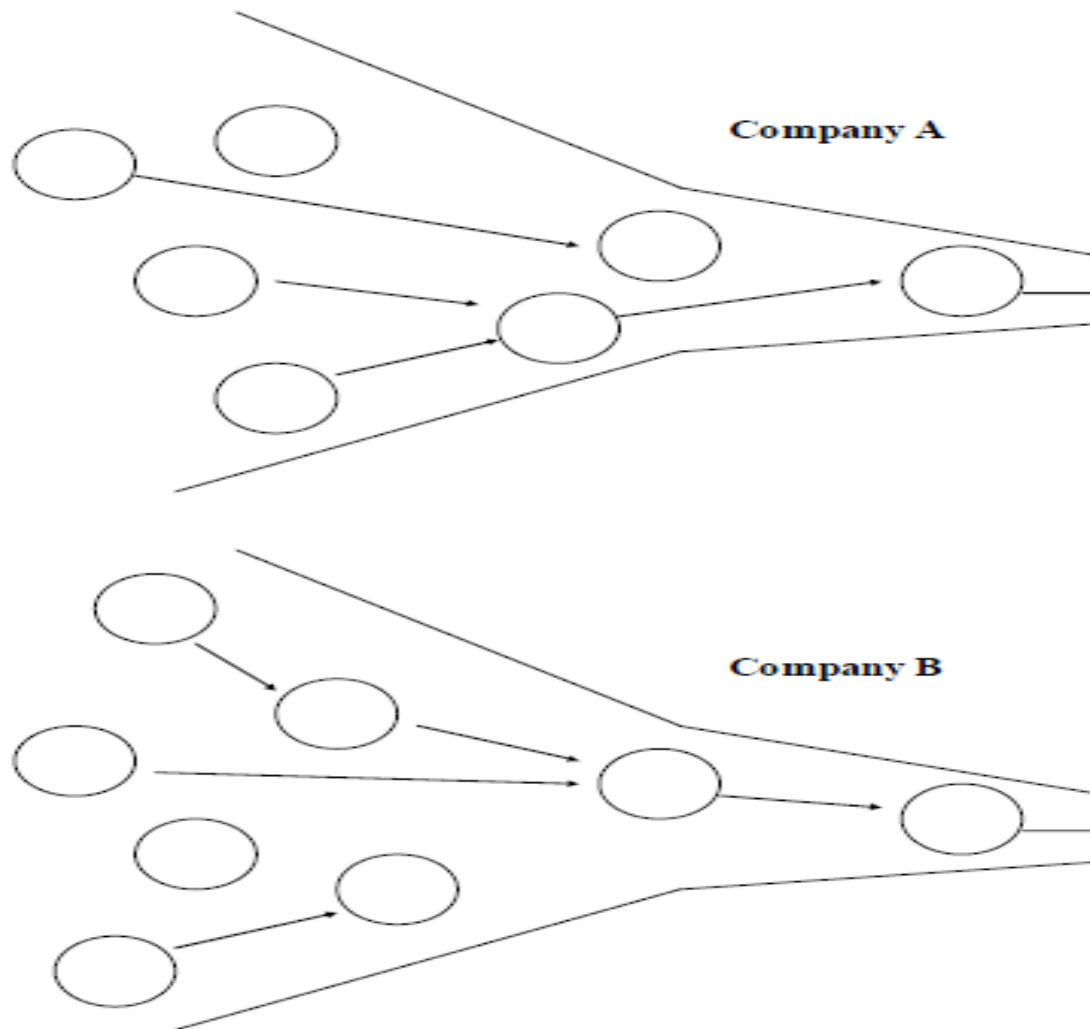
<sup>30</sup> Chesbrough 2003a. The Era of Open Innovation

<sup>31</sup> Chesbrough, 2003c. Open innovation: the new imperative for creating and profiting from technology: 33-58

<sup>32</sup> Slowinski, et al. 2010. Good Practices in Open innovation: 40.

<sup>33</sup> Chesbrough 2003b. The logic of open innovation: Managing intellectual property: 15-33

levelled the playing field for large and small organisations when it comes to research and development, as previous models were more favourable for big organisations with large budgets dedicated to research and development, and this was due to the dwindling cost of innovation. The knowledge landscape in both closed and open innovation paradigms are shown in figure 5.



**Figure 3: Knowledge Landscape in Closed Innovation.**<sup>34</sup>

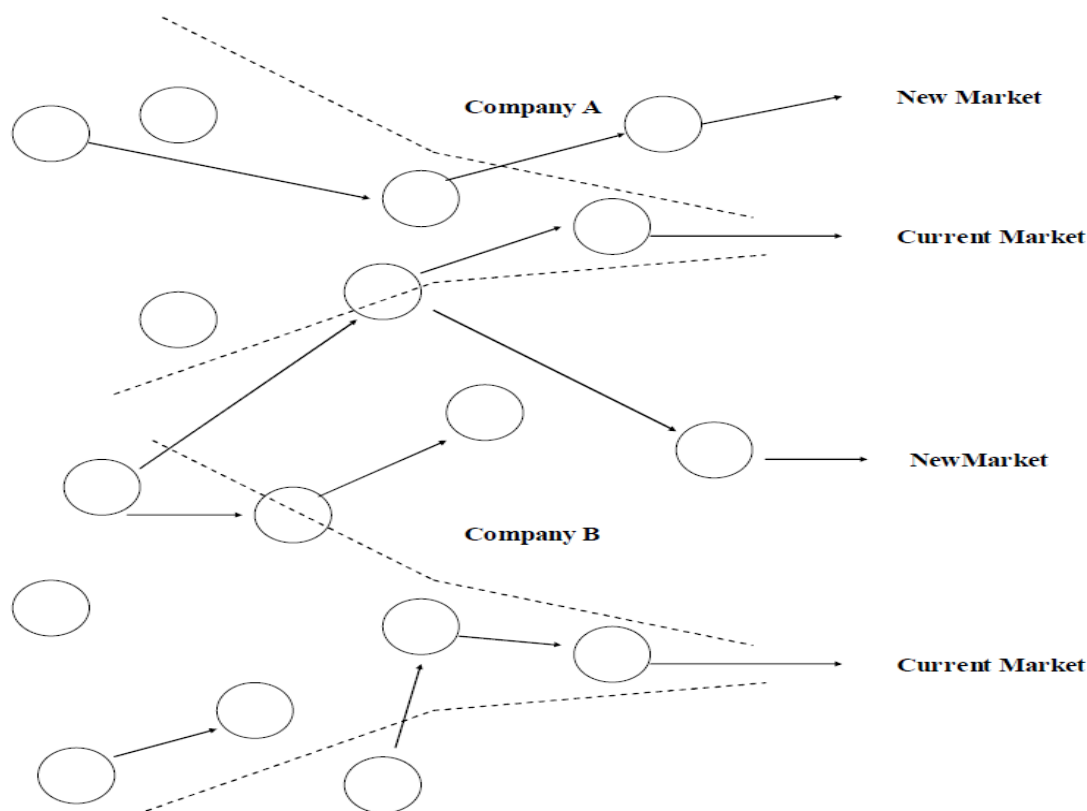
According to Yström, open innovation has gained traction as a model over the years largely due to the complex nature of the problems organisations face and require multiple forms of

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<sup>34</sup> Chesbrough 2003a. The Era of Open Innovation: 35-41



expertise and collective knowledge for them to be solved.<sup>35</sup> It is no longer practical for organisations to innovate internally for all challenges they are faced with. The market has a high influence on the direction taken by organisations when it comes to innovation, which encourages organisations to look externally for expertise that they perceive to be more aligned to and in touch with the expectations of the market.<sup>36</sup> This creates complex knowledge networks that extend from industry subject matter experts to consumers, all being involved in the innovation process and creating an open flow of new and renewed knowledge.<sup>37</sup>



**Figure 4: Knowledge Landscape in Open Innovation.**<sup>38</sup>

Jeff Howe contributes to the open innovation theory by presenting the concept of

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<sup>35</sup> Yström 2013. Managerial Practices for Open Innovation collaboration

<sup>36</sup> Sharpe et al. 2007. Scenarios for Success– Turning Insights into Action: 6

<sup>37</sup> Chesbrough et al. 2006. Open innovation: Researching a new paradigm: 1-12

<sup>38</sup> Chesbrough 2003a. The Era of Open Innovation: 35-41

crowdsourcing which he defines as:<sup>39</sup>

The act of taking a task traditionally performed by a designated agent and outsourcing it by making an open call to an undefined but large group of people. Crowdsourcing allows the power of the crowd to accomplish tasks that were once the province of just a specialised few. Or to put it in another way, crowdsourcing is to take the principles which have worked for open source software projects and apply them right across the entire spectrum of the business world.

The concept is founded on the theories of innovation and outsourcing. Unlike outsourcing, crowdsourcing is targeted at large groups of people that are only structured based on the requirement of the deliverable. These groups comprise seasoned industry practitioners, novices, hobbyists and part timers. It is based on these qualities that Howe argues that the concept of crowdsourcing leverages the wealth of knowledge in the crowd to reduce costs of innovation compared to other theories of innovation.<sup>40</sup> The theory of crowdsourcing has evolved as fast as the social media phenomenon, allowing organisations to reach talent from around the globe, providing quality and competition at a fraction of the cost compared to having a research and development department. According to the Howe companies choose to throw an entire idea to the crowd to mature their idea in a modular fashion. Figure 6 depicts crowdsourcing accurately as articulated by Howe.

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<sup>39</sup> Howe 2006. The rise of crowdsourcing: 1-2

<sup>40</sup> Howe 2006. The rise of crowdsourcing: 1-2

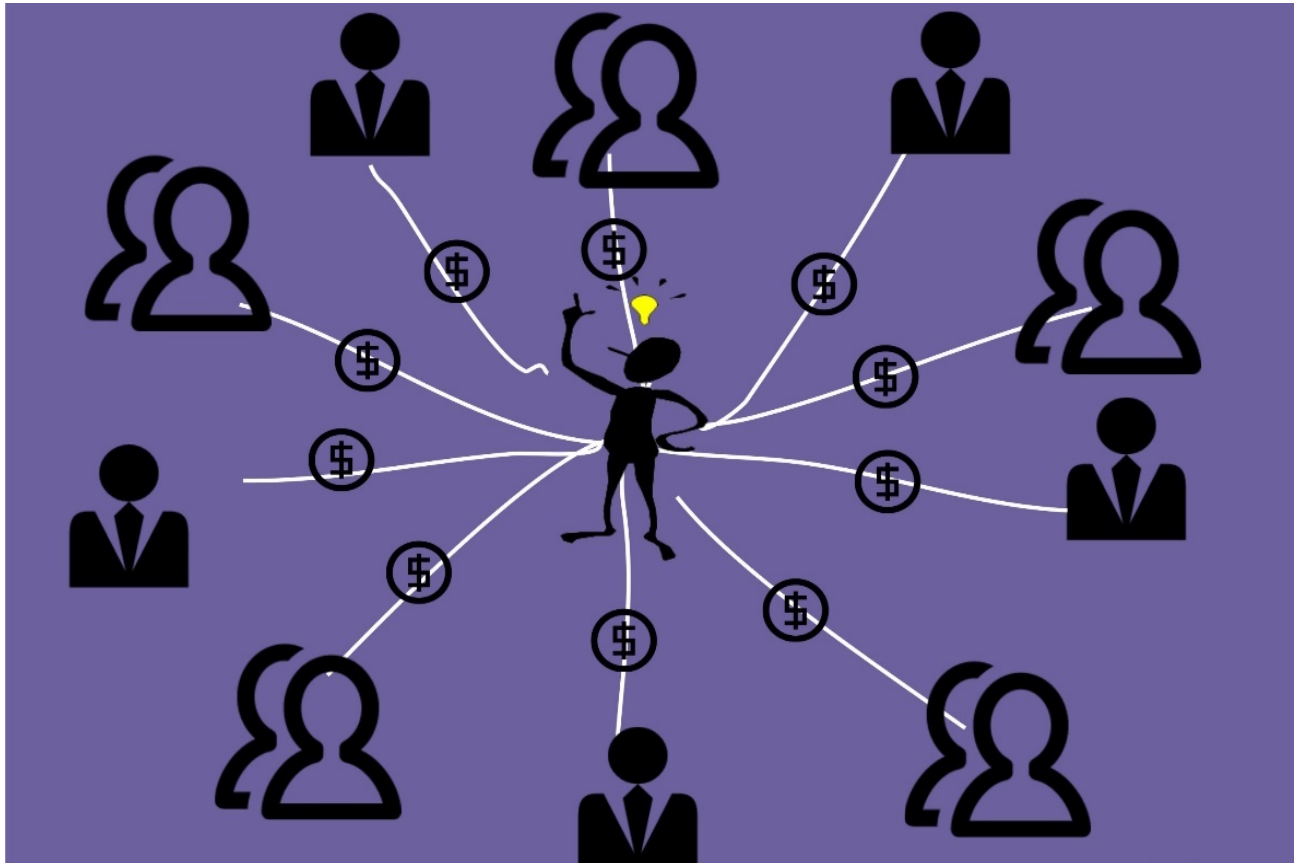


Figure 5: Crowdsourcing Doodle<sup>41</sup>

Crowdsourcing, like any other innovative theory, requires high levels of product knowledge from the organisations or individuals that own the innovation. This is even more complex in crowdsourcing because understanding the target audience for sourcing can be a differentiator between a successful or failed innovation campaign.

#### 2.4 Diffusion of Innovations

The subject diffusion of innovations is aimed at understanding the process of innovation uptake in society and the adaptation trends among individuals and does not deal with the thermodynamic definition of diffusion. Rogers offers a social definition of diffusion which he described as “the process in which an innovation is communicated through certain channels over time among the members of a social system”.<sup>42</sup> The communication that takes place during the diffusion process is targeted and specific to the innovation with a sole purpose of

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<sup>41</sup> Crowdsourcing figure source : <http://www.tech360ng.com/> extracted on 14<sup>th</sup> February 2015

<sup>42</sup> Rogers. 2003. Diffusion of Innovations (5th ed.): 5

creating mutual understanding among the participants.<sup>43</sup> According to Rogers et al. successful diffusion occurs in heterogeneous zones which they refer to as heterogeneous network connection, comprising innovation-diffusion systems, innovators and engaged members of the population.<sup>44</sup> Rogers argues that the heterogeneous network can be created with a clear understanding of elements of diffusion such as the innovation, communication channels, time and the social system.<sup>45</sup>

#### **2.4.1 The Innovation**

The first element of the diffusion of innovation process is the innovation itself. The diffusion theory draws attention to the innovation rather than focusing on the audience. The “innovation” element highlights the characteristics of an innovation that present it as being relatively better than previous innovations. The perceived relative advantage that an innovation has over another is influenced by individual knowledge of the innovation, the individual’s comparative frames of references and easy of assimilation of the innovation.<sup>46</sup> According to Rogers individual frames of references and experiences with the innovation influence to a greater degree the perception of the next innovation.<sup>47</sup>

#### **2.4.2 Communication Channels**

The next element of the diffusion of the innovation process is the communication channels. Rogers defines a communication channel as “the means by which messages get from one individual to another”.<sup>48</sup> Rogers presents two types of channels through which communication is facilitated during the diffusion process. These include mass media and interpersonal channels. According to Rogers, mass media channels refer to the means by which an individual or organisation is able to transmit messages that involve a mass audience.<sup>49</sup> Interpersonal channels on the other hand involve a direct face-to-face interaction between two or more individuals. Rogers argues that communication is important regardless of medium as

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<sup>43</sup> Rogers. 2003. *Diffusion of Innovations* (5th ed.): 5

<sup>44</sup> Rogers et al. 2004. *Complex Adaptive Systems and the Diffusion of Innovations*: 4

<sup>45</sup> Rogers. 2003. *Diffusion of Innovations* (5th ed.): 10

<sup>46</sup> Rogers. 2003. *Diffusion of Innovations* (5th ed.): 17

<sup>47</sup> Rogers. 2003. *Diffusion of Innovations* (5th ed.): 17

<sup>48</sup> Rogers. 2003. *Diffusion of Innovations* (5th ed.): 18

<sup>49</sup> Examples of mass media is media such as televisions, radios, newspapers, social networks etc. Rogers. 2003. *Diffusion of Innovations* (5th ed.): 18

it creates a perception of mutual understanding during the diffusion process.<sup>50</sup> He points out, however, that due to the social nature of diffusion, interpersonal channels are more powerful to create and establish individual relationships.<sup>51</sup> Relationships are more likely to succeed when the potential adopters are connected with likeminded individuals, which can influence the success of the diffusion process.<sup>52</sup>

### 2.4.3 Time

Time is the second element presented by the diffusion of the innovation process. According to Rogers, the time element is one of the differentiating dimensions offered by the diffusion of innovation theory compared to other behavioural sciences theory.<sup>53</sup> The time element provides insights into the innovation-decision process, the innovativeness of individuals and the absorption rate of an innovation.

Rogers describes “innovation-decision” as a process individuals go through during the adoption of innovations.<sup>54</sup> This process covers the individual’s cognitive processes from their first knowledge of an innovation, to the formulation of an attitude towards the innovation all the way through to adoption or rejection. The essence of this process is to articulate stages and engagement an individual goes through during the innovation process.<sup>55</sup> Rogers identifies five main steps that form part of the innovation-decision process. These include knowledge, persuasion, decision, implementation and confirmation steps. According to Rogers the time it takes individuals varies, with some requiring a considerable amount of time to adopt while others are relatively quick. The time taken by individuals between knowledge and implementation is what Roger refers to as the innovation-decision period.

Rogers goes on to describe the innovativeness of an individual as being relative responses or reactions individuals have when responding to adoption of innovation in comparison to other members of the social system.<sup>56</sup> This speaks to the rate of adoption being early or late in relation to the public ageing of a particular innovation. Rogers argues that the rate of adoption

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<sup>50</sup> Rogers. 2003. *Diffusion of Innovations* (5th ed.): 5

<sup>51</sup> Rogers. 2003. *Diffusion of Innovations* (5th ed.): 19

<sup>52</sup> Rogers. 2003. *Diffusion of Innovations* (5th ed.): 19

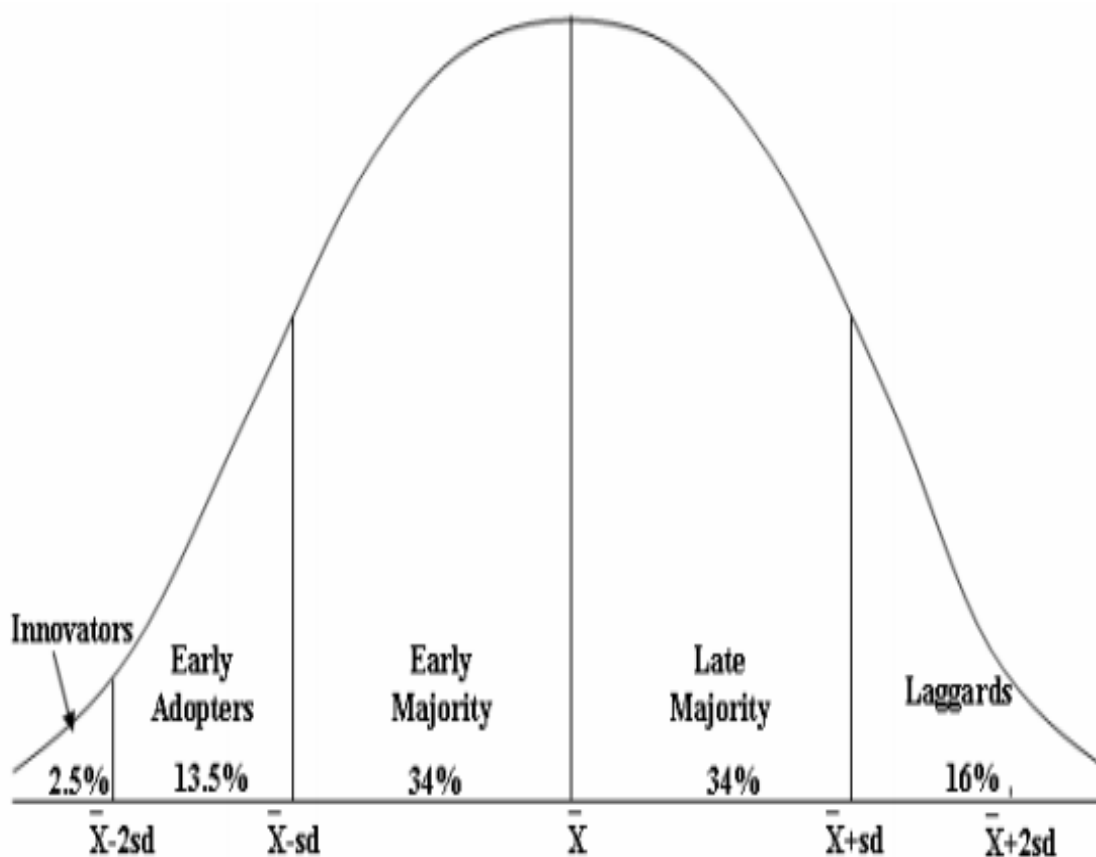
<sup>53</sup> Rogers. 2003. *Diffusion of Innovations* (5th ed.): 20

<sup>54</sup> Rogers. 2003. *Diffusion of Innovations* (5th ed.): 20

<sup>55</sup> Rogers. 2003. *Diffusion of Innovations* (5th ed.): 20

<sup>56</sup> Rogers. 2003. *Diffusion of Innovations* (5th ed.): 20

does not necessarily indicate in itself whether an individual is more innovative or not compared to others, but rather a measure of their attitude towards innovation. Rogers offer five adopter categories to classify members of a social system. These includes innovators, early adopters, early majority, late majority and laggards.<sup>57</sup> He describes innovators as active information seekers about new ideas with easy access to mass media.



**Figure 6: The Adopter Categorisation on the Basis of Innovativeness<sup>58</sup>**

The rate of adoption is the third way in which the time dimension contributes to the diffusion of innovation theory.<sup>59</sup> Rogers defines it as the “relative speed with which an innovation is adopted by members of a social system”.<sup>60</sup> The rate is visualised as an S-Curve when plotted on a cumulative frequency over time. Rogers argues that the start of the curve will show a

<sup>57</sup> Rogers. 2003. Diffusion of Innovations (5th ed.): 22

<sup>58</sup> Rogers. 2003. Diffusion of Innovations (5th ed.): 22

<sup>59</sup> Rogers. 2003. Diffusion of Innovations (5th ed.): 23

<sup>60</sup> Rogers. 2003. Diffusion of Innovations (5th ed.): 23

thin distribution which represents innovators in the social system and over time the curve begins to grow as more individuals adopt. The S-Curve is aimed at painting the rate of adoption, which is a measure of the time taken for different members of the social system to adopt an innovation.

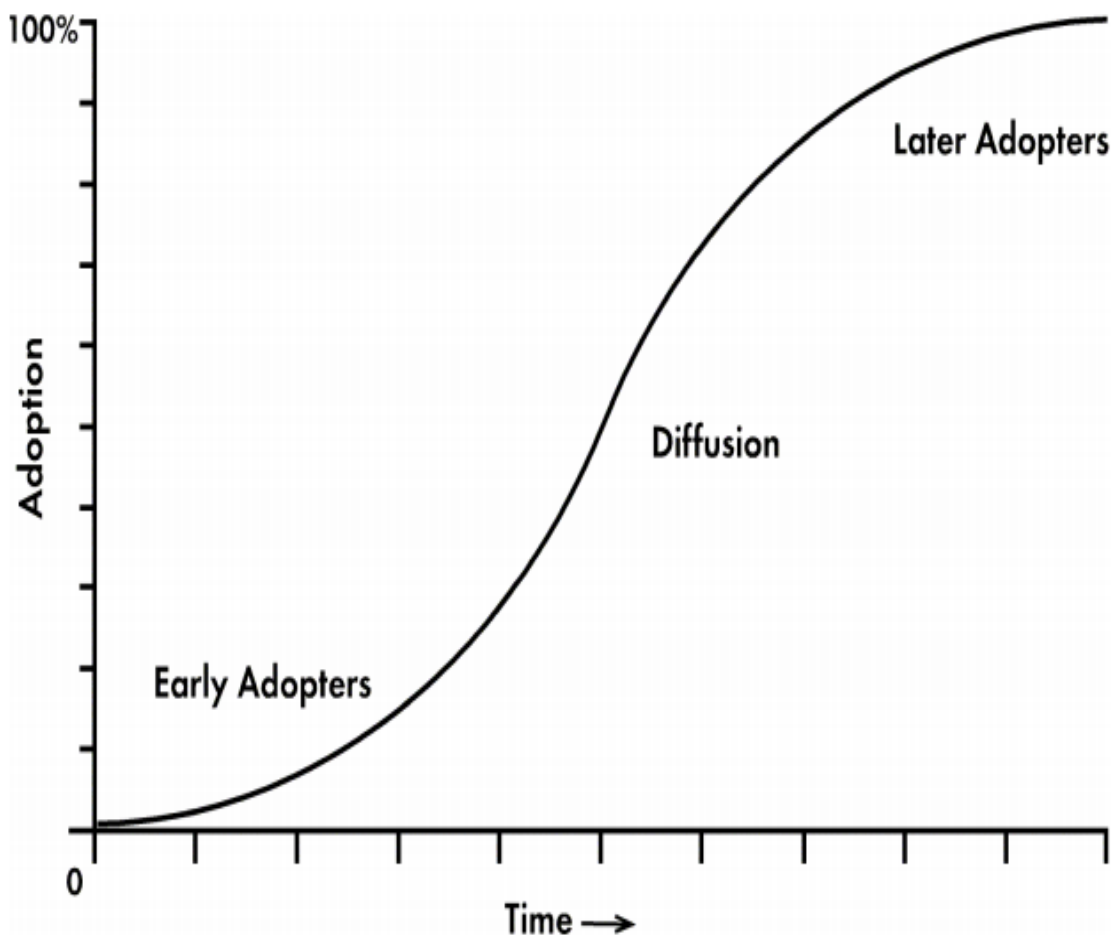


Figure 7: Classic Diffusion Model<sup>61</sup>

#### 2.4.4 Social System

The third element presented by the diffusion of innovations process. According to Rogers the social system is “a set of interrelated units that are engaged in joint problem solving to accomplish a common goal”.<sup>62</sup> He further argues that a social system is gelled together by an implicit sense of common identity and objectives that dictate that members work together to solve common problems. This social structure creates a favourable environment for diffusion to thrive. According to Rogers, it is the social system that defines the boundary within which

<sup>61</sup> Dearing et al. 2012. Diffusion of Innovations: 4

<sup>62</sup> Rogers. 2003. Diffusion of Innovations (5th ed.): 23

an innovation can be diffused.<sup>63</sup>

## **2.5 Conclusion and Summary**

The chapter discussed innovation as introduction and conception of new knowledge in the organisation. It started by defining the innovation theory, establishing the linguistic foundation and relevance of innovation.

The chapter then went on to explore innovation theory maturity over the years, exploring work by Schumpeter, Abernathy, the OECD, Nonaka, Chesbrough and Howe. It drew distinctions between innovation and invention in the process. Finally the chapter discussed the diffusion of innovation, highlighting that just as idea formulation is important so is the delivery and consumption of innovation. It explored Rogers' work of diffusion of innovations, presenting the dimensions of the diffusion process that includes the innovation itself, communication channels, time and the social system.

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<sup>63</sup> Rogers. 2003. *Diffusion of Innovations* (5th ed.): 24



# Chapter 3

## *Sensemaking*

### **3.1 Background on Sensemaking**

Using Weick's sensemaking theory, this thesis highlights that one cannot discuss innovation without touching on other fundamental concepts such as learning and collaboration in the organisational context. This understanding necessitates conceptual clarity on innovation, learning and collaboration at an organisational level. The sensemaking theory presented by Karl Weick offers a useful framework that can be utilised to understand the fundamental elements of the concepts towards a systematic management and facilitation of the innovation process in organisations.<sup>64</sup>

The thesis demonstrates that sensemaking can be used to establish connections between innovation, learning and collaboration, and therefore should form an integral part of the discussion in modern thinking about innovation management in both practice and theory in organisations. The interlink (or the lack thereof) that exists between the concepts presents an opportunity to explore conceptual foundations of the theories in order to bring coherence to the discussion on innovation management. We explore innovation, organisational learning and collaboration both as a subjects and products of sensemaking by individuals, groups and organisations. The sensemaking approach to innovation management can be utilised to gain insight into the complex phenomenon.

Weick's sensemaking theory is presented as an ongoing process that enables actors to have a clear understanding of what is going on in their environment. This understanding is important

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<sup>64</sup> Weick, KE 1995. Sensemaking in Organizations

for innovation management as it is a phenomenon that capitalises on events that take place around them. Making sense of these events would be ideal for innovation success as it would offer both individual and organisational awareness of the environment. What is important about the sensemaking theory is that it describes the elements that go into the process of organisational innovation.<sup>65</sup> This covers aspects of how people observe cues that lead to idea development all the way through to innovation development and consumption.

We position organisational innovation and collaborative learning as processes that materialise through enactment. Organisations act on cues they cause, and trigger learning which leads to them producing new knowledge. This continues as they strive to better the individuals and the organisation itself. Weick's theory addresses the process through which individuals and organisations construct frames that they utilise to learn and innovate. His framework asserts that people act first then examine their action. Individuals actively structure what is unknown to them by referencing past events. It also addresses the role that individuals' and organisations' self or public images play in the generation of meaning. The view is that of organisations being a collection of individuals that possess unique identities which go through socialisation and negotiation processes introspectively and outwards.

Weick's theory presents ambiguity and uncertainty as occasions of sensemaking which he describes as being interruption to usual occurrences in people's lives, thereby triggering a conscious process of fitting cues associated with the event into existing frames of reference. If the existing frames do not fit the cues new frames are constructed when people try to understand the event. This perspective provides the theory with insight into the role that understanding of the causes or motivations for innovation play in the management of organisational innovation. Most theories explored in this thesis do not provide a clear conceptual check and balances mechanism that validates that the innovation is relevant for the context it is being developed for. Therefore, it is the view of this research that understanding and systematically tracking of events can provide a mechanism for validation of relevance of the innovation throughout the process before the diffusion process which is only apparent when viewed through the sensemaking lens.

Weick presents seven properties of sensemaking that he uses to explore the process. These assist in explaining what sensemaking is and is not.

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<sup>65</sup> Weick. 1995 Sensemaking in Organizations: 5-18

This chapter discusses the sensemaking theory presented by Karl Weick. It will provide a framework for a critical review and comparison of innovation, learning and collaboration management in organisations. The chapter begins by discussing Weick's theory and then expands on the property of frames.

The chapter begins by defining the sensemaking theory as presented by Weick. It presents the theme and properties of sensemaking. It then explores properties that are relevant to the delimiters of this thesis. It explores identity construction, retrospection, social nature and sensemaking, focusing on extracted cues. It then moves on to discuss the occasions of sensemaking, highlighting the sources and triggers of sensemaking. The chapter concludes by discussing and presenting the different vocabularies of sensemaking.

### **3.2 Sensemaking**

Sensemaking is an ongoing process that enables the actor (sensemaker) to have a grasp of what is going on in his or her environment, in the process facilitating activities such as learning, inventing and relating. Weick puts forward a theory that presents sensemaking as a process of social construction that occurs when discrepant cues interrupt individuals' ongoing activity, and involves the retrospective development of plausible meanings that rationalise what people are doing.<sup>66</sup> The concept of sensemaking according to Weick is a literal representation of the phrase "the making of sense".<sup>67</sup> Weick argues that "people make sense of things by seeing a world on which they have already imposed what they believe".<sup>68</sup> Thus, sensemaking is not about interpreting what is going on, it is about discovering products of your own enactment. He put this point across with his analogy:

"How can I know what I think until I see what I say?"<sup>69</sup>

This theme is central to Weick's framework as he asserts that people act first, then examine their action. Individuals actively structure what is unknown to them by referencing past events. There individuals act in order for them to discover who they are, what they are dealing with and what they really know about a particular situation or event. This all points to

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<sup>66</sup> Weick. 1995 Sensemaking in Organizations: 4-6

<sup>67</sup> Weick 1995 Sensemaking in Organizations: 4

<sup>68</sup> Weick. 1995, Sensemaking in Organizations: 15

<sup>69</sup> Weick. 1995, Sensemaking in Organizations: 15

individuals being active participants in the sense they make and the products of that sense.<sup>70</sup> Weick uses the sensemaking framework to explain events of high complexity, such as human disasters, to clear ambiguity and uncertainty surrounding such events.<sup>71</sup> To explain this aspect of sensemaking Weick visits the work of Starbuck et al. when he asserts that sensemaking simply is about placing stimuli into a framework.<sup>72</sup> Wick identifies the stimuli as being the trigger or cause of sensemaking which he refers to as occasions of sensemaking. The occasions of sensemaking interrupt usual occurrences in people's lives, thereby triggering a conscious process of fitting cues associated with the event into existing frames of reference, and if the existing frames do not fit the cues new frames are constructed as people try to understand the event. This enables the sensemaker to attach meaning to complex real life scenarios in order develop a platform for action to be taken. The meaning attached to events tends to differ among individuals. When dealing with these differences it is important to take cognisance of the possibility of people attaching different meanings to a situation based on individual experiences with the interruption. When faced with ambiguity, an individual is provided with various interpretations, whereas in the case of uncertainty they will be ignorant of any interpretations.<sup>73</sup> Weick argues that the desire in human beings to carry on with activities in the disrupted routine drives a sensemaker to seek for an explanations or reasons that enable him or her to carry on with their routine. When these explanations do not materialise the desired results, the process of sensemaking is initiated. At this point the sensemaker's perception of the world will differ from the current state of the world.<sup>74</sup> This difference is possible because individuals make sense of disruption by associating cues emanating from the environment with their own frame of reference, in order to understand the changes they observe in the environment. According to Weick, one of the states an individual goes through during the sensemaking process is that of cognitive dissonance. Weick argues that cognitive dissonance happens in retrospect as the sensemaker gets negative

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<sup>70</sup> Weick 1995 Sensemaking in Organizations: 5

<sup>71</sup> Weick. 1995, Sensemaking in Organizations: 8

<sup>72</sup> "When people put stimuli into frameworks, this enables them to comprehend, understand, explain, attribute, extrapolate, and predict" Extract from Starbuck et al. 1988 as cited by Weick. 1995. Sensemaking in Organizations: 5

<sup>73</sup> Weick. 1995, Sensemaking in Organizations: 91

<sup>74</sup> Weick et al. 2005. Organizing and the process of Sensemaking in organizational science

cues (feedback) based on a choice.<sup>75</sup> He says people will find themselves divided between two parallel alternatives and immediately lose confidence in the choice made. This dilemma (dissonance) has an impact on whether the sensemaker acts on the interruption or not.

Weick conceptualises sensemaking in terms of seven distinct characteristics that set it apart from other explanatory processes such as interpretation and understanding. The properties of sensemaking according to Weick include:

- Sensemaking is grounded in identity construction.
- Sensemaking is retrospective.
- Sensemaking is enactive of sensible environments.
- Sensemaking is social in nature.
- Sensemaking is ongoing.
- Sensemaking is focused on and by extracted cues.
- Sensemaking is driven by plausibility rather than accuracy.

He uses these properties or characteristics as a guide to sensemaking and to explain how individuals construct realities. Focus was only on four of the seven proposed characteristics (i.e. grounded in identity construction, retrospective, social and focused on extracted cues) to form part of the theme for reviewing organisational innovation and learning in a collaborative context.

### **3.2.1 Sensemaking Is Grounded in Identity Construction**

This property is linked to the awareness of a sensemaker, and his or her desire for an identity in the interaction between their own perception of self and that held by other actors in the environment. Weick regards the establishment and sustainability of the sense of identity by an individual as an integral aspect of sensemaking.<sup>76</sup> He acknowledges that identity construction is an ongoing activity that is contextual by nature and he draws distinctions between an individual and the collective (organisational) identity. According to Weick identities are continually constructed out of the process of interaction. Depending on the

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<sup>75</sup> Weick. 1995. Sensemaking in Organizations: 11

<sup>76</sup> Weick. 1995. Sensemaking in Organizations: 18-24

interactions that one engages in, the identity they assume may differ.<sup>77</sup> This does not imply that a new person is created throughout the life cycle of the interactive process but rather that the same person adopts different traits depending on the role he or she assumes at a particular point in time. The identity that an individual adopts in a particular role-play influences their outlook on the environment and the meaning they attach to different events. The sensemaker's interpretation of events in his or her environment is largely influenced by their evaluation of self against the impact the events have on them and/or the collective's future. Weick draws a link between the identity individuals carry and that of the organisation they belong to.<sup>78</sup> He argues that individuals are affected by the perception other people have of the organisation they belong to. Depending on the public perception of the organisations, individuals react by either preserving the positive outlook or by attempting to remedy or counteract the negative outlook.<sup>79</sup> Weick further argues that this individual introspective behaviour accords organisations an opportunity to learn and to define themselves.<sup>80</sup> This opportunity comes as individuals confirm their own identities, in turn allowing organisations to clarify their own identities as well.

The connection between individuals and the organisation is reciprocal by nature, as individuals are a reflection of the collective ideology.<sup>81</sup> Both individuals and the organisation have in them the control to shape their own identities based on the feedback they get from the environment but have little or no control on the responding variables in the environment. In other words the onus is on the sensemaker to either uphold the image projected to the environment or remedy it. Weick highlights the need for the sensemaker to self-evaluate the implication certain events have on who they become in their environment based on the identity they choose to take up.<sup>82</sup> A sensemaker may choose to construct different versions of self to suit the context of the current environment. These choices are driven by the interactions they have with different people that have feedback channelled to them.

The constructed images of self are constantly being validated against the cues coming from

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<sup>77</sup> Weick. 1995. Sensemaking in Organizations: 20

<sup>78</sup> Weick. 1995. Sensemaking in Organizations: 21

<sup>79</sup> Weick. 1995. Sensemaking in Organizations: 21

<sup>80</sup> Weick. 1995. Sensemaking in Organizations: 21

<sup>81</sup> Weick. 1995. Sensemaking in Organizations: 21

<sup>82</sup> Weick. 1995. Sensemaking in Organizations: 24

the sensemaker's environment and subsequently fitting them into predefined acceptable versions of self. According to Weick this is done as a self-validation of wanting to know "who they are now and who they will become". Weick highlights the relationship between the sensemaker and the stimuli from the environment as one of the determinants of which version of self is invoked during an event.<sup>83</sup> Weick further points out that this phenomenon is driven by an individual's positive self-perception, evaluation of their own capabilities and desire to experience coherence.

Learning and innovation are phenomena that need to be enshrined in the identity of an organisation in order for them to resonate across the entire organisation. The identity adapted by an organisation will determine how individuals act towards learning and innovation initiatives. This also has an effect on how the organisation positions itself. Weick argues that an individual's need for an identity mirrors that of the organisation.<sup>84</sup> An organisation's desire for knowledge creation and sharing must be clearly reflected in its identity for employees to adopt the characteristic. The implication of this is that individuals in an organisation will identify with learning and innovation initiatives that are representative of the divergent knowledge areas of the organisation. People are more inclined to engage actively in such initiatives when the identity they take on is natural to that of their own construction. An example of this assertion can be that an accountant will be less engaged if the organisation's innovation strategy is centred on technology while a technical resource will be fully engaged, and the opposite is true when the innovation is centred on financial processes.

Brown offers a different dimension to the discussion on identity construction when he explores the possibility of having individuals with divergent identities that makes it challenging for an organisation to find a common identity.<sup>85</sup> Brown argues that power and group politics have a bearing on the identity of an organisation and sensemaking as a whole.<sup>86</sup> Brown makes reference to Clegg to make his argument:<sup>87</sup>

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<sup>83</sup> Weick et al. 2005. Organizing and the process of Sensemaking in organizational science

<sup>84</sup> Weick. 1995. Sensemaking in Organizations: 20-21

<sup>85</sup> Brown. 2000. Making sense of inquiry Sensemaking: 3

<sup>86</sup> Brown. 2000. Making sense of inquiry Sensemaking: 3

<sup>87</sup> Clegg 1975 and 1981 as cited by Brown. Making sense of inquiry Sensemaking: 3

According to Clegg some voices in a social hierarchy have more privileges than others and may impose the sense that is made on the group.

This perspective on identity construction is very important when dealing with learning and innovation strategy as the identity adapted by the organisation must be representative of those identities held by individuals.

### **3.2.2 Sensemaking is Retrospective**

This property is linked to individual's ability to reference past experiences to interpret current events. Weick regards sensemaking as a retrospective activity whereby people act first and reflect on their actions in hindsight in order to attach meaning to their actions.<sup>88</sup> He argues that sensemaking is based on individual experiences which are always in the past; this implies that sensemaking is always retrospective in nature. This indicates that retrospection like the entire sensemaking process is an ongoing phenomenon where individuals are constantly projecting extracted cues from the present onto past events. Weick further points out that the meaning attached to lived (past) experiences varies based on the value attached to the past action or event; hence interpretation of one event will tend to vary based on the extracted cues.<sup>89</sup> This implies that past events cannot be 100% reliable to provide clarity that a sensemaker may need, largely due to a possibility of equivocality based on the value attached. The possibility does not mean that past events do not make sense, but may make many different kind of sense.<sup>90</sup> Weick proposes that a sensemaker needs a set of values, priorities and preferences in order to assign importance to past events. This characteristic of sensemaking helps to understand the role that past or lived experiences play when it comes to learning and innovation.

### **3.2.3 Sensemaking is Social in Nature**

This property is linked to the interactive nature of sensemaking. Weick argues that sensemaking does not happen in isolation but in a social context.<sup>91</sup> Thinking of or approaching sensemaking as a process done by individuals will create what Weick refers to

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<sup>88</sup> Weick. 1995. Sensemaking in Organizations: 24

<sup>89</sup> Weick. 1995. Sensemaking in Organizations: 27

<sup>90</sup> Weick. 1995. Sensemaking in Organizations: 27

<sup>91</sup> Weick. 1995. Sensemaking in Organizations: 38



as blind spots which can make the sensemaker oblivious to other perspectives on his or her enacted world.<sup>92</sup> The social context of sensemaking can be facilitated by a sense maker's evaluation of others' perspectives or by face-to-face interactions.

Weick points out that any internal monologue an individual conducts presumes an imagined audience which ultimately touches on the relational and social perspective of sensemaking.<sup>93</sup> Imagined or actual audiences influence the conversations individuals have and any actions that are coupled with them. Weick argues that central to conversations are beliefs, emotions, symbols and memories that provide structure used to govern the conversations.<sup>94</sup>

Weick argues that divergent perspectives or views provide balance during the sensemaking process and in consequence organisations must not be looked at as a collection of shared views.<sup>95</sup> He borrows Blumer's argument that society is not built on shared mean but rather a collective of divergent perspectives that reinforce one another by common objectives.<sup>96</sup>

Having different personalities interpreting an event or a situation gives rise to politics. Politics play a vital role in assigning meaning to events. This is true for individual or group sensemakers. In the case of individual sensemakers depending on the self that is adapted and the current state of the world, a person will make different sense of the same event if another image of self is adapted. In an organisational or group setting different views can be presented for the same event which can result in a political exchange of views.

#### **3.2.4 Sensemaking is Focused on and by Extracted Cues**

This property is linked to the sensemaker's reliance on cues as stimuli for understanding events. Weick argues that extraction of cues is the very essence of sensemaking as it provides a platform for a sensemaker to mature his or her reasoning capacity.<sup>97</sup> The extracted cues provide stimuli for the sensemaker to enact and reconstruct past or lived experiences to fit with the cues or to interpret the cues in ways that fit with the reconstruction.<sup>98</sup> This property

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<sup>92</sup> Weick. 1995. Sensemaking in Organizations:39

<sup>93</sup> Weick. 1995. Sensemaking in Organizations: 41

<sup>94</sup> Weick. 1995. Sensemaking in Organizations: 41

<sup>95</sup> Weick. 1995. Sensemaking in Organizations: 42

<sup>96</sup> Blumer 1969 Cited by Weick. 1995. Sensemaking in Organizations: 42- 43

<sup>97</sup> Weick. 1995. Sensemaking in Organizations: 49

<sup>98</sup> Weick. 1995. Sensemaking in Organizations: 49

highlights the importance of each and every event in an organisation as they form part of the meaning, seeking and reconstructing processes by individuals as well as organisations.

A sensemaker's frames of reference provide context with which meaning can be attached to extracted cues; without this context being provided meaning will be distorted. Various factors affect the construction and adaptation of frames by individuals or groups. This can range from beliefs, memories, cognitive understanding, social exposure and the environment.

### 3.3 Occasions of Sensemaking

Occasions of sensemaking are associated with events that confront people with conflicting versions of reality in response to their actions. It is in human cognitive nature to attempt to reorder everything that the individual's frame of reference deems to be out of place. According to Weick anything that disturbs the routine flow of how people do things presents an opportunity for sensemaking to take place.<sup>99</sup> He points out that these interruptions bring about a sense of dissatisfaction that prompts individuals to seek solutions for their current status quo.<sup>100</sup> This dissatisfaction or shock is the stimulus or trigger for sensemaking. It enables people to open up to other perceptions on the events or situations being experienced.<sup>101</sup> Weick further points out that this shock usually presents itself as a necessity, opportunity or threat which can broadly be classified as either being ambiguous or uncertain to the sensemaker.<sup>102</sup>

Ambiguity and uncertainty both present a level of interruption to routine events but offer varying accounts of shock. According to Weick ambiguity offers an element of confusion as the shock factor, whereas uncertainty offers one of ignorance.<sup>103</sup> He argues that ambiguity refers to an ongoing stream of rational interpretations that offers multiple meanings for the same artefact, whereas uncertainty stems from the inability to adequately predict the consequences of present actions on future outcomes.

Having a brief overview of the occasions of sensemaking offers us a platform to understand

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<sup>99</sup> Weick. 1995. Sensemaking in Organizations: 86

<sup>100</sup> Weick. 1995. Sensemaking in Organizations: 84

<sup>101</sup> Weick. 1995. Sensemaking in Organizations: 88

<sup>102</sup> Weick. 1995. Sensemaking in Organizations: 85

<sup>103</sup> Weick. 1995. Sensemaking in Organizations: 91–98

the conceptual overlap of sensemaking with other concepts presented in this thesis. It enables the thesis to analyse the various events that lead to learning, collaboration and ultimately innovation and how they can be understood as occasions of sensemaking.

### **3.4 Vocabularies of Sensemaking**

The chapter has established that sensemaking ultimately is about people placing stimuli into cognitive frames of reference. Weick's articulation of the frames theory suggests that stimuli or cues are elements in people's current context, and that they relate with past experiences which act as their frames of reference. The frames that people construct allow them to locate, perceive, identify and label events that take place in their lives and the world around them.<sup>104</sup> This dynamic represents what Weick refers to as the "minimal sensible structures" or vocabularies of sensemaking.<sup>105</sup> He argues that frames are abstract narratives that point to other less abstract ones.<sup>106</sup> These become sensible as narratives based on the context provided by the inclusion of more inclusive words. This entire dynamic of minimal sensible structures Weick refers to as vocabularies, which he argues are rational. According to him a cue that is in a frame is basically what makes sense and not the cue on its own or a frame on its own. To explore this concept he identifies six vocabularies that explain this dynamic.

#### **3.4.1 Ideologies: Vocabularies of Society**

The first vocabulary deals with the aspect of people's adoption of shared beliefs, values and norms that provide the ability to work together. Weick argues that these are very emotionally charged but achieve a fairly coherent and tightly coupled process outcome.<sup>107</sup> This description sums up the foundational building block of ideologies and is important to understand the element of emotions that are at play when people work together. People with their emotions rely heavily on ideologies to provide context in order for them to develop a simplified perspective of the world around them. The vocabulary of ideologies speaks to the ability individuals have to filter events based on collective beliefs, which include, among others, organisational, cultural, religious, regional beliefs. People are more inclined to

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<sup>104</sup> Weick. 1995. Sensemaking in Organizations: 109

<sup>105</sup> Weick. 1995. Sensemaking in Organizations: 109

<sup>106</sup> Weick. 1995. Sensemaking in Organizations: 109

<sup>107</sup> Weick. 1995. Sensemaking in Organizations: 111

overlook cues that emanate from their environment that do not meet their beliefs, values or norms. The existence of ideologies does not imply that everyone will make exactly the same sense of events, but rather provides only a guiding frame for different perspectives to thrive within a context.<sup>108</sup>

### **3.4.2 Third-order-controls: Vocabularies of Organisation**

The second vocabulary provides the narrative for sensemaking that articulates assumptions made and definitions derived by individuals in organisations. The vocabulary provides a unique context for making sense of innovation in practice and theory. This is because innovation exists at a non-routine end of the organisational spectrum which is naturally ambiguous. Weick describes third-order controls as premise controls that influence the premises that people utilise when faced with the dilemma of diagnosing situations that requires them to make decisions.<sup>109</sup> He goes on to provide context of his understanding of what a premise is. He describes it as “a supposition made so that people can get on with the processes such as decision making”.<sup>110</sup> These form part of the basis from which people draw assumptions that are used as the guiding factor for cultural formulation and according to Weick these are taken as they are given.<sup>111</sup> This is possible due to the unobtrusive nature of third-order controls. The elements that constitute the controls such as the implicit, tacit, precocious and mindless properties which influence sensemaking. Weick argues that these properties are usually taken for granted or even overlooked.<sup>112</sup> This in itself speaks to the subjective nature of sensemaking as there is a dependency on the knowledge and experiences held by individuals. This vocabulary influences the vocabulary of ideology. The premise controls are one of the means by which ideology is translated into action.<sup>113</sup>

### **3.4.3 Paradigms: Vocabularies of Work**

The third vocabulary deals with assumptions that individuals and organisations make that dictate their perception of how the world works. This includes elements such as standard

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<sup>108</sup> Weick. 1995. Sensemaking in Organizations: 112

<sup>109</sup> Weick. 1995. Sensemaking in Organizations: 113

<sup>110</sup> Weick. 1995. Sensemaking in Organizations: 113

<sup>111</sup> Weick. 1995. Sensemaking in Organizations: 114

<sup>112</sup> Weick. 1995. Sensemaking in Organizations: 114

<sup>113</sup> Weick. 1995. Sensemaking in Organizations: 117

operating procedures, shared definitions of the environment and the agreed-upon system of power and authority. Paradigms put forward the assumption of a shared understanding and that the state of consensus can be utilised as a mechanism for control. Just like ideologies and premises, paradigms are a simplification of heuristics; however, they are more self-contained.<sup>114</sup> Weick points out that paradigms are basically subjective points of view that influence how a person perceives, conceives and enacts reality.<sup>115</sup> Paradigms provide a mechanism by which organisations and individuals can collect narratives or illustrations that they can reference in order for them to take action.

#### **3.4.4 Theories of Action: Vocabularies of Coping**

The fourth vocabulary is focused on the way organisations identify stimuli from the environment, process them, and how they construct responses. Action theories build on the stimulus-response paradigm.<sup>116</sup> This relationship is the differentiating factor compared to other vocabularies. This vocabulary is closely linked to the retrospective property of sensemaking as it perceives people in organisations as being able to build knowledge based on events they experience which ultimately informs the sense they make. This, according to Weick, allows organisations to be more proactive in responding to situations as they have experience to refer back to.<sup>117</sup>

Weick goes on to introduce a concept of mapping as the means by which action is taken in organisations. The mapping process is useful when making sure that stimuli are properly identified and ensure that adequate responses are in place to deal with the stimuli. He further suggests that the mapping process just like knowledge structures are mechanisms for noticing. To select adequate responses organisations map their environments and infer what causal relationships operate in their environment.

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<sup>114</sup> Weick. 1995. Sensemaking in Organizations: 118

<sup>115</sup> Weick. 1995. Sensemaking in Organizations: 118

<sup>116</sup> Weick. 1995. Sensemaking in Organizations: 121

<sup>117</sup> Weick. 1995. Sensemaking in Organizations: 121 :

“People in organizations build knowledge as they respond to the situations they encounter. These trial-and-error sequences includes both the processes by which knowledge is used offensively to improve the fits between organizations and their environment”

### 3.4.5 Tradition: Vocabularies of Predecessors

The fifth vocabulary deals with frames or structures that have stood the test of time and are widely considered as truths. Weick describes tradition as something that was created, performed or believed in the past that has been handed down or transmitted from one generation to the next.<sup>118</sup> He argues that for something to be classified as being a tradition it must have been transmitted at least twice, over three generations.<sup>119</sup>

According to Weick all kinds of images, objects and beliefs can be transmitted as traditions except for action.<sup>120</sup> This implies that traditions by themselves do not dictate the particular course of action that individuals take but rather provide a framework through which images of the actions can be transmitted. Weick points out that images of actions such as know-how, recipes, scripts, rules of thumb and heuristics all represent symbolic encoding of work that enables transmission across generations.<sup>121</sup> This understanding is very important to the traditional vocabulary as it emphasises that encoding of the images merely prescribes a context of operation and the environment in which they apply.

### 3.4.6 Stories: Vocabularies of Sequence and Experiences

The sixth and final vocabulary brings a niche perspective to organisational theory as it deviates from the norm of articulating organisations as being founded on argumentation but rather as being negotiated narratives for construction of realities.<sup>122</sup> This perspective is positioned to bridge the divide or failure to reconcile realities against skill, experienced by people who find it hard to negotiate the argumentative structures of organisation with their skills that are based on narratives.<sup>123</sup> Most people think narratively rather than argumentatively or paradigmatically.

According Weick stories provide a plausible frame for sensemaking as they gather strands of experience into a narrative that produces an outcome.<sup>124</sup> These narratives follow either the

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<sup>118</sup> Weick. 1995. Sensemaking in Organizations: 124

<sup>119</sup> Weick. 1995. Sensemaking in Organizations: 124

<sup>120</sup> Weick. 1995. Sensemaking in Organizations: 125

<sup>121</sup> Weick. 1995. Sensemaking in Organizations: 126

<sup>122</sup> Weick. 1995. Sensemaking in Organizations: 127

<sup>123</sup> Weick. 1995. Sensemaking in Organizations: 127

<sup>124</sup> Weick. 1995. Sensemaking in Organizations: 128

sequence of “beginning-middle-end or situation-transformation-situation”.<sup>125</sup> Weick argues that stories are important for sensemaking as they facilitate the observation or diagnosis process, thereby reducing disruptions from arising when there is an interruption to organisational processes.<sup>126</sup>

### 3.5 Belief-Driven Processes of Sensemaking

According to Weick, sensemaking consists of two types of process which he identifies as beliefs and actions.<sup>127</sup> These process determine how people cope with situations, including sharing information, imitating one another and everyone acting as though they know what is going on. Beliefs are influenced by two of the vocabularies of sensemaking, namely ideologies and paradigms.<sup>128</sup> The two vocabularies govern how people construct and utilise frames. Weick further points out that belief affects how events unfold when they produce a self-fulfilling prophecy. People believe as they selectively see and notice events around them. It is important to note that believing in self is a half-full measure of sensemaking as it requires a complementary action for substance.<sup>129</sup> People in a group or an organisation have diverse backgrounds which influence what they believe in the long run, by implication offering varying accounts of beliefs. Weick explores two forms of belief-driven sensemaking processes, namely arguing and expectation.

Arguing in sensemaking offers a channel through which variety in beliefs can be reduced. This takes into account all beliefs and filters out those that are seen to be relevant. Weick describes Arguing as either being at an individual level covering any piece of reasoned discourse or at a social level covering disputes between people.<sup>130</sup> According to Weick, arguing is central to organisational sensemaking because by definition, organisations are a set of procedures for argumentation and interpretation as well as for solving problems making decisions.<sup>131</sup> This places organisations as operating at a social dimension of arguing. He

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<sup>125</sup> Weick. 1995. Sensemaking in Organizations: 128

<sup>126</sup> Weick. 1995. Sensemaking in Organizations: 129

<sup>127</sup> Weick. 1995. Sensemaking in Organizations: 133

<sup>128</sup> Weick. 1995. Sensemaking in Organizations: 133

<sup>129</sup> Weick. 1995. Sensemaking in Organizations: 134

<sup>130</sup> Weick. 1995. Sensemaking in Organizations: 137

<sup>131</sup> Cohen et al. as cited by Weick. 1995. Sensemaking in Organizations: 136

further points out that the social process is described as decision making by objection. Objection or arguing offers the sensemaking process a quality assurance layer that the process uses to vet information. Factional views offer challenging perspectives on the information which enhances the quality of innovation. Weick cites Billig's work to argue that statements or questions made by people during interactions contain two opposing views, which can be used differently to argue by them or other people.<sup>132</sup> This points to social controversy as being a container in which individual reasoning thrives. Because social controversy is triggered by reasoned discourse, it is what makes arguing a belief-driven process of sensemaking.

The other form of belief-driven processes of sensemaking is expecting. Weick argues that expectations tend to hold more strongly as people are less likely to contradict them compared to actions.<sup>133</sup> This, according to Weick, offers Beliefs a possibility of being a key resource when embedded in expectations.<sup>134</sup> Expectations are the foundational base on which frames are constructed and maintained. They offer a mechanism for testing and evaluation, through which a unit of meaning can be formed when cues are connected to expectations. This however depends on the accuracy of the expectations. Weick points out that people gain confidence in their situational assessment when their expectations are accurate enough.<sup>135</sup> This allows the sensemaker to process input from expected events faster leaving time for adaptive action. This further implies that to an extent expectations can be inaccurate for sensemaking because they filter inputs that may be useful if properly scrutinised. It is, however, important to note that unlike actions, expectations can be self-correcting.<sup>136</sup> The self-correcting aspect is surfaced when the sensemaker experiences events that seem different from their expectations, they have an opportunity to alter the expectation or the event. According to Weick this possible through the dynamic of a self-fulfilling prophecy whereby the initial definition of the solution is false and in the process evoking behaviour that justifies false definition as in fact being true.<sup>137</sup> With continued justification, it opens the definition to

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<sup>132</sup> Billig. 1989 : 41 as cited by Weick. 1995. Sensemaking in Organizations: 137

<sup>133</sup> Weick. 1995. Sensemaking in Organizations: 145

<sup>134</sup> Weick. 1995. Sensemaking in Organizations: 145

<sup>135</sup> Weick. 1995. Sensemaking in Organizations: 146

<sup>136</sup> Weick. 1995. Sensemaking in Organizations: 147

<sup>137</sup> Weick. 1995. Sensemaking in Organizations: 147



scrutiny and counter scrutiny in the process qualifying the context of what true/false means in a particular situation. It is from this base that self-fulfilling prophecies form part of the fundamental act of sensemaking. From a broader sensemaking perspective, they are the minimal structures through which events can be properly analysed and probed. Weick argues that expectations are the initial tools available to people at first contact with an event or even other people.<sup>138</sup> This means that people subjectively approach situations from a view that is influenced by what they expect to see, in the process impacting their perception of the target. He further points out that expectations affect parameters used to interpret stimuli or events and the conclusion they arrive at, following the interpretation.<sup>139</sup> Expectations in this case act as a means for a sensemaker to predict and enact what they predict.

### 3.6 Action-Driven Processes of Sensemaking

Weick explores commitment and manipulation as process of action-driven sensemaking. He begins by stating that in both processes, sensemaking starts with action.<sup>140</sup> The difference lies in the impact of the action.

Commitment covers action for which the sensemaker assumes responsibility.<sup>141</sup> Weick uses irrevocable decisions that provide a pillar around which the cognitive apparatus must be draped as an example. What this implies, is that commitments are deliberate and assumed to be products of some kind of thought process. It is through this thought process that beliefs are imposed on the action to try and justify and validate it. Weick points out that beliefs make sense of the irrevocable action and the circumstance with which it was generated.<sup>142</sup> He argues that people are more inclined to protect and build meaning around actions with which they have strong commitment.<sup>143</sup> This, according to him, can be used to understand the sense people make, by simply reviewing the binding actions and justification available to them when the action was taken. Weick offers three common factors that are responsible for

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<sup>138</sup> Weick. 1995. Sensemaking in Organizations: 148

<sup>139</sup> Weick. 1995. Sensemaking in Organizations: 148

<sup>140</sup> Weick. 1995. Sensemaking in Organizations: 156

<sup>141</sup> Weick. 1995. Sensemaking in Organizations: 156

<sup>142</sup> Weick. 1995. Sensemaking in Organizations: 156

<sup>143</sup> Weick. 1995. Sensemaking in Organizations: 156

binding a person to an action. These include:<sup>144</sup>

- Explicit behaviour where there is clear evidence that the act occurred
- Public occurrences where important people saw the act
- Irrevocable acts where they cannot be undone.

Even with these factors, merit is considered to determine deliberate intent by the agent in order to determine whether they are bound to the action or not. This determination factors in the responsibility for action, importance of action, consequence of the action and responsibility of action. Following the determination of intent, then comes evaluation of responsibility which covers publicity, irrevocability and the result of the intent determination. This speaks to the level of accountability attached to people over their actions. Weick points out that it is through accountability that people are bound to consequences, in the process making the action that led to the consequences more visible and irrevocable.<sup>145</sup> Commitment becomes a relevant form of action-driven processes of sensemaking because it allows us to note the difference in value attached to actions and sensemaking in general based on consequences. It also opens up a clear understanding that without action, the sensemaking process can be stifled. Before a commitment is made, everything that exists before is usually perceptions and assumptions that are surrounded by experiences. These become organised as commitment is developed around actions, in the process defining a distinction between ones that support the action and those that do not. Weick highlights that without these distinctions people cannot articulate what they know for certain only until they have placed value on their actions. This implies that we only really know what we know based on what we decide and on what we make of our decisions. By acting, a shift in focus is made from dwelling on the action to exploring other features that previously were obscured. Weick argues that inability to choose, act, and justify leaves people with too many possibilities and too few certainties.<sup>146</sup> He further points out that for both individuals and organisations, indecision implies a vague sense of self.<sup>147</sup> He goes further points out that organised anarchy can be a catalyst that drives commitment in organisations. This suggests a level of high volatility with high knowledge

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<sup>144</sup> Weick. 1995. Sensemaking in Organizations: 157

<sup>145</sup> Weick. 1995. Sensemaking in Organizations: 158

<sup>146</sup> Weick. 1995. Sensemaking in Organizations: 160

<sup>147</sup> Weick. 1995. Sensemaking in Organizations: 159

production. These organisations get defined by ongoing choices and not historical precedents.<sup>148</sup> This manipulation covers actions that have made visible change in the world that requires explanation.<sup>149</sup> This form of action-driven processes of sensemaking, implies that sensemakers are not just passive actors in their environment but rather that they have an influence on shaping their environment. They do more than just understanding what they are given from the environment by putting something in the environment, consolidating what is there, poking and experimenting in order to discover what is out there or even creating confusion. Weick points out that because organisations seek environments that have not been reached by competition, they continually attempt to distinguish themselves by inventing and influencing the environment.<sup>150</sup> He points out that action and environmental accommodation are reciprocal in nature, allowing one to have an impact on the other and vice versa.<sup>151</sup> He further argues that sensemaking by means of manipulation involves acting in ways that create an environment that people can then comprehend and manage.<sup>152</sup> Just like commitment, manipulation begins with an action.

### 3.7 Conclusion and Summary

The chapter discussed sensemaking, beginning by defining the concept as articulated by Weick. The chapter acknowledged the existence of Weick's seven properties of sensemaking but for the purpose of this thesis only explored four of the properties. The chapter highlighted that for purposes of collaborative learning that is aimed at innovation, properties of identity construction, retrospection, social nature of sensemaking and extracted cues are very important. Identity construction brings into focus the role that group and individual identities play when exploring sensemaking. The retrospection property highlights the unique role that experiences play within the sensemaking process and the value they propose to collectives on how they learn and exchange knowledge for innovation. The social property brings out the fundamental principle that sensemaking, just like learning and innovation in organisations, is about "people". The final property considered relevant for discussion is the extracted cues

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<sup>148</sup> Weick. 1995. Sensemaking in Organizations: 160

<sup>149</sup> Weick. 1995. Sensemaking in Organizations: 156

<sup>150</sup> Weick. 1995. Sensemaking in Organizations: 163

<sup>151</sup> Weick. 1995. Sensemaking in Organizations: 163

<sup>152</sup> Weick. 1995. Sensemaking in Organizations: 165

property. The chapter highlighted that bracketing cues that emanate from the environment is critical for sensemaking in organisations.

The chapter discussed occasions of sensemaking, exploring ambiguity and uncertainty as two sources or triggers of sensemaking. This provided insight into when and how sensemaking is triggered.

The chapter then went on to discuss the vocabularies of sensemaking. These provided this thesis with the different frameworks through which sensemaking is influenced. The vocabularies point to frames of references that people fit cues into. As part of this discussion the chapter explored ideologies, third-order-controls, paradigms, theories of action, tradition and stories as the different variations of frames.

This chapter provided a basis for drawing comparisons between sensemaking and other theories presented by this thesis.

Sensemaking as presented by Karl Weick provides a platform for critical analysis, allowing for a multi-dimensional analysis of not only the concepts, but also the findings on them. It is on this premise that this thesis concluded that the critical analytical framework offered by sensemaking would be a useful in influencing the course of organisational learning and innovation.

The properties of sensemaking allowed for this thesis to isolate concepts of organisational strategy and operations in order to apply the needed analysis. The identity construction dimension offers a perspective that organisations and leadership can utilise to understand the social capital in and around the organisations and how they collectively define and identify with a philosophy. The retrospective dimension offers insight into the value, power and relevance of organisational and individual history or experiences. It provides skill for members of the organisation that enables them to recognise strengths, weaknesses, opportunities, threats in their current realities by leveraging past experiences. The social dimension highlights the importance of the human element in organisational strategy. It ultimately offers a perspective into how people work together and deliver on common objectives. The focus on the extracted cues dimension highlights that individuals and organisations are only as good as the knowledge and support structure they have.

## Chapter 4

# Organisational Learning

*An organization's ability to learn, and translate that learning into action rapidly, is the ultimate competitive advantage –*

Jack Welch<sup>153</sup>

### 4.1 Background on Organisational Learning

Organisational learning transforms individuals' skills or knowledge into the knowledge embedded in the identity of organisations. Proper strategic mechanisms must be in place to facilitate the creation, internalisation and development processes. We explore the relationship between the creation and internalisation processes being referred to respectively as innovation and learning. Various studies conducted in the area of organisational learning have presented knowledge as the main source of competitive advantage in organisations.<sup>154</sup> This assertion touches on one of the ideals that innovation is centred on which is competitive advantage.

Russo-Spenda and Mele<sup>155</sup> present innovation in organisations as something that people do and not a linear process of knowledge application. This thesis asserts that both innovation and learning in organisations do not occur in isolation but leverage individual experiences to

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<sup>153</sup> Jack Welch quotes extracted on 25/09/2015 from [http://www.brainyquote.com/quotes/authors/j/jack\\_welch.html](http://www.brainyquote.com/quotes/authors/j/jack_welch.html)

<sup>154</sup> Nelson et.al, 1982; Winter, 1987

<sup>155</sup> Russo-Spena et.al 2012a. Five Co-s in innovating: practice-based view Journal of Service Management

drive the collective knowledge. This perspective is reflected in Argyris et al.'s work on organisational learning which they describe as being a collaborative process that involves individuals from within and outside the organisation.<sup>156</sup> It also highlights the important role that individual learning plays in the organisational learning process.

Organisational learning socialises individual knowledge in order to collectively learn and produce new knowledge. Collaborative learning as a theory of learning is relatively new and not exempt from distortion. This thesis approaches this as being a complementary and collective process of learning in which subject matter experts and novices alike come together to collectively negotiate meaning. This view positions organisational learning as one such flavour of collaborative learning.

This chapter discusses the concept of organisational learning, drawing on the conceptual foundations of the theory. This exploration is done in order to gain a clear understanding into the impact and usefulness of organisational learning on organisational innovation.

The chapter begins by discussing the core concept of learning and draws a conceptual distinction between the cognitive and behavioural schools of thought. It explores the maturity of both cognitive and behavioural schools of thought from the 19<sup>th</sup> century, highlighting some of the major contributors to the schools of thought. The chapter then explores individual learning as the foundational ingredient for organisational learning. It highlights the role that individuals play in organisational learning.

The chapter then discusses culture and the role it plays in enabling learning in organisations. Culture is considered as one of the environmental enablers of organisational learning. Hence the chapter gives the conceptual exploration of culture as a whole and organisational culture particularly. It discusses some of the prominent perspectives that have been offered over the years on the concept of culture. The chapter then goes to discuss organisational learning and its foundational elements. It describes the fundamentals of organisational learning and some of the major contributions to the theory of organisational learning that have been offered over the years.

Finally the chapter discusses knowledge management and organisational learning as constructs of modern organisational theory and their impact on organisations, especially with

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<sup>156</sup> Argyris et al. 1978. Organizational Learning

the advent of the knowledge economy.

## **4.2 Learning**

The concept of learning has attracted a wide range of theories. We explore two of the consistent categories of learning for the purpose of establishing a foundation for learning in order to better understand how learning occurs in organisations. For the purposes of this thesis, behaviourist and cognitive perspectives are explored. The two distinct theories share some level of commonality as they all present learning as a catalyst of change in individuals' and organisations' ability or capacity to act within rational parameters.

### **4.2.1 Behaviourist Perspective on Learning**

The behaviourist school of thought positions learning as the acquisition of responses.<sup>157</sup> Foundations for this school of thought can be traced back to the early 19th century. Thorndike's work of 1913 which is called the "hungry cat experiment" is thought to be one of the pioneering theories of the behaviourist school of thought.<sup>158</sup> According to Estes, Thorndike focused his study on the modification of actions based on satisfying effects and he summed it up in his Law of Effect which states that:

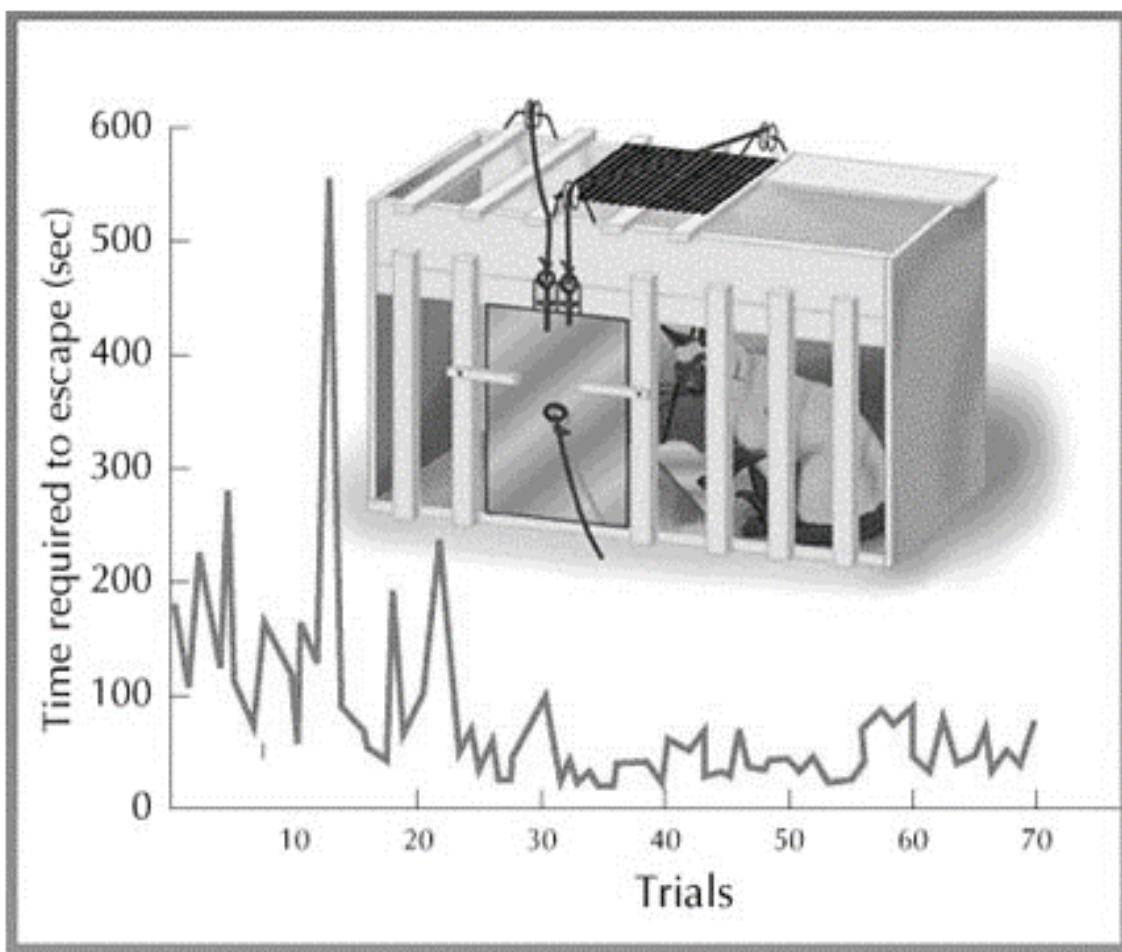
Responses that produce a satisfying effect in a particular situation become more likely to occur again in that situation, and responses that produce a discomforting effect become less likely to occur again in that situation<sup>159</sup>

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<sup>157</sup> Estes 1967. Reinforcement in Human Learning: 2

<sup>158</sup> Estes 1967. Reinforcement in Human Learning: 1

<sup>159</sup> Thorndike's Law of Effect source : <https://www.boundless.com/> extracted on 24th April 2015



**Figure 8: Thorndike's Puzzle Box<sup>160</sup>**

The other prominent contributor to the behaviourist perspective is Pavlov's classical conditioning theory of 1927. According Bransford et al., classical conditioning describes learning as the acquisition of a series of responses through divergent associations.<sup>161</sup> These associations are drawn from both internal and external environmental conditions. The external conditions describe conditions that simulated a model learning environment such as a classroom with learner-to-teacher relationships mapped. This, like many behaviourist perspectives, placed emphasis on observable attributes of the participants of the learning process. Facilitators of the learning process control variable conditions in the environment in order to solicit responses for the participants thereby informing the facilitator of conditions that are desirable and undesirable. Compared to Piaget's theory, this does not grant

<sup>160</sup> Thorndike's Law of Effect figure source : <https://www.boundless.com/> extracted on 24<sup>th</sup> April 2015

<sup>161</sup> Bransford et al. 2000. How People Learn: 124



exploratory control to the participants, which some of the critics say can lead to introduction of biases into the learning process. The importance of the behaviourist perspective to the learning theory has been the understanding that individuals are unique in respect to adaptation to new knowledge and that individual experiences play an important role with regard to how they learn.

Skinner presented the Operant Conditioning theory which was complementary to Pavlov's work but with a few enhancements. Skinner argues in his theory that complex human behaviour cannot simply be explained using classical conditioning without clear understanding of environmental variables.<sup>162</sup> According to Skinner, learning occurs continually as people seek positive feedback loops as they avoid negative reinforcement in their interactions within their environment.<sup>163</sup> These feedback loops or reinforcements act as stimuli or triggers that emanate from the learner's environment that influence the likelihood of repeating behaviour that produces them. This understanding of the role that environmental variables play in the learning process is what positions Skinner's theory uniquely. According to Skinner both negative and positive feedback loops are essential for learning, even though negative ones will not produce the desired learning outcomes but will produce reference points for avoidable behaviour.<sup>164</sup> Skinner argues that just as behaviour can be learnt so the opposite holds true that it can be unlearnt.<sup>165</sup> He further argues that human behaviours are influenced by past experiences of reward or punishment. This he argues is the dynamic nature of behaviourism which allows it to repeat rewarding behaviour and adjust the punished one.<sup>166</sup> According to him behaviour is an extension of its consequences and is shaped by past experiences, the environment and selective rewards or punishment that it attracts.<sup>167</sup>

#### 4.2.2 Cognitive Perspective on Learning

The cognitive perspective articulates learning as the acquisition of knowledge from the environment, storing it in the mind/memory and at a later stage these memories are recalled.

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<sup>162</sup> Understanding Learning source : <http://www.tllg.unisa.edu.au/> extracted on 15<sup>th</sup> March 2015

<sup>163</sup> Skinner 1953. Science and Human Behaviour: 87 - 93

<sup>164</sup> Skinner 1953. Science and Human Behaviour: 98

<sup>165</sup> Skinner 1953. Science and Human Behaviour: 78

<sup>166</sup> Skinner 1953. Science and Human Behaviour: 96

<sup>167</sup> Skinner 1953. Science and Human Behaviour: 96

According to this perspective learning takes place when new knowledge is acquired or existing knowledge is modified and stored in a systematic meaningful way. Cognitivists argue that human learning and behaviour are forged by human cognition and therefore should be separated from human behaviour. Learning involves the formation of mental representations of the aspects of a task and the discovery of how these elements are related to each other and to elements in the environment.

Vygotsky is arguably the father of the cognitivist perspective on learning. According to DeVries, Vygotsky's theory was both informed and motivated by his political involvement and as such was not widely accessible to the West and beyond.<sup>168</sup> Vygotsky's theory considered cognitive development as an ongoing process during the lifetime of an individual which can only be limited by external influences in the individual's environment. According to this theory real learning takes place when new knowledge is internalised by the learner. The internalising process occurs when a learner gains control of what they have learnt and are able to integrate it in their actions.

Piaget is one of the pioneers of this school of thought. Piaget concluded that intelligence and learning are influenced by ideas, individual judgements and biological adaptations.<sup>169</sup> Piaget's theory was built on his studies of child cognitive development which he articulated as four stages of cognitive development. The stages are: biological maturation, experience with physical environment, experience with the social environment, and equilibration. According to him the equilibration stage plays a pivotal role in the theory as it provides an interface between cognition and the environment, mapping environmental realities onto the cognitive structure. The stages covered the maturity that a human goes through as they learn and discover new things. He argued that intelligence and/or learning develops objectivity through lived experiences.<sup>170</sup> He further argues that human behaviourism is largely influenced by human cognition and that learning new concepts is only possible at a

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<sup>168</sup> DeVries 2000. Vygotsky, Piaget and Education: A Reciprocal Assimilation of Theories and Education Practices: 3

<sup>169</sup> Piaget's Stages of Cognitive Development source : <https://www.boundless.com/> extracted on 29th April 2015

<sup>170</sup> DeVries 2000. Vygotsky, Piaget and Education: A Reciprocal Assimilation of Theories and Education Practices: 11

corresponding developmental stage.<sup>171</sup> The key contribution from Piaget's theory is that of age/maturity consideration. In each of the stages he articulates the factors in the maturity of a learner and how at each stage they are able to respond to the learning stimuli.

Bruner is another major contributor to the cognitivist school of thought. His perspective was developed from a functional point of view.<sup>172</sup> According to Bruner, knowledge can be represented as enactive, iconic or symbolic. Enactive knowledge is action based, involves the manipulative effect of knowledge on the environment. Iconic and symbolic representations of knowledge involve the visualising of knowledge objects in the learner's environment, enabling the learner to transfer the object into their thinking process. According to a General Teachers Council of England article Bruner's theory argues that knowledge is transferred through the different states, from enactive to iconic and then to symbolic.<sup>173</sup>

Bradshaw summarises cognitive learning as involving the awareness of and taking in of information.<sup>174</sup> According to Bradshaw, cognitive learning is focused on shaping and development of perceptions and insights that introduce change in thought patterns and actions associated with them. She points out that the development of individual intellect involves active awareness of the individual's own thinking and their ability to prioritise events.<sup>175</sup> This awareness and prioritisation eventually leads to conceptualisation and categorisation of acquired knowledge. Bradshaw further argues that individuals develop complex cognitive structures by comparing their existing frames of reference with newly acquired knowledge.<sup>176</sup> According to her, having a clear understanding of what is already known is useful for the learner to transition into new or unknown situations or environments.

Based on the above theories and understanding, cognitivist approaches emphasise cognition as the vital ingredient in the learning process and emphasise that learning is categorised in different stages that can be attributed to the learner's thinking process.

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<sup>171</sup> Piaget's Stages of Cognitive Development source : <https://www.boundless.com/> extracted on 29th April 2015

<sup>172</sup> Research for Teachers Jerome Bruner's constructivist model and the spiral curriculum for teaching and learning: <http://www.gtce.org.uk/> extracted on 15<sup>th</sup> May 2015

<sup>173</sup> General Teaching Council for England. 2006. Research for Teachers. <http://www.gtce.org.uk/teachers/rft/bruner0506/> extracted on 15<sup>th</sup> October 2014.

<sup>174</sup> Bradshaw 2007. Effective Learning: What Teachers Need to Know?: 3

<sup>175</sup> Bradshaw 2007. Effective Learning: What Teachers Need to Know?: 4

<sup>176</sup> Bradshaw 2007. Effective Learning: What Teachers Need to Know?: 4

### 4.3 Individual Learning

This thesis has discussed the broad perspectives on learning, highlighting characteristics of the two dominant articulations of learning theory. This section explores individual learning as a foundational step towards organisational learning. As discussed in 3.2.2 the cognitive perspective on learning suggests that learning is based on an individual's mental models that have an effect on one's performance. This perspective further indicates that past experiences and collected knowledge affect what and how individuals learn in the future and how external environmental stimuli, such as information and experiences, are interpreted in the learning process. Section 3.2.1 also offers a useful perspective that suggests that individual behaviour is influenced by cues that emanate from the individual's environment, triggering a desire to acquire or search for new information in areas related to the individual's frames of reference which are associated with past experiences. This suggestion indicates that individual behaviour is on a continuum and changes to its path are very gradual. Similarly, the way knowledge as well as cues are interpreted in the cognitive process is greatly influenced by the individual's constructed frame of reference, leading to individuals forming perceptions on different subjects.

What is common in both the cognitivist's and behaviourist's perspectives is that individual perceptions hold and drive the learning process by offering varying interpretations for incoming stimuli. Argyris et al. argue that individuals are agents for organisations to learn.<sup>177</sup> They point out that organisational learning takes place when individuals in the organisation are confronted by a challenging situation or event and the onus is on them to interrogate the situation as representatives of the organisation.<sup>178</sup> During the interrogation process they constantly make reference to their perception of the desired outcome and their image of the organisation, if at any point the view of the actual result and that of their perception do not match they begin to negotiate their expectations against the actuals, in the process transforming the image of the organisation.<sup>179</sup> One can deduce that an organisation matures as its people learn and act on what they learn; therefore, in the process the organisation learns from the people's behaviour within it.

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<sup>177</sup> Argyris et al. 1978. *Organizational Learning: A Theory of Action Perspective*: 16

<sup>178</sup> Argyris et al. 1978. *Organizational Learning: A Theory of Action Perspective*: 16

<sup>179</sup> Argyris et al. 1978. *Organizational Learning: A Theory of Action Perspective*: 16

#### 4.4 Role of Culture in Organisational Learning

Culture can be broadly defined as the shared and acceptable way people do things. Schein describes culture as a pattern of basic assumptions that are formulated, refined and articulated by communities as they deal with internal and external adaptation issues.<sup>180</sup> Culture defines acceptable parameters (norms) within which people who subscribe to a particular community or group can actively participate in the affairs of the group. According to Schein these parameters or norms would have been tried, tested and seen to be yielding desired outcomes for them to be widely adopted.<sup>181</sup> Schein further argues that the adopted norms inform the members of group on the correct way to perceive, think and feel in specific situations.

Culture in an organisation is then fundamentally based on a belief system that is shared throughout the entire organisation.<sup>182</sup> According to Denison, organisational culture has many dimensions that require a systematic value framework to explore. He presents the competing values framework to categorise organisational culture. This framework presents two different dimensions of categorising organisational culture, which include a dimension that deals with flexibility vs. control and the dimension that deals with activities that occur within or outside the organisation. The two dimensions are then combined to define four different types of organisational cultures: group, developmental, rational and hierarchical. According to Denison group culture is focused on the importance of flexibility and change to internal organisational structures. Developmental culture is focused on the importance of flexibility in how organisations are influenced by factors external to them. Rational culture is focused on the importance of control in dealing with external factors. And hierarchical culture is focused on stability of the internal structures of the organisation. Culture in an organisation is usually a composition of different orientations but one dominant orientation will always stand out.

The competing values framework offers a good platform for understanding how organisational culture is positioned and also gives generic characteristics of the broad categories that exist. These categories essentially provide a blueprint of how the cultural landscape of shared values, beliefs, norms and practices are aligned in organisations. Culture becomes a key component of organisational learning as it indicates the alignment of the

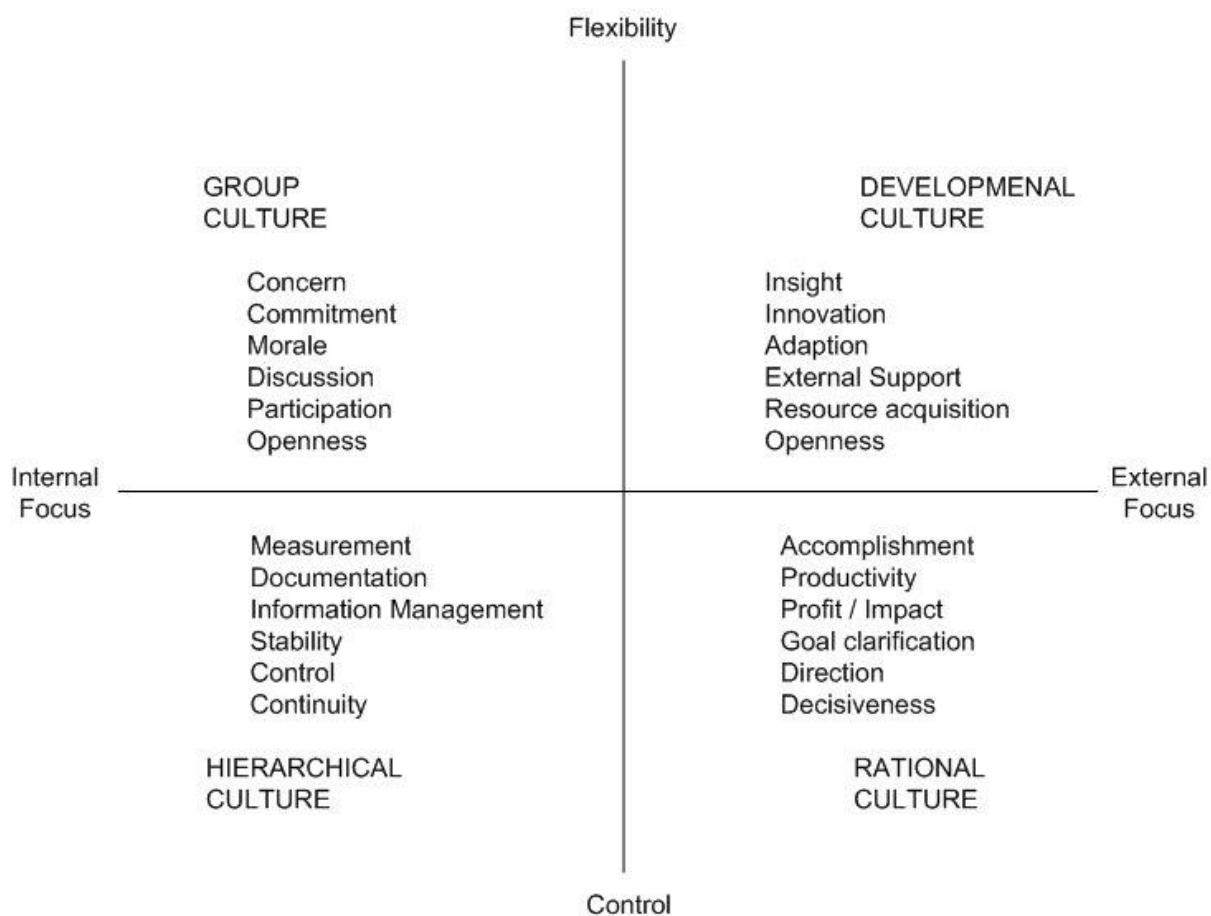
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<sup>180</sup> Schein 1992. *Organizational Culture and Leadership*: 18

<sup>181</sup> Schein 1992. *Organizational Culture and Leadership*: 74

<sup>182</sup> Denison 1996. *What is the difference between organizational culture and climate?*: 622

organisation towards learning.<sup>183</sup> According to Petrides when organisations embed learning into their strategy for growth and survival then learning becomes incorporated in the culture of the organisation.<sup>184</sup> Petrides, like Denison, acknowledges that flexibility, adaptability and control all fall in the domain of organisational culture and forms part of an organisation’s strategy on learning and innovation. It is important to note the introduction of innovation at this stage because innovation, like learning, is tightly coupled with culture within an organisation.



**Figure 9: The Competing Values Framework**<sup>185</sup>

Parry et al. argue that there is a direct correlation between organisational culture and positive

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<sup>183</sup> Petrides 2002. Organizational Learning and the case for knowledge-based systems: 70

<sup>184</sup> Petrides 2002. Organizational Learning and the case for knowledge-based systems: 77

<sup>185</sup> Denison 1996. What is the difference between organizational culture and climate?

or desirable outcomes at an individual and organisational level.<sup>186</sup> According to them, the extent of satisfaction from the outcomes is influenced by the levels of support and promotion for learning and innovation in the culture itself. This requires deliberate formulation of policies that encourage and support easy sharing of knowledge and information at all levels of the organisation. Petrides points out that policy formulation creates an enabling environment for individuals to gain access to information that allows them to share their ideas in a safe environment.<sup>187</sup> This enables individuals to broaden their capacity to act, change, grow and influence organisational performance as well as adaptability to changing environments. This aspect of culture is important because change is one of the key attributes needed for organisational learning to be successful.

Škerlavaj et al. describe organisational learning culture as a set of norms and values focused on the performance of an organisation with emphasis on a development of a systematic approach to how knowledge is created, shared and commercialised. In Škerlavaj et al.'s description they assert that fostering a culture of learning in organisations is beneficial for both individual participants and the entire organisation as it taps into the idea potential that could otherwise would not have been surfaced.

This section has highlighted the significance of a learning culture for successful organisational learning. It has also explored the dimensions and types of cultures generally found in organisations. The next section discusses the concept of organisational learning.

#### **4.5 Organisational Learning**

Having explored the conceptual foundation and roles that learning and culture play in organisational learning, it is important to understand conceptually what is involved in organisational learning. This section explores the historical, conceptual and theoretical foundation of organisational learning.

The concept of organisational learning gained significance during the mid-20<sup>th</sup> century when learning was at the centre of most academic debates, in particular ones involving behaviourists and economists.<sup>188</sup> These debates stemmed from a rise in economic models of the firm in the early 20th century. Core to these debates was the idea that organisational

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<sup>186</sup> Parry et al. 2000. The New Zealand leadership survey: 10

<sup>187</sup> Petrides 2002. Organizational Learning and the case for knowledge-based systems: 79

<sup>188</sup> Schulz 2002. Organizational learning: The Blackwell companion to organizations: 415

decisions are uniquely determined by environmental constraints and not the organisation's responses to those constraints.<sup>189</sup> These type of debates gave rise to the number of organisations as well as scholars who explored the notion of organisational learning. Many of these scholars have described organisational learning as a process that leverages retrospective events both within and outside the organisation in order to position the organisation competitively. Templeton et al. describe organisational learning as a collection of action-oriented traits that influence output in organisations.<sup>190</sup> This description is important to the understanding of organisational learning as it as it points out that organisational learning is not a "thing" but rather a collective of many processes.

During the 1970s Argyris et al. and Duncan et al. contributed to the organisational learning theory and can be considered as thought leaders of that era. According to Argyris et al. organisational learning can be described as a process that is collaborative in nature, involving individuals from both within and outside the organisation.<sup>191</sup> This description is relevant for understanding the role that individuals and experimentation play in organisations. Argyris et al. argued that an organisation learns through the individuals that are part of that organisation. Haho explores Duncan et al.'s contribution which, according to her, builds on Argyris et al.'s work. Duncan et al. describe organisational learning as a knowledge-intensive process that is used to develop action relationships and manage their effect on the environment.<sup>192</sup> Argyris et al. make a similar suggestion when they assert that organisational learning is a conscious process of acquisition of knowledge.<sup>193</sup> In Duncan et al.'s theory organisational learning is argued to be focused on the creation of knowledge which can be used to facilitate change in organisations.<sup>194</sup> This leads to the understanding that organisations must be deliberate in their policy formulation and enforcement of organisational learning strategy. Haho argues that organisations have choice to either to implement or not the ideas that are developed, and therefore organisational learning should not be seen only to address effectiveness and action

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<sup>189</sup> Schulz 2002. *Organizational learning: The Blackwell companion to organizations*: 417

<sup>190</sup> Templeton et al. 2002. *Development of a measure for organizational learning construct*

<sup>191</sup> Argyris et al. 1978. *Organizational Learning: A Theory of Action Perspective*: 17

<sup>192</sup> Duncan et al. 1979 as cited by Haho 2014. *Learning enablers, learning outcomes, Learning paths, and their relationship in Organizational Learning and Change*: 29

<sup>193</sup> Argyris et al. 1996. *Organizational Learning 11: Theory, Methods and Practice*. Reading: 20

<sup>194</sup> Haho 2014. *Learning enablers, learning outcomes, Learning paths, and their relationship in Organizational Learning and Change*: 29



in organisations but also as a capacity building mechanism.<sup>195</sup>

The 1980s saw a spike in contributors to the organisational learning theory and for the purpose of this thesis only a few extracts from these scholars are presented. Levitt et al. are among the contributors in this area and their contribution focused on knowledge as both the driver and catalyst for learning in organisations and as such should be heavily embedded in the policies, practices and routines of an organisation.<sup>196</sup> Levitt et al. argue that organisational learning is fundamentally built on three classical observations drawn on their behavioural studies of organisations. In the first observation they argue that behaviour in organisations is surfaced through the routines which are characterised by different actions. They further argue that these actions are dependent on the individual's logical interpretation of how appropriate the actions are depending on environmental variables.<sup>197</sup> This simply asserts the importance of individual learners in the organisation and that the sense individuals make of the routine ultimately determines how the learning culture is shaped, or the general behaviour of the organisation. In the second observation they point out that actions individuals carry out are "history-dependent". They argue that retrospection plays an important role in routines and not the ability of individuals to anticipate the future.<sup>198</sup> In the third observation they argue that organisations are target oriented and as such organisational behaviour is shaped as they reconcile the actuals against their planned targets. To sum up the three observations they point out that organisations learn by encoding their interpretation of the past into routines, rules and procedures in order to guide their behaviour. Core to Levitt et al.'s conceptualisation of organisational learning is their view of organisational learning as being routine-based, history-dependent and targeted.<sup>199</sup>

Levinthal et al. also contributed a unique perspective during the 1980s. They presented a model that made provision for learning in organisations that takes place in situations of ambiguity.<sup>200</sup> They argued that ambiguity has fundamentally two entry points.<sup>201</sup>

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<sup>195</sup> Haho 2014. Learning enablers, learning outcomes, Learning paths, and their relationship in Organizational Learning and Change: 30

<sup>196</sup> Levitt et al. 1988. Organizational learning. pp. 319–340.

<sup>197</sup> Levitt et al. 1988. Organizational learning: 320

<sup>198</sup> Levitt et al. 1988. Organizational learning: 320

<sup>199</sup> Levitt et al. 1988. Organizational learning: 319

<sup>200</sup> Levinthal 1981. A Model of Adaptive Organizational Search in: 307 - 333

In organisations' search for technology ambiguity is first presented when evaluating the effect of an adopted technology's performance and when the technology is regarded as evolving.

Levinthal et al.'s theory factors in the rate at which individuals learn. They argue that this is important because signal or cue responses determine the sense that individuals make of a particular situation. They further argued that ambiguity allows individuals to provide varying interpretations to a situation that an organisation is faced with. Time also plays an important role in how people learn in an organisation, as over time the levels of ambiguity begin to subside, thereby offering more unique insights.<sup>202</sup>

Senge is credited to be one of the leading scholars of the 1990s that conceptualised organisational learning and/or learning organisations. According to Senge learning in organisations is facilitated by learning individuals and is dependent on individuals cultivating a shared vision as they complement their own skill set.<sup>203</sup> He further argues that organisational environment must be conducive for individuals to expand their capacity of creating desired outcomes and in the process pursue their aspirations freely.<sup>204</sup> This according to him accords people the opportunity to learn how to learn together with other people. Senge puts forward five disciplines in his theory that form part of the base for learning in organisations; these include systems thinking, personal mastery, mental models, team learning and shared vision.<sup>205</sup> According to him systems thinking connects all the disciplines as a coherent value proposition for both theory and practice. Personal mastery is focused on personal motivation to learn and understand the impact of an individual's action on their environment. Mental models are focused on highlighting the viewpoints adapted for interpreting the environment and how they can be improved. Team learning is focused on developing skills of individuals that would enable them to have a holistic view of their environment. And shared vision enables individuals to have a greater buy-in into the vision of the collective for the long term.

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<sup>201</sup> Levinthal 1981. A Model of Adaptive Organizational Search in: 307

<sup>202</sup> Levinthal 1981. A Model of Adaptive Organizational Search in: 316

<sup>203</sup> Senge 1990a. The Fifth Discipline, the Art and Practice of the Learning Organization. pp. 3-16

<sup>204</sup> Senge 1990a. The Fifth Discipline, the Art and Practice of the Learning Organization: 3

<sup>205</sup> Senge 1990a. The Fifth Discipline, the Art and Practice of the Learning Organization: 3 -16

Another prominent contributor of the 1990s is Dixon. Unique to Dixon's theory is her deliberate distinction between individual and organisational learning. According to her in order to understand how organisational learning differs from individual learning:<sup>206</sup>

It is helpful to think of organisational members as having meaning structures that could be categorized as private, accessible and collective.

Dixon points out that "private" in her categorisation refers to meaning which the individual constructs and does not disclose to other individuals in the organisation, whereas accessible and collective meanings are available to other individuals in the organisation.<sup>207</sup> To explore this phenomenon Dixon presents a framework she refers to as an organisational learning cycle where information is created through the direct experience of individuals, shared and interpreted collectively, leading to action being taken by those involved after careful consideration of the impact of their actions. She identifies four steps as part of learning cycle. The first step involves the widespread generation of information: this step deals with the availability of knowledge/information-creating assets in the environment both internal and external to the organisation.<sup>208</sup> She argues that organisations must be cognisant of the existence of information and must observe the cues that emanate from processes and products.<sup>209</sup> The second step involves the integration of new information into the organisational context. According to Dixon, information that is collected for organisational purposes can only be understood with the context of the entire organisation. This allows individuals to work together and share their understanding of the tasks to be accomplished.<sup>210</sup> The third one is the collective interpretation of information. This step emphasises the collective interpretation of information as opposed to individual interpretation. The fourth is having authority to take responsibility for actions based on the interpreted meaning.

Argyris, who has already been discussed in the 1970s contributors section, is revisited for his contribution during the 1990s. At this stage Argyris is credited with evangelising pioneering organisational learning concepts, one of which is surfaced which he articulates as double-

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<sup>206</sup> Dixon 1999. The Organisational learning cycle: 43

<sup>207</sup> Dixon 1999. The Organisational learning cycle: 45

<sup>208</sup> Dixon 1999. The Organisational learning cycle: 63

<sup>209</sup> Dixon 1999. The Organisational learning cycle: 93

<sup>210</sup> Dixon 1999. The Organisational learning cycle: 98

loop learning. He draws a distinction between learning that challenges the norms, which he calls double-loop learning, and routine learning which he refers to as single-loop learning. He argues that double-loop learning is solution oriented, focused at solving difficult problems, while single-loop learning is routine centred where people are conditioned to believe unthreatening truths are a good idea.<sup>211</sup> According to him double-loop learning involves critical testing of claims and statements made among colleagues.<sup>212</sup> He cites a few common managerial practices that he argues can hinder double-loop learning even if they assist in solving other challenges; these includes focus groups, surveys and management-by-walking around.<sup>213</sup> According to him these create an environment in which employees assume the role of critics while management assumes the role of problem solvers instead of having a robust engagement offered by the double-loop learning process.<sup>214</sup> He points out that for double-loop learning to thrive the onus is on employees to seek truth, transparency and take responsibility in the workplace.<sup>215</sup> He argues that this promotes individual introspection and taking responsibility for action or inaction.<sup>216</sup> On the other end of the spectrum, according to Schulz, is that organisations respond with varying performance-engagement programmes when faced with recurring decision-making situations brought about by employee–organisation interactions.<sup>217</sup>

#### **4.6 Organisational Learning and Knowledge Management**

The concept of knowledge management, just like organisational learning, has grown in prominence over the past few years. These two concepts are seldom discussed together yet they both address the nature of learning in the organisation and how organisations build capacity for learning in order for them to remain competitive. The advent of the knowledge economy has made these concepts cardinal constructs of modern organisational theory and practice which necessitates making mention of them both whenever one of the concepts is explored.

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<sup>211</sup> Argyris 1994. Good Communication that blocks learning: 73

<sup>212</sup> Argyris 1994. Good Communication that blocks learning: 73

<sup>213</sup> Argyris 1994. Good Communication that blocks learning: 75

<sup>214</sup> Argyris 1994. Good Communication that blocks learning: 75

<sup>215</sup> Argyris 1994. Good Communication that blocks learning: 73

<sup>216</sup> Argyris 1994. Good Communication that blocks learning: 74

<sup>217</sup> Schulz 2002. Organizational learning: The Blackwell companion to organizations: 417

Exploration into the concept of knowledge management would not be complete without touching on the complex phenomenon of knowledge. The debate on the definition of knowledge is one of the longest running in modern organisational theory. This debate is divided between those that present positivist, non-positivist and pluralistic perspectives of how knowledge can be understood.<sup>218</sup> The pluralistic perspective is articulated as the aggregation of the positivist and non-positivist.<sup>219</sup> According to Vo these perspectives have influenced the development of perspectives on knowledge management. One's understanding of knowledge is reflected in how one implements, adopts and practises knowledge management.

The positivist school is the predominant and widely accepted view in organisational theory. This school of thought articulates knowledge as “justified true belief”. According to Vo, in this school of thought knowledge is viewed as existing independent from the knowing subject.<sup>220</sup> Vo points out that this perspective articulates knowledge as being perceptive and a commodity, thereby implying that knowledge is something that can easily be acquired by an organisation.<sup>221</sup> Knowledge is thought to hold a representation of real life objects and events which are stored either cognitively or in symbols.<sup>222</sup> This perspective speaks to the universal nature of knowledge, which enables construction and consumption of the knowledge to be standardised.<sup>223</sup> Vo argues that the only deviation from this standardisation of knowledge comes through learning, which in itself does not change the nature of the knowledge but rather offers improvements on how the object and events are represented.<sup>224</sup> The positivist perspective offers another interesting view on knowledge which argues that knowledge is independent of context. Regardless of how and when the knowledge is used, the context of its use does not define what that knowledge is or what it becomes.<sup>225</sup> This suggests that

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<sup>218</sup> Vo. 2012. Pragmatist Perspective on Knowledge and Knowledge Management in Organizations

<sup>219</sup> Vo. 2012. Pragmatist Perspective on Knowledge and Knowledge Management in Organizations: 79

<sup>220</sup> Vo. 2012. Pragmatist Perspective on Knowledge and Knowledge Management in Organizations: 79

<sup>221</sup> Vo. 2012. Pragmatist Perspective on Knowledge and Knowledge Management in Organizations: 79

<sup>222</sup> Vo. 2012. Pragmatist Perspective on Knowledge and Knowledge Management in Organizations: 79

<sup>223</sup> Vo. 2012. Pragmatist Perspective on Knowledge and Knowledge Management in Organizations: 79

“Two cognitive systems should come up with the same representation of the same objects or situations. It is free from the influences of any subjective assumptions that may distort the reality”

<sup>224</sup> Vo. 2012. Pragmatist Perspective on Knowledge and Knowledge Management in Organizations: 79

<sup>225</sup> Vo. 2012. Pragmatist Perspective on Knowledge and Knowledge Management in Organizations.

knowledge is loosely coupled with its application or the actions associated with it. The implication of this viewpoint is that organisations can only control or manage universal knowledge according to the context applicable to that organisation. According to Vo, the options available to organisations when it comes to managing knowledge are capturing, codifying and distribution of knowledge.<sup>226</sup>

The positivist school of thought has over the years been complemented and challenged by the non-positivist school of thought, and central to this has been the contention over the view of knowledge as “a commodity that can be acquired and easily distributed throughout the organisation”.<sup>227</sup> The non-positivist perspective articulates knowledge as being a dynamic process of knowing.<sup>228</sup> According to Vera knowledge cannot be conceived independently from action and that humans are able to know in two ways, based on reason or experience.<sup>229</sup> This implies that knowledge is socially constructed as knowledge agents interact and are embedded in organisational identities.<sup>230</sup> According to Vo this social construction is largely influenced by individual perceptions of reality. In organisations people exist in different disciplines and operational contexts that shape how they view their environment and ultimately how they perceive different realities.<sup>231</sup> It is for this reason that in this school of thought communities of practice play a very important role in the process of knowledge creation. Vo uses Lave et al.’s work to define communities of practice which they describe as “a set of relations among persons, activity, and world, over time”.<sup>232</sup> He argues that social construction of knowledge is driven by practice or individual participation. It is in the process of individual participation that the definition of how knowledge can be used to organise and articulate what needs to be done by a practice and in turn an organisation.<sup>233</sup>

The three perspectives on knowledge are the conceptual foundation for the various perspectives on knowledge management, in as far as influencing the forms of knowledge and

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<sup>226</sup> Vo. 2012. Pragmatist Perspective on Knowledge and Knowledge Management in Organizations.

<sup>227</sup> Vera et al. 2006. Organizational learning and knowledge management: toward an integrative framework

<sup>228</sup> Snowden. 2002. Complex Acts of Knowing, Paradox and Descriptive Self-awareness

<sup>229</sup> Vera et al. 2006. Organizational learning and knowledge management: toward an integrative framework: 125

<sup>230</sup> Vo. 2012. Pragmatist Perspective on Knowledge and Knowledge Management in Organizations: 80

<sup>231</sup> Vo. 2012. Pragmatist Perspective on Knowledge and Knowledge Management in Organizations: 80

<sup>232</sup> Lave et al. 1991. Situated learning. Legitimate peripheral participation. As Cited by Vo. 2012. Pragmatist Perspective on Knowledge and Knowledge Management in Organizations: 80

<sup>233</sup> Gherardi. 2000. Practice-based theorizing on learning and knowing in organizations: 212

how they articulated and managed. According to Argote et al. regardless of the school of thought, knowledge management is aimed at understanding the sustainability of knowledge in organisations for competitive advantage.<sup>234</sup> Vera et al. assert that in different communities knowledge management is understood and articulated differently.<sup>235</sup> They argue that practitioners place emphasis on the proactive management of knowledge which adopts a non-positivist perspective of knowledge.<sup>236</sup> On the other side of the spectrum technologists articulate it as a process that is reliant on information technology and advocate for implementation of tools and applications that aid in the storage of data, documents and metadata that promote “collaboration” among members of the organisation.<sup>237</sup>

Argote highlights the overlap that exists between organisational learning and knowledge management when she argues that both concepts define learning as the medium of knowledge acquisition.<sup>238</sup> Learning in both concepts is explored at a cognitive and behavioural level. Vera points out that both concepts recognise that learning and knowing are rooted in practice and therefore both exist in a contextualised socially-distributed activity system.<sup>239</sup> Context is in this case provided based on the participant’s knowledge and how it is relevant in a given situation.

## **4.7 Organisational Learning as Sensemaking**

### **4.7.1 Identity Construction**

It has been established that the concept of organisational learning occurs at an organisational level, and is supplemented by members of the organisation. Individuals learn by negotiating responses that they receive against the knowledge structures that define them as individuals and as a collective.<sup>240</sup> As individuals receive responses that suggest a change in how they understand events and their environment, they tend to try and negotiate their own identities and those of others in the organisation. This negotiation is facilitated more easily when the organisation is reflective of its intent to learn or adjust as people learn. This, according to

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<sup>234</sup> Argote. 2001. *Organizational Learning: Creating, Retaining, and Transferring Knowledge*: 18

<sup>235</sup> Vera et al. 2006. *Organizational learning and knowledge management: toward an integrative framework*: 3

<sup>236</sup> Vera et al. 2006. *Organizational learning and knowledge management: toward an integrative framework*: 3

<sup>237</sup> Vera et al. 2006. *Organizational learning and knowledge management: toward an integrative framework*: 3

<sup>238</sup> Argote. 2001. *Organizational Learning: Creating, Retaining, and Transferring Knowledge*.

<sup>239</sup> Vera et al. 2006. *Organizational learning and knowledge management: toward an integrative framework*: 8

<sup>240</sup> Bransford et al. 2000. *How People Learn*: 124

Skinner, is what can facilitate learning, as individuals learn by seeking positive reinforcement from their environment (in this case the organisation).<sup>241</sup> Positive reinforcement is a result of individuals interrogating events they are faced with in order to determine if they represent the image they hold of the organisation.<sup>242</sup> From the sensemaking point of view, this speaks to the idea that sensemakers are never a singular representation of self but a constitution of a parliament of selves.<sup>243</sup> People learn as they negotiate the role they play in a situation in the context of what they believe their organisation represents.

Collective identity construction is key for organisational learning, as individuals' contribution to the learning process is dependent on them being able to identify with the image of the collective and that image must be adjustable to represent every participating or subscribing individual identity.<sup>244</sup> This points to individual and organisational identities as constantly changing as people learn and ultimately as the organisation learns. Learning, just like identities, is driven by human interaction, which derive the constant reflection of self by both individuals and the organisation. At an individual level, learning shapes the mental models that influence how individuals present themselves in a collective.<sup>245</sup> When these individual mental models become integrated into the collective to an extent that they define the collective identity, then they have the potential to alter the organisation's interpretive model.<sup>246</sup> This alteration process is a negotiation process that is not always deliberate and straightforward. Senge's view of this negotiation process is that people engage in the learning process in order to understand themselves and their systems, and that they do this through a process that is more like a trial-and-error type of process.<sup>247</sup> He suggests that this negotiation (trial and error) is necessary as it allows individuals to shift their own ways of thinking about systems, about organisations and about themselves, without which organisations would be ineffective.

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<sup>241</sup> Skinner 1953. *Science and Human Behaviour*: 87–93

<sup>242</sup> Argyris et al. 1978. *Organizational Learning: A Theory of Action Perspective*: 16

<sup>243</sup> Weick. 1995. *Sensemaking in Organizations*: 18

<sup>244</sup> Weick et al. 2005. *Organizing and the process of sensemaking in organizational science*: Weick et al. consider identities as being mutable rather stable enduring concepts. They are in a continuous state of flux with the capacity to be shaped as required.

<sup>245</sup> Argyris et al. 1978. *Organizational Learning: A Theory of Action Perspective*: 17

<sup>246</sup> Senge 1990a. *The Fifth Discipline, the Art and Practice of the Learning Organization*: 17

<sup>247</sup> Senge 1990a. *The Fifth Discipline, the Art and Practice of the Learning Organization*: 237



#### 4.7.2 Cues and Frames

In summary, organisational learning has been presented as being a process that aggregates or reconciles the needs, values and views of individuals in an organisation towards a collective outcome. Important to note is that the process is dependent on how individuals interpret and respond to stimuli. People learn by observing what effect their actions or engagements have on their environment.<sup>248</sup> People leverage their observation skills in order to extract meaning from cues or stimuli that they are presented with. The observation skills are formed as individual cognitive frames mature and as individuals' ability to recognise discrepancies and equivocality from their environment, and when they can validate what they know by sharing with others in a collective. By individuals sharing experiences with others, collectively they are able to reorder any discrepancies and are able to create new patterns from them.<sup>249</sup> In the case of innovation, the collective seeks ways of creating novelty from the discrepant cues. This from a sensemaking perspective is achieved when the cues are sorted, labelled, connected to past experiences and presented in a way that allows the organisation to offer plausible outcomes or responses.

#### 4.7.3 Retrospection

Organisational learning success hinges on an organisation's ability to learn from its experiences and evolve to adapt to changes in its environment. How organisations label and sort cues is driven by frames of reference that exist within the organisation and are constructed from lived experiences. References to past experiences present an avenue for feedback into the frames and the process which allows for new frames to be created or existing ones to be refined.

In organisational learning, individuals first make reference to their own personal experiences, then those of the organisation in order to understand and assign meaning to events. If the two sets of experiences are not aligned in any way, people make attempts to negotiate the two differing perspectives, in the process creating new knowledge and development of new understanding. Weick characterises this process as involving editing and pruning.<sup>250</sup> Editing and pruning refer to how individuals and organisations refine their understanding based on

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<sup>248</sup> Estes 1967. Reinforcement in Human Learning: 7

<sup>249</sup> Thorndike's Law of Effect source : <https://www.boundless.com/> extracted on 24th April 2015

<sup>250</sup> Weick. 2001. Making Sense of the Organisation: 237

what they already know, in the process developing new understanding.

#### **4.7.4 Social**

It has been shown that organisational learning is something that people in organisations do, in other words as a social phenomenon where people interact with others in order to utilise shared resources for purposes of refining and creating new knowledge. Organisational learning leverages individual interactions and how individuals interact with the environment in order to formulate new ways for the organisation to interact with its environment.

Organisational learning offers a variety of ways through which learning takes place in organisations, which includes experimentation or observation. The social aspect of organisational learning allows the organisation and individuals to observe other models in order to replicate what they observe. This offers organisations an opportunity that allows their members to apply knowledge that they have already learnt from others and be able to offer a chance for others to learn from them.

Organisational culture also plays an important role in determining how social the learning process is, and how new knowledge is filtered through the organisation. Organisational cultural consideration must accommodate individual personal values and beliefs to be reflected and considered during the process. It is important to note that culture in itself can be considered as a product of learning. Organisations develop cultures through learnt behaviour: by formulating policies and procedures that they would have observed to reap reward or deter bad behaviour in other organisations.

The social nature of learning cuts right across the entire learning process, from initial engagement, organisational structure, formulation of the learning process and importantly the benefit realisation process. Benefit and rewards of the learning process are a key consideration for individuals and organisations in order for them to learn effectively. People and organisations engage more with the learning process when they can associate either reward or punishment to certain types of behaviour.

#### **4.8 Conclusion and Summary**

The chapter discussed organisational learning as a strategy towards organisational innovation and competitiveness. In order to gain insight into organisational learning the chapter discussed the learning concept, identifying two schools of thought as being dominant, i.e. the cognitive and behaviourist schools. As part of the behaviourist school, the chapter explored work by Thorndike, Pavlov and Skinner as key contributors referred to by many scholars.

The consensus among these authorities is that learning is a product of human behavioural adjustment. Responses that people offer to events around them influence how they learn and ultimately behave.

The other learning dimension explored is from the cognitive school, which articulates learning as a process that is in and influenced by human mental models. As part of this dimension, the chapter explored work by Vygotsky, Piaget, Brunner and Bradshaw.

The chapter then discussed individual learning as a vital component of organisational learning. It highlighted that organisations learn through individuals or their people and as such explores the behaviourist and cognitivist views on individual learning.

The chapter then highlighted the vital role that organisational culture plays in how people ultimately learn. The chapter established what culture is and the influence it has on learning. It went on to present the competing value framework in order to understand the dimensions of culture. The competing value framework offered a good platform for understanding how culture can be mapped. The chapter explored Parry et al.'s work which draws a comparison or relationship between the adopted organisational culture and the output produced by organisations. Škerlavaj et al. also offer a perspective on culture which also draws a comparison between performance and organisational culture.

The chapter then discussed organisational learning as a concept, starting by defining the concept and then exploring the contributions over the years. The chapter explored work by scholars such as Argyris et al., Duncan et al., Levett et al., Levinthal et al., Senge and Dixon in order to get a balanced view on organisational learning.

Finally the chapter explored knowledge management and organisational learning as complementary concepts that warrant mentioning the other, whenever one is discussed. The chapter relied on Vo's work on knowledge management to gain an understanding of the concept.

## Chapter 5

# Collaboration

### 5.1 Background on Collaboration

Collaboration at its conceptual foundation is a social phenomenon that needs to be understood as such and how it impacts learning in organisations for purposes of innovation. Common synonyms include partnerships, joint ventures, alliances and associations. These are all polymorphic symbolic representations of the concept of people coming together for productivity, common good and common gain. It is a concept that is common to various industries, sectors and disciplines.

Understanding how people work together, how they form a collective identity and create new knowledge, is very important to understand in order for organisations to maximise their capacity to learn and innovate. This position highlights that learning and innovation are people-centric processes and understanding collaboration would assist in further understanding of learning that is meant for innovation. With this clarity, it is important to note that collaboration is not driven by technology as many practitioners and scholars hold, but rather technology only facilitates the process.

Collaboration has been described as collective intelligence, action and communities of practice. All these articulations imply a level of cognitive organisation within the group that leverages individual capacities in order to find a balance in the collective. The balance of the collective is largely influenced by the diversity of the group, the culture of the organisation and size of the group. This thesis explores all these traits of collaboration in order to highlight the social aspects of learning and how leveraging individual knowledge is more effective when it is complemented by other views.

This chapter summarises the findings and a critical review of the relevant theoretical and practical literature from academic, professional and practitioner sources in relation to the concept of collaboration in organisations. They are classified as identifying the key elements necessary for successful organisational collaborations. The review allows a conceptualisation of the factors as being either behavioural or structural. The chapter explores collaboration as a whole with various components influencing the process and management thereof. This chapter attempts to explore the intersection of the various schools of thought concerning collaboration.

There is a lack of coherence in the literature among different researchers and practitioners as to the benefits, reasons and the key factors in achieving successful collaboration. This thesis begins by providing the varied definitions of collaboration. Then it explores the constructs of collaboration, beginning with identity construction as a foundational building block of any collaborative process. Then we discuss collaboration as a social phenomenon with diverse compositions. The chapter then highlights the role learning plays in the collaborative process and its importance.

The chapter begins by exploring the different perspectives on the definition of collaboration. It establishes that collaboration is ultimately a social phenomenon which should be understood and articulated as such.

The chapter then looks at collective intelligence as a conceptualisation of the cognitive value of people working together. We explore Por's contribution to the perspective on collaboration. Por offers a lens through which collective intelligence can be viewed and analysed. The chapter highlights collective intelligence as the socialisation of individual knowledge for a common goal. It positions collective intelligence as cognitivist articulation of collaborative theory.

The chapter goes to discuss collective action which offers a perspective into target-driven collaborative theory and practice. The term "common good" is surfaced during the discussion of collective action to describe the target-driven concept. This thesis relies on Olson's work on collective action in order to have a view of how it fits into the collaboration picture.

The chapter then introduces the concept of identity construction as articulated in the sensemaking theory to provide a perspective into the role that individual identities play in a group dynamic. In order to fully grasp the identity construction concept, the chapter introduces the joint problem space from Roselle's work. This maps the social, sensemaking

and cognitive path that individuals take in order to arrive at a shared view, goals and problem viewpoint.

The chapter then moves on to discuss group dynamics and the role that diversity plays in building effective group dynamics. This thesis positions diversity as being more than just the physical and social attributes that describe an individual or groups of people, but as a clear representation of the diverse knowledge embodied by different individuals. The chapter then introduces the perspective on learning and the role it plays within the collaborative space. The chapter positions collaboration for purposes of innovation as a continuous learning experience and as such warrants a brief mention of learning when being discussed.

Finally the chapter discusses the role that trust and engagement play in developing group synergy that is conducive for innovation and learning. The chapter visits Noteboom's work to gain an insight into the concept of trust. It also highlights the importance of maintaining high energy levels and productivity within the collaborative group for its own success.

## **5.2 Defining Collaboration**

The concept of collaboration has been used to define social aspects of productivity and development of knowledge by groups of people. The subject of collaboration has attracted academic interest from scholars of many disciplines who have presented unique perspectives on the concept. These have ranged from sociology, technology, business and recently knowledge management literature. Research done on the subject of collaboration has been in large part from the behavioural science field and some from management theory literature. It is interesting to note that with the vast amount of study done on the subject there is very little awareness of the definition of what "collaboration" entails. It is therefore important to acknowledge that the term "collaboration" has been used in different studies and practice to represent social constructs such as partnerships, joint ventures, alliances and associations.

To better understand collaboration one has to trace the linguistic history of the term itself, with a Latin foundation whose meaning according to the Oxford online dictionary is "the action of working with someone or the action of working together to produce something".<sup>251</sup>

From the Oxford definition, one can safely assume that collaboration is an action-filled social

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<sup>251</sup> Oxford dictionary. <http://www.oxforddictionaries.com/definition/english/collaboration>

process that is undertaken by two or more individuals/organisations for a productive outcome. A lot of studies have presented collaboration as a phenomenon that is social, interactive and diverse: a very complex continuum of both interorganisational and interpersonal proportions.<sup>252</sup> The Australian Research Alliance for Children and Youth (ARACY) refers to Friend et al.'s work on collaboration when they describe it as a process which develops capabilities for individuals to accomplish common goals, in the process developing trust and a sense of togetherness.<sup>253</sup> According to Wood et al the phenomenon of collaboration is achieved when different stakeholders come together as a group to engage on a specific subject matter in an interactive fashion using shared rules, norms, and structures to act or decide on issues related to that subject matter.<sup>254</sup> Bleich described it as being a complex interdisciplinary developmental process that is resource-intensive that is achieved when “the goals and aims of every party are focused on a common cause or need, then the vision of what is desired is clear.”<sup>255</sup>

These and many more definitions ultimately share similar sentiments about the having a shared perspective on the activities being addressed when people come together. According to Zack, knowledge is usually a driving force at the centre of constructing an environment of collaboration.<sup>256</sup> To better understand the concept of collaboration the thesis explores the different articulations of the concept of collaboration and the common facets in the different schools.

### 5.2.1 Collaboration as Collective Intelligence

Collective intelligence has grown in prominence as a school of thought articulating how people work together. According to Por collective intelligence can be described according to four different lenses, namely the cognitive, evolutionary, political economy and ICT lenses.<sup>257</sup>

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<sup>252</sup> Australian Research Alliance for Children and Youth 2009. What is collaboration?: 2

<sup>253</sup> Friend 1992 et al. As cited by Australian Research Alliance for Children and Youth 2009. What is collaboration?: 3

<sup>254</sup> Wood et al. 1991.

<sup>255</sup> Bleich 1995. Institutional factors in paradigm change. *Family Systems Medicine*: 320

<sup>256</sup> Zack 1999. Managing codified knowledge. *Sloan Management Review*: 46

<sup>257</sup> Por. 2008. Collective intelligence and Collective Leadership: 2

The cognitive lens views collective intelligence as groups of individuals working together in a manner that seems intelligent.<sup>258</sup> This description opens up a possibility of having the reverse of collective intelligence, in which groups of individuals can work together in a manner that is irrational or stupid. Por points out that social concepts such as communities, organisations and cultures which deal with groups of people, all exhibit cognitive or “mind-like”<sup>259</sup> properties that allow these groups to learn, build perceptions, act, think and articulate problems etc.<sup>260</sup> Por goes on to argue that by definition intelligence represents the cognitive abilities of humans, abilities such as perception, planning, coordination, memory, imagination, hypothesis generation, inquisitiveness and learning etc.<sup>261</sup> Therefore collective intelligence represents the cognitive potential or capacity in order to improve and understand collective learning and the creative process.<sup>262</sup>

The evolutionary lens views insight into the role that collective intelligence plays in mankind’s social evolution journey. According to Por collective intelligence through the evolutionary lens is defined as the “capacity of human communities to evolve towards higher order complexity and harmony, through such innovation mechanisms as differentiation and integration, competition and collaboration”.<sup>263</sup> Throughout history human society has been shaped by groups of people collectively reasoning in order to enact changes in their way of lives. This is evident when one looks at evolutions such as “hunter-gatherer age”,<sup>264</sup> “farming,”<sup>265</sup> “industrial revolution”<sup>266</sup> and “knowledge economic age”.<sup>267</sup>

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<sup>258</sup> Por. 2008. Collective intelligence and Collective Leadership: 6

<sup>259</sup> The Term “mind-like” is assumed to imply the inner workings of a human brain as used by Por in his paper of 2008. Collective intelligence and Collective Leadership: 6

<sup>260</sup> Por. 2008. Collective intelligence and Collective Leadership: 7

<sup>261</sup> Por. 2008. Collective intelligence and Collective Leadership: 7

<sup>262</sup> Levy, P., 2003, frequently Asked Questions about collective intelligence as cited by Por. 2008. Collective intelligence and Collective Leadership: 7

<sup>263</sup> Por. 2008. Collective intelligence and Collective Leadership: 7

<sup>264</sup> “Gatherer/Hunter Age’ refers to the aspect of human history where mankind gathered all they ate and hunted as a mode of survival and sustainability

<sup>265</sup> Farming definition is specific to activities of growing crops and livestock

<sup>266</sup> The Industrial Revolution was the transition to new manufacturing processes in the period from about 1760 to sometime between 1820 and 1840. Retrieved from : [https://en.wikipedia.org/wiki/Industrial\\_Revolution](https://en.wikipedia.org/wiki/Industrial_Revolution)



The political economy lens offers a social innovation context to the view presented by the evolutionary lens. According to Por this perspective deals with the negotiation of views among individuals concerning the direction of evolution, with dominant views dictating the direction.<sup>268</sup> In the political economic sense, what is articulated as collective intelligence in the cognitive and evolutionary lens is basically general intellect. Por argues that general intellect is representative of the widely accepted norms that shape the creative capacity and daily life of people and organisations.<sup>269</sup> The political economic lens goes a step further to address the building blocks of these norms and how individuals negotiate identities in the collective in order to develop a collective viewpoint.

The ICT lens explores the enabling infrastructure technology for collective intelligence to be feasible. Por uses Gonsalves' definition of collective intelligence to articulate the ICT perspective which Gonsalves describes as: "An approach to developing intellectual content, such as code and documents, through individuals working together with no centralized authority."<sup>270</sup>

This definition offers a perspective into how globalised and dynamic collective intelligence constructs have become, as they leverage on subject matter experts across the globe from different disciplines. Por argues that this has been made possible because ICT has offered a social dimension that has improved organisational efficiency and productivity by creating a new form of cooperation.<sup>271</sup> The internet and its evolution have been a major catalyst to this cooperation shift as it opens up a new horizon for innovation, open source, crowdsourcing and many other socially driven offerings to dictate the course of existence of the organisations.

### 5.2.2 Collaboration as Collective Action

This perspective of collaboration theory was first explored by Mancur Olson in his 1965 work *The Logic of Collective Action* in which he articulates the importance of organising and

<sup>267</sup> Knowledge Economy can be described as an economic paradigm whose growth is driven by intelligible capacities of action that are insight centric.

<sup>268</sup> Por. 2008. Collective intelligence and Collective Leadership: 8

<sup>269</sup> Por. 2008. Collective intelligence and Collective Leadership: 8

<sup>270</sup> Gonsalves, A., 2006, Gartner Names Hot Technologies with Greatest Potential Impact: Information Week as cited by Por. 2008. Collective intelligence and Collective Leadership: 10

<sup>271</sup> Por. 2008. Collective intelligence and Collective Leadership: 10

working together as individuals for the common “good”<sup>272</sup> of everyone involved.<sup>273</sup> Marshall adds to Olson’s definition when he describes it as the action taken by a group of individuals in pursuit of members’ perceived shared interests.<sup>274</sup> According to Olson, perception for the common good is key to having people to work together.<sup>275</sup> Olson further argues that heterogeneity and individual incentivising may prove to be more favourable for the success of collective action.<sup>276</sup>

### 5.2.3 Collaboration as Communities of Practice

This perspective of collaboration theory was first explored by Lave and Wenger who positioned the concept as shared learning and exploration driven by intrinsic human endeavours.<sup>277</sup> Wenger defines communities of practice as:<sup>278</sup>

Groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly.

Lave et al. present the concept as a process of knowledge creation, application and recycling that is facilitated by groups of people with shared values, views, goals and interests, etc. According to Wenger, the main objective of this process is to translate the experiences and knowledge held by individuals into transferable models that can be used to better knowledge previously held by individuals.<sup>279</sup> He argues that a clear distinction must be made between a community of practice and an ordinary community. According to him, not every community is a community of practice.<sup>280</sup> To draw this distinction, Wenger presents three characteristics that he argues must be present for communities of practice.

The first characteristic is the domain characteristic which provides context and a boundary of

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<sup>272</sup> In his Theory Olson describes “Good” as being representative of equal realization of benefits attributed to all members of the group. Olson. 1965. *The Logic of Collective Action*: 1

<sup>273</sup> Olson. 1965. *The Logic of Collective Action*.

<sup>274</sup> Marshall. 1998. *Dictionary of Sociology*.

<sup>275</sup> Olson. 1965. *The Logic of Collective Action*: 2

<sup>276</sup> Olson. 1965. *The Logic of Collective Action*: 29

<sup>277</sup> Lave et al. 1991. *Situated Learning: Legitimate Peripheral Participation*: 98

<sup>278</sup> Wenger. *Communities of practice: Brief introduction*. Retrieved July 6 2015 from <http://wiki.lib.sun.ac.za/images/d/de/Brief-intro-to-cop.pdf>

<sup>279</sup> Wenger. 1998. *Communities of Practice: Learning, Meaning and Identity*: 58-59

<sup>280</sup> Wenger. *Communities of practice: Brief introduction*. Retrieved July 6 2015 from <http://wiki.lib.sun.ac.za/images/d/de/Brief-intro-to-cop.pdf>

operation and existence for communities of practice. Wenger points out that communities of practice are not just clubs of friends or a networking of friends but rather communities with identities defined by a domain of shared interests.<sup>281</sup> This characteristic is what determines the criteria for membership, by defining the competences that members should have.<sup>282</sup>

The second characteristic is community which in essence describes the closeness attributed to subscribing to communities of practice. Wenger argues that for communities of practice to succeed, relationship building that would allow for easy learning is important.<sup>283</sup> These relationships enable a level of interaction and learning which goes beyond people coming from the same work discipline.

The third characteristic is the practice characteristic which addresses the dimension of translating knowledge and experiences into transferable models. According to Wenger, members develop a shared repertoire of resources: experiences, stories, tools and ways of addressing recurring problems which take time and sustained interaction to develop.

### **5.3 The Role of Identity Construction in Collaboration**

By building on Weick's sensemaking theory, in particular his identity construction property, correlation can be made between this property and collaboration. Roschelle et al. present this perspective using a concept of joint problem space.<sup>284</sup> They describe the joint problem space as a shared knowledge structure that integrates shared goals, shared views of the problem, shared problem solving actions and also creating associations between goals, current problem states and available actions. They argue that in the joint problem space mutual intelligibility in a collaborative setting is achieved when participants establish shared meaning and perspective of the problem domain.<sup>285</sup> To achieve shared meaning, aligning individual identities to that of the collective is important for the balance of the collaborative process. Roschelle et al. further argue that establishing a common ground is vital for cognitive

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<sup>281</sup> Wenger. Communities of practice: Brief introduction. Retrieved July 6 2015 from <http://wiki.lib.sun.ac.za/images/d/de/Brief-intro-to-cop.pdf>

<sup>282</sup> Wenger. Communities of practice: Brief introduction. Retrieved July 6 2015 from <http://wiki.lib.sun.ac.za/images/d/de/Brief-intro-to-cop.pdf>

<sup>283</sup> Wenger. Communities of practice: Brief introduction. Retrieved July 6 2015 from <http://wiki.lib.sun.ac.za/images/d/de/Brief-intro-to-cop.pdf>

<sup>284</sup> Roschelle et al. 1995. The construction of shared knowledge in collaborative problem solving: 75

<sup>285</sup> Roschelle et al. 1995. The construction of shared knowledge in collaborative problem solving: 75

analysis of problem-solving activities.<sup>286</sup> This similar aspect of collaboration is presented by Baker et al. when they talk about grounding which they describe as:<sup>287</sup>

A common ground of mutual understanding, knowledge, beliefs, assumptions, presuppositions, and so on, has been claimed to be necessary for many aspects of communication and collaboration. Grounding is the process by which agents augment and maintain such a common ground. Although agents who interact will usually already possess some such common ground, perhaps in virtue of their common membership of a particular culture or social group, their physical co-presence or even due to their previous interactions, this common ground will also need to be augmented and maintained during the interaction itself, in order to take into account new aspects of the common situation or task.

The reflection in the extract draws a correlation between communication and collaboration. According to Baker et al. communication plays an important role in the process of constructing a shared identity. They argue that as part of the grounding process clear communication of facts and proposals to or in front of others is vital for identity negotiation.<sup>288</sup> They point out that collaborators do not place emphasis on ensuring that every aspect of the problem area is mutually understood but rather they strive to construct a common ground or shared identity as a point of departure for all interactions. Roschelle et al. make a similar argument when they talk about the joint problem space as a pragmatic structure that will highlight the common conception of the problem and not the complete view of the problem. Collaborators need to understand the role they play in the process and must be able to map all interactions with other agents during the process to the function of the role. Baker et al. argue that one cannot cognitively respond to messages communicated unless one is able to relate that to the role one plays and this requires one to have already created a perception (identity) of the meaning it carries.<sup>289</sup> They highlight that the grounding process is merely a negotiation process having different levels representing different objects. This understanding is critical to understanding the management of collaborative activities as this

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<sup>286</sup> Roschelle et al. 1995. The construction of shared knowledge in collaborative problem solving: 77

<sup>287</sup> Baker et al. The role of grounding in collaborative learning tasks: 4

<sup>288</sup> Baker et al. The role of grounding in collaborative learning tasks: 5

<sup>289</sup> Baker et al. The role of grounding in collaborative learning tasks: 5

informs you that individuals will negotiate their identity either by interactions with other collaborators or by lived experiences.

Researchers have referred to this process of collaboration as negotiation, inter-subjectivity or as grounding (as is the case with Baker et al.) and now as identity construction. These all speak to the aspect of detailing the social formulation of a shared view and purpose. This is where it becomes important to understand that tools or software packages are just “aids” for facilitating collaboration and cannot substitute the sensemaking process that takes place in the form of identity construction. Agents or collaborators will utilise words, actions and/or algorithms to form part of the necessary utilities for aiding the identity negotiation process. Agents will use these skills to interrogate their perception of the problem against that of the collective. This negotiation of identity will take place at various occasions during the collaborative process, i.e. when negotiating about what the problem being addressed is, or when looking at the possible solutions to the problem. It is important to note that research conducted on the subject of negotiation has presented it as a process of reconciling conflicting viewpoints and as adversarial in nature.<sup>290</sup>

Initially every collaborator or agent comes into a collaboration with limited information and seeking clarity on how to approach the problem at hand.<sup>291</sup> This limited information provides a platform for negotiating both individual and collective identities. Sidner argues that information is limited because collaborators or agents will not know aspects of the situation they are faced with. She argues that most of the times collaborators or agents will be focused on their own goals without knowing which other agents share similar goals with them.<sup>292</sup> This paradox sets in motion the process of negotiation. This process includes introspection of an individual’s belief system as well as reconciling them to those of others in a collaboration. According to Sidner the type of negotiation that takes place in a collaboration differs from other types that dictate adversity. This negotiation is more about establishing a mutual set of beliefs or identities.<sup>293</sup>

We introduce the term agents to draw attention to the possibilities of collaboration between

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<sup>290</sup> Australian Research Alliance for Children and Youth 2013. Collaboration Negotiation: 5

<sup>291</sup> Sidner 1993. The role of negotiation in collaborative activity: 90

<sup>292</sup> Sidner 1993. The role of negotiation in collaborative activity: 90

<sup>293</sup> Sidner 1993. The role of negotiation in collaborative activity: 91

man and machine.

#### 5.4 The Role of Diversity in Collaboration

It is important to note from the outset that diversity, like collaboration, is a complex concept; hence the perspective this thesis adopts is a behaviourist or cognitive one. This thesis acknowledges the fact that diversity is not a straightforward activity but very important to understanding the collaboration concept. In order to create a diverse collaborative environment in an organisation one has to go beyond physical and social attributes. These attributes can range from bringing together individuals from, among others, different cultural, national, racial, gender, religious, sexual orientation and discipline backgrounds. Studies conducted into the impact of the diversity on the performance of a collaboration have shown that diversity may have both a negative and positive influence on the outcome.<sup>294</sup> Williams et al. argue that positive traits can be attributed to having a wider knowledge base, skills and background, whereas the negative traits can be attributed to poor or bad communication, less cooperation and high levels of conflict.<sup>295</sup>

The goal of diversity in collaboration should be one of fostering a supportive environment where collaborators of diverse backgrounds and varied knowledge are able to contribute optimally. This, however, does not imply an open-ended scope of participation but rather a contextual socialisation of expertise, skills and disciplines. Gormley et al. argue that when addressing diversity one has to be cognisant of the different dimensions of the concept.<sup>296</sup> According to them diversity can be viewed from three different dimensions which they refer to as “the three diversity lenses”. They classify these as social, cultural and cognitive-functional differences lenses.<sup>297</sup> They describe the social lens as encompassing all visible characteristics of individuals including race, gender, class, age and sexual orientation. They argue that identity negotiation will also be affected by the diversity of collaboration because the identity constructed or adapted by an individual will be informed by their knowledge of the challenges as well as benefits related to belonging to one of the social groups (for

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<sup>294</sup> Williams et al. 1998. Demography and Diversity in Organizations: 81

<sup>295</sup> Williams et al. 1998. Demography and Diversity in Organizations: 94

<sup>296</sup> Gormley et al. 2003. Working with diversity: The Organizational Change Program for the CGIAR: 1

<sup>297</sup> Gormley et al. 2003. Working with diversity: The Organizational Change Program for the CGIAR: 8-9

example, women).<sup>298</sup> They then describe the cultural differences lens as one that considers people's cultural foundations as being influential on their cognition, values, beliefs, norms, and communication and social relational styles. They point out that cultural differences are very hard to detect but are an important aspect to consider when understanding diversity in a collaboration or in group settings. They then go on to describe the cognitive-functional lens as one that is purely focused on knowledge, skills, abilities and experiences that are relevant for the task at hand. They argue that functional areas in an organisation (in this case a collaboration) will have their own cultures and jargon that will dictate how collaborators are identified.

To better understand the role diversity plays in a collaboration it is important to revisit the definition explored in Section 4.2 about collaboration which in summary is about working together to perform tasks for a common goal or outcome. With this said, diversifying the knowledge base is very critical for successful collaboration. If one only considers the visible attributes of individuals as the core factor in deciding on the diversification of a collaboration they may run a risk of having a poorly balanced knowledge landscape. Therefore, careful consideration of the cognitive-functional, disciplinary and educational backgrounds of the collaborators is vital.

## **5.5 The Role of Learning in Collaborative Environments**

Learning being one of the key concepts explored by this thesis it is therefore imperative to understand the concept of collaborative learning. The collaborative learning concept has gained prominence over the past few years especially in the education sector. According to Gibson, collaborative learning presents both the organisation and the participant with a joint opportunity to learn.<sup>299</sup> Collaboration and learning are inseparable and as such must be viewed as a whole.<sup>300</sup> In a collaborative environment the social component will lead to socialisation of the tacit knowledge embodied by individuals, resulting in knowledge conversion.<sup>301</sup> The knowledge conversion process is ultimately a learning process. The flat hierarchical structure assumed by collaborative environments provides a conducive

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<sup>298</sup> Gormley et al. 2003. Working with diversity: The Organizational Change Program for the CGIAR: 8

<sup>299</sup> Gibson 2013. Fostering collaboration and learning in asynchronous online environments: 66

<sup>300</sup> Gibson 2013. Fostering Collaboration and learning in asynchronous online environments: 73

<sup>301</sup> Nonaka et al. 1995. The Knowledge Creating Company: 71

atmosphere for cross-discipline learning and a deeper knowledge pool to tap into during the learning process. Anthony et al. suggest that the prominence of collaborative learning can be attributed to the continued need for organisations to increase their core competencies.<sup>302</sup> They argue that collaborative learning enables organisations to cope with the changes taking place in their environment, develops multi-disciplinary skills and provides a platform for continued learning.

Collaboration as a process in itself is a learning process as individuals and organisations negotiate their identities while learning is taking place.<sup>303</sup> The kind of learning that takes place in a collaborative environment leverages the existing cognitive structures held by individuals to construct new knowledge as individuals go through the negotiation process. The learning process is ongoing as the new cognitive structures constructed are most likely going to be receptive of new knowledge or changes to discourse that dictated their construction in the first place.<sup>304</sup>

## 5.6 The Role of Trust in Collaboration

Trust is an important aspect in understanding collaboration as it contributes to individuals building a shared common objective during a collaboration. Trust in collaboration speaks to individuals not only having belief in their own cognitive structures, skills and knowledge of the subject matter but also in the fellow participants or collaborators.<sup>305</sup> As opposed to the trust that is formulated based on “bonds” (such as those between family members, friends, neighbours) the one prominent during collaborations is one that seeks to bridge intersecting value structures between the participants (such as that existing between workmates and acquaintances). Nootboom describes trust as being a collection of positive rational expectations that are largely built on understanding benefits arising from a positive outcome of a process.<sup>306</sup> This understanding is influenced by fundamental belief systems held by individuals that inform them that others are bound to act in an honest way with good intentions for the process and have the right skill set to contribute optimally. Nootboom

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<sup>302</sup> Anthony et al. 2009. Communities of Practice: The source of competitive advantage in organizations.

<sup>303</sup> Dooley et al. 2008. Constructing Knowledge Together: 22

<sup>304</sup> Sidner 1993. The role of negotiation in collaborative activity

<sup>305</sup> Nootboom 2002. Trust, Forms, Foundations, Functions, Failures and Figures: 140-143

<sup>306</sup> Nootboom 2002. Trust, Forms, Foundations, Functions, Failures and Figures: 10-21



further argues that trust has far-reaching implications on the economic value of the organisation as without it translating individual viewpoints into a shared vision is difficult.<sup>307</sup> The thesis submits that trust in a collaborative environment is in a continuous state of flux as it cannot be dictated to the group or individuals but rather constructed as relationships are built. According to Nooteboom trust is aimed at reducing uncertainty and complexity within the group.

## **5.7 The Role of Stakeholder Engagement in Collaboration**

Ensuring that people are and remain interested in the collaborative process is very important for the purpose of learning and innovation. This section highlights the role and significance of stakeholder engagement during the collaborative process.

Thus far the chapter has highlighted that collaboration is about people and involves the socialisation of different knowledge compositions. These dimensions introduce an aspect of stakeholder theory that this thesis does not explore in its entirety, rather zooms in on the understanding of who or what a stakeholder is. Waddock refers to Freeman's work who defines a stakeholder as "any group or individuals who can affect or is affected by the achievement of the organisation's objectives".<sup>308</sup> For the purposes of this thesis this includes all co-collaborators involved in learning for the purposes of innovation. Waddock argues that for stakeholder engagement to be successful, the ethical and strategic foundations must be centred on capturing authentic interactions among the full range of stakeholders.<sup>309</sup> She further points out that collaboration and innovation are essentially by-products of successful and effective stakeholder management. Gould echoes a similar sentiment when he argues that stakeholder engagement allows organisations to access information or knowledge from stakeholders which they can utilise to generate approaches that have the potential to influence output.<sup>310</sup> The process of capturing information or knowledge is the entry point to relationship building and management that contributes to the expansion of organisational competencies and competitiveness.

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<sup>307</sup> Nooteboom. 2005a. Trust, Institutions and Development: 3

<sup>308</sup> Freeman. 1984. Strategic Management. As cited by Waddock. 2002 Unfolding Stakeholder Thinking: 26

<sup>309</sup> Waddock. 2002. Unfolding Stakeholder Thinking: 27

<sup>310</sup> Gould. 2012. Open Innovation and Stakeholder Engagement: 6

Dembczyk et al. offer a summarised perspective into stakeholder engagement when they argue that it is seen as practices that organisations undertake to involve stakeholders in a positive manner in organisational activities.<sup>311</sup>

Understanding the nature of the intended innovation can enable organisations to carefully consider the stakeholders in order to know how they can be socialised. The innovation process must remain relevant throughout its life cycle and it is imperative for organisations to ensure that all involved feel part of the process and contribute at optimum levels.

## **5.8 Collaboration as Sensemaking**

From a sensemaking perspective the process of collaboration can be better understood as a belief driven process. The different theories explored have shown that collaboration subjectively implies a sense of community that is formed based on shared beliefs, values and norms. Whether the collaboration is for social or productive purposes, it is fundamentally the validation of a structure that is constructed based on ideologies and paradigms. In the context of the organisation, these structures are ring fenced with controls, policies and procedures that guide the exchanges that take place within the structure. This allows participants to form assumptions, clarifications and eventually new knowledge.

The start of the collaborative process is characterised by setting of boundaries which people can use to filter out what belongs from that which does not. People and the organisation then use these boundaries or frames to impose their understanding on to the environment, in the process enacting a subjective point of view.

### **5.8.1 Identity Construction**

We have discussed collaboration as a social concept that is predominantly defined by knowledge elements being socialised for purposes of productivity. This offers insight into the existence of isolated knowledge agents that come together to achieve a purpose. This section explores the socialisation aspect of collaboration as sensemaking and views it through the identity-construction lens. This thesis has explored collaboration as a façade for a different conceptualisation of human ability to draw capacity from different resource pools that include knowledge, manpower and technology. This understanding in itself presents an opportunity for identity negotiation. Before embarking on a collaborative quest, organisations must be

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<sup>311</sup>Dembczyk et al. 2014. Stakeholder Engagement in Sustainable Entrepreneurship and Innovation.

clear about what they want to achieve and what collaboration means to them. This offers a chance for the collaborative process to identify what collaboration means to the individuals involved, the organisation and the process itself.

As a social concept, collaboration is about seeking to construct meaning. Meaning in the collaborative context is about negotiating knowledge, structures, experiences and conduct of participants.<sup>312</sup> The composition of the group influences who the participants choose to be. Depending what the participants are faced with, they assume a different identity in order to fit into the identity of the collective. The constructed identities facilitate development of a continuum of robust representation, trust and a sense of togetherness.<sup>313</sup> When people can identify with each other as individuals and a collective, then trust and healthy relationships can be established. Organisations must be in position to acknowledge the social dynamics that collaborations introduce to the organisations and break them down to the level of identities. The outlook of the organisation or group constitutes what can be referred to as collective identity, which must be negotiated before the collaborative process begins. This is particularly important because individuals tend to embody the identities of the organisations they belong to; hence, a clear meaning of what the group or organisation represents must be reflected in its identity.<sup>314</sup>

Conceptualising collaboration as a sensemaking process driven by collective identity and meaning construction is important in determining the success of the process and in driving learning for innovation. Collaborating for purposes of learning and innovation dictates a continuous construction of purpose, meaning and knowledge. These as proponents of sensemaking are driven by how people view themselves, the group and the organisation, and most importantly how the organisation views collaborations. As shown by this thesis, it can be considered as collective action, intelligence or community of practice.

### **5.8.2 Focused on and by Extracted Cues**

As a process, collaboration is characterised by first establishing the purpose for collaboration, identification of participants and establishing parameters of operation. These characteristics point to bracketing of cues and framing them in a way that makes sense for the individuals,

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<sup>312</sup> Roschelle et al. 1995. The construction of shared knowledge in collaborative problem solving: 78

<sup>313</sup> Australian Research Alliance for Children and Youth 2009. What is collaboration?

<sup>314</sup> Weick. 1995. Sensemaking in Organizations: 21

the group and the organisation.

At an individual level, understanding the purpose of the collaboration entails relating the role that one plays in the process against the overall objective of the process. Individuals utilise their existing cognitive frames to guide them in navigating the role expectations and properly understanding problem statements and success criteria of collaborations.

Groups as compared to individuals move to a higher level by providing context for the collaboration. The context includes establishing the areas of knowledge to socialise, diversity compositions and defining the operating models. How the group frames its context will determine how people respond to cues from their environment. As discussed in the diversity section of Chapter 4, ensuring that the collaborative group is diverse in terms of knowledge composition is important and determines whether knowledge is created or existing knowledge is circulated and recycled. Having different people's knowledge being represented in itself presents the group with multiple cues and frames to deal with. Each individual offers the group cues that they may have observed from the environment.<sup>315</sup> Context provided by the group offers a guide or frame through which irrelevant cues can be filtered.

At the organisational level is where the initial cue and framing take place. Organisations generally would have observed cues from the environment that would influence their decision to engage in a collaborative process. This can be due to lack of skills internally, threats or opportunities in the market.

The collective action and intelligence perspectives of collaboration highlight the enactive nature of the collaborative process. These views inform this thesis that people during collaboration do not passively receive cues from their environment and frame it, but rather actively construct meaning through their actions.

### **5.8.3 Retrospective Sensemaking**

Collaboration processes are usually constituted to address events that an organisation would have experienced. Things like maintenance of market share, need for new knowledge or skill are some of the things that are triggered by past events in an organisation's life that can influence decisions to collaborate. Organisations notice shortcomings or areas of improvements in hindsight as they go about their day-to-day business. This is because they

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<sup>315</sup> This can be presented through members offering opinions and viewpoints on the subject. Understanding that in a collective context cues go beyond current context and frame according is very important.

usually evaluate their actions retrospectively.

Individuals engage in collaboration with already constructed frames of reference, which are formed through their experiences. Individual experience is dependent on lived experiences. Even during the collaborative process, people act and observe the results of their own or of other's actions. Participants engage in the process with either prior knowledge of a particular discipline or disciplines, or the problem area. Without either of these products of retrospective events, participants are irrelevant to the process. This view is important when determining who is involved in the process and how they contribute to it.

Part of the reason why people collaborate is for them to rationalise disruptive events experienced by the organisation. This drives the definition of when the collaborative process is considered done or successful.<sup>316</sup> Without a clear definition of "done" people will continue to act and observe their actions without end, using past experience that can observe their current actions to determine whether there is clarity on the past events. It is the view of this thesis that rationality can only be determined by lived experiences. Without any past experiences, it is difficult to determine what is rational and what is not.

#### **5.8.4 Social**

Collaboration has been established as something that is done by people in conjunction with others. This covers people within the collaborative group and outside. How people within the group relate to one another is instrumental to the success of the collaboration. As highlighted in Chapter 4, trust within a group is built as people continually interact and relate. Without trust, groups cannot be functional and still less be productive.

People interact and engage with one another at levels that make sense to everyone. This takes into consideration feels of others, gender, race, cultures and levels of education. Without the people element, collaborations would lack meaning, negotiation and learning to develop new or enrich existing knowledge. Conceptualising collaboration with organisations should bring a level of cognisance to it being socially enshrined and that the foundation of a collaborative group must be reflective of organisational policies and governance. Organisations must reflect a level coherence with social norms that are conducive for collaboration to thrive.

Collaboration through many lenses is depicted as a representation of collective views, actions

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<sup>316</sup> Sensemaking as a retrospective exercise seeks to ammonize smilingly chaotic events. Weick 1995. Sensemaking in Organizations: 29

and intentions. This implies that actions of individuals in the collaborative group depend on actions of others and vice versa. As people interact, the sense they make is influenced and shaped by views and actions of others. Collaborative groups just like organisations are what Weick refers to as networks of inter-subjectively shared meanings that are formed through everyday social interactions.<sup>317</sup> These networks are formed on the assumption that the participants will act intelligently and collectively.

Collaborating for learning and ultimately for innovation requires the organisation to be clear on the knowledge areas to socialise. This takes into account the diversification of the collaboration and the levels of the organisation that will be affected by the innovations.<sup>318</sup> Thinking of collaboration as a social phenomenon has the potential of introducing the necessary flexibility needed in the governance of collaborative groups that is set by organisations.<sup>319</sup> Flexibility must always fall within the bounds of plausibility for collaboration to succeed.

## 5.9 Conclusion and Summary

The chapter discussed collaboration as a social phenomenon that is focused on productivity, leveraging a diversity of knowledge assets. To arrive at a definition of collaboration the chapter relied on the Oxford dictionary definition of the term “collaboration”. On the conceptual foundation side, the chapter explored work by the ARACY, Wood et al., Bleich and Zack. These scholars informed this thesis on the background key conceptual constructs of collaboration, with all of them agreeing that collaboration is a knowledge-intensive social phenomenon.

The chapter then explored variant flavours or schools that present collaboration. The first perspective explored is that presented by Por, which positions collaboration as a networking of individual intellects in order to supplement the cognitive, political, economic and technical capacity of groups and organisations. Por presents different variations of collective

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<sup>317</sup> Weick 1995. *Sensemaking in Organizations*: 38

<sup>318</sup> Diversity at this level goes beyond physical traits as highlighted in Chapter 4. The organisation must ensure that when they bring people together, they are relevant to the process. It is one thing having different physical traits represented (e.g. genders, races, creeds etc.) and quite another guaranteeing that they are different knowledge assets. The possibility exists of bringing different people to collaborate, who in essence are an extension of one another.

<sup>319</sup> This talks to elements such as breaking of organisational hierarchies. A collaborative group ideally should reflect a flat structure that encourages a peer-to-peer type of interaction.

intelligence which he refers to as lenses, having the cognitive, evolutionary, political and ICT lenses. The second perspective on collaboration explored by the chapter was that of collective action which positions collaboration as the coming together of people for the common good. This view is important as it argues that people work together if they gain something in return. The chapter then explored the role that identities play in the collaboration process. This leveraged on the sensemaking property of identity construction presented by Karl Weick. The chapter highlighted how dependent collaboration is on identity negotiation for its success. It also visits the role that diversity plays, highlighting the importance of group composition and formulation. It then discussed the role of trust in collaboration, highlighting that trust is the key driver of relationship building and individual participation. Finally the chapter explored the role of stakeholder engagement and the importance of keeping the collaborative process relevant at all times for it to succeed.

# Chapter 6

## *Innovation from a Sensemaking Perspective*

*If you don't have a competitive advantage, don't compete*

Jack Welch<sup>320</sup>

### **6.1 Introduction**

Understanding the nature of the relationship that exists among concepts such as organisational learning, collaboration and innovation provides a platform for organisations to effectively manage the innovation process. Chapter 2 showed the different variants of innovation theory which in effect contribute to lack of coherence in understanding the concept. In facilitating a perspective shift on how innovation is approached in organisations, this thesis set out to explore the knowledge activities that form part of the innovation process when viewed from a sensemaking perspective. The question then was to understand how people learn and learn together in order to produce new knowledge. This effectively was to understand the cognitive and behavioural steps people and organisations go through as they act and impose their beliefs on events of ambiguity and uncertainty.

This chapter seeks to analyse innovation and its products – collaboration and learning – in order to arrive at satisfactory conclusion using Weick's sensemaking framework on how best

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<sup>320</sup> Jack welch quotes extracted on 25/09/2015 from <http://www.brainyquote.com/quotes/quotes/j/jackwelch382558.html>



innovation can be managed in organisations. In order to achieve the analysis, this thesis identifies fundamental phases of the innovation process that organisational leadership must be aware of in order to effectively manage innovation in the organisation. Sensemaking presents the opportunity to scrutinise innovation as an organisational process with many meanings (“multi-tenant”), with sub-processes that require careful management at that sub-level.

It is with the view of the multi-tenant nature of innovation that this thesis approached the concept as not being a linear one-directional process, but rather an interactive process with self-scrutiny at each phase of the process.

Through the sensemaking lens it was established that each of the concepts explored by this thesis are fundamentally knowledge processes with various knowledge activities that need to be managed and understood as such. This understanding could not be established without exploring the foundational elements of each concept in order to identify the activities involved and more importantly areas of knowledge creation and preservation.

Through isolated exploration of each concept, this thesis established that collaboration in an organisational context should be more than just people working together. It implies understanding the knowledge diversity the participants introduce to the innovation process. The sensemaking view takes a step further by establishing that in fact managing people in an innovative process must consider not only the expertise that a person introduces but go on to understand their beliefs, actions and more importantly to understand that the sense they make of the process is never certain. Depending on the information they are confronted with, they will act, and enact different realities. Hence without decisive leadership and guidance this in itself will introduce unending uncertainty. This thesis further established that triggers for learning in organisations come from different sources in the environment and if not carefully considered, opportunities or threats cannot be fully grasped. It showed that each interaction through the innovation process is an opportunity for learning and must be properly facilitated. This understanding could only be arrived at by understanding what diversity means in a group setting and understanding the social styles of different people.

This chapter highlights the implication of approaching the innovation process as a series of sensemaking processes. To demonstrate this element of innovation management, the chapter explores innovation as a belief and action-driven process. This consideration is very important before closely examining the activities that make up the entire process as it shows

that, depending on the point of view, one can only see a series of action or beliefs. But it is the view of this thesis that a holistic view of the traits of innovation that shows it as both action and belief driven would ease the burden of managing the process. The chapter then presents the end-to-end process of innovation highlighting the knowledge activities that constitute the process. It is, however, important to note that these activities have been abstracted at phase level for ease of articulation and presentation. The logical phases are then unpacked to understand the knowledge activities that are involved. This is with the full awareness of the social cognitive and behavioural impact each of the phases have on the organisation and the entire process.

In applying the Weick's sensemaking theory the following can be understood of the innovation process.

## **6.2 Innovation Is a Belief-driven Process**

As a sensemaking process, innovation can be articulated as a process that is belief and action-driven. The innovation process relies upon strong belief sets which leverage experiences and points of view from individuals and the organisation. As such, when managing the process clear understanding of what impact or influence processes such as arguing and expecting have on the outcome of the innovation can assist in the delivery of quality innovations.

The sensemaking perspective allows us to see that innovation in an organisation is a systematic construction and organisation of knowledge, resources and people. Having full awareness of the internal organisational construct such as the culture, the routines, nature of business and strategies adopted by the organisation, is important when articulating innovation management. The importance of this aspect has not received the necessary attention that it deserves and is by far one of the shortcomings in literature on the subject.

Viewing innovation as a sensemaking process, one can identify throughout the process elements of organising that resonate with the belief-driven processes of sensemaking. At the start of the innovation process, the organisation evaluates what the process entails and what it means to its environment. This kick-starts a process of buying into the innovation, which is a formulation of a belief system around the process. Without the development of a solid set of beliefs around the process, chances of success dwindle over time. Therefore, innovation should be viewed as a process that starts by negotiating and socialising different perspectives in order to generate a cross-organisational buy-in. This means a diverse group of people interacting to understand exactly how the process fits into the broader organisational context

– not just one particular group of people locked in a room somewhere and in the process shaping and shifting beliefs and viewpoints on the innovation.

The organisation must be able to properly frame and communicate the operational boundaries of the innovation process with the intent of leveraging the ideologies or paradigms that enable individuals to interact with the process effectively. The organisation must be able to negotiate the tradeoff between people's daily routines and their involvement in the innovation process. This is important as from the outset it sets expectations and paves the way for constructive engagement.

The framing process falls in the boundary of what Weick refers to as self-fulfilling prophecies. What this means for innovation is that the process can and will only achieve that which it is set out to achieve. If there is no clear organisational direction as to what the innovation process is meant to achieve, the motivation towards it will be next to none, as it will most likely be viewed as “pie in the sky” that has little to do with what people do on a daily basis. People begin to trust, believe and want to get involved in the process once they perceive a clear and deliberate drive by the organisation to take steps towards being innovative. After framing the boundaries, ensuring that the right people are involved in the process is essential.

The sole aim of innovation being the creation of “new knowledge”, be it in the form of products, processes or new ways of doing things, requires the socialising of the right knowledge, expertise and experiences. This aspect of the innovation process also touches on its nature of organising. Here the organising is people driven and has the largest influence on the success factor of the innovation. This is simply because, when viewed from the sensemaking point of view, it opens up aspects such as identity negotiation / construction, arguing and expecting. These three aspects are always encountered whenever human-to-human interaction is explored in an organisational context.

In Chapter 5 it was discussed that as people negotiate who they are as individuals and who they are as part of a collective, they create a new version of self in the process.. This is very important to consider when bringing people together for innovation. One has to be aware that regardless of demographic traits, the knowledge and substance that individuals contribute is what determine the value of the individual's participation. Arguing occurs when different people with diverse backgrounds come together (which in essence is healthy for innovation). Attention must be given to this aspect because people are bound to form their opinion based

on their own belief systems. The implication of this is that it introduces tension and political conflict within the innovation process. It is therefore important to anticipate conflict or arguing in order to capture the varying points of view without the group disintegrating. From a sensemaking point of view, allowing arguing to continue enables the organisation to break through the subjective nature of opinions held by individuals. This is important, as no single point of view is comprehensive. Facilitating the arguing process requires management to have the skills to identify and accommodate different individual social styles. By so doing, this allows differing political viewpoints to be socialised, as by nature innovation is very political and emotive. It is also important to note that just like sensemaking, this process is not clear-cut, and can only be useful when the innovation process is properly framed. The people and resource organisation part of innovation is more social and development of a belief system around the innovation process.

The other aspect of innovation that involves organising is the idea formulation and conceptualising phase of the process. This mainly involves individuals and the collective observing cues, collecting them and enlarging them into meaningful ideas. Individuals and the organisation drive this phase as they define their expectation of what the process must achieve. Expectations enable the individuals and the organisation not only to measure the success of the process but also to know what it is they are looking for in the cues. People and organisations learn and develop new meaning when they connect cues to their expectations. This implies that new knowledge is created when events, cues and expectations are connected, and more so when a variety of these interconnections exist.

The organising paradigm of innovation can be observed throughout the innovation process; therefore, management must be aware that the successful outcome of the process is dependent on proper organisation of knowledge assets, ideas and resources. It is through beliefs, ideologies and mindset that organising occurs throughout the innovation process. As highlighted, it takes people trusting and believing in the process for them to get involved in the process and continually shape meaning that is created by the process. It is therefore imperative that the organisation is constantly reviewing on an ongoing basis the level of buy-in and engagement into to the process from all stakeholders.

This perspective on innovation brings into focus two aspects that come from arguing and expecting variants of belief-driven processes. The first is that people throughout the innovation process are bound to present differing or even contradictory points of view which when managed properly can produce new meaning for the process. This implies that

difference must be embraced and nurtured for the success of the innovation process. The second aspect that the perspective highlights is the need to embrace familiarity. People are going to trust and contribute to what they perceive as being familiar. This means that for innovation to succeed, setting expectations and highlighting familiar points that are obscure to the participants are important for the process to be trusted.

### **6.3 Innovation Is an Action-driven Process**

Sensemaking allows us to see the behavioural and cognitive changes that innovation introduces into an organisation. Management must be aware of underlying motivations that influence how people and the organisation at large behave towards innovation. They must be able to negotiate the tradeoff between personal aspirations, which are guided by routine, targets, budgets and disciplinary boundaries. Because people are a representation of the image or version of self that they have constructed, they must feel that there is something in the process that benefits them outside their day-to-day work. It requires insight into how identity negotiation takes place for change to be introduced effectively without alienating individuals from the process.

Innovation in an organisation implies a shift in what the organisation has done traditionally. From a sensemaking point of view, this tells us that, at every iteration in the innovation process change is taking place for the participants and the organisation. These changes are surfaced as a series of dynamic actions, which sensemaking views as committing and manipulation.

From the very beginning of the innovation process, the organisation has to make a commitment to innovate. This commitment opens up the possibility of more commitments to be made, that can influence the course of the innovation. The choice of who is involved in the process is another commitment that management should make that requires careful consideration to ensure that the group composition is well balanced. The implication of this commitment is that it has a bearing on the output from the process. This speaks to the diversification of the group dynamics.<sup>321</sup> It gives a level of structure and a shift in what is known about the innovation within the organisation.

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<sup>321</sup> Knowledge diversity answers the question of how the organisation gets engineers and accountants talking about the same version of productivity.

Following the formulation of the engagement parameters when resources (people) are mobilised, the innovation process begins to surface details that before the commitment was made would never have been noticed. At the point the organisation conceptualises the innovation process, it remains a significant unknown as to whether the process will be good for the organisation or not, Only when the choice to innovate is made does the change in perception of good begin to happen. This spontaneously introduces a shift in the focus of the innovation from evaluating if it is good for the organisation to discover what is possible in the innovative space. This is purely an imposition of logic on the commitments that are made throughout the process. Building from here onwards is a series of changes in knowledge held by individuals and the organisation. As people learn from one another, new knowledge is produced from the environment and the process.

The innovation process offers the organisation multiple avenues of change. As the process progresses, participants continually rearrange what they know is out there, what could be and even possibly add substance to what is already within. Regardless of what the form of change is, innovation introduces something new to the environment. This, however, does not imply that what is introduced by the innovation did not exist. It offers multiple opportunities of novelty, requiring skill and knowledge to nurture and grow into meaningful knowledge.

A collaborative view on the state of the organisation and its environment is what allows the innovative process to surface novelty. As people offer new ways of viewing and approaching the need or needs that necessitate the innovation in the first place, new cues are observed which lead to more opportunities of learning. It is though proper understanding of the stakeholders and their needs that new knowledge can be appreciated and applied. It is therefore important to understand the context of what “new” means for the environment and what people perceive as “new”. A retrospective sensemaking process of reviewing what currently is in existence allows the innovation process to properly sensitise the environment to what could be and how best it can be utilised. New knowledge or novel patterns begin to emerge as interactions among participants, the organisation and the environment challenge the status quo of what defines the organisation’s image. This comes in the form of a challenge to ideologies, paradigms and traditions held by individuals, the organisation and the environment. This challenge offers learning opportunities that develop new ideas and new knowledge. The perspective becomes apparent when one views it from the identity contraction point of view. An organisation’s products, services and its people’s contribution to the environment are driven by the identity they carry as well as the perceived identity from

the environment.

In essence, it is through acting that innovation thrives. As the organisation decides to innovate, who gets involved and what is created, then and only then can they begin to grasp what the process means and the impact it will have on the environment. These actions, as discussed, come with a commitment and consequences without which value cannot be attached to the innovation process. Then follows manipulation of cues, skills and knowledge. Without action that manipulates existing knowledge structures, there cannot be learning or even innovation. Only after actions are taken can change be introduced to the body of knowledge in the organisation and environment.

Viewing innovation as an action-driven process brings into focus the need for decisiveness from participants and leadership alike. New knowledge is created as people act, either to justify why they act in the first place or totally create new meaning to explain it. In the process of innovation, action must be associated to each iteration or phase. This acts as a way of enforcing consequences for failing to act or even acting late. The implication of this is that people are then forced to act to avoid punishment associated with acting and allowing them to learn from seemingly wrong actions. According to the sensemaking view, we act in order to know and validate what we know. This is very important for innovation to move through the different stages or phases of the process.

What is common in both action- and belief-driven perspectives on innovation is that the process is essentially about creating meaning and people interacting socially.

#### **6.4 Innovation Is a Process that is Socially Enacted**

Through the sensemaking process, innovation can be understood as a process that is people driven for meaning creation. People utilise their experiences, expertise, insights and beliefs to create new knowledge or even re-frame existing knowledge. Therefore managing and understanding the stakeholders or participants of the process is just as significant as knowing what is to be achieved. Understanding innovation as being socially enacted highlights that from beginning to end, the process is constantly being contracted, conceptualised and being debated until new knowledge fitting the purpose outlined is created.

Leveraging the conceptualisation from Sections 6.2 and 6.3 above, we have established that innovation with its complex nature sometimes requires participants or the organisation to act in order to gain insight into what is being created. This is what underpins the enactment process. This means that innovation is an art form where the artists do not always have a full

view of their creation until they have seen their creation in action. Therefore the substance of innovation is not in knowing what is being created but in continually acting on what is known by individuals and the entire group in order to open new avenues of meaning. In other words, innovation operates in a context of cause and effect.

Sometimes in order to be innovative, it may be necessary for the organisation to create ambiguity or uncertainty. This requires a level of understanding for both the environment and the internal capabilities of the organisation. The social standing and exposure of the organisation in its environment can allow it to manipulate variables that are within reach. It must, however, be noted that this is possible when there is an image already established for the organisation that exists in the environment. Shock or disruption can only occur if there is already an identity that can be compared to what is being offered.

## **6.5 Making Sense of the Innovation Process**

Organisational innovation as a process comprises sub-processes of collaboration and learning socially intensive forms of productivity. Both learning and collaboration as sub-processes of innovation have theories that depict them as only addressing routine elements of organisations and some that depict them as processes for creating and complementing organisational knowledge. As such, innovation as an umbrella concept must be understood as a knowledge creation process that is driven by beliefs and action. It is through the sensemaking process that this understanding is validated, as explored earlier in this chapter.

This thesis set out to explore each concept separately in order to understand and surface conceptually what each means, and in the process identify different available articulations. This was done in order to surface conceptual overlaps when viewed from a sensemaking perspective. A view was then developed that for purposes of organisational innovation, learning that takes place is a collaborative process that involves different knowledge views being socialised. It was further established that as a people-driven process, innovation offers an opportunity for different enactments of reality to be presented and negotiated on an ongoing basis.<sup>322</sup> This is important for both the relevance and quality of the innovation that are delivered as it offers a chance of being balanced in terms of the views represented if

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<sup>322</sup> It is the view of this thesis that innovation as a process is socially enacted and as such mechanisms must be in place with an organisation to foster an environment that can enable the free collection, formulation and develop socially conceived ideas and add value to them



conceptually sound principles are applied. The potential drawback surfaced is the potential of the innovation process running longer than its relevance time span.<sup>323</sup> The delimiter then was set to be that as a concept innovation is timeline and budget agnostic as these are driven by strategic business decisions, which are outside the delimiters of the current study.

In a collaborative learning process, individuals must be able to relate the context in which the process takes place against their views of what they know needs to happen. This thrives through the enactment aspect of sensemaking. As people negotiate context vs possibility they are then able to confront their realities and offer plausible alternatives to what is presented to them. This implies that all involved in the process must understand what the process entails to them at an individual and organisational level. This understanding makes it easier for identity construction and establishment of trust within the group.<sup>324</sup> The construction process forms part of the norming and forming part of process of defining group dynamics. At this stage, individuals retrospectively utilise their own experiences to define their understanding of the collaborative learning process and accordingly assign meaning to it. This process is driven by individual and organisational ideologies, paradigms and traditions.<sup>325</sup> These must be challenged at an identity level in order for them to eventually harmonise for the common good. Common good from a collaboration point of view creates new ideologies or new member subscriptions. It has been shown that sensemaking is ongoing by nature and equally so are the meaning definition and negotiation processes that take place during the innovation process and subsequently the collaborative learning sub-process, especially for creation of new knowledge. Throughout the process individuals and organisations refine what they know about the innovation and what it means to them, which may lead to developing new knowledge that previously was obscure to the process. This particularly is part of the process that is learning intensive, since as people understand more about the innovation they increase their capacity to contribute to the collective based on experience and discipline. This new

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<sup>323</sup> The observation made was in cognisance of the fact that most organisations target particular trends in their environment and may run on limited budget and scope. The delay in particular is possible if strong personalities, views and experiences are socialised as this may lead to the negotiation of meaning causing multiple feedback loops for learning.

<sup>324</sup> The thesis showed that people work effectively together when they have established a level of trust and rapport within the group. It further showed that trust is established when people negotiate who they are in the collective and what role they fulfil in the process.

<sup>325</sup> It is only normal that the process triggers a level of discomfort to what is a norm for both individuals and the organisation. It may create a level of uncertainty as well.

cycle of learning has the potential to clear the disruption/ambiguity initially experienced by the organisation.<sup>326</sup>

Organisational innovation has been conceptualised as a process of introducing change into an organisation, either through introduction of new things or changing existing things. The process has a high social dynamic. Some scholars explored in this thesis would differ with this description and some would agree. Such is the discourse surrounding innovation theory. The description offered takes into account the organisational domain that is considered to be targeted by innovations. These can be broadly categorised as processes, products and services, and new markets. Products and services have been the bedrock of organisational innovation theory, from the time of Schumpeter to the present. Over the years, focus on goods and services have seen a shift towards nonlinear innovations that seek to integrate internal organisational capabilities and evaluate how the organisation competes in its environment. We showed that innovations usually set out to be an answer to organisational shortcomings or events that affect them. These events are either threatening to the organisation or present an opportunity.

The conceptual building blocks of innovation lie in the acknowledgement that, as a process, innovation has distinct yet interconnected phases that need unique attention. The phases include the event, conceptualising the idea, refining the idea, developing the idea and diffusion of the innovation. The phases are by no means rigid but more agile and may differ from organisation to organisation. These phases are then underpinned by sub-process of collaboration and learning. At each point in the process, what is known is continually being refined as actions are taken and beliefs are defined or shifted.

Anchoring these phases are parallel processes of extracting, negotiation and developing of meaning that take place throughout the process. Throughout the process, learning takes place that from a simplistic view cannot otherwise be observed except through the sensemaking

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<sup>326</sup> Human beings just like organisations project an outward image that the literature reviewed in the thesis referred to as identities. According to Weick's theory, people are equipped with the ability to negotiate, manage and adopt multiple identities, and depending on the situation they are faced with they put on a different identity of self. He further pointed out that as human beings we are constantly observing the stimuli generated by our responses on to the environment, in the process determining who we become in a given situation. This characteristic is true for organisations as well. Organisations have the ability to take up different identities as well, e.g. for their stakeholders as value producers, for employees as providers, for consumers as creators of trusted products or services and for competitors as players in the industry etc. Weick. 1995. Sensemaking in Organizations.

lens. Simply put, the innovation process is a multi-dimensional process as each phase as a people (collaboration) and cognitive/behavioural shift that takes place. The framework shown in Figure 11 is used to conceptually unpack the collaborative leaning process as a driver for innovation. The framework articulates the process as involving four distinct phases that cover internal and external organisational environments. The view is that modern organisational innovation has influences from both within and outside the organisation.

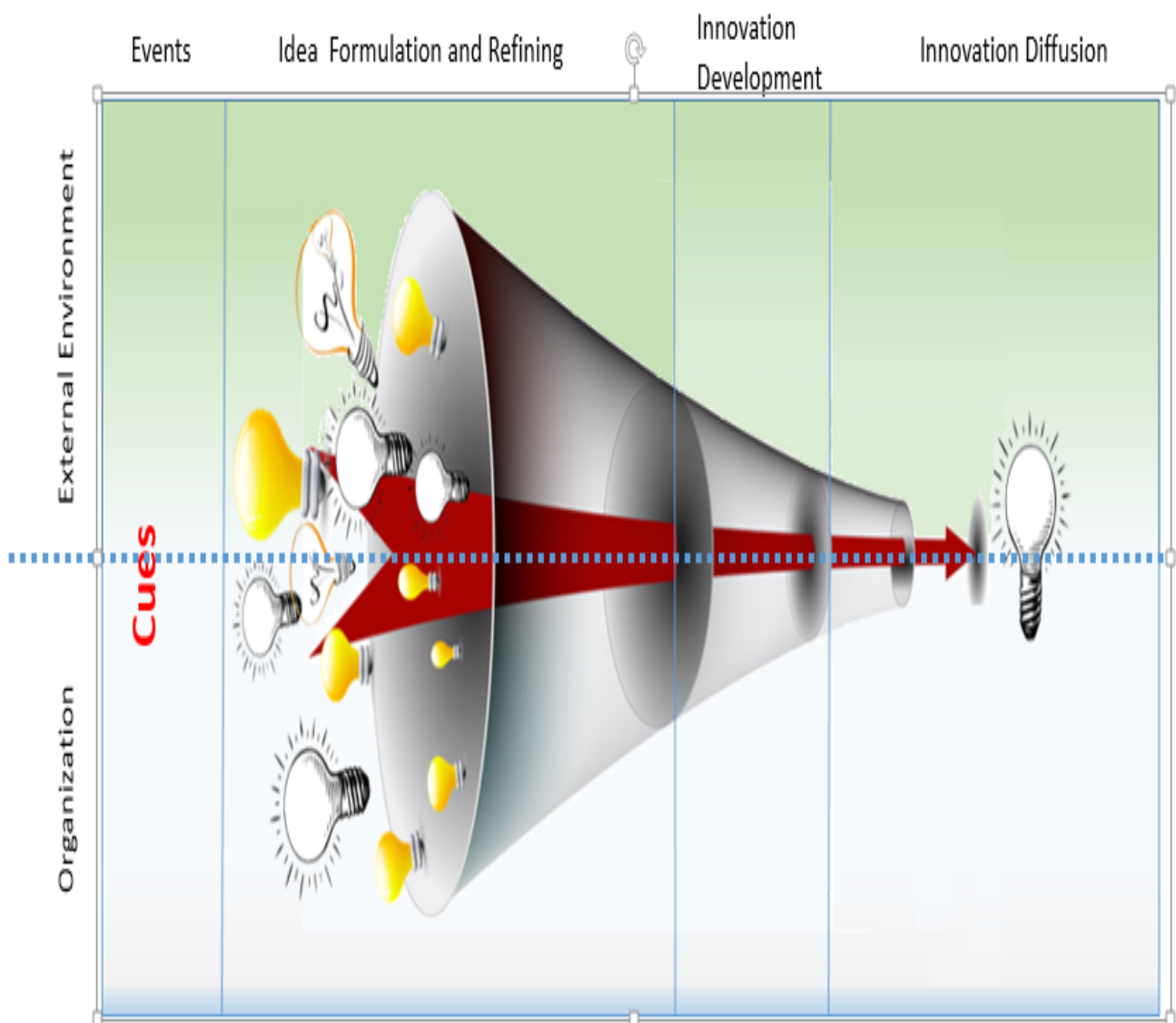


Figure 10: The Innovation Process

### 6.5.1 The Event Phase

From a sensemaking and collaborative learning perspective, the innovation process starts

with a phase that this thesis refers to as the “event”. This phase covers the trigger and motivation behind innovation. From a sensemaking perspective, innovation is triggered by events that are surrounded by ambiguity and uncertainty. This is one of the elements that is usually overlooked by various theories on innovation. It is important to note that this can have its source from either within the organisation or outside. When it is from outside, it usually presents itself as something that the organisation has little or no control over. In this case, they can only respond in the belief that their interpretation of what it means is plausible. The reverse is where the source is from within the organisation, where uncertainty or ambiguity is created by the organisation itself. This can be through experimentation or the organisation wanting to probe the environment, soliciting a response to the cues they generate. This case is a classic example of enactment, where the actors have some level of control over the initial parameters of the interaction with no clear clue of how the environment may react. This thesis positions the event phase as being just as important as the idea that responds to ambiguity and uncertainty generated by the events. The event phase covers the responses offered by stakeholders to resolve the dissatisfaction that comes from the “shock” or disruption presented by events.

Leveraging the collective experiences, the organisation retrospectively consults past experiences in order to gain some insight into what the event means for individuals and the organisation as a whole.<sup>327</sup> At this stage, the knowledge that is socialised does not represent a singular view, but is rather a collaborative alignment of different disciplines and cultures as well as knowledge from the environment. Events are surfaced as cues that individuals from the organisation collectively make sense of, in order to extrapolate meaning. Therefore the organisation or its leadership must be aware that if the group composition of the innovation process is only representative of a small section of the organisation, it will affect the quality of the final output. This further implies that learning, as a sub-process, must be clear and deliberate in the strategic approach of the organisation.

Understanding and clearly articulating the cues or events that have the potential of leading to an innovation and systematically framing them is important for organisations to grow their

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<sup>327</sup> The event view covers aspects of sensemaking and learning that must be fully understood and weighed correctly by leadership and the entire organisation. The event view brings into focus the reasons why organisations innovate in the first place and using this as a relevance gauge for the entire process. Fully understanding the event unlocks the ability for organisations to correctly socialise their knowledge resources.

capacity. This capacity allows organisations not only to respond faster to threats or opportunities in the environment but also for them to be considered innovative. One of the factors explored by this thesis is the aspect of diffusion, which relies on the response and lead-time the organisation has towards innovation. When the environmental cues and events are systematically analysed through a pre-constructed frame, the shorter the time taken for organisations to develop and adopt innovations. This also speaks to the generation of healthy consumer appetite for innovation, which comes only when the organisation understands what is going on around it. The point is that the events phase addresses the awareness that the organisation develops and sustains. This is realised as individuals and the organisation collaboratively learn in conjunction with other stakeholders.

Output from this phase is a critical analysis of the motivation for innovation. This is not a straightforward process because it depends on the nature of disruption faced by the organisation. From a sensemaking perspective, this phase is about interpretation of cues that come from internal and external change agents in order to correctly label them with context suiting the organisation's needs. The disruption or perceived shortcoming between the organisation's current and potential status offers an opportunity for identification of novel problems or ideas that an innovation responds to. It is in this phase where individuals and the organisation cognitively define their criteria of success.

In most theories on innovation, this phase is overlooked and can only be apparent when innovation is viewed as a collaborative learning process that is a product of sensemaking. Together with internal and external change agents, this process offers an opportunity for the organisation to collaboratively learn and define parameters through which new knowledge can be developed.

#### **6.5.2 Idea Formulation and Refining**

After the organisation and the innovating group have adequately made sense of what the motivation for innovation is and what the innovation means to the organisation, the process of idea conceptualising can begin. Through the sensemaking lens, this phase is one that deals with actualising of plausible ideas for innovation. Having understood that innovation covers the conversion of ideas into new knowledge, this thesis goes a step further to unpack what this means from a sensemaking perspective. This phase offers an opportunity for participants to offer their views on the innovation and in return learn from other views.

As individuals offer their experiences and views on ideas, the innovation process benefits from a diversity of knowledge resources if the group composition is truly knowledge diverse.

As mentioned in Chapter 4, collaboration especially for innovation would only make sense if individuals are considered only based on the experience, knowledge and expertise that they have. Organisations must be careful not to allow a singular knowledge view to dominate the process, but to maintain a healthy group synergy.

Idea formulation is one area of organisational innovation that is “sensemaking intensive”. It entails sourcing of ideas from within the organisation or externally from specialists in a particular field or even leveraging the wisdom of the crowd. This process is mainly about connecting cues (reasons for innovating) to frames (expertise) in order to create a plausible outcome (idea). Therefore, if the expertise being used to interpret the reasons does not allow the cues to flexibly fit, then chances of the process’s success diminish. It is imperative that a state of dynamic phase traversal be maintained, whereby the leadership constantly consults the events phase in order to see relevance and accuracy of the innovation. The event phase acts a directional compass for the entire innovation process. The organisation/management should be aware that the idea formulation phase operates at a double loop-learning dimension. This implies that, what was originally thought of as being the idea may change or the people may change their perception of the idea.

As individuals offer and present their views and ideas to the process, new patterns begin to emerge that consolidate the differing views. This allows individuals and the organisation to enrich their existing knowledge as they learn from the process. The same holds for the process: as knowledge is exchanged among the participants and the environment, the process also learns. The process is more focused on extracting value from the contributions made rather than focusing on the quantity of the contribution. It is important to note that contributions come from within the organisation and from outside.

The phase is highly dependent on individuals and the collective enacting what they perceive the innovation should be. The innovating organisation should have in place a mechanism through which reaction or feedback can be solicited for the ideas developed in this phase. This would enable any ideas generated to be relevant for the target consumers of the innovation. Another important mechanism that should be in place is one of filtering between noise and valid contribution to the process. As long as there is a human element in the process, it is difficult to predetermine the quality and value of the contributions. These can only be validated retrospectively. Ability to reference past experiences is valuable to this phase. This is where individuals’ frames are utilised for the collective advantage. Retrospectively the organisation can also inform the process of previous ideas, products and

innovations that can assist the current process.

Knowing and understanding who the consumers of the innovation are and what they want from it is important to this phase. It allows contributors to have context and contribute within the frames of the consumer's needs. Defining a novel offering to the consumer is the primary goal of this phase. This takes into account the cues that the consumer lets out when interacting with the organisation and the innovating group. Emphasis here is that clear methods of interaction must be in place throughout the innovation process in order to ensure that the innovation remains relevant to the consumer, while at the same time maintaining the organisation's intellectual property.

From a practical point of view, this phase is the most political of the entire innovation process. It determines how engaged people will be with the process and how they choose to interact with it. People are confronted with emotive choices on where the process conflicts with their daily jobs, if their contributions are rewarded and what their roles will become after the innovation. These offer a double-edged sword effect. The organisation may use the underlying tension to create new ways of thinking and approaching the innovation or may overlook the relevance of such emotive choices, in which case it may pull the group apart. Choice of facilitator also plays an important role in negotiating and addressing these choices. A novice eye will consider this as being petty and irrelevant to the process. But as suggested from the sensemaking point of view, there is no such thing as an irrelevant contribution. All ideas represented must be accommodated and challenged if necessary, in the process offering the contributor an opportunity to learn and grow.

### **6.5.3 Innovation Development**

This phase follows the successful conceptualisation of a plausible idea; it is a complementary phase to the idea-refining process. It covers aspects such as delivering proof of concepts to validate the idea, delivery of material for consumer acceptance or marketing and delivery of the final innovation. It leverages the core expertise of a particular discipline to deliver. An innovation is not always developed by the organisation internally but can utilise external expertise.

The process brackets the idea as the main cue for this phase and develops frames around it or uses the existing ones. This provides context for what needs to be delivered and who the target audience or segment of the environment should be. Bracketing of the idea or incubation analyses the technology, skills, competencies and resources that need to be developed for innovation. After setting the context, the phase addresses the sensible

parameters that can be used to deliver and develop the idea.

The phase offers a chance to evaluate the sense and quality of balance reflected in the ideas. These can only be evaluated in collaboration with the target consumers and in retrospect. Organisations can only effectively realise the impact of an innovation by getting feedback from the consumer. This is a difficult dynamic for any organisation to deal with, as resources are finite and require proper controls. The open innovation theory proposes a mechanism that offers the outside world a glimpse into the innovation process, thereby offering the organisation insight into what the view is on the innovation.

#### **6.5.4 Innovation Diffusion**

Following the production of an innovation, the diffusion process follows. This is another product of sensemaking in organisational innovation. We presented dimensions for adoption of innovations that cover the negotiation of meaning. Individuals and organisations negotiate what a particular innovation means to them and the possible gains that can be realised through its adoption. Part of the diffusion process, the time dimension, was explored which showed that individuals and organisations are informed by making reference to the past, this being either the immediate or the distant past, in order to understand what a particular innovation has meant to other people or organisations. The diffusion process seeks to negotiate the meaning, views and approaches towards an innovation. Addressing the consumer appetite for the new knowledge is key to whether the process is successful or not. As highlighted, understanding the type of consumer that innovation is directed to is key: that is the way in which the organisation tailors campaigns around what it seeks to accomplish with the new knowledge must be clear to all stakeholders, and more so the problem it seeks to address.

### **6.6 Final Thoughts**

The sensemaking perspective does not provide a model that covers all aspects of innovation nor does it offer a simulation model. However, it offers a stable abstract lens through which understanding innovation from a disciplinary and industry-agnostic perspective is possible.

This thesis has covered the enactment aspect of innovation, by placing it at the core of what innovation is really about. It set out to explore the value of a sensemaking view of collaborative learning as a means for innovating in organisations. The value that is highlighted is that the entire process is an active process of creation (enactment) of meaning, knowledge and plausibility. This, however, does not imply that elements of sensemaking



such as selection and retention have no impact on the innovation. It was the view of this thesis that in fact these processes are complementary to the process of enactment. People act in order to have options that they can choose, and then embrace that which they choose. What this means for innovation is simply that enactment drives what we eventually select and return as new knowledge.

The social nature of sensemaking allowed this thesis to highlight that innovation equally is a social process, and in an organisational context is a collaborative effort. Socialising different perspectives is what ultimately creates new meaning that is relevant to the organisation and the environment.

Through Weick's sensemaking lens, it becomes apparent that innovation is a pursuit of interpretation. It is through attempts to understand what is going on, that organisations shift perceptions and meaning. Learning for innovation is a collaborative effort, whereby unique talents and skill sets come together. Individual identities in the innovation process are constantly redefined, in the process allowing both the organisation and the individuals to properly assess their role in the process and the value that they offer. This in essence offers a safety net for the innovation process where only required identities can fit the desired profile. Differing versions of "self" and "collective" allow individuals in the group to learn from each other. With diverse environments, multiple realities can be enacted that leverage unique individual experiences.

The sensemaking perspective on collaborative learning gives individuals and organisations the ability in retrospect to enact their offering for the environment, as they observe results of previous actions. As people learn from these results, they construct realities that produce new meaning to situations and events, which leads to innovation.

Organisational innovation is a learning process that is a product of sensemaking and achieved through socialisation of different types of knowledge. It is driven by the organisation's interpretation of what exists in its environment. It negotiates with this interpretation in order to remain relevant and competitive in the environment. When viewed through a sensemaking lens, a new dimension is opened, which depicts innovation as a cognitive process of reality enactment that is possible as organisations learn from cues extracted from the environment. This leverages capabilities and skills both from within and outside the organisation.

A sensemaking view highlights that organisations use collective or individual experiences to observe events in the environment looking for familiarity. If they encounter events that are

not familiar, they begin looking for elements, skills, products or processes that exist that can be used. They continuously scrutinise the environment further to see what else exists that addresses similar events. This process highlights deltas between what exists, is required and the capabilities in order to show what can be created to address the gap, if any. The process offers an opportunity to learn from what comes from the cues and to allow organisations to validate what they know and are capable of achieving. The delta leverages individual and collective experiences to facilitate learning and production of the new knowledge that can address the gap in order to establish new collective memories. Sensemaking also allows the organisation to analyse further the new knowledge in order to rationalise what it means for the organisation and the relevance for the environment. This is the double-loop learning process that identifies the areas of the organisation and the environment that need further socialisation and sensitisation.

Organisational innovation has been shown to be a journey of discovery for all stakeholders involved. This understanding resonates from concepts such as collective good, which open up a dimension of partnership between the organisation and the environment. These partnerships are developed through trust and mutual benefit. Developing of these partnership traits is achieved through engaging the right knowledge without which innovative processes would not succeed. Understanding the environment and the organisational landscapes is critical to ensuring that relevant areas are covered and that the right relationships are built.

Through sensemaking, overlaps between innovation and collaborative learning are surfaced which point to the need to integrate into the discussion a perspective of sensemaking. These overlaps are useful for clearing up conceptual shortcomings on how innovation is managed and approached in organisations. It therefore it makes sense to view the process of organisational innovation as a learning process driven by partnerships, relationships, cooperation and shared knowledge for the success of organisations.

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