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Role of Epistemological Assumptions in Knowledge Transfer Process

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TABLE OF CONTENTS**page****LIST OF TABLES****LIST OF FIGURES****ABSTRACT**

1. INTRODUCTION	13
1.1. Research Problem	17
2. EPISTEMOLOGY	20
2.1 Justification of Beliefs	22
2.2. Structure of Justification	24
2.2.1. Internalism.....	24
2.2.2. Externalism	25
2.2.3. Reliabilism	27
2.3. Scope of Justification.....	28
2.3.1. Foundationalism.....	28
2.3.2. Coherentism	31
3. JUSTIFICATION IN KNOWLEDGE MANAGEMENT	34
3.1. Justification as a process	35
3.2. Taxonomy of justification	36
3.3. Justification in the context of knowledge transfer	39
3.4. Summary.....	41

4. SOURCES OF KNOWLEDGE	42
4.1. Rationalism	42
4.2. Empiricism.....	46
4.3. Kant and Idealism	49
4.4. Positivism.....	52
4.5. Heidegger, Wittgenstein, Polanyi & Constructivism	54
4.5.1. Heidegger.....	54
4.5.2. Wittgenstein.....	56
4.5.3. Polanyi.....	57
4.6. Social Epistemology	59
4.6.1. Modes of Analysis in Social Epistemology.....	62
4.7. Summary.....	63
5. SOURCES OF KNOWLEDGE IN KNOWLEDGE MANAGEMENT	65
5.1. Defining Knowledge.....	67
5.2. Realism vs. Constructivism	68
5.3. Epistemology of Possession in Knowledge Management	70
5.4. Constructivism (Epistemology of Action) in Knowledge Management.....	74
5.6. Summary.....	80
5.7. Knowledge Transfer.....	81
5.7.1. Signaling Metaphor.....	83
5.7.2. Characteristics: a unified approach	84
5.8. Summary.....	89

6. RESEARCH METHODOLOGY	91
6.1. Case Study Research.....	91
6.2. Case Study Research Design	92
6.3. Proposition & Research Questions	93
6.4. Research Design & Unit of Analysis	94
6.4.1. Unit of Analysis.....	95
6.5. Case Study Design	96
6.6. Data Gathering.....	98
6.6.1. Qualitative & Quantitative Approach.....	98
6.6.2. Data Collection Method	99
6.7. Analysis.....	101
6.8. Validity & Reliability	102
7. EMPRICAL FINDINGS	105
7.1. Justification.....	106
7.1.1. IT Department	107
7.1.2. Sales Department	109
7.1.3. Marketing Department	111
7.2. Epistemological Assumptions.....	112
7.2.1. IT Department	113
7.2.2. Sales Department	117
7.2.3. Marketing Department	119
7.3. Effects on Knowledge Transfer	121

7.3.1. Findings of Knowledge Transfer Impediments.....	122
8. DISCUSSION.....	127
8.1. Epistemological Assumptions.....	128
8.2. Knowledge Transfer Process	130
9. CONCLUSION	132
9.1. Limitations	132
9.2. Managerial Implications	133
9.3. Theoretical Implications and Suggestions for Further Research	134
REFERENCES	136

LIST OF TABLES AND FIGURES

LIST OF TABLES

Table 1. Classification of Interviewees	106
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LIST OF FIGURES

Figure 1. Taxonomy of knowledge types.....	37
Figure 2. Process of Communication.....	84

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ABSTRACT

Knowledge has been identified as the primary resource which plays a key role in the success of any company. The age of knowledge and the knowledge worker has been heralded by business scholars and economists alike. Thus it comes as no surprise when knowledge is one of the most prominent and intensively studied topics in business research today.

Knowledge transfer research aims to explore, identify and analyze key variables involved in the process of communicating knowledge between two parties within a business setting. The research field is rife with variables that have been identified or suggested to influence the success of a knowledge transfer. Notwithstanding the highly philosophical disposition of the topic, extant research in the knowledge transfer field appears to shy away from addressing these philosophical underpinnings in a straight forward manner.

This study aims to overcome this aversion by studying philosophical assumptions held by parties in a knowledge transfer effort. In doing so it addresses three questions. Firstly, in order to determine the nature of formulation of rationality and justification in organizations the study asks how firms justify their knowledge claims. Secondly, through a historical review of philosophical and business studies, this paper aims to explore the spectrum of epistemological assumptions displayed within organizations. Finally, by utilizing the findings of preceding questions, third question's objective is to observe what might be manifestations of these philosophical assumptions and beliefs in knowledge transfer process.

To this end, the study analyzes three distinct departments under a MNC in terms of their interactions both within and outside their boundaries. It utilizes a case study method with pattern matching analysis and qualitative data which has been gathered through semi-structured interviews.

The study has identified discernible deviations in beliefs on knowledge throughout different departments. These differences appears to draw positive correlations with the background of the individuals and structural constitutions of their departments. Finally, study also suggests that these differences possess a direct effect on context building which in turn plays a vital role in knowledge transfer process.

KEYWORDS: Knowledge Transfer, Knowledge Management, Strategic Managemen

1. INTRODUCTION

William the Conqueror, having defeated his rival to the throne Harold and establishing himself as the first Norman ruler of England, ordered a detailed survey assessing the material worth of all of his subjects. Purpose of this effort, which materialized in the Domesday Book, was to gather the most accurate information on the material wealth possessed by the citizens of the realm. Thus the taxes could be levied accurately in order to provide income for rebuilding the kingdom that had been ravaged by warfare.

On another account, arguably the first multi-national corporation; British East India Trading Co. was well aware of the importance of accurate information as they have sought ever deeper understanding of their growing empire on Indian subcontinent in order to have an accurate understanding of the people and the lands they govern (H.V. Bowen, 2006).

These bits of historic accounts, like many others, highlight the importance of knowledge and information for human kind in all its endeavors. Just as in determining the correct tax levies or portraying an accurate picture of a culture, in our decisions we rely on having access to accurate information and our beliefs corresponding to the map of reality. As human beings we abhor uncertainty.

It should not be overlooked that information and knowledge has both been highlighted as underpinning decision making. Thus we have already touched on the straining factors in epistemology and therefore in Management Science. In the end the overarching theme of this thesis would be the ambivalent and paradoxical nature of our thirst for facts, as epitomized in abstract information, and unrelenting grip of elusive and context bound knowledge. The reader should note that in the following pages, unless stated otherwise, the term *knowledge* will be used to refer to both information and context bound knowledge. This approach I believe will be more conducive to capture the ambivalent nature of the type of knowledge we desire and the challenges it presents.

In the second half of 19th Century, through the studies of Taylor, Simon and Boston Consulting Group, strategic management has become an appealing topic for the managers and researchers (Nonaka and Takeuchi, 1995). Furthermore with the introduction of new dynamic economics and globalization, a new strategic management paradigm emerged in the Resource-Based View of the firm (RBV). Based on the research of Penrose (1959), the RBV focuses on the valuable resources that a firm possesses, and holds that it should not be the industry norms but the firm itself, and its resources and capabilities that define its strategies. Following RBV the focus of strategy making shifted from industrial dynamics to the core competences of the firm. Nevertheless, RBV stipulates that for a resource to be a key factor in determining firm strategy it should be Valuable, Rare, Inimitable and Non-substitutable. This translates into resource being conducive to creation of value while not being easy to reproduce or replace. In this light Conner and Prahalad (1996) assert that “knowledge” is the most prime example of a valuable resource. The context bound, idiosyncratic nature of knowledge coupled with its immense fuel for innovation, creativity and improvement validates this statement, and renders it even more vital to the knowledge based economy we are living in today (Drucker, 2001). Thus knowledge is a catalyst for differentiation and competitive advantage (Gupta & Govindarajan, 2000). Furthermore exploring the variables that underpin the decisions taken by a firm as one of the determinants of its performance constitutes the objective of Strategic Management (Grant, 1996). If accept that the prerequisite for any successful decision is having accurate understanding and knowledge of variables that play into it, then it should be abundantly clear that transfer of information and knowledge should be one of the priorities of Strategic Management field.

Following the rise of resource based view of the firm; knowledge has become the focus of academic research. As clearer the role of intellectual capacity and ability to innovate emerged as a major driver of a firm's success, cracking the codes of learning and sharing this valuable resource has become a vital endeavor. Nevertheless unraveling knowledge and its functions had always been a daunting task for intellectuals over centuries and this dismal reality has also been valid for researchers in the “Knowledge Management Field” to this day.

Hence, from 1980s onwards knowledge has become one of the popular topics which strategic management field immensely focuses on. (Nonaka and Takeuchi, 1995; von Krogh & Roos, 1995; Blackler, 1995). As the resource-based view of the firm emerges more vividly, attention to knowledge as one of the crucial resources has increased. Following the studies of Drucker (1959), Penrose (1959) and Polanyi (1958), strategic management scholars turned their attention to knowledge management as a vital part of the management's responsibilities, thus aimed to explore the different aspects of knowledge which would optimize its employment and productivity (Nonaka and Takeuchi, 1995).

Many aspects of knowledge management have gone under exploration and theoretical scrutiny. As a field, it derives theoretical foundations from various other research fields such as Cultural Studies, Information Technology, Cognitive Sciences, Psychology and Strategic Management (Baskerville and Dulipovici, 2006). The extant literature mainly focuses on three aspects of knowledge management which proves to be vital for the firm that aims to manipulate it; knowledge creation, acquisition and transfer. There had been significant number of research focusing on these three issues which would render competitive benefits for the firm if it may be applied efficiently.

It may be argued that proliferation in knowledge management research owes a lot to Polanyi's (1958) work *Personal Knowledge* and its distinction of explicit and tacit knowledge. By discerning knowledge from information and data, Polanyi opened the doors for investigation of the phenomenon called "tacit knowledge". Since then the research in the field of knowledge management focused on how tacit knowledge may be codified and conveyed throughout the organization. While some researchers are focusing on the creation of "tacit knowledge", others focused on what makes its transfer so intricate. Nonaka and Takeuchi (1995) tried to establish a framework for spiral knowledge creation and dissemination by addressing the complexities of tacit knowledge transfer. Their conclusions were largely focusing on the social and relational context of the process, promoting socialization as the main tool for converting tacit knowledge to explicit knowledge therefore to trigger other forms of transformation to promote spiral learning. Kogut and Zander (1992) postulated a different learning organization where

relational ties and networking renders the firm advantageous over its market. Szulanski's (1996) research came with the breakthrough of establishing the several factors which makes transfer of tacit knowledge complex, calling them 'stickiness' factors. He divided those factors into four main groups; characteristics of knowledge, recipient, source and context. Intriguingly, his findings pointed to a different phenomenon of characteristics of knowledge impeding the process whereas previous research focused on the social and motivational drivers. Thus it was also recognized that the nature of knowledge was all by itself a major impediment. Nahapiet and Goshal (1998) utilized the concept of social capital to facilitate the transfer of intercultural or cross-border transfer of knowledge. They emphasized the differing effects of various social and relational factors. Eventually, Bhagat, Kedia & Triandis (2002) offered another framework for cross-border transfer of knowledge which addresses the different types of knowledge and the context of the process.

Yet, all of these researches are really insufficient in addressing how knowledge really emerges and is being conceived by organizations. Amidst the entire endeavor to construe knowledge creation and knowledge transfer, only few researches directly acknowledges the importance of epistemological assumptions in knowledge management. Nonetheless epistemology is still being considered as the principal source in understanding human knowledge and its formation. The field of business may be perceived as distant from the abstract efforts of philosophy, nevertheless it is not independent from its fundamental assumptions as a body of science and literature. Thence any theoretical supposition in this field is also subject to the scrutiny of philosophy and its branch that is investigating knowledge; epistemology.

The field of organizational epistemology, as remarked previously, has an insufficient and incoherent disposition. There are two main epistemological frameworks that were suggested in due time which may be classified as; epistemology of possession and epistemology of practice (Assudani, 2005). The cluster of possession has its foundations in the Cartesian epistemology, postulated by Descartes, which fundamentally draws a distinction between the knower and the known, the mind and the experience. As it will explored in coming chapters, the thesis of Descartes draws a strict distinction between the

mind and the external world, hence establishing the individual as the primary arbiter of knowledge. On the other hand practical perspective on epistemology was relatively recently developed having roots in Idealism and finally culminating at Social Epistemology. This thesis promotes social factors and practicality of knowing over the knowledge, claiming the ineffectiveness of Cartesian view that previous theories employed and offers an integration of the knower and the knowledge, thus binding the action of knowing with the knowledge (Cook and Brown, 1999). Notwithstanding the promising discussions, the field of organizational epistemology still lacks a comprehensive framework which may better explain its role in knowledge transfer process. The lack of emphasis of organizational epistemology may also be attributed to such lack of coherent foundation for epistemology of organizations.

1.1. Research Problem

Acknowledging the gap of research which comprehensively addresses the issue of epistemology in knowledge transfer, the aim of this study is to explore the role of epistemological assumptions in the process of knowledge transfer at an individual and intra-departmental level. Pointing to the scarcity of research on this very topic, following questions will be addressed in this research;

- 1) How do organizations justify beliefs and knowledge claims?
- 2) Do firms span different epistemological assumptions?
- 3) How do epistemological assumptions affect knowledge transfer process between organizational departments?

On the one hand this study will heavily draw on the Social Epistemological approach to organizational design and its effects on epistemological outcomes (Goldman, 1999; List 2005). System Oriented social epistemology suggested by Goldman (1999; 2009a; 2009b) asserts that different epistemic goals would entail differing organizational structures that cultivate the right kind of epistemic behavior towards these goals. List (2005) and Zollman (2007) present cases where different organizational settings that

effect various outcomes in epistemic success and rationality. Thus one of the primary objectives of the inquiry will be the exploration of the various effects of organizational structures, professional and personal back grounds on the behavior of epistemic agents.

As Nonaka and Takeuchi (1995) remarked that any inquiry about knowledge should have a comprehensive understanding of epistemology and its foundations. First question will aim to explore the structure of justification and their functioning against the background of philosophical postulations up to this date. In imitating the general approach to the discussion of structure of justification in epistemology, the topic will be handled under two overarching discussions; firstly of between Internalism and Externalism, secondly of Foundationalism and Coherentism. Hence providing the philosophical arguments and disputes in this field, the paper will aim to apply the theories of justification to the organizational setting. While doing so, it will also explore the research on epistemological justification in organizational studies and discuss their contributions and shortcomings.

The second question will target the inherent norms rationality in establishing sources and acquiring knowledge and aim to explore the supposed differences of concepts of knowledge across different departments of an organization. This exploration, likewise the first question, will start with the presentation and discussion of the philosophical literature that addresses the inherent qualities of knowledge. Following, the extant research on organizational epistemology and qualities of knowledge will be assessed in their relation to the main philosophical arguments. Thus, the study will try to establish a basic framework to evaluate the organizations and their perception of knowledge in reference to literature. In this part of study, extant research on organizational epistemology will be taken as a roadmap to distinguish differing manifestations in subject organizations of the research. However, whenever possible, the study will strive to derive its own conclusions on how organizational patterns manifest themselves.

The final question will be aimed to be directly addressed by the outcome of empirical research. Consequently, the analysis of collected data is expected to give implications on how differing or converging epistemological assumptions will lead to deviating outcomes

on knowledge transfer process and therefore point out the significance of epistemological compliance in the knowledge transfer process.

Eventually, this study will aim establish epistemological assumptions of a firm as one of the critical factors that may impede knowledge transfer process and contribute to our knowledge of stickiness factors which determines the transferability of knowledge. Considering the fact that epistemology derives its roots from both the nature of knowledge and the knower, the outcome of this study should have implications for understanding both the characteristics of knowledge and organizations.

On the other hand, this study will not aim to perform the duty of establishing a comprehensive epistemological framework for the analysis of organizations. Extant literature on organizational epistemology, although regarded as imperfect and incoherent, will serve as the basis of this study and its analytical procedure. However, the paper will aim to contribute to the existent ideas by discussing them in the light of research data acquired.

This paper intends to employ a rather heavy theoretical and philosophical style as its author believes such efforts to be the underrated aspect of knowledge management field. The reader, whilst going through the rather grueling experience of reading philosophical arguments, should bear in mind that the sole enterprise of the author is to shed light on the intricacies of knowledge by employing much underappreciated contributions of epistemological philosophy.

2. EPISTEMOLOGY

Before exploring its subtleties let us survey the general aim of epistemology and try to elucidate those concepts which will be vital for the enunciation of the ideas that will be explored in this thesis.

Briefly put, Epistemology is the study of knowledge. Term derives from Greek words “episteme” meaning knowledge and “logos” meaning the study of (Truncellito, 2007) This ancient field of philosophical inquiry aims to explore the nature of knowledge; that is its conditions, sources, structure and scope (Steup, 2005). There are generally three different types of knowledge defined in; propositional knowledge, knowledge of acquaintance and knowledge of how. Traditional epistemology mainly focuses on the study of propositional knowledge as statements of facts or beliefs concerning a truth about the world. Therefore knowledge is regarded as a state of belief that corresponds to a truth about the world which has been reached through rational means. When we reflect on these conditions, they are actually strikingly reasonable; belief condition establishes that in order to possess knowledge first you have to believe in your statement. Secondly, if a belief is to be qualified knowledge, it has to be true. And finally, conditions of rationality and justification ensures that your belief is not true by sheer luck (such as mere guesses) but has been acquired through valid methods or sources. Thus we reach the conception of knowledge as Justified True Belief. It should be noted that the Justified True Belief condition of knowledge has been successfully contested and shown not to be error proof by Edmund Gettier (1963), nevertheless for the purposes of this paper JTB definition should be sufficient without digressing to explore Gettier Cases and their proposed solutions.

Perhaps the most vital concept, for the themes explored in this study and in epistemology in general, is the concept of rationality. Rationality can be construed as the evaluation of epistemic decisions taken by an agent in believing or not believing. In traditional epistemology rationality is marked by its pursuit of valuable true beliefs via using correct methods of inquiry (Pritchard, 20069). The value of beliefs and goal of truth emerge when

we inquire the value of true belief and knowledge. Is having a true belief always desirable? The general agreement attests to the fact that, despite few exceptions, having a true belief is more beneficial than having a false belief in our lives (Pritchard, 2009). Yet, now we can ask ourselves if *knowledge* has any more value than *true belief*. Does having a justification for our beliefs render them more valuable? According to Socrates, reflection that underpins justification provides a valuable anchor that allows *knowledge* to be more stable and reliable especially in the face of conflicting information. Nevertheless some contemporary philosophers (Goldman, 1999; David, 2005) hold *true belief* to be the primary goal of human behavior, while others such as Kvanvig (2005) claim other epistemic goals that are equally valuable as true belief.

Now that we have established the value of knowledge, or at least of true belief, second criterion of rationality concerns the methods in taking the decision to believe. Repeating Pritchard's (2009) example let us assume there are two judges that reach their verdicts through separate methods. First judge does so by following the legal procedure and the second judge reaches her verdict by tossing a coin. Presumably we would all agree that the first judge is acting rationally and thus, is justified in her decision. Whereas the second judge clearly violates the conventional norms of reaching a decision, and therefore would be neither justified nor rational in our eyes.

Nevertheless we should consider the question of what it is that makes us grant rationality to the first judge. Since justification and rationality is closely connected, the answer to this question will have far reaching ramifications that will be explored throughout this thesis. First of these discussions will be reviewed under the heading of justification of beliefs which will explore the external and internal aspects of rationality. As for the remainder of the paper, rationality will emerge as the underlying factor that marks the difference between various philosophical thoughts both in Epistemology and in Knowledge Management literature.

2.1 Justification of Beliefs

Epistemology as an intellectual enterprise aims to explore knowledge; that is its nature, limits and verification. To this end two questions essentially define this enterprise; “How do we acquire beliefs” and “How do we justify those beliefs which are acquired”. Primarily, accepting the definition of knowledge as “Justified True Belief” entails the provision of the premises and processes which renders our belief to be justified. It is at this juncture that philosophical ideas clash with each other; striving to settle the normative difficulties of knowledge and intricacies of human apperception.

The outlook of the problem of justification starts with its juxtaposition with truth. Such descriptive obscurities lead to deliberations over if the justification should also imply the truth of the belief, or these two conditions of knowledge should be realized in a starkly stand-alone process. More often now it is debated that the definition of knowledge as Justified True Beliefs engenders an obscurity as to how strong the justification should be. Since entailment of truth requires the strictest level of justification that is infallible, thence the concept runs into the danger of supporting only mathematical or analytical a priori knowledge claims which would not provide any sufficient grounds for any inferential knowledge claims. Thus, we would only be able to hold true beliefs which are applicable to everyday life, yet failing to fulfill the criteria for knowledge as they cannot be justified on a solid ground. (Dancy, 1985; Sturgeon, Martin & Grayling, 1995; Bonjour, 2009; Audi, 2011)

However, if the impossibility of an impeccable justification of a belief would be assumed, hence leading to severance of truth and justification, then we may talk about having knowledge of things which would then correspond to “high probability of truth” (Dancy, 1985; Bonjour, 2009; Audi, 2011) whereas failing to achieve the historical pursuit of roadmap to certainty. Nevertheless, it can also be entertained that same line of argument against Justified True Belief, and for probable qualities of knowledge were also put forward back in ancient philosophy, first one in the writings of Plato and latter in dissertations of New Academy. Notwithstanding the gravity of the topic of truth this paper

will solely focus on justification of knowledge claims for the sake of integrity and intelligibility.

Also comprising the problem of juxtaposition, a more formidable obstacle for scholars is determining the mediums, sources or processes which make it possible for human beings to justify their beliefs. Here we find two different discussion points; one regarding the question of “how beliefs justify each other” (structure of justification), the other occupies itself with the scope of justification. The debate relating to the first question is mainly divided between the theses of Foundationalism and Coherentism (for the sake of brevity and clarity Infinitism will not be discussed here). The second question is purported to be answered by the theses of Internalism and Externalism.

Briefly, Foundationalism holds the view that our beliefs are justified by building on other beliefs through inferential chains. A good analogy to give here can be to think of inferential chains as building blocks that can be put upon another like Lego pieces. Contrary to this thought Coherentism holds that our beliefs are justified via other body of beliefs which they relate to. They counter the example of building blocks by likening our beliefs to an image of a web where all members support each other.

On the other hand the debate between Internalism and Externalism tries to pin down where we derive justification. Internalism holds that justification should come from the cognizing subject and the tools available to her. Its proponents take rationality and justification to be a matter that is internal to mind of the subject. Disagreeing with this stance, Externalists claim that not all possible evidence or processes can be available to the subject at a time, therefore the reward of justification should be awarded according to external standards.

Throughout the history of epistemology each school of thought, and their sub-logical systems, haphazardly clashes or amalgamates each other’s dissertations in order to provide the most accurate description of human apperception of beliefs and knowledge. Notwithstanding the prevailing absence of a satisfactory coherent answer for their

ventures (Bonjour, 2009); these schools and their arguments will be analyzed in the following chapters to shed light over their reverberating effects on the field of knowledge management.

2.2. Structure of Justification

2.2.1. Internalism

Alan has been taught starting from his childhood, that positions of the planets and stars give cues to future events, which he believes is true. Every night he gazes upon the havens and tries to decide what events will come to pass tomorrow. Is Alan justified in his beliefs about the future? Internalism is the thesis that Alan is indeed justified in believing in the events he foresees due to the positions of stars and planets.

The debate on Internalism vs. Externalism can be best explicated in terms of rationality as justification generally regarded to stem from this concept. (Pritchard, 2009) Therefore the question is ‘When do we confer rationality to a person in terms of how they reach their beliefs?’ Internalism holds that the answer should be decided on the basis of mental tools and resources available to the person.

Concerning the process of justification, Internalism postulates that the justification of a belief is achieved through features which are internal to the cognitive subject. (Sturgeon *et. al.*, 1995) Hence, accordingly this cognitive subject should be able to justify its beliefs on the grounds that are provided sole and adequately by its conscious awareness. (Bonjour & Sosa, 2003) Here the definition of accessibility should not be taken too literally as for Internalism defines a self-conscious or reflective endeavor, which may be introspective or directed outward, to become aware of the features of certain conscious phenomena such as sensory data or mental states (Steup, 2005; Audi, 2011).

For Internalism satisfying your epistemic duties is a necessary and sufficient condition to be deemed rational or to be justified in your belief (deontological concept of justification). Furthermore all the methods and beliefs needed for satisfying this condition should be directly accessible to the person. Importantly, Internalism allows that a person can be mistaken in their belief due to use of epistemically non-optimal tools, but since those are the only tools that were available to this person, she should still be counted as justified in her belief. Hence rationality and thus justification are evaluated in terms of a person's own epistemic standards. If the subject is not contravening her own epistemic norms, and thus being blameless in her beliefs, she should be regarded as being justified and rational. Of course the most significant ramification of this view is that Knowledge and Justified True Belief becomes two distinct concepts; whereas Justified True Belief holds up as an internally evaluated quality within the structure of a person's own beliefs, Knowledge becomes something that is conferred to our beliefs by measuring how much they approximate to truth.

Defined as such Internalism has been the prevalent perspective taken by the general epistemic view of various philosophical eras and many prominent intellectuals based their views on the internal justification of the human consciousness. Encompassing most classical and some of the modern philosophical schools, Internalism mainly seeks to establish the existence of an outer world to be accurately depicted by the human cognitive system. (Bonjour & Sosa, 2003; Audi, 2011)

2.2.2. Externalism

Despite the fact that Internalist argument has been accepted without much scrutiny during the greater part of the history of philosophy (Bonjour, 1985), the inability of Internalist accounts on clarifying justifying factors and their nature led to the burgeoning of Externalism as an opposing school of thought. Fundamentally, Externalism is a theory of Epistemic Justification which holds that justifying factors of an individual's beliefs are not necessarily mentally or introspectively accessible to that individual. Hence the

individual's justification of one's beliefs does not depend on her reflection of the justifying factors, or the mental states she possesses.

Consequently, they must be functioning as external factors which are not readily available to individual (Morton, 2003). One way to demonstrate the plausibility of such argument is by appealing to small children or animals that are not capable of reflecting on their experiences, providing evidence or conducting inferences, nevertheless still being able possess some sort of knowledge (Steup, 2005; Audi, 2011). Following its premises, an Externalist account of justification aims to promote the justifying factors that are external to the individual such as society, recurrent experiences and unconscious states of reasoning.

Unlike Internalism, Externalism does not see a person as justified in her beliefs unless her methods are objectively correct, whether or not she thinks her method is the right one should be considered irrelevant. For Externalism what matters is the method used independently of the person herself. If her methods are objectively truth-conducive, then she is justified in her belief even if she has never reflected upon or considered the accuracy of this method. The assessment of justification occurs from an external perspective.

As Adam Morton (2003: 107) exemplified how the external factors unbeknownst to the individual might affect the degree of justification of the belief;

“If you believe that you have seen Elvis in London, your claim to know that you have seen Elvis in London may be undermined by the fact that there are too many Elvis-imitators in the neighborhood although you have no reason to believe that they were there. The external element here is that your failure to check if there were any Elvis-imitators could not be mitigated by just reflecting on what you know.”

Eventually, Externalism is the process of justification directed towards the promotion of truth. (Pritchard, 2009) For externalist claims, truth of a claim is not something we have direct access to, therefore justification should be sought in the fulfillment of the criteria

of truth. Consequently, Externalist theories put the endeavor of truth to the center of their claims while defining justification in terms of the truth. (Sturgeon *et. al*, 1995)

2.2.3. Reliabilism

Reliabilism, as the most promoted and widely accepted type of Externalism (Dancy, 1985; Bonjour, 2009; Audi, 2011), purports to define the justification of knowledge by ascribing the vital importance to the process itself rather than the content. Although it has its own various different forms which argues the reliabilist account in slightly differing variations such reliable indicator theories, this paper will choose to focus on the process reliabilism which will hence be referred to as Reliabilism. For the reliabilist, contradicting the Internalist claim, it is not the self-reflection or conscious states that assure an individual of the degree of justification of a belief, conversely it is the reliability of the processes that were employed for acquiring such belief that renders a belief to be justified in a probabilistic manner. (Bonjour, 2009; Audi, 2011)

Reliabilist argument follows as such;

“S’s belief that his friend is driving a yellow car is justified if and if only S’s belief is produced by a reliable process.”

The theory of reliabilism as it was first put forward by Alvin Goldman (1979), aims to exclude the factors of justification, such as reasonability and rationality that are closely related to the concept of justification itself which he believed to cause circularity of argument as using to claim to justify itself. He argued from examples that the justificational status of a belief must somehow depend on the way the belief is caused or causally sustained, invoking truth and causal relation as the factor of justification. No account of justification can get the story right unless it incorporates a suitable condition about belief-forming processes or methods.

Reliabilism, as Goldman (2008) conceptualizes it, follows a sequential pattern in belief forming that is akin to Foundationalism (Pollock & Cruz, 1999) which exposes the inadequacy of the reliability of the process as the sole justifier. As the outcome of reliable inferential process must be supplemented by justified grounds in order not to fall into regress problem, the theory has to presuppose that antecedent beliefs were justified themselves in non-inferential basis such as sensory input. (Goldman, 2008) Furthermore reliabilist account also should take the defeasibility of the reliable source into account. Moreover, Reliabilism conceives justification and truth in terms of degrees, allowing for beliefs to be relatively more or less justified which are produced by processes with their own degree of reliability. Thence the degree of reliability corresponds to the degree of justification. Additionally rationality is also defined in terms of the reliability of the source of the belief. (Pritchard, 2009) In the light of such classification there will always be a conceivable precedence of the more reliable sources of justification over the ones that are less reliable (Pollock & Cruz, 1999) At this juncture the level of reliability should also be determined by occasional conditions since the sources of justification might have priority over each other in different occasions. For example; in daylight, perception may be a better reliable source whereas hearing would take over the precedence in pitch black conditions.

2.3. Scope of Justification

2.3.1. Foundationalism

Remarkably any argument about structure of epistemic justification should start with Foundationalism; hence any other theory on the topic should be regarded in its relation to it (Dancy, 1985: 53). The basic premise of Foundationalism rests on the idea that most of our justified beliefs, which are often presented as “non-foundational” or “inferential”, are justified on the basis of our foundational beliefs which are often regarded to be self-evident (self-justifying) or available to direct awareness such as beliefs about perception (Russell, 1950; Dancy, 1985) Therefore it will be apt to depict justification system of Foundationalism as a building which foundational beliefs are forming the ground while

non-foundational beliefs are establishing the superstructure. Foundational beliefs, which are self-evident or direct by their nature, do not depend on other beliefs for their justification and they may be regarded to be based on *sensory input, memory, consciousness, testimony* and *a priori knowledge* (Audi, 2011) as sources of justification. However; as it will become evident in the further deliberation, what confers the foundational beliefs this quality has been part of an extensive debate.

In regards to its origins, it may be observed that the burgeoning of Foundationalism actually corresponds to the efforts of overcoming the eminent “Epistemic Regress Argument”. The idea of foundational beliefs as being self-evident or direct virtually enables us to finalize a line of argumentation for justifying a knowledge claim to end at a final point where no further claim for justification is needed to support the antecedent claims. Henceforth, its arguments are regarded as the only plausible way of overcoming the regress problem by its proponents. (Other thesis which directly opposes this view is “Infinitism”)

Nevertheless an accurate analysis of Foundationalism should include both of its branches; Classical Foundationalism and Moderate Foundationalism. I believe it will be befitting to mention that latter is more widely accepted by scholars recently. Any view purporting to be Foundationalist should address two essential questions; “How are foundational beliefs justified” and “How these foundational beliefs may justify non-foundational beliefs” (Steup, 2005) Thus, bifurcation of Foundationalism is engendered by the untenable position which the concept of self-evidential foundational beliefs entail in the wake of concerns about why these so called foundational beliefs should be exempt from the scrutiny of justification and how we can justify them.

For the sake of intelligibility of further discussion it should be noted that interpreted from an Internalist perspective, Foundationalist beliefs are introspective and reflective in their nature.

Hence to give an instructive example;

“Let us assume that S saw a friend driving a yellow car. Altogether the belief of S that the car is yellow solely depends on the perceptual experience of S for justification. Therefore S would be holding the belief that his friend’s car is yellow, which would indeed be a basic belief for S since it does not depend on any other beliefs for S to justifiably believe that the car is yellow. It would be helpful here to take note of the introspective dimension of the issue as the belief is not about the car but how it appears to S.” (Steup, 2005)

In case of Classical Foundationalism, presupposing the self-evident nature, or in other terms the strict infallibility of foundational beliefs; it is exceedingly hard to predict how few foundational beliefs should support myriad non-foundational beliefs for its rigid definition only allows only few to exist. Moreover, infallibility, or otherwise referred to as indefeasibility, of foundational beliefs were demonstrated to be wrongfully taken for granted which would in the end allow false beliefs to be justified.

In order to sidestep the objections to rigid structures of foundational beliefs some proponents of Foundationalism attempted to ease the definition of foundational beliefs. Hence they proposed the initial conception of foundational beliefs must be revised in two aspects; firstly, foundational beliefs should not be regarded to imply the truth of the “inferential” non-foundational belief they justify (Audi, 2011) and secondly, the infallibility of those foundational truths must be conceived as being potentially defeasible if a condition arises that challenges their justifying qualities (Steup, 2005; Bonjour, 2009; Audi, 2011). Thereby with new perspectives on the concept of foundational beliefs Moderate Foundationalism took shape. This position would concede that, while still preserving the conditional dependence on foundational beliefs, coherence factor may also add extra justificational influence to the non-foundational beliefs (Audi, 2011).

In the writings of Robert Audi and Lawrence Bonjour; Moderate Foundationalism even extends itself to incorporate some compatible aspects of other views on Justification such as Coherentism and Reliabilism. Nevertheless maintaining the centrality of

Foundationalism as the tool for exploring the knowledge development and belief structure of individuals, these efforts aim to extend the span of the Foundationalism aspect to render it more viable and compatible with contemporary issues which would also be presented throughout this paper.

2.3.2. Coherentism

Coherentism, as similar to Internalism, holds that the functions that justify one's knowledge should be present to his consciousness and be of internal awareness. Traditionally Coherentism has been assumed to entail Internalist scope of justification due to the requirement that the subject need to connect beliefs together thus need to be always aware of them. However modern conceptions of weak Coherentism, which holds that Coherent structures can rest on foundational mental states or impressions, allow the subject to be unaware of certain sources of justification.

However, unlike Foundationalism, Coherentism gives no precedence or privilege to any kind of belief. The proponents of the view postulate that any belief should be justified in its relation and compatibility with other belief that a person holds. So under the most basic definition of the Coherentist view, a justified belief of a person should cohere with the entire system of belief they hold. (Blanshard, 1962; Bonjour, 1985)

The logic behind the basic coherence argument may be presented as such;

“S’s belief that the friend’s car is yellow will be justified if and if only this belief will be compatible and coherent with the rest of the set of beliefs S has. To explicate the matter with another example, we can say that the a person’s belief that he/she may be standing in front of a field should be coherent with the surrounding sounds, the smell of the field and the touch of the grass.” (Audi, 2011)

With certainty one of the issues we have to clarify for accurate understanding of Coherentism is the notion of ‘coherence’ and how it has been applied by different scholars up to this day. It should be remarked that one of the departure points of Coherentism had been the objection against the asymmetrical distribution of justification between notions in Foundationalism. (Dancy, 1985) For its proponents, this asymmetrical influence was engendered due to the ascription of justifying authority solely to foundational beliefs while non-foundational beliefs possessed no such privilege. Thus, somewhat inevitably, Coherentist views accentuated the consistency, completeness and coherence of the set of beliefs of an individual. (Bradley, 1914) Nonetheless they differ on their views about how to conceive and apply the notion of “coherence”.

First divergence presents itself on the issue of what coherence actually encompasses. Initially it was suggested by Blanshard that coherence corresponds to entailment which meant that every belief would be entailed jointly by the rest of the beliefs that a person holds as a whole. (Dancy, 1985) Accordingly, by the advancement of our beliefs and augmentation of our belief set, our beliefs will become gradually more complete and therefore more coherent. However this “Strong Coherentism” required that the set of beliefs must be complete in order for them to entail each other in a mutual manner that will sustain symmetry that Coherentism was looking for. Since the concept of completeness is hard to capture and raises another question as to how if we can have any complete set of beliefs about anything, mostly it has come to be regarded as an untenable position. (Dancy, 1985, Steup, 2005, Bonjour, 2009) Additionally, such “Strong Coherentism” only recognizes the structural coherence of the belief system, while denying there need to be any other reference of justification other than coherence of whole set of beliefs of an individual. Therefore it may also make way for an Externalist disposition since introspective accessibility will not be regarded as a necessity anymore.

Other version of Coherentism that is presented in the writings of Bonjour, 2009 and Dancy, 1985 purports to define what really constitutes coherence. (Dancy, 1985, Olsson, 2012) This version of Coherentism purports to define coherence in rather holistic manner; leaving out the concept of “entailment” while replacing it with “mutual explanation”. Also a further discerning fact is that while “Strong Coherentism” visualizes coherence as

an enclosed system, isolated from any input from the outside world (Bonjour, 1985; Dancy, 1985; Steup, 2005; Audi, 2011), the weaker versions; one such as Bonjour asserts; holds that strong sense of Coherentism would be incapable of rendering an accurate picture of the outside world unless it allows sensory input of the outside world to justify the set of beliefs.

For Bonjour (1985) suggested that coherent set of beliefs should be conceived as logically consistent; in accordance with the probabilistic consistency of the set; in correlation to what kind of inferential connections are present between the beliefs as in numbers and strength of the links; the inverse of the existence of subsystems and unrelated beliefs; and the inverse of the extent to system possesses deficient beliefs that cannot be explained in justifiable grounds. Thus accordingly; each member of the would be more accurately justified by the increase of the total set of beliefs, further the inferential links between the beliefs will also be strengthened by the augmentation of the set. It should be noted here that the weaker conception of coherence conceives the beliefs as different sets which are justified in themselves, as opposed to the stronger conception that justification should span every belief that a person has.

As a very intriguing picture we can see that both Foundationalism and Coherentism is converging on the probabilistic conception of justification while relaxing their structural rules and requisites. Yet, as it will be seen in what will follow Coherentism has more fundamental problems to surmount in order to validate its availability as a reliable theory of justification.

3. JUSTIFICATION IN KNOWLEDGE MANAGEMENT

Considering dynamics of the information age we are living in, we can easily come to the fair conclusion that firms are dealing with excessive amounts of information and data (Hansen & Haas, 2001). It is then incumbent upon the organizations and their members to filter out the redundant pieces of data and preserve the fragments that are congruent. But on which premises they base their decision of filtering? How do they justify their beliefs about this filtering process? What kind of micro-processes and macro-processes are involved in such entangled mechanisms? Starting by delineating the scarce scholarly sources touching upon the topic justification in knowledge management, the paper will aim to develop an articulate picture of the topic while asserting that justification should claim a more central role in knowledge studies and what should be addressed further.

Unfortunately, so far the topic of “Justification of Knowledge” has not received significant attention from the scholars of knowledge management or knowledge transfer field. Despite three publications; (Giroux & Taylor, 2002; Tell, 2004; Berends, 2005) that addressed the problem of justification in a straight forward manner, justification of knowledge is largely overlooked or assumed implicitly throughout the knowledge management literature. Even the subject publications deal with the issue in a substantially practical way which superficially represents the philosophical foundations of the field of epistemology and justification.

By majority, as it will be presented in the developing chapters of this paper, the knowledge literature of business studies emphasizes the properties of knowledge more than its justification. However, due to inter-connectedness of the concepts of epistemology, it is possible to draw conclusions assumptions of many scholars on the topic of justification. Such examples are the taxonomies presented by Blackler (1995) such as “embodied” and “embrained” knowledge which captures the qualities of internally and externally justified knowledge respectively; as the first one is starkly individual while latter is collectively established on organizational norms and routines.

Likewise, Lave and Wenger's (1991), Tsoukas' (2001) and Spender's (1996a) view of organizations and communities of practice entails an externalist perspective whereas the autopoietic organizational systems of Van Krogh and Roos (1995) may be pertinently depicted as Internalist due to their self-referential nature. Nevertheless there still seems to be a conceptual problem regarding the unit of analysis. If we take individuals as our primary unit, the description of Blackler's (1995) taxonomy will hold in accordance with the classification of justification theories. However, considering the organizations as the prime unit of analysis, just as Van Krogh and Roos, we will be running into problems with Blackler's classification. Thereon it may be suggested that resolving the issue at which level the knowledge is being justified is a major obstacle that needs addressing. On the other hand it may also be proposed that same knowledge, being justified internally for an organization may be justified externally for an individual or vice versa.

In the following chapters, the research on justification in organizational context will be analyzed in depth therefore to deduce theoretical implications for the development for the development of the thesis.

3.1. Justification as a process

In their seminal paper Giroux and Taylor (2002) analyzes justification as an ongoing process in different elements of organization. Throughout the article, in which they investigated the implementation process of TQM (Total Quality Management) at a firm, it is emphasized that a justification of firm's knowledge is primarily dependent on the external communication and interactions with a larger community which points to the Externalist account of justification. The article presupposed that the justification of knowledge itself is stationed in tacit knowledge leading to the idea of "knowledge of how to justify belief". Referring to the situatedness of tacit knowledge, they assert that distinctive perceptions of different communities may cause problems in organization-wide justification of knowledge, and how this may cause problems for the unification of organizational intentions due to conflicting "modes of justification" and "premises" of

interacting communities. Eventually it is postulated that justification of knowledge for a firm is more than just a “screening” process but a productive conflict of different social constructs that could be employed for cultivating an effective and innovative organization (Giroux & Taylor, 2002).

At first glance Giroux and Taylor’s findings explicate the main controversies of the knowledge justification as they refer both to internal and external justification as complementary while acknowledging the intricacies of social constitution of organizations. Nonetheless there are some points which may undermine the generalization of the findings. First of all the issue addressed in the paper concerns a major implementation which cut across many organizational levels and were conducive for a conflicting environment. Furthermore knowledge creation and acquisition were equated to innovation. It is ambiguous if all organizational knowledge creation processes encompass such complexity and all created knowledge can be labeled as innovation. Certainly it may also be asked what “modes of justification” would there be for a process of knowledge creation internally limited to a single community. Additionally, internal processes of justification also require significant elaboration to complement the findings of the paper. Eventually arguments presented in this paper assumes that the best method to approach the process of justification is to apply a dynamic view of the concept, which will also be assumed by this paper, in order to mitigate the confusion and complexity that the unit of analysis will engender.

3.2. Taxonomy of justification

Fredrik Tell (2004) approaches the topic of justification from another standpoint that is the types of justification and their deployment in organizational strategy. Notwithstanding its quasi-comprehensive coverage of philosophy and epistemology, the paper is entangled with concept confusion and inaccurate use of philosophical terms. In the article, Tell correctly emphasizes the importance of focusing on justification of knowledge and criticizes the overemphasis of inherent properties of knowledge in research field. He aims

to adopt a pluralist approach to justification problem which he believes would draw a more accurate picture of the complexities that are involved in the process. Thereon, he suggests a new taxonomy of knowledge on the basis of justification contexts (Figure 1).

	Internal justification	External justification
Justification by performance	Personal knowledge	Institutional knowledge
Justification by procedure	Subjective knowledge	Objective knowledge

Figure 1. Taxonomy of knowledge types as adopted from Tell (2004)

As depicted in Figure 1, Tell delineates four types of justification in two dimensions; first two are internal and external justification and latter are justification by performance and procedure. First dimension of the taxonomy is also presented in previous sections of this paper, however second dimension requires some explanation precisely due to the fact that it engenders challenges and difficulties. By “justification by procedure” Tell refers to rational and sequential steps of justification which involves following certain steps of logic, reason and testing. In an opposite manner, “justification by performance”, defines the process of justification by referring to “action rationality” of Brunsson (1985); which is characterized by absence of reason and judgment that enables a haphazard generation of justification through the acting (Tell, 2004). Although subject demarcation of rationality and action has a reasonable disposition, it stumbles into problems once it is cohabited with internal vs. external justification in a two dimensional matrix.

First difficulty arises with the definition of “objective knowledge” being characterized by external and procedural justification. Tell claims that objective knowledge is socially constructed knowledge, which set of rules are defined collectively by a community or society, through reason, testing and rationality exemplified by scientific knowledge (Tell, 2004: 452). Notwithstanding the accurate conception of scientific knowledge as being

external, its coupling with procedural justification violates the paradigm of Externalism. As it was explained above externalism requires the justification of knowledge through mediums that are not conscious to the individual. Yet, procedural justification functions through reflection, reasoning and testing.

Likewise, Tell also defines “personal knowledge” as being justified internally by performance. Citing Polanyi (1966), he describes personal knowledge as being product of an internal process that functions at an unconscious level through action. Again, first part of the claim on internal justification is plausible whereas bracketing it with an unconscious process contradicts the nature of internal justification. It should be stressed once more that internal justification requires a process of introspection and reflection which the individual should be readily aware of. Moreover, Tell describes the process of tacit knowledge directed towards the goal of attaining truth, which also depicts the externalist enterprise whereas for Internalism justification and truth possess different status. Therefore it becomes apparent that Tell’s taxonomy does not genuinely discern internal and external justification as it purports to combine their properties. Virtually, it is possible to swap places of objective and personal knowledge without any logical difficulties. Hence the taxonomy is demonstrated to be obsolete while “justification by procedure” corresponds to “internal justification” whereas same kind of logic may be asserted for “justification by performance” and “external justification”. Same problems inflict the main argument of the paper; that is the argument for the importance of “subjective” and “institutional” knowledge as a position opposed to the prevailing presupposition of concept of knowledge in tacit vs. explicit divergence.

The substantial problem with Fredrik Tell’s taxonomy is that it fails to acknowledge the essential factor that defines justification; that is “how” the justification functions, not “where” the sources reside that characterizes it. After all, sources of justification for externalism do also reside in perception or a priori knowledge, yet it is what renders them as sources of justification that is external to the mind. Likewise, sources of knowledge for may be external, such as the case for scientific knowledge, yet it is how the individual justifies that knowledge determines the type of justification. It is salient that the dichotomy of external vs. internal justification does not adequately address the problems

of knowledge management, conversely it entails further complications such incorporation of extra processes which are employed to patch up the deficiencies of such taxonomies. This confusion on justification processes encountered in Fredrik Tell's paper will lead this paper to adopt a rather holist approach to justification that was also suggested by Audi and Bonjour previously.

3.3. Justification in the context of knowledge transfer

For the last part of the analysis of knowledge research on justification, Berends (2005) presents the concept of justification in relation to knowledge transfer. Although the issue of justification is not central to the paper of Berends, it serves for few important purposes which will also contribute to the theoretical construction of this paper. First of all Berends has been the first researcher to explore the role of justification in knowledge sharing processes of organizations. Therefore its findings are central to this paper as it is also its aim to explore justification in the context of knowledge sharing. The main focus of Berends is how the justification demonstrates itself in organizational knowledge sharing. Henceforth the paper does not give a thorough account of philosophical background of justification, but mainly emphasizes the practicality of justification by drawing conclusions from the empirical studies.

The study roots itself in "speech act theory" of Austin and Searle, in order to explicate the knowledge sharing "moves" that are employed by organization members. Thereon, justification is also being assessed in the light of speech act moves, displaying what kind of communicational norms are employed to justify knowledge claims in a social context.

"For example, Jason commented in the following way on the fact that one of his advices did not work out adequately: 'My advices are sometimes based on miserable models. Our analytical work has a certain elegance, but it is sometimes a little too far away from reality. You shouldn't trust those advices. You should also do a test. I gave those solvents to Marc with the idea that he'd do a test. I also gave an explanation, but: fifty percent

chance. That's all. Nevertheless, he is satisfied with that fifty percent.'" (Berends, 2005:102)

Examples such as above, extracted from the empirical studies, gives eminent clues about how justification may work in a genuine organizational setting, delineating in which ways justification is perceived and applied. Similar examples may be utilized to discern internal and external elements of justification in organizations and the manner they demonstrate themselves. Such as the aim of this paper, the future research should strive to develop similar research settings to further explore how internal and external properties of justification may play a role in conjunction throughout the justification process of knowledge in organizations.

Berends' study points to another important element in justification that is the collective norms of community. Empirical study of the article points to distinguishable criteria for justification and what kinds of elements it should possess. Due to the focus of the study on R&D practices, the justification that is demanded for knowledge generation was heavily positivist and explicit in manners. This implication is also congruent with the objective of this paper to explore the effects of varying assumptions on justification of knowledge in organizations.

However, Berends' article also has short comings. Primarily, it lacks the conception tacit knowing while focusing heavily on explicit dimension that emanates from the empirical study. Therefore, it may prove to make a fractional contribution to the issue of justification of tacit knowledge, despite the qualitative availability that may have served as a key to its dimension. Furthermore, it also lacks the in depth analysis of philosophical background of justification which obscures the genuine implications of the paper's outcome, hence again adds little to the issue of justification from a theoretical perspective.

3.4. Summary

This chapter aimed to delineate the various ideas and approaches that encompass the current epistemological tradition in regards to justification. Chapter aimed to capture different approaches to rationality in Internalism vs. Externalism. In which the discussion was based around what constitutes rationality; Internalism argued for internal integrity and conformity to one's own rules, while on the other hand Externalism argued for a picture of justification which has to answer external criteria. Internalism also construed justification as being mainly an individual process. On the other hand from Externalist perspective justification is detached from the first person but sustained in external correspondence.

Secondly, Foundationalism vs. Coherentism debate aimed to explicate the structure of justification and how individual beliefs can grant justification to each other. Foundationalism as the classical thesis argues for a straight inferential chain that is robustly grounded in foundational beliefs that are hard to refute and which cannot be inferred from any other belief. On the other hand Coherentism argued for a structure reminiscent of a spider web where there are no predominant beliefs but each belief lends support to the other and also get supported itself.

4. SOURCES OF KNOWLEDGE

The main struggle of classical philosophy regarding the inherent qualities of knowledge may be concisely outlined in the contest between mind and experience. Throughout the history rationalists and empiricists had quarreled over which one of these two mediums should be acknowledged as the preceding channel for knowledge. Amidst the stark division of rationalism and empiricism, Kant introduced the new concept of knowing by putting the subject into the focus rather than the object leading to the argument of subjective knowledge and idealism. However, modern continental philosophy developed into a much different path; extending Kant's arguments while shifting the focal point of argumentation from first person orientation to external construction.

Hence, studying the philosophical discourses on the inherent qualities of knowledge, this paper first aims to delineate the roots of knowledge management arguments in order to understand them more accurately. Just as Locke and Wittgenstein argued, the confusion and ambiguity concerning the jargons adopted in philosophical discussions underlie many of the disputes and impasses. Therefore, a study of philosophical foundations, from which the knowledge management field derives its arguments, is essential for clarification and rectification of the concepts for a sounder discussion.

Continuing below the paper will continue with the relatively brief delineation of philosophy of epistemology comprising the ideas and arguments that underscores the ideas in today's knowledge management field research.

4.1. Rationalism

Ancient philosophy, despite its extensive means, has never ventured for a comprehensive study of epistemology. Although writings of Aristotle, Plato and other prominent

philosophers put forward arguments concerning the nature of knowledge and its qualities, this effort never developed into a thorough theory or a discourse.

Following Renaissance, with the stimuli generated by uncovered ancient writings, Western civilization flourished on the latent thoughts and ideas that had long been forgotten. In an extremely intriguing fashion, due to rise of natural sciences, the quest for impeccable knowledge claimed the foremost attention in this new dawn of philosophy. What that had been unraveled in Montaigne as skepticism reverberated in Descartes' study of knowledge as his effort to refute skepticism in order to establish unshakable grounds for natural sciences. (Kenny, 2008) Consequences of this venture would be immense for the world of philosophy as Descartes was establishing the foundations of epistemology and giving birth to the thought of rationalism which would influence the ideas of ensuing scholars to our time.

Rationalism; is based on the premise that the *thinking-self* or *reason* has the precedence over the experience as a means to acquiring knowledge and that we gain claim to possess some knowledge that is independent of our experience (Markie, 2008). This premise of course is largely underpinned by the famous quote of Rene Descartes "I think, therefore I am". To provide a rebuttal of skeptic arguments Descartes undertook the quest for finding the immutable grounds that would underpin the human knowledge which cannot be doubted by critical reasoning. (Scruton, 1981, Sturgeon 1995; Bonjour 2002; Kenny, 2008) To him, what would qualify as knowledge should have demonstrated the qualities designated as; self-evidence, clarity and distinctness. A knowledge being clear would mean that there was no assistance received from sensory inputs whereas distinctness would signify the detachment of the knowledge from other concepts. (Scruton, 1981; Sturgeon 1995) With the help of his famous *Method of Doubt*, Descartes aimed to reduce the concepts construing knowledge to the most rudimentary article whence he can move on to deduct further knowledge about the external world. Exposing every possible way of knowledge to the ruthless questions of doubt, he eventually concluded that primarily the existence of *mind* or *thinking-self*, *the cogito* could not be doubted and is self-evident.

Establishing the action thinking as the prime evidence for his existence, Descartes purports to move on to other mediums of consciousness such as emotions, sensations and mental states of mind in order to enforce the scaffolding of his arguments for indubitable knowledge. (Scruton, 1981, Sturgeon 1995; Kenny, 2008) Hence the process of deduction avails him to demonstrate how reason can transcend the boundaries of mind and make claims of external features and experiences.

Eventually, constructing upon the concept of mind; Descartes reached to the point where he suggested that mind and its conscious mental states were the unquestionable premises for knowledge. On the other hand, he isolated the mind from the physical bodily existence which he thought belong to the different realm of material world (Pritchard, 2009). Thus, sensational experiences were to be doubted as sources of knowledge. Nevertheless, sensory input would still be a means to attain knowledge but only through the scrutiny of the process of reasoning. (Scruton, 1981; Sturgeon, 1995; Skirbekk & Gilje., 2001) Another rationalist Spinoza also postulated that in order to attain the truth, hence knowledge, we have to exceed our sensual experiences with the help of our reason.

Subsequently, the main premises for classical philosophy were established as Descartes postulated the thinking-self as the rational core of our knowledge which constantly reflects upon the empirical knowledge the body gathers as an extension of the mind. Herewith the split between *the mind* and *the body*, *the cognizing subject* and *the perceived object* was established which would have immense effect on the field of philosophy to this date. Labeled as the *Cartesian Split* or *Cartesian Dualism* the bifurcation of the mind and the body would dominate the discourse of philosophy until the 19th century when formidable challenges were raised against it by Phenomenology, Analytic Philosophy and Pragmatism.

There are three claims of Rationalism that is essential to its viability; intuition, innate knowledge and innate concepts. (Markie, 2008) Rationalism claims that we gain knowledge by intuition prior to our experiences and can deduct further knowledge constructed upon it, which greatly resembles the Foundationalism. Secondly, for

rationalists a human possesses of innate knowledge that is endowed by God or nature, which is a priori. Mathematical and geometrical axioms may be epitomes of such knowledge claims. Lastly, individuals have innate knowledge of concepts they employ, the claim which was also accentuated in Descartes as he claims that ideas, corresponding images of word in mind, should be a priori (Kenny, 2008)

Naturally, there are myriad objections to arguments that rationalism presents. A fragment of those criticisms are directed specifically to Descartes and his *Method of Doubt* whereas the rest is targeting the general assumptions of rationalism. One of the formidable difficulties facing rationalism is the limits of human reasoning process. (Markie, 2008) The question; if human reason always functions perfectly without defects or deviations is hurdle rationalism must address. If the rationalist would still claim that the knowledge reached via correct reasoning must be infallible then they risk running into the same problems as Classical Foundationalism.

The second problem that rationalist even lapse into among themselves is their criterion for indubitable knowledge, or from another perspective the criteria for truth, that knowledge should be clear and distinct. There is a contentious disagreement over what these criteria really corresponds to.

Finally, may be one of the most serious objections was presented by Wittgenstein questioning the very method Descartes utilized to reach his conclusions. Wittgenstein, while ridiculing the absurdness of scepticism, drew attention to the fact that Descartes while initially doubting everything never thought of doubting the very language that he was using to carry away his method of doubt.

The ideas expounded by Rationalists drew much attention and received overwhelming criticism from their counterparts in Britain. Philosophers such as Locke and Hume presented counter arguments for rationalism and today their line of argument is known as Empiricism.

4.2. Empiricism

Empiricism, although first found its basis in the writings of Hobbes and Bacon, it was John Locke who constructed empiricism as a legitimate stream of arguments and a formidable opposition of Rationalism. Some scholars (Markie, 2008) suggest that empiricism and rationalism are not altogether incompatible since one may adopt each for different types of knowledge. However the basic premises of each line of thought are often starkly contrasting each other.

Repudiating the rationalist argument of rational precedence, empiricism is established on the presupposition that all our knowledge derives from sensory experience. Therefore it propounds the priority of experience over rationalist reason as a means to acquisition of knowledge. Just like this overarching premise of empiricism other arguments were first to be put forward by John Locke in opposition to the works of Descartes.

If Descartes was the first philosopher to introduce knowledge as a problem into the focus of Philosophy, then Locke may be attributed as the first one to study and conceptualize knowledge as a distinct branch. (Gökberk, 1985) Ironically, although being influenced by the works of Descartes, Locke would challenge the presuppositions and premises set by him and put human experience above the reason for acquiring knowledge. Locke also maintained, much as Wittgenstein later would, that epistemological dialect is often vulnerable to lapse into usage of obscure terms and concepts which hampers the possibility of a healthy debate. Nevertheless ironically he himself ended up utilizing the concept of *ideas* in a very ambiguous manner.

For Locke, the rationalist view of the reason and clear concepts that were derived by it conveyed nothing useful in terms of knowledge of reality, but were mere conceptual relations which are self-evident in nature (e.g. all unmarried men are bachelors.) Therefore, the insights attained by reason should be enhanced to valuable knowledge by employing the tools of our experiences.

He also objected to the presupposition of innate knowledge (*a priori*) which he asserted to be impossible. According to Locke's line of argument, if children had no access to such mathematical concepts then it would be illogical. Instead he argued for the mind being a blank tablet; *Tabula Rasa* which the human experience will carve out in due process of living (Gökberk, 1985).

Subsequently, Locke describes two modes through which the experience finds meaning; external perception that is sensations and internal perception which corresponds to reflection. According to the line of argumentation; simple impressions which are called *ideas*; sensory inputs and mental states, will be accessed through external perception subsequently being proliferated by reflection hence ending in knowledge. (Locke, 1690) Moreover; Locke maintained that human beings cannot have access to the true being of an object that *the thing-in-itself*, rather we can only have a representation of that object which we gained through perception of ideas. Thence he classifies ideas in two dimensions; first are the *primary qualities* of an object that exists independent of the perceiving subject and *secondary qualities* that are the sensations caused by the primary qualities of the object. In order to explicate the properties of qualities it will be apt to exemplify primary qualities as; volume, shape, motion, and we can delineate secondary qualities as; color, smell or taste. (Grayling, 1995)

This postulate has an immense importance as it signifies the concept of Indirect Realism or else referred as Representationalism. The concept of representationalism entails an indirect conception of the external world which the cognizing subject can never have an accurate picture of. Instead the subject should only be able to hold a more accurate picture in accordance with the amount of its experiences. Henceforth everything that we can come to know is our own perceptions. (Kenny, 2008)

At this juncture it will be apt to mention David Hume and his problem of induction. Although he was an empiricist, defending similar premises of knowledge much like Locke, Hume also maintained a rather skeptical attitude towards knowledge claiming that human knowledge depends on the unjustifiable method of induction which allows us to

extrapolate from our experiences to form an understanding of the world around us. The question for Hume was how it would be possible for a person to infer from what senses present her at a given moment, say 'Fire is hot', to the conclusion of 'every other instance of fire should also be hot'. To be able to justify Induction then we should justify this assumption of uniformity. He expounded the idea that this assumption depended on our intuitive grasp of the causal relations between matters of fact, and these causal relations could not be discovered a priori, therefore cannot be necessary truths, nor they can be a consequence of deductive reasoning. Here Hume points to a gap in our understanding, a 'Secret Power' that is the link between the cause and the effect. It appears so that Hume thinks the reason why we cannot deductively infer the next event being same as the previous one is that we don't have an adequate understanding of the mechanism through which a fact causes another. Consequently we cannot justify the principle of Uniformity through reason.

On the other we cannot justify it through induction either because that would put us arguing in circles. Therefore Hume's conclusion is that induction, as based on assumption of Uniformity, is not a process of reasoning but a mere habit, drawn from observational regularities that cannot be justified by reason or induction.

Position of Hume is usually interpreted from two different perspectives. First, the standard, interpretation regards Hume to be a skeptic about Induction. It was argued that Hume thought, albeit being useful, induction could only rely on customary action which depends on other inductive inferences in return. By this interpretation beliefs acquired by induction can never be justified, therefore exposing the unattainability of knowledge while admitting that this kind of quasi-knowledge is the best human can possess. Any attempt to establish future as predictable would undermine the viability of empiricism because it will render the essentiality of experience as obsolete. Thus, any kind of knowledge be it Testimonial or Perceptive would be the only probable quasi-knowledge that may be attained by human beings since it depended on immediate experience.

A second and more recent reading of Hume suggests that he might have approached the case from an externalist/reliabilist perspective. Hence proponents of this perspective claims that Hume thought that we could still be justified in our inductive inferences nonetheless, while not being able to grasp all the reasons (i.e. Secret Power) why we should be so.

4.3. Kant and Idealism

In philosophy, Immanuel Kant has often been regarded as being analogous to Copernicus for the way he drastically altered the way philosophy functioned and conceived of the human intellect. He took Hume's skeptical challenge to human knowledge via his critique of induction to the heart and affirmed the possibility of knowledge.

In his quest he aimed to settle the discrimination between rationalism and empiricism; between reason and experience. To prove the viability of knowledge against the arguments of Hume, Kant structured the human understanding and apperception in a new fashion which would be regarded as the Copernican revolution in philosophy.

First and foremost Kant challenged the "priority of first-person" including the idea of subjectivity, which had been the established departure point for all philosophical arguments since Descartes (Scruton, 1981; Sturgeon, 1995). Instead, he presupposed the *self-conscious being* itself as an object in an objective world which all the human beings conceive and apperceive through similar concepts and categories (Scruton, 1981; Gökberk, 1985; Sturgeon, 1995). This argumentation would later influence philosophers such as Wittgenstein and Heidegger who also had an immense impact on epistemology through extending Kant's arguments on "objectivity" or "inter-subjectivity" of the external world.

In his venture to cover the gap between rationalism and empiricism Kant argued that both schools of thought are equally mistaken in their arguments, and both experience and

reason account for the attained knowledge of human beings whereby none of them could have precedence over the other.

For Kant, in the absence of senses no object would be available to us and without understanding (reason) no object could be thought of (Scruton, 1981; Rockmore, 2006; Kenny, 2008). More importantly he claims that our sensory experiences have innate content whereof he encapsulated in the idea of *synthetic a priori* truths. To better explicate Kant's ideas we should first delve into how he conceives experience and understanding.

Supplementing his argument for the indispensability of metaphysics, Kant not only distinguished between *a priori* and *a posteriori* knowledge, but also discerned two different semantic structures in knowledge; *synthetic* and *analytic*. From these distinctions *analytic* designates necessity, whereas *synthetic* is associated with contingent propositions. Analytic claims are generally regarded as having their truths contained in the meaning of their constituent parts, whereas synthetic claims must depend on external verification for their truth. Therefore *analytic a priori* claims would correspond to what previous philosophers such as Descartes labeled as innate ideas, which, as empiricists argued, provides no knowledge but only relation of ideas (e.g.: All unmarried men are bachelors). On the other hand there are *synthetic a posteriori* truths such as given in the proposition "All trees are green." As it is apparent nothing within the meaning of words "green" or "tree" ensures the validity of this claim, rather it should depend on our sensory experiences for validation. By intuition *analytic & a priori* and *synthetic & a posteriori* have been regarded as completing concepts (Sturgeon, 1995). However according to Kant, *synthetic a priori knowledge*, contrary to the empiricists' arguments, is another viable form of knowledge which should give insights to knowledge and extend it through reflection and the function of incorporating concepts. Such synthetic a priori statements may be exemplified in the form of "All changes have a cause [or] a line is the shortest course between two dots in space" (Gökberk, 1985). These categories of time and space as defined by Kant underpin our experiences and scientific knowledge. They are neither analytical truths nor derived from experiences, but act as a precursor to all our sensory experiences. A helpful way of imagining them is through the analogy of glasses through which we perceive the world.

Said categories expounded by Kant may be classified as: quantity, quality, relation and modality. They capture the pure concepts that form the basis of all objects, and our understanding of them. Understanding encapsulates the relation of categories and experiences while synthetic a priori judgments form the basis of understanding. Thus understanding categorizes the human experience and enables the acquisition of knowledge. Moreover, every experience or statement should conform to the qualities of time and space as these are the overarching concepts of our understanding, designated by Kant as two pure forms of intuition (Rockmore, 2006). The fact that the mind applies categories and qualities to the sense-experience may seem to point at relativism. Nevertheless, Kant's concept of the existence of such categories for every human being should be conceived to establish an objective or at least an inter-subjective understanding of the external world. Eventually, this cooperation of understanding and experience never is available to human beings, it exists as *transcendental*, meaning that it cannot be verified through argumentation since every argument that will analyze this cooperation should presuppose its existence (Scruton, 1981).

Thus according to Kant, human mind possesses a priori concepts which apply to all experiences and structure them. These concepts, named *categories*, are innate to all human beings and help them make sense of their experience and acquire knowledge. Every experience should conform to these a priori categories and in return categories can only be applied to experiences (Kenny, 2008). It is possible to see an earlier argument for Constructivism through Kant as he argues that the object impinges as much upon the subject as it is vice versa (Rockmore, 2006). Following this thread leads us to Kant's transcendental idealism in which human beings cannot know things as in themselves (i.e. their true nature), but rather can only grasp the representations that are structured by the mind through application of categories.

The influence of Kant on the philosophy of mind and logic has been substantial. Even today, categories of understanding and synthetic a priori knowledge are an issue of debate amongst scholars. In addition, his ideas of categories and objectivity yielded grounds for

Wittgenstein, and Logical Positivists. Furthermore his conception of constructions was an influence to Heidegger. These influences will be explored in the following chapters of this paper.

4.4. Positivism

Positivism; the philosophical view, with its tenets firmly embedded in scientific method, was the driving force of Enlightenment and was later reinvented in Logical Positivism by the members of the Vienna Circle whose prime objective was to save the philosophy by putting it on the firm ground of experimentation and verification (Hanfling, 1981). Thus the metaphysical arguments would be shunned as unproductive, while every philosophical argument would consist of axioms that logically consistent and verifiable. In other terms, logical positivism was conceived for subjecting philosophy to the test of scientific method by analyzing the logical construction of its axioms and processes.

Positivism is the school of thought which was born parallel to Idealism, yet countered its speculative arguments and metaphysical obscurity. Although both schools have pursued the same goal of exploration of reality, they followed different methods in their ventures. Whereas Idealism sought reality through subjectivity and abstraction, positivism adopted the premises of natural sciences and sought for objectivity and matters of fact (Gökberk, 1985). French scholar Auguste Comte is regarded as the pioneer to constitute the thought of positivism and his application of positivism influenced and underpinned many other forms of positivism; such as logical positivism, materialism, utilitarianism and behaviorism (Marias, 1967).

Positivists took up the critique of Kant and construe it to imply that only *analytical* and *synthetic* types of propositions are of value (Grayling, 1997). Thus meaningful statements were those which could be tautologically or empirically verified. As opposed to metaphysics, which aims to explore the essences and the existence of things (in our case knowledge), positivism seeks the facts and verifiable truths, a postulation that draws on the paradigm of natural sciences (Marias, 1967; Gökberk, 1985). Maxim of the Positivist

method was epitomized in the *verifiability principle* which saw the meaning of a sentence in the method of its verification.

Comte's fascination of natural sciences influenced him to apply the same paradigm to social sciences. Being the founder of *social sciences* or *sociology*, he believed that in a world where natural sciences are pioneering all kinds of inquiry about the mechanisms of the nature, social sciences should also employ the tools that had been scrutinized by positive sciences (Gökberk, 1985). He conceptualized societies going through gradual advancement in their knowledge base where factual knowledge is the final stage (other two preceding stages being theological and metaphysical). Likewise, according to Comte, sciences may also be arranged in a hierarchical manner, in accordance with their evolution through the same stages that he pictured the societies go through. Hence he devised the hierarchy of sciences where the first sciences to reach the positive stage of knowledge were mathematics and astronomy, and last were sociology.

Mathematic-Astronomy => Physics-Chemistry => Biology-Sociology

Therefore sociology was the last science to emerge from metaphysical stage of knowledge and establish itself on a positive paradigm. Moreover, as a consequence of the hierarchy, sociology depended upon other preceding sciences for the explanation of its findings and conclusions. (Gökberk, 1985)

The ideas of Comte were soundly realized in Durkheim (1897) and his work on the factors affecting the suicide rates. Applying quantitative criteria and using statistics for distinguishing the sociological factors that play a role in suicide rate, Durkheim demonstrated that the positivist approach may be applied to social sciences in a plausible and efficient manner.

4.5. Heidegger, Wittgenstein, Polanyi & Constructivism

Thus far the discussion of philosophy has revolved around the themes of objective individual knowledge that assumes a strong connection between truth and justification. This approach assumed that knowledge is only possible for individual agents and disregarded the influences of their environment (Bird, 2010). The dialectic of epistemology revolved around themes of the critical, rational mind and the environment that is presented to it.

4.5.1. Heidegger

Heidegger is a remarkable philosopher who contributed prominently to three different schools of philosophy that are existentialism, phenomenology and hermeneutics. Mainly his ideas on hermeneutics hold an undeniable significance for modern epistemology and social understanding of knowledge. For Heidegger philosophy begins with the establishment of *Being*. There he purports to overcome the *Cartesian Dualism* and differentiates human self-consciousness from *Being* as a common mode which applies to all substances. Heidegger poses the question of what it means “to exist”, and strives to explicate the property of different modes of being which pervades all beings and makes them intelligible to human beings (Wheeler, 2011). In order to achieve this goal he introduces three different modes of being; *presence-at-hand*, *readiness-at-hand* and *Dasein*. To further explicate; *Dasein* corresponds to a special type of conscious being that defines human beings. It captures the essence of being for humans, as we are creatures who can actually inquire about the meaning of being. For Heidegger the ability to reflect on the question of being enables us to exist as a separate mode of it. Secondly, *presence-at-hand* is explained as a being in isolation, a mode of substance that is self-sufficient which does not depend on other substance for its meaning. Lastly *Readiness-at-hand* relates to mode of being captures in relation to *Dasein* as substances gain their meaning through their utilization towards a goal, and thus defines in relation to other substances. Thus conceptualized, their utility to *Dasein* demarcates the boundary between objects that are *present at hand* and those that are *ready at hand* (Rockmore, 2006). Here *Dasein* is

not defined as an entity rather catches the openness of human beings to interaction with other beings in the world (Wheeler, 2011). It serves as the governing factor which structures understanding and knowledge through interaction (Schroeder, 2005). It is shared experiences of a community (Wheeler, 2011).

Phenomena appears directly to the *Dasein*, nonetheless the being of things are not defined by their presence but their functionality. Moreover Heidegger promotes the primacy of practical activity in human understanding in which the human being perceives the world primarily through practice and experience of beings. Heidegger claims that through its practical interaction with the environment, things appear to human consciousness as tools to be utilized. These tools are less present to the consciousness whilst they are performing their functions properly (Likewise as Polanyi's argument of subsidiary employment of tools).

Much like Kant's categories, Heidegger postulates that there are certain structures that govern the existence of human beings in the world. One of those structures, central to our topic, is *being-in* that governs practical understanding. *Being-in* is how human beings adjust themselves against the world of tools, substances that are *ready at hand*. It comprises skills and practical familiarity rather than theories and intellectual reflection. Being-in structures understanding through language, interpretation and moods.

Just as there is no isolation between object and subject, according to Heidegger, there is no isolation between self and other individuals as well. Human world is constructed through mutual interaction of other beings. Thus knowledge, truth, understanding and cognition may all be constructed socially and therefore any kind of human endeavor should be interpreted against the background of its historical and social circumstances. Inter-subjectivity, according to Heidegger, is established by the fact that human beings share the same kind of construction in a society. Ever since we operate in the mutually constructed environment, utilizing the same tools and norms, the knowledge should be mutually objective or inter-subjective as well.

Consequently, Heidegger's views on the tool orientation and arbitrary construction of truth and knowledge defied the very foundations of empiricism on which positivism was grounded.

4.5.2. Wittgenstein

The essential contribution of Wittgenstein to philosophy is constructed upon the ideas presented above. Initially, he attacked the presupposition of Descartes that first person enjoys a priority in awareness of its mental states. As for rationalist and empiricists as well, the person himself/herself is more certain about their experiences and have a direct access to them compared to an observer. Wittgenstein argued that the world of knowledge cannot solely be explored and justified on the premises of positivism or metaphysics. In a similar vein to Heidegger, he also argued that the very concept of knowledge and truth are socially constructed, and our understanding depends vitally on our utilization of language and its rules.

As a pupil of Russell, Wittgenstein was partly inspired by Logical Atomism of his predecessor. The analytic logic and pursuit of linguistic construction of knowledge dictated and explicated the boundaries and applications of language in epistemology. In accordance with Russell, Wittgenstein would postulate that what can be thought can also be said. Henceforth, denying the arguments of former philosophers, Wittgenstein embarked upon examining the problems of philosophy and providing the remedy. First and foremost he believed that most of the philosophical confusions were stemming from the futile efforts of philosophers to utter what cannot be said hence cannot be thought, such as metaphysics. (Scruton, 1981)

He asserted that the limits of our knowledge and understanding were constrained by the rules of language that are determined through social construction. The truth of a sentence or the plausibility of a knowledge claim depends on its compatibility with the rules of the language usage. Thus human beings are bounded in their utterances by the very system

of language which is established publicly (Scruton, 1981). Expounding Wittgenstein's ideas on rules and applications of language games, Saul Kripke goes on to argue that an application of a rule can never be fixed thus a symbol (i.e. a word) can never have a fixed meaning in application (Kripke, 1980). According to this interpretation, past applications of a symbol can only serve as exemplary purpose, hence adherence to a rule cannot be conceived as a *must* but an *ought* (Boghossian, 1989). Corollary of this proposition is the impossibility of private (i.e. personal) language and constitution of meaning by convention.

Wittgenstein argues in his claim of Private Language that a sensation which is only accessible to an individual can never be referred or established publicly, hence it is impossible for any sensation to be deemed specific to the first person. A counter argument for his claim is that it can be referred publicly, yet the meaning would only be private to the individual. Eventually, Wittgenstein presents his rebuttal by asserting that it is impossible for the first person to distinguish between things that seem and things that are by linguistic means. Hence only way to describe pain would be the same for the first person as it would be for the third person, whether or not one has direct access to it or not. Consequently, an individual cannot manipulate the language, but can only conform to its rules. And language defines the limits of reality and how it can be described. So far as every other human being would be using the same means of communication and obey the same rules of Language Game, therefore there can be an inter-subjectivity established. Thus, Wittgenstein finalizes the Transcendental Deduction of Kant and establishes the tenability of third-person approach to knowledge.

4.5.3. Polanyi

Influencing deeply the discourse of Knowledge Management, Polanyi postulates that most of our knowledge is vaulted in our tacit understanding of the practices we engage in. Thus he expounds that we know more than what we can tell. This maxim not only point outs that tacit knowledge is difficult to convey in code, but it cuts deeper to undermine the goal of objective knowledge by exposing that if we cannot scrutinize all

aspects of our knowledge, the endeavor of divorcing biases and partial assumptions from it becomes unattainable (Prosch, 1986).

Polanyi appears to put forward a thesis that is akin to Semantic Constructivism which, owing to Wittgenstein and Kripke, presupposes that sentences do not have any empirical content, thus lacking any fixed meaning and/or truth value (Kukla, 2000). Same argument echoes prominently in Polanyi's proposition that "we know more than we can tell" (Polanyi, 1966). If our experiences in the empirical world do not have any role in semantic process of justification, then rationality as a basis of justification in pursuit of truth becomes relativistic. Hence due constitution of meaning by convention could also define what is regarded as a rational epistemic practice in a community. This leads Semantic Constructivists to argue that truths can be negotiated in a community and can be established by tacit agreement.

Nevertheless Polanyi strives to escape the impending threat of relativism by introducing the idea of tacit knowledge. As defined, tacit knowledge encapsulates a category of knowledge that is situated in a skilled practice. Polanyi tries to convey the idea in examples of Copernicus and Einstein, through whom he claims that scientific revolutions they inspired were not drawn from empirical evidence but rather the visceral understanding of the world they came to possess through the practice of science (Polanyi, 1958). This intuition with regards to the objective world (or reality), Polanyi tries to solidify in the concept of knowing which entails skilled action in practice. Only through knowing, Polanyi believes, that we can come to contact with the objective world and know about it.

Therefore what becomes important in philosophy of post Kantian era is the conceptualization of human being as situated in an environment; both in terms of her physical and mental being. Philosophers like Heidegger, Wittgenstein and Polanyi emphasized the importance of experience, interaction and intuition besides rationality when it comes to knowing. Their ideas try to capture the intricate nature of human intelligence and learning which greatly depends on non-linear and non-rational decisions and other subtleties that are unaccountable. In a certain way parallels can be drawn with

Romanticism, the movement that started to counter the effects of Enlightenment of Rationalism, Empiricism and Industrialization, which argued for the prioritization of emotions and intuition over rationality. In a similar manner these philosophers purport to extend the scope of what counts as knowledge, rational or knowing in a way that breaks away from the strictly normative constraints of earlier philosophy. Most importantly human experience takes the central role in terms of evaluation of beliefs.

A helpful parallel can found in field of Artificial Intelligence. Initially the focus of AI was solely on computation and formation of “thinking” through mathematical logic. Pioneers of computation such as Ada Lovelace, Alan Turing and John von Neumann primarily focused on computation and imitation of consciousness through complex information processing. However in due time philosophers such as John Searle presented ample examples (refer to The Chinese Room Experiment) that simple computation prowess would never translate into a *Being* with a consciousness experience such that is displayed by a human subject. All of these new experiments showed that what we know and how we learn are in large part being undercut by our environment, our bodies and our experience as *Being* in our world. Not surprisingly contemporary AI is now pursuing the incorporation of human experience through adoption of human like bodies or linguistic experiences to approximate their machines to the human intellect.

4.6. Social Epistemology

In our exploration of different philosophical strands of thought regarding knowledge, careful observation should reveal a gradual change of perspective emerging from Descartes to Constructivism. This trend can be explained in the paradigm shift that changed the modus of analysis from Descartes’ individual mind to the situated being in Heidegger and Polanyi who incorporates social interactions and experience to the process of knowing.

Following this shift, and paralleling the advances in Philosophy of Science, Social Epistemology (SE) has emerged as a viable alternative or an equally valid perspective in which we can analyze social systems and their reciprocal interactions with individuals in terms of knowledge. Whereas traditional epistemology purports to analyze knowledge under the light of individualistic normative processes, social epistemology focuses on the effects of social interactions on individuals and institutions. Concepts that are central to traditional epistemology, such as justification, rationality and truth, are handled with much more liberty in social epistemology where these are construed and analyzed through the lens of social constructivism. Thus the strictness of traditional epistemology when it comes to granting rationality or justification is not espoused by SE which generally holds them to be more fluid and amenable.

Three different approaches to social epistemology have been defined by Alvin Goldman (2010) with respect to their departure from the traditional paradigm; Revisionism, Preservationism and Expansionism. Revisionism purports to do away with the constraints of traditional epistemology while conceptualizing knowledge as a product of human interaction (Rorty, 1979) or construction (Latour & Woolgar, 1986). According to these scholars epistemology must be stripped from any prescriptive and normative workings adopted through Kantian systematic approach. Hence we can discuss epistemology in terms of human interaction and social construction where absolute norms and prescriptions of rationality lose their meaning. On the other hand Preservationism, as per its title, preserves the traditional goals and norms of traditional epistemology and applies them in the context of socially acquired knowledge such as Testimony and Peer Disagreement. Thus the individual as the primary unit of analysis maintains its place. Finally, Expansionism argues in favor of the traditional epistemological goal, however tries to conciliate them with the social dimensions of knowledge through expanding the field into studies of groups and institutions as epistemic agents.

Following from the discussion above we can see that the field of Social Epistemology has been influenced heavily by ideas expounded by Heidegger, Wittgenstein and Polanyi. Its departure from traditional veins not only signifies a departure from individualism but also departure from traditional Foundationalism where systematic approach to epistemology

is essential. The goal is not the achievement of truth and justification (thus rationality) through absolute norms, but explication of knowledge as utilized and is affected by different social structures and institutions. Thus, social institutions, groups and their conventions take a prominent role.

One vehicle of such development is the paradigm of Constructivism which allows different methods and process of acquiring knowledge to be analyzed as a corollary of extant social ties and norms. To give an example of a social construction we can take the concept of genders and observe how the definition of what constitutes being a man or a woman changes across different cultures. At this point naturally one can sense a subtext of epistemic relativism within constructivism and SE. As expounded in the idea of *Revisionism* (Goldman, 2010) SE and constructivism can be taken to mean that there are no absolute truths or norms that are objectively better than others when are talking about rationality or justification. This conception of SE conceives knowledge as a social construct which cannot hold any connection to an external objective fact therefore its truth is contained within the paradigm of the society it features in (Goldman, 1999). Referring back to hermeneutics, it emerges that badges of knowledge, rationality or truth can only be awarded through consideration of the social contexts in which they were formed. Thus a true belief is accepted belief (Shapin, 1994).

To sum up, just as Kuhn expounded there can be different paradigms which lay out various norms on how to pursue and acquire knowledge or truth. Upon which philosophers such as Rorty (1979) assert that there can be no objective justification to hold one paradigm over the other in terms of truth conduciveness or rationality (Boghossian, 2006). Thus we end up with a framework with no objective norms of rationality or possibility of objective truth, and where knowledge is dictated by the norms of society or other conventions.

Nevertheless being tangled up in relativism and extreme constructivism serves little purpose when epistemic paradigms have value based consequences such as in the field of Economics and Business Administration. Therefore we need a framework which can

differentiate between the epistemic achievements of different types of social institutions and their effects on individual epistemic behavior. It should still possible to hold a much mild perspective which claims that even though there are social constructions it should still be possible to reach some objective truths or norms about them (Kukla, 2000).

Recourse to epistemic relativism is offered by Goldman (1999) and Boghossian (2006) in SE. Both reject the relativist non-consequentialism that social epistemology purports to entail and argue that social epistemology can be restructured to include the traditional concepts of rationality and justification, albeit defining other goals that suit the nature of the field. One such redefinition of a primary epistemic goal comes as goal of true belief being promoted under the heading of *Veristic Value* Goldman (1999; 2009a), in effect replacing Justified True Belief as the primary goal. Taking this primary value as a pivotal indicator thereon we can analyze different institutional and organizational setting on the basis of their impacts on *Veristic Values* of their members (Goldman, 2004; 2009a). Nevertheless Goldman acknowledges that social institutions may have different needs up to the point where their epistemic objective differ from those of an individual. Hence while espousing the traditional sense of an epistemic goal of truth in *Veristic Value*, Goldman (2009a) also argues that different institutions can have different approaches to utilization of truth. For example, a company may pursue a strategy where it is willingly keeping some of its members in ignorance of certain truths. Clearly this is a deviation from traditional grounds, where truth through justification is held to be the primary epistemic goal. Thus the suggested framework allows Social Epistemology to have the flexibility that traditional epistemological constraints does not avail, all the while keeping the value of truth and justification as non-relativistic concepts.

4.6.1. Modes of Analysis in Social Epistemology

In parallel to their divergence from traditional epistemology Goldman (2009b) delineates three different modes of analysis in SE; first of individuals, secondly of collective entities and thirdly of epistemic systems. These different approached will later be essential in the

classification of knowledge management literature in terms of their approach to knowledge.

The first mode of analysis bares the most parallels to traditional epistemology for the reason that individual knowledge is still the primary unit of analysis Goldman (2009b). Individualistic SE mainly concerns itself with the knowledge acquired through social interaction covers the topics of Testimony and Peer Disagreement.

Second mode conceives of collective entities as individual agents and investigates the possibility of these entities achieving rationality and acquiring knowledge as a single body (Goldman, 2004; List, 2005).

Thirdly, the sphere of analysis extends to epistemological systems that encompass various arrays of institutions (Goldman 2009b; 2010). Examples for such systems can be found in legal system or different sciences. This approach analyzes the epistemic communities with regard to their effects on the epistemic behaviors of their members, and tries to assess the institutional structures in terms of their effectiveness in creating positive epistemic values (Zollman, 2007).

4.7. Summary

Throughout the preceding chapters on the Nature Knowledge, the paper purported to elucidate the various historical and theoretical approaches have been taken in tackling the problem of knowledge and knowing. What is vital to following chapters is the understanding of the redefinition of rationality and scope of knowledge that has been expanding all along the history of thought.

What has started with Descartes, Locke and partially with Kant as knowledge being conceived in clear cut deliberateness, systematic analysis and norms has expanded to

include knowing by experience, social interaction and cultural preferences through likes of Wittgenstein and Heidegger. As briefly put, practice and experience was a much better guide to truth than rationally formulated theories. (Oakeshott, 1962)

Thus we witness a spectrum emerge; where in one end individualistic and normative definitions of rationality are held up, and at the other hand rationality and knowledge are being assessed in terms of social norms and interactions.

5. SOURCES OF KNOWLEDGE IN KNOWLEDGE MANAGEMENT

Previous chapters on the Sources of Knowledge aimed to outline the main arguments and disagreements in the theory of knowledge. As we have seen the Realism of Empiricists and Foundationalism have been in discord with the Constructivist traditions and Social Epistemology. This intellectual rift also has greatly influenced and underpinned the discourse of the Knowledge Management field.

Post Kantian divide on the differing opinions on the structure of knowledge has resulted on creating a fault between two opposing schools of thought. On one hand we would have the Realists who aim to pinpoint a knowledge that is factual and individual. On the other hand, following the footsteps of Idealism and Social Epistemology there is a school that perceives knowledge to be more fluid, amenable and social. Under this tradition knowledge is a social construct that can have different values in differing contexts. It is also this knowledge that comes alive in everyday practices of human beings; therefore it cannot be verified through analytical methods.

Here we see two facades, two differing approaches that human thought has taken in addressing the question of knowledge. One of them treating knowledge as something that exists independently of us, which we have to uncover through reason and logic, and while the other perceives knowledge as that we can only conceive through reflecting upon our history, our use of language and our praxes. Thus divided is also the field of Knowledge Management in their pursuit to define and circumscribe the knowledge of the firm.

Knowledge Management field draws essential influence and intellectual underpinning from the study of Epistemology. Although it has been argued that Epistemology and KM are not compatible in their objectives (Aarons, 2011: 270) first is primarily occupied with the analysis of propositional knowledge while the latter focuses on knowledge of doing. Nevertheless it would be imprudent to disregard the fact that latter's foundations depend on the former. The development in ideas has mirrored the developments in Epistemology

and Philosophy of Science. The struggle between realism and constructivism had an altering effect on how Social Sciences had been conducted and observed. The ideas put forward by Thomas Kuhn and Karl Popper challenged how we see sciences as a social endeavor, while the rise of Social Epistemology helped proliferation of the social research decoupled from the constraints of natural sciences.

As it will be explored within coming chapters, the changes in the conceptions of what knowledge is and how we know has contributed to change the terrain in the literature of business strategy and knowledge management.

Finally what we begin to see today and will observe more readily in the future is the eclectic application and experimentation at the crux of the accumulating findings, in an attempt to construct a basic and simple framework which can serve as a common ground in our understanding knowledge related problems in management field.

Unfortunately, theoretical basis of knowledge management is vastly fragmented and disconnected (Schneider, 2007). There is a deluge of research on different aspects of knowledge and its management which does not seem to be aware or be content with each other let alone follow a salient line of progression in theory and understanding. Attempts for a coherent framework are hindered by the lack of clarity on the part of researchers for they profess their concepts and presuppositions in obscurity (Von Krogh, 2009; Schneider, 2007). At present there are many endeavors to grasp the elusive term, whereas few are actually bringing fresh ideas or contributing to advance earlier ones. Arguments are manifold *i.e.* on the nature of knowledge, its characteristics, where it is located, through which ways can it be managed. Due to aberrations in discourse, the communication between theories and concepts are hindered (Schneider, 2007).

5.1. Defining Knowledge

Concept of knowledge takes many forms in literature which often overlap or are synonymous. Different definitions of knowledge have been offered in various papers *e.g.* embodied, embedded, embrained, encultured, encoded (Blackler, 1995), conscious, objectified, automatic and collective (Spender, 1996a; 1999b). Others argue that up until now all the proposed definitions and forms knowledge are vague, confusing and misleading (Schreyögg and Geiger, 2007; Tsoukas and Vladimirou, 2001). Hence emerges the difficulty of clearly presenting the differing views in the research field and the problem of interpreting what scientists would mean by their often ambiguous and generic terminologies.

Taking a simplistic approach, we can outline the essence of knowledge management discourse under the arch problem of Objectivity versus Constructivism. Researchers take different paths in tackling this problem, and their answers in turn also determines the way they see knowledge. Through philosophical discourse, locus of knowledge can be pointed as, to a great extent, the individual mind; as in Descartes' rationalism or Locke's empiricism, or external constructs; as in Heidegger's phenomenology or Wittgenstein's philosophy of language. Just as naturally, organizational scientists are divided in claiming if the individual or the collective should be regarded as the prime domain of knowledge creation and knowing in organizations (Von Korch 2009). Another important question that has been frequently raised is how do we interact with knowledge? Is knowledge something we possess and create objectively or is it something that we construct introspectively through our practices (Cook and Brown, 1999) and social interactions (Blackler, 1995; Tsoukas & Mylonopoulos, 2004). Many parallel or diametrical paths can be taken in answering these questions.

There is a spectrum of hypotheses that credits differing amounts of clout to individualism and collectivism, or to practical and logical aspects of knowledge. Regardless, for the sake of an intelligible and clear analysis, it would be necessary to classify these arguments under two schools of thought which can be painted with a broad stroke.

5.2. Realism vs. Constructivism

In knowledge management literature borders of this expansion has been drawn between two schools; Realism which is regarded to prioritize individual perspective and abstracted (explicit) knowledge (Tsoukas, 1997; Cook and Brown, 1999; Spender, 2006) and Constructivism which values the knowledge as a contextual construct therefore prioritizing its collective and implicit qualities (Nooderhaven and Harzing, 2009).

So far the most definitive epistemological framework, which has been suggested in literature for examining the epistemological classes in organizational sciences, was provided by Cook and Brown (1999), and later expanded by Assudani (2005). This framework categorizes organizational epistemology under two broad headings;

- 1) Epistemology of Possession
- 2) Epistemology of Action (Process)

Cook and Brown (1999), defines epistemology of possession in terms of its preoccupation with the type of knowledge that is defined by its locality and accessibility. Hence it encompasses all tangible and inert knowledge that is explicit/tacit or individual/collective which have been stored, deposited or possessed at any time. Nevertheless it should be noted that tacit/explicit distinction that Cook and Brown (1999) proposes for “Epistemology of Possession” is a fluid concept where one can be converted to the other. Assudani (2005) characterizes “Possession” as resources and divides this between “output” i.e. innovations, created knowledge and “input” i.e. knowledge embedded at individual, collective and organizational level. Given the above definition we can see how the epistemology of possession can have Realist inclinations. Conceiving knowledge as having a position and being interchangeable gives the grounds for its objectification in measurement and analysis, which bolsters the presupposition that we can to benchmark knowledge with an independent reality.

Notwithstanding the appealing simplicity of Epistemology of Possession, many researchers believe that knowledge as possessed is a deficient understanding of its nature, and a better conceptualization can be achieved by accepting human understanding as derived from immersive action (Polanyi, 1966; Blackler, 1995; Spender, 1996b; Cook and Brown, 1999). Spender 1996a contends positivistic approaches to knowledge has proved to possess significant short comings on explaining factors such as intuition while Schreyögg and Geiger (2007) calls for a distinction of high quality and low quality knowledge in terms to its constructs. Main argument to take away is that knowledge is not an isolated and inert entity, conversely it is dynamic and multifarious.

Epistemology of Action especially emphasizes the concept of Knowing, which can simply be described as knowledge applied in practice. Underpinning epistemological thrust lies within coupling of knowledge with “Knowing”. Knowledge is applied and regenerated through practice. In Assudani’s framework, compared to “Possession”, “Process” or “Action” is given as the intermediary which facilitates the transmission from “input” to “output” of knowledge. Although many researchers (Blackler, 1993; Cook and Brown, 1999) would suggest that all types are knowledge hold unique uses in application, the latent idea in their writings suggests that Knowing is mainly a tacit endeavor both in application and knowledge generation”. Therefore I find it agreeable to conceive Epistemology of Action as inclined to emphasize the tacit qualities of knowledge through promotion of the concept of Knowing.

Put briefly, “Epistemology of Possession” aims to explore the knowledge that is stored in the confines of the company; that is the data banks, individuals and organizational routines. This perspective inevitably lends itself to prioritizing the individual and the tangible nature of knowledge. Thus “Epistemology of Possession” has been rightly dubbed as having Realist qualities. Conversely, “Epistemology of Action (Process)” explores the subtleties of human action and the intrinsic qualities of knowledge; such as immersion in practice and social interaction. This line of thought, which is akin to Constructivism, argues that the knowledge cannot be decoupled from the experiences and ideas of those who make use of it.

Following chapters will try and expand on the two epistemological approaches that have been defined above in terms of how these ideas present themselves in the field of Knowledge Management. As Assudani (2005) put it, many researchers, though sharing common grounds, stressed different aspects on their views of what knowledge is. Therefore the salient requisite would be to go through these ideas in detail. Nonetheless, for the sake of the coherence and the ease of comparability with previous chapters, the paper will continue to investigate the literature under two orders that of Realism and Constructivism. As hinted earlier, Realism will be equated with Epistemology of Possession while Epistemology of Action will be viewed under Constructivism.

5.3. Epistemology of Possession in Knowledge Management

Rational enquiry underpins a vast variety of philosophical thinking, as it does Epistemology of Possession (EoP). Its roots can be found in Plato to Descartes and Locke, and has influenced modern thinking through different strands of thought such as Positivism and Analytical Philosophy. Today, Positivism, within the thrust of Scientific Realism is the dominant paradigm that pervades all thought and scientific endeavor. Together with its Objectivist and Foundationalist underpinnings, it has influenced the knowledge economics from its onset. Following the extensive success of the resource based view and recognition of knowledge as a key ingredient for competitive superiority by post-industrial era scholars, great focus were given to organizational learning and behavioral sciences. From these fields of research that knowledge management has adopted its first theoretical tools and frameworks in order to study the phenomenon of managing knowledge in firms (Cohen and Levinthal, 1990; Blackler, 1995; Spender, 1996a). In parallel to the first studies in cognitive science, organizational and knowledge management literature adopted a positivist paradigm for investigation, which aimed at eliminating the bias of the subject (Spender, 1996a) and exploring the knowledge as an approximate representation of objective and universal truth. This idea of knowledge as absolute truth pervades positivist view. In contrast under Constructive Relativism what constitutes knowledge becomes what is useful and what is learned in practice.

EoP contrues knowledge as something that a firm or an individual possesses i.e. an asset, or a resource (Assudani, 2005). Within traditional (Cartesian) epistemology, this approach maintains an individual and objective view of knowledge where the source of knowledge is the individual mind and inquiry must lead to an objective knowledge that holds true across the board (Brown and Cook, 1999). The epistemological framework of objectivity gain a more central role with the advance of Big Data (HBR, 2012). Popularity of data banks, trend and connection analytics signify an evolution in the society construal of knowledge (Boyd and Crawford, 2011).

As discussed above through the preceding chapters, this evolution is a display of emergence of social norms as to what is knowledge, what counts as rational, what is evidence and how should we engage with it. Reflection of this mind set is also salient in our modern society where scientific knowledge and uncompromising search for truth undercuts our endeavors, which was described by Bell (1976) as systemization and abstraction of knowledge in his definition of post-industrial society. In this society people are expected to possess objective knowledge and be rational in their decision making (Blackler, 1993).

Within this new framework, intuition and practical experience recedes, though not totally discarded, to leave the primary emphasis on “facts” as derived from analysis of data (HBR, 2012) Advance of data focus can create an asymmetrical playing ground between different epistemological backgrounds (Boyd and Crawford, 2011). Methodologies employed in the examination of data would favor epistemological backgrounds that have a predilection for structured data and deductive logic. An adverse effect extended through this bias would be the organization becoming lop-sided in their view of knowledge, thus analysis of data.

It would appear so through the rhetoric of Liebeskind (1996) and Nonaka that EoP is more driven by results. Economic rents are consequential to it. One immediate outcome of this approach is the need of a concrete, measurable, abstracted substance that can be quantified and analyzed (Baskerville and Dulipovici, 2006). To this end economic

conceptualizations of knowledge as; asset, property, capital and network (Winter, 1988; Nonaka, 1994; Liebeskind, 1996; Boisot, 1998; Baskerville and Dulipovici, 2006) have been central to describe the competitive advantage of knowledge as an extension of the Penrosian theory of resource-based view of the firm. Thus positivist view of knowledge appeals to practical applications of businesses by pointing to something concrete that is actually physically manageable (Schneider, 2007). Quantification and codification of knowledge aims to provide factual results that should approximate to reality; being a representation of reality. For the same reasons IT research focuses on knowledge as data, presuming that the individuals and organizations are rational and goal oriented beings (Spender and Scherer, 2007; Schneider, 2007) whom once supplied with adequate and accurate information should be able to deduce justified true beliefs regarding their environment (i.e. market, organization etc.). In essence being able to quantify knowledge means that its value and contribution to economic success can be analyzed or presented in an objective manner. Knowledge being a commodity, it could easily be an article in a company's balance sheet along its other assets, or quantified in databases it can be scrutinized and analyzed. Hence stems the importance given to explicit knowledge and the ultimate goal of extracting explicit knowledge from the tacit (Nonaka, 1994) and the pressures for adopting a positivist approach (Blackler, 1993). Not surprisingly we now begin to see advances by knowledge intensive companies to quantify their aggregate know-how in terms of acquired patents, experience etc.

Consequence of positivist application to knowledge management models is another ramification, which may indeed be more fundamental and important to the topic. Knowledge being reduced to its core, which can be defined as "codes" (Language as written or spoken), defines it as a passive entity in the organizations which can be stored, transferred and transformed. Thus providing the defining tenet for EoP (Cook and Brown, 1999; Assudani, 2005) where creation and sharing of knowledge is individualized and abstracted.

Duly, these conceptual developments results in two pivotal paradigms in research; firstly individual mind receives a footing over the collective and explicit knowledge was preferred over tacit knowledge (Cook and Brown, 1999; Schneider, 2007). In the light of

the first tenet, knowledge resides in human mind (Myers, 1996), it is individuals who form a firm's knowledge base. Hence it is the firm's prime objective to exploit this embedded knowledge or expertise (Cohen and Levinthal 1990; Nonaka, 1994; Blackler, 1995).

Herbert Simon (1991) addressed the problem of knowledge as primarily an individualistic one as he stipulated that "all learning takes place inside individual heads..." (Simon, 1991; 125). For Simon everything originates from the individual, and that includes the culture which he views as an aggregate of various representations within individuals' minds. Grant (1996) also conceives knowledge creation as an individual activity. Donna Hendrix (2007) from Shell KM team defines their efforts as mapping "knowledge nuggets" and disseminating this converted valuable tacit knowledge through various IT tools. Wing Lam (2005) reports on an IT Company that set its prime goal for knowledge sharing in terms of document repositories.

The understanding of collective in EoP is demonstrated in the concept Ba (Nonaka, Toyama & Nataga, 2000). Ba is the context shared among the knowledge agents, it is constituted when a group of experts come together combining their experiences and skills to form a shared base to create knowledge. In this construal Ba is constructed almost as a puzzle, in which individual parts are contributed and glued together by different parties.

Nevertheless focus on individual and codified knowledge does not rule out the importance of the collective in positivist research. Many researchers, while acknowledging indispensability of the individual and the explicit forms of knowledge, attributes great value to social interaction and collective understanding for the facilitation of conveying tacit knowledge between parties of transfer. Nevertheless their advances are still limited to the thought of positivists; in the context of drawing on interchangeability between the individual/collective and explicit/tacit as Cook and Brown (1999) defined. We can see this stance in writings of Nonaka and Takeuchi (1995), Cavusgil, Calantone & Zao (2003), Zander and Kogut (1995), and Nahapiet and Goshal (1998). For this aim researchers have strived to explore how this valuable resource can be utilized better by;

social interfaces (Nahapiet and Goshal, 1998), establishing connectivity through knowledge networks (Kogut and Zander, 1992; 1996), (Zander and Kogut, 1995) and via the help of IT tools (Swift, 1991). Nahapiet and Goshal (1998), focuses on the quality of the ties and interaction between the actors of a network. Rooting their argument in the social capital theory, researchers suggest that sense responsibility, mutual trust and intimacy that entail social interactions would lead to the ultimate benefit of achieving results at lower costs. For them the healthier and more valuable the connections between the actors are the better the cooperation and knowledge sharing will be between them. The health and the value of the connection or social capital as they put it would depend on the

As for the second paradigm, it begets the sharing and creation knowledge through codified knowledge (information) or conversion between tacit and explicit types knowledge (Nonaka, 1994). Tacit dimension can be codified through images, texts or charts (Alavi and Leidner, 2001).

Currently, the research field for Information Technologies is still very much adopts the notion of knowledge as a distinct entity. Data and knowledge are almost used synonymously while describing the knowledge sharing facility of IT constructs. Contrary to the argument that this approach is faulty inadequate, author of this paper would suggest that it points to the epistemological tendencies of different divisions of organizations and its management. Blackler (1995) and Schneider (2007) would also argue that differing challenges in practice would lead to differing conceptions in knowledge Therefore worth exploring from the perspective of epistemological friction and addressing the needs of context while dealing with the question of knowledge sharing.

5.4. Constructivism (Epistemology of Action) in Knowledge Management

In second part of the 20th Century, in the light of the works of Constructivist theorists researchers had become more and more adamant in voicing their concerns over the established research methods and its preconceptions of how social research should be

conducted. Epistemology of Practice is rooted in the philosophies of Heidegger and other phenomenologist. This has led to what Blackler (1993) calls undermining of the rational-cognitive approach to knowledge. As constructivism argues the knowledge is a social construe, it is not a piece of material that exists in bytes but something that is constructed around and corresponding to our social life and language.

Concerns have been voiced and exemplified, exposing the shortcomings of the Foundationalist conceptions of knowledge. For many, positivism was not adequately addressing the practical application of knowledge (Tsoukas, 2007; Cook and Brown, 1999), and intricacies of social, and more analog aspect, of the management world (Schneider, 2007). Just like the revolution of constructivism in philosophy, the arguments have been extended on the immersive nature of knowledge and for a greater part of knowing as action.

Arguments put forward by the detractors of foundationalism focus on the short comings of the positivistic concept of knowledge as bereft of context (Blackler, 1995; Tsoukas, 2002), impractical (Cook and Brown, 1999; Nooderhaven and Harzing, 2009) and rigid (Spender, 1996a). Drawing data and evidence from various strides of social sciences the essential argument of constructivism is based on the notion of knowledge being molded in practice, where different contextual parameters define the shape of the mold. In the end, the complete process of “how you know” defining “what you know” is canonized in the concept of “Knowing”.

Before digging deeper in to the concept of knowing it might be helpful to see how knowledge is (not) defined for constructivists. Building up on the philosophical contentions of Polanyi, knowledge was proposed to have both explicit and implicit qualities (therefore the distinction of codified and tacit knowledge) while rejecting the ideas of knowledge quintessentially being a commodity which can be exchanged and distributed at will. Knowledge is not a possession but rather a process which is often utilized subconsciously and honed with practice (Assudani, 2005; Blackler 1995, Tsoukas & Vladimirou, 2001). Quoting Cook and Brown (1999) “Knowledge is a tool of knowing,

that knowing is an aspect of our interaction with the social and physical world, and interplay between knowledge and knowing can generate new knowledge and new ways of knowing.” Furthermore knowledge is presented to be more idiosyncratic for it is rooted in our beliefs and convictions of the external world (Tsoukas, 1997). It is a product of the collective mind, yet not appropriated by any individual (Schneider, 2007). As it can be inferred from these descriptions knowledge is conceived to have two facades; one which is grounded at the individual level as part of a person’s subconscious process (remember Heidegger’s Dasein), second that it is seeded and revitalized at the collective level. Following authors’ arguments we can aptly assume that knowledge should be first created at the collective level through social constructive mechanism, thereon to be absorbed and internalized at the individual level through practice and experience.

Nevertheless, under the arching understanding of knowledge as knowing, theory of action is also rife with divergences. First of these rifts concerns what actually constitutes knowledge, whereas many would argue for a various types of knowledge can be defined (Blackler, 1995), others would assert the notion of a monolithic view of knowledge where explicit and implicit knowledge is part of the same structure (Tsoukas, 2002).

One of the forth coming variations is on the treatment of knowledge. Researchers such as Cook and Brown (1999), Blackler (1993) would assert a knowledge dichotomy where they conceptualize knowledge of different forms. To them knowledge changes frame in various contexts where it can be utilized for different purposes. Cook and Brown, and Spender describes the four beings of knowledge through the matrix of individual/collective and explicit/tacit. Blackler (1995) in his paper goes on to list many more types of knowledge, nonetheless he prioritize these forms in their importance to the organization which is in contrast to Cook and Brown (1999) and Spender (1996a; 1996b) who gave equal footing to all the four distinctions.

Cook and Brown argue the distinction must be established between tacit and explicit types of knowledge. They claim that this distinction has been being violated in research in favor of explicit knowledge whereas these two forms are mutually exclusive and have different functions. Nevertheless researches acknowledge the interplay between tacit and explicit

dimensions of knowledge. Many argue that these are often the two sides of the same coin, and complete each other in praxis on a daily basis (Blackler, 1995; Spender 1996b; Cook and Brown, 1999; Tsoukas, 2000; Assudani, 2005; Schreyögg and Geiger, 2007)

Cook and Brown will suggest a framework of epistemology where both possessive and practical aspects work harmoniously in operating at different levels of organization. They claim that all these different levels; explicit/tacit and individual/organizational; contribute a distinctive epistemological task that could not be achieved by others. Finally, knowing comes into play when these distinctive forms are being applied in practice. Also another argument put forward makes distinctions not in knowledge in itself but on the basis of different status of knowing. According to these arguments knowing, or knowledge in practice, can exist in different levels where they hold unique functions in organizational knowledge process. This structure is presented in a two by two matrix in which the explicit and tacit knowledge have differing manifestations at individual and group levels (Spender, 1996a; Cook and Brown, 1999).

However these will fail to make a substantial distinction between knowing and tacit knowledge. Cook and Brown would claim them to be different, asserting that tacit knowledge resides in the individual at all times whereas knowing is deployment of body of knowledge in practice. This kind of claims should then allude to how tacit knowledge would reside in the individual at all times. Furthermore how deployment in practice can be considered different than the tacit knowledge that Polanyi described that is embedded in action. Is it not the crux of the tacit concept that it can be only invoked in practice? How can we recall tacit knowledge if it is in individual's mind at all times. Besides, in describing knowledge (both explicit and tacit) as a tool, I believe Cook and Brown are contradicting themselves as attributing physical qualities to tacit knowledge. As much as we know until now from Wittgenstein that the language we speak defines the very nature of our knowledge, this semantic error points to a problem to their concept.

Further criticism of the epistemology of action (Cook and Brown, 1999); is that it does not really address the reality of knowledge management and its challenges (Schreyögg

and Geiger, 2007), definition of knowledge proposed by the proponents are too broad and unrealistic for their application in real life (Schneider, 2007). Basic argument of Schreyögg and Geiger (2007) is that the focus on mundane construction of knowledge misses the point of the advantage of distinctiveness that the economics of business requires. If all the systems are the basis of knowledge creation and acquisition, then how we can argue for the exclusivity of the knowledge intensive firms, societies, furthermore how we can distinguish them in terms of their competency in knowledge sharing. In spite of sharing the common aim of altering the reign of objective knowledge of positivism, Schreyögg and Geiger turn to Wittgenstein's ideas of the theory of language instead of phenomenology.

As explained in the earlier chapters of this paper, Philosophy of Language; as sculptured and elevated in to the philosophical stage by Wittgenstein, suggests that our perceptions of the world with our knowledge of it, is dependent on our language and tools of communication. In order to allude to this fundamental concept, Schreyögg and Geiger (2007) aptly cite Hans-Georg Gadamer whose lines follow; "Human experience is essentially linguistic." Consequently, first tenet of their hypothesis draws on 'linguistic construction' of knowledge. However there is still one issue that remains to be addressed, which Schreyögg and Geiger is well aware, that is how it would be possible to emancipate knowledge from the claws of relativism when we assert that knowledge is individually constructed through vocabulary. Answer; Schreyögg and Geiger offers is one concept that has been proposed by phenomenologists; intersubjectivity. Intersubjectivity entails that although human experience with language can be personal, the rules of the game are decided in the society that they dwell. As Wittgenstein very elegantly described, the word pain gets its meaning through mutual agreement of people who use it, although they have no insight into how each other might be feeling at the time when they are experiencing it. Therefore presenting the core of the hypothesis as knowledge being constructed through social communication process (Schreyögg and Geiger, 2007).

Building on this premise, Schreyögg and Geiger argues for what they think epistemology of practice lacks in general; that is distinguishing the essential knowledge from everyday routine. Here they argue that knowledge has to hold against a discourse on its validity

through communication in its community (Schreyögg and Geiger, 2007) Therefore knowledge should be validated on the basis of inter-subjective criteria of the community. Furthermore, it is acknowledged that different communities will have different types of criteria for knowledge and for scrutinizing its validity. Naturally these assertions beget some difficult questions, which in my opinion authors haphazardly addresses. First problem comes with the acceptance of differing criteria for knowledge where authors seem to fall into the same relativistic conception which they blame epistemology of practice for. Secondly, by not recognizing tacit dimension of knowledge but rather skillful practice they relinquish the possibility of harnessing and managing it. Thirdly, how can you argue for the distinctiveness and the exclusiveness of knowledge when it can be put through discourse and be validated objectively in the community? Finally authors does not substantiate as to how this discourse would lead to distinctiveness, other than suggesting that it would, but how do we distinguish between failed and successful knowledge firms?

Schneider (2007) also voices similar concerns over the proposal of Schreyögg and Geiger (2007) to limit the definition of knowledge to one that is open to validation. Going even further Schneider (2007) also asserts that any attempt to define knowledge in precise boundaries, be it in positivist or constructivist terms, is bound to fail due to the exclusion of its counter arguments which might be useful in other context bound conditions fuzzy nature of knowledge and its application in real life scenarios.

Blackler (1995) suggests the migration to the organizational structures where embrained and encultured types of knowledge are emphasized. He thus points to the pattern of firms shifting to structures which are supported by rather more abstract knowledge bases. On the other hand, Blackler also remarks that the some technological advances are presenting novel problems in knowledge management. As the introduction of new technological devices more and more coded information is replacing the processes which have been executed by human expertise.

Nevertheless creating a richer research alternative to positivist approach to knowledge management, constructivist approach cannot escape the perennial problems that haunted metaphysical studies. Concepts, definitions, arguments and theories in this field are too fluid and vague to have formed a foundation for the research and management theories. Most terms and concepts used by authors are either not fully understood by them or have too fluid definitions to be useful as to bolster a theoretical basis. Bigger picture on the level research field is no consolation either. There are many esoteric words and definitions being purported by different researchers that crisscross or overlap with each other. To aggravate the problem researchers seldom devote sufficient time and ground for explaining and clarifying these newly coined phrases which leads to confusion and disorientation in the field as it impedes the cooperation and communication to flourish.

5.6. Summary

We have come through a long way and during this time we have identified two different approaches to knowledge in the field of management. First approach having deeper roots in traditional epistemology via Rationalism and Empiricism, and it purports to ascertain the objective conditions under which we can achieve the knowledge of an external world. Second approach, being the more recent creed, switches the locus of analysis from external world to human activity and psychology, thus attempts to construe and understand knowledge through the framework of human construction. Furthermore the paper aimed to highlight the symptoms arising from these competing perspectives as they demonstrate themselves in management science through the discussion on priority of information vs. context bound knowledge.

At this point I should hope that the research questions flesh out more clearly. Given these two different approaches to what may knowledge be, from an organizational point the interest is in if the clash of these approaches may present itself in the transfer of knowledge? To this end first this paper will aim to explicate the process of knowledge transfer through its construal and challenges as defined in extant literature.

5.7. Knowledge Transfer

Firms have been suggested to exist because of their capabilities in exploiting valuable resources better than the market (Liebeskind 1996), and MNCs have been characterized as being more capable in exploiting knowledge compared to other organizations (Gupta & Govindarajan, 2000). Given these two premises, degrees of efficacy in absorbing and exploiting knowledge, as a valuable resource, can be argued to mark the difference between a successful firm and others. Consequently, it is great importance to firms to find more effective and efficient methods in absorbing new knowledge and transferring it through relevant organizational units (Argote & Ingram, 2000). Thus, in fulfilling this objective, study of knowledge transfer aims to explore different methods of knowledge transfer undertaken by firms, while ascertaining the involved parties, constitutive parts, and difficulties that are inherent in them. Despite these efforts barriers to knowledge transfer continue to thwart organizational efforts to identify knowledge, manage its flow, and effectively integrate its use in organizational decision making (Lindsey, 2011).

Knowledge transfer is defined as *transfer of best practices* (Szulanski, 1996) where new knowledge being absorbed by the receiving unit (Gooderham, 2007). Furthermore in order for the transfer to be deemed successful improvement or change should be observed in the targeted practices of the knowledge receiver (Minbaeva, Pedersen & Björkman, 2003). When contrasted with *knowledge dissemination* or *knowledge sharing*, *knowledge transfer* is a didactic and targeted process that encapsulates recreation of a certain practice or distinct knowledge of one company unit in another (Szulanski, 1996). As corollary of its definition it can be argued that all knowledge transfer research explicitly or tacitly adopts the signaling metaphor presented by Shannon & Weaver (1949) in their analysis. Through this framework communication is compartmentalized into four distinct constituents i.e. sender, receiver, message and context. Thus knowledge transfer is framed as a transaction of communication which can be analyzed in smaller parts, thus allowing barriers to be isolated in each phased and improve the possibility of solution (Lindsey, 2011).

Signaling metaphor (SM) presents a generally mechanical view of communication process in which a stepwise progression occurs between a sender and a recipient in a certain context in order for information (or message) to be delivered via the designated channel (Figure 2). It is conceptualized that for knowledge to be transferred the sender has to codify the message and articulate it to the receiver, who then will absorb and replicate it (Cohen & Levinthal, 1990; Kogut & Zander, 1995; Szulanski, 1996; Gupta & Govindarajan, 2000).

Traditionally, this process of transfer has been evaluated through the apparent cost of the transfer (von Hippel, 1994) where the success or ease of transfer was assumed to be negatively correlated with the cost incurred. However other research has contested this view (Szulanski, 1995; 1996) and hold to the contrary that the ease or difficulty of transfer should be measured in respect to the barriers inherent in the process. Consequently this entailed the need for designating barriers for each of constituents respectively whereof several have been identified and examined in due time (Szulanski, 1996; 2000; Cohen & Levinthal, 1990; Minbaeva, 2007). All the identified constituents of knowledge transfer and their effects on the general process have been commonly identified as factors of *Stickiness* (Szulanski; 1995) which is used as a measure of difficulty in transferring a certain body of knowledge as a result of factors involved in the process.

Contributing factors to Stickiness can be grouped under Characteristics of Knowledge, of Parties (i.e. recipient and source) and of Context (Szulanski, 1996). Nonetheless the recognition and measurement of Stickiness emerge as a complex matter. Szulanski (1995; 1996) proposes that a particularly sticky transfer at the same time must be an eventful one. Moreover, in this case eventfulness can be recognized through symptoms such as deviations from objectives, running over due dates and budgets, expressed discontent from parties etc. (Szulanski, 1995). However the proposition that stickiness always leads to eventfulness appears to be debatable. Considering the difficulties with knowledge outlined in the discussion of Constructivism, it may still be argued that all knowledge transfers should be sticky at some level. From this perspective eventfulness cannot be an indicator but rather should be regarded as a gauge of stickiness.

In terms of identifying the central characteristics that drive stickiness Szulanski's empirical data (1995; 1996) shows that transfer process was primarily curtailed by the inherent difficulties in knowledge accompanied by the absorptive capacity of the recipient and the arduous relationship between parties. This thesis contends that primary impediments may be referred to in terms of epistemological differences, yet this kind of argument will require further elaboration on how Signaling Metaphor construes the process of knowledge transfer and characteristics of knowledge transfer as outlined previously.

5.7.1. Signaling Metaphor

As previously described, SM utilizes a concept of communication that aims to isolate different parties and steps involved in its analysis. This confines the scope of the transfer to a unidirectional pattern, nonetheless it may also very well be argued that knowledge transfer is a reciprocal process where both roles of sender and receiver are being shared by the interacting parties in turn. However splitting the process into convenient fragments may be enabling investigation of the isolated phases and factors meticulously, it also has its shortcomings mainly due to disrupting the integrity of those pieces and their functioning. Szulanski himself, also acknowledging this called for a holistic analysis of the impediments (Szulanski, 2000). Rather than melting the characteristics of communication and knowledge in the same pot that is the source and the receiver, the common view in knowledge transfer handles each factor separately and leaves out the pith of the problem that is the characteristics of individuals or strains of perspective.

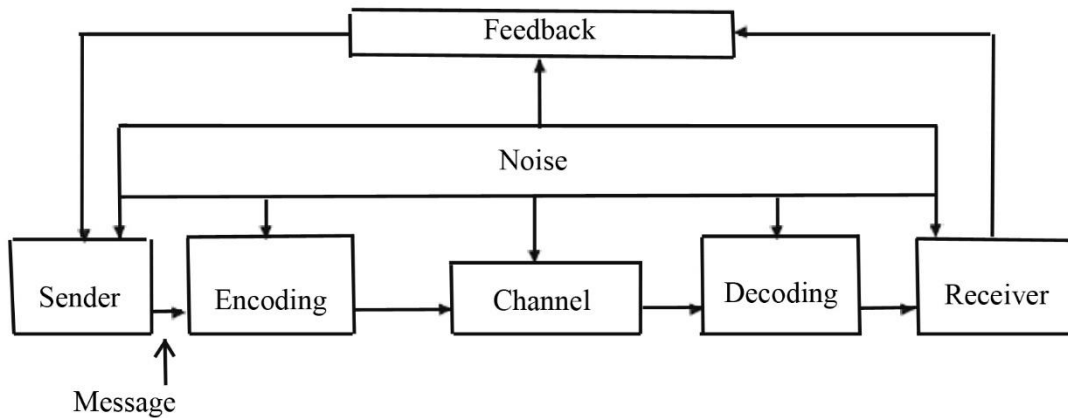


Figure 2. Process of Communication

Contrary to the SM, this paper will utilize a more unified analysis of communication through its phases and constituents. This approach I believe will be justified in the goal of this thesis where the pith of the matter lies in the epistemological interplay between involved parties, knowledge and context. Thus it will adopt the view that all subsequent barriers identified as being prominent in the process of knowledge transfer should be analyzed in correlation. Thus at a given time any characteristic of the recipient should not be viewed as detached from that of knowledge, source or organizational context. Barriers, as in characteristics, should not be limited to one constituent of the communication process.

5.7.2. Characteristics: a unified approach

Parallel to the view that evaluates knowledge transfer in terms of transaction cost has been the conception that most difficulties in due process arise from issues that are related to the motivational dispositions of parties (Szulanski, 1995). Nonetheless Szulanski (1996) has demonstrated that the role motivational outlook of sender or receiver had been overemphasized while other factors, such as inherent characteristics of knowledge, were overlooked. Within the same study Szulanski identifies factors that appear to have played the most prominent role in the success of knowledge transfer. From the perspective of this

study most essential of these are; Causal Ambiguity (CA), Absorptive Capacity (AC) and Arduous Relationship (AR) (Szulanski, 1996).

Through the lens of Resource-based view CA is defined as an inherent quality of a firm specific trait or condition which is hard for both the firm itself and its rivals to explicate and analyze (Powell, Lovallo & Caringal, 2006). From this perspective CA embraces the tacit or personal knowledge of Polanyi and all the constructive elements that has been discussed over in the previous sections of this thesis. It alludes to the personal aspect of knowledge, which has been constructed through private experience as expounded in Heidegger's category of readiness to hand, and/or through conventions and interactions of a community.

Many researchers see CA as the essence of knowledge which begets rarity and competitive advantage (Nonaka, 1994; Kogut & Zander, 1995; Grant, 1996) Notwithstanding CA's acclaim, its construal in terms of both as a source competitive advantage and token of elusiveness inevitably leads to a paradox (King & Zeithaml, 2001) Adding to this Powell *et. al.* (2006) argues that CA is lacking empirical evidence to support its perceived importance. They argue that potency of CA is caused by a misinterpretation on behalf of researchers and managers through which perceptive bias in psychological and social process assume CA to be a real phenomenon rather than a misgiving or an illusion. Accordingly CA should not be viewed as an unequivocal source of competitive advantage but rather a quality of the advantageous competence. Nonetheless being regarded as a characteristic of transferred knowledge itself (Szulanski, 1996), CA should be analyzed against the backdrop of management perspective, firm culture and other context relevant features. Thus construing it not only as a quality of the knowledge but an emergent phenomena that is shared by all the constituents of the communication process.

Factor of Absorptive Capacity (AC) was introduced by Cohen and Levinthal (1990) which they defined as a firm or an agent's receptiveness to an external knowledge source. A firm's ability to recognize, absorb and operationalize valuable knowledge is deemed

critical to its innovativeness and survival (Cohen & Levinthal, 1990). Prior experience plays a key role for the absorptive capacity of a firm to the effect that it enhances the previously mentioned abilities.

AC is defined as a capacity for learning and creativity which is critically underpinned by prior knowledge and experience (insight). It should be possible to argue that absorptive capacity is an outcome of context. This insight (or context) develops through time with practice and experience (Cohen & Levinthal, 1990). In a manner of speaking AC can be construed as a measure of the overlap in Causal Ambiguity. As such more practical experience and intellectual background the recipient has in common with the external source, the more absorptive it should be in transfer while observed ambiguity declines for both parties. Furthermore, AC appears to overlap with other motivational characteristics as described by Szulanski (1996), due to central role of background knowledge and experience in recognizing the value of knowledge being transferred. Crucially though a superficial exposition to background knowledge is not adequate for bolstering absorptive capacity, rather the main thrust of such capability lies in the associative and creative powers that experience enables a person to connect and construe concepts that would otherwise be inaccessible (Cohen & Levinthal, 1990).

Cohen and Levinthal (1990) differentiate between the knowledge absorption capacity of the individual and organization. The latter is constituted by the former, albeit not being the sum of it. For Cohen and Levinthal (1990), once the firm acquires valuable knowledge, exploitation of this knowledge is reinforced by the internal knowledge transfer capabilities of the firm. Thus communications between constituents are vital to the ability of organization to exploit the absorbed knowledge. Hence better communication and assimilation between individual members directly affect the absorptive capacity of the collective. These communication channels can be mediated through gatekeepers (with greater knowledge; if there is a knowledge gap between external and internal environment), or it can be diffused throughout the organization. Importantly Cohen & Levinthal (1990) distinguishes between internal and external AC; first concerning the capacity to imitate knowledge within the organization and latter being the same for recognizing and assimilating external knowledge. They point out that

unchecked drive for homogeneity in the organization, while being conducive to internal success in communication, would be detrimental to firm in the long run as it may be alienated from external sources. Thus they prescribe for a balanced approach where the firm maintains relevance in both dimensions while preserving variety in the expertise it encompasses and maintaining a satisfactory shared background.

Nevertheless, shared experiences and overlapping background knowledge is still essential for effective communication which also elucidates the factors that differ between the firm's and individual's absorptive capacity. At this point Absorptive Capacity turns out to be rather circular; as a firm needs to be highly absorptive to possess the awareness to invest in expanding its absorptive capacity. For this reason how to create and nurture a fertile organizational environment, thus a context conducive to absorption of new knowledge, is not addressed fully.

Naturally then, knowing how context emerges and transforms is of paramount importance if we want to understand how people create, use and share tacit knowledge. (Shariq & Vendelo, 2011) Although the importance of context is almost always acknowledged (Szulanski, 1996; 2000, Nonaka et. al., 2000; Shariq & Vendelo, 2011; Lindsey, 2011) due to the process oriented nature of KT, the conceptual definition takes a shape that is divergent from the heuristic and social aspect of constructivist knowledge and is more centered on the individual or at least individually conceived agents. From this perspective, in analyzing the transfer process KT does seem to be able to take advantage of the systems oriented approach put forward by Alvin Goldman (2009a). In that KT approaches the system to see which settings under what conditions can be most effective in transferring a certain set of expertise.

Context is usually regarded as a collective phenomenon (at least distinctive and more vital at collective level) (Cohen & Levinthal, 1990; Brown & Duguid, 1991; Nahapiet & Goshal, 1998) nevertheless being build up on the individual level. It is the individual acting through the lenses of her past experiences and knowledge to interact with other individuals and her environment that leads to the emergence of context. Wherefore

context may vary between individuals, as no two individual can have exactly the same past experiences, but still an overlap in context can be established in correlation with shared experiences (Shariq & Vendelo, 2011) Furthermore context would change as shared experiences and communications develop; which in turn determines how communicated messages are received and interpreted. Being a driver of barriers to knowledge transfer, shifting context can also mean changing preferences in which barriers manifest themselves the most. Therefore context needs to be manipulated through reacting to manifesting barriers over time. This temporal nature of barriers should be followed up and exploited; for example the rise of digital technologies can drastically change the employee attitudes towards knowledge sharing (Lindsey, 2011).

Other researchers investigate the context that is shaped through the actions of the collective, which as they stipulate is distinctive from context construed by an individual (Brown & Duguid, 1991) and furthermore can be inaccessible to her cognitively (Nahapiet & Goshal, 1998). The Social capital theory as put forward by Nahapiet & Goshal (1998) addresses the conditions under which a knowledge transfer conducive organizational environment can be achieved. Understanding the social environment is vital because culture is more vital to knowledge sharing than commitment to knowledge management (McDermott and O'Dell, 2001). The facet of social capital, as defined by Nahapiet and Goshal (1998) that is of interest to this paper is *Cognitive Dimension*. This dimension envelops the shared meanings, interpretations and representations that are shared between networks of actors. These mutual qualities between parties are argued to enhance the relational connections they develop which facilitates the communication, therefore the knowledge transfer between them (Gooderham, 2007). Hence according to Nahapiet and Goshal, cognitive qualities play an intermediary role in facilitating knowledge through empowering the relational ties between parties. Thus giving us reason to contemplate the possibility of epistemological factors in the impediment of Arduous Relationship (AR) as described by Szulanski (1996).

Whether it is constituted at an individual or collective level, two points emerge as important from the investigation of context; first that it is the primary drive that undercuts the most prominent knowledge transfer barriers. Secondly it can and should be

manipulated to achieve the best conditions for knowledge transfer across different individual and collective units. Gooderham (2007) suggests that more socialization and cultural interaction between units will result in greater commonality in shared perspectives. A greater degree of shared educational background also presented as one of the contributors to greater shared cognitive conceptions.

There are salient parallels between the individual and collective construction of context with ideas of Polanyi, Kant, Heidegger and Wittgenstein. Individual construction of context depends on the subject's perspective and construction. It is shaped by her internal experiences described Polanyi and her application of learned structures to external world as given in Kant. In turn these learned structures are partly contributed by the subject's epistemological assumptions, thereon bringing epistemology under the purview of context. Similar arguments can be presented for epistemology coming under the umbrella of context from a collective perspective. Discussion of shared languages, systems of meaning, codes and experiences (Gooderham, 2007) are in many ways the same arguments that are put forward by constructivist philosophers when describing the underlying factors of differing epistemological conceptions of rationality and justification.

If context is vital to the sharing of valuable knowledge, therefore it can be argued that different epistemological conceptions for different departments can set different contexts for knowledge sharing within and with others. However it is an issue of debate whether context is an individual or a collective phenomenon. While many knowledge transfer literature appears to at least consider it as a collective activity (Szulanski, 2006) other perspective argue for placing the individual at its source (Shariq & Vendelo, 2011).

5.8. Summary

Previous chapters aimed to give overall review of philosophical thoughts and their reflections in the knowledge management and knowledge transfer literature. It has been observed that the extant research and debate in knowledge management literature appear

to mirror those of philosophical tradition. Thus the debates predominantly were based on what constitutes rationality, how knowledge should be construed and what weight should be given to individual and collective loci of knowledge.

In the end categorization of these debates can be succinctly summarized in Objective (abstract) knowledge vs. Constructed (practice oriented) in term of knowledge construal and Individualist vs. Collectivist regarding the loci of knowledge. On justification level categories have been defined around Externalist vs. Internalist and Foundationalist vs. Coherentist approaches.

In addition this paper will aim to observe the effects epistemological assumptions, which will be construed on categories defined above, on knowledge transfer process. Effects will be evaluated in three different aspects through their construal as a contributor to context; first in terms of relations between parties (Arduous Relationship), second in terms of awareness of parties (Absorptive Capacity) and thirdly in terms of direct relation to understanding of knowledge itself (Causal Ambiguity). Combined with the categories adopted through the previous chapters that give descriptions in Justification and Structure of knowledge, this research will try to explore the interplay of these different constituents on the process of knowledge transfer.

The study expects it to be possible to assert that justificational rationality is bounded by the context build by the individual or the collective effort of a group of individuals. As persons go through their daily practice, interacting with their environment, the formulation of what constitutes rationality and therefore process justification takes shape. Hence within a department of professionals, it can be argued that relative objectivity should be established building up on their interactions both between each member and between each individual and their daily work. Finally the study will also attempt to see the how organizational structure facilitates this interaction as described.

6. RESEARCH METHODOLOGY

This thesis will employ an embedded single case study method for exploring the intricate qualities and functions of knowledge transfer in firms. Furthermore, interviews comprising open-ended questions in semi-structured method will be utilized as the data collection method. Additional triangulation of data will be supplemented by the manuals, guidelines and primers provided by the company concerning the knowledge transfer processes. Consequently, all these data will establish the foundation of subsequent theory generation that will be based on Grounded Theory approach.

In the following chapter, the author will aim to delineate the qualities and pitfalls of case study research and purport to justify his decision to utilize a single-embedded case study method. Eventually this chapter will also try to explicate the data collection process and give an introduction to the case study firm.

6.1. Case Study Research

Succinctly put the objective of all sciences is reaching answers to satisfy proposed questions. The route for arriving to these answers is what defines the research design and methods, as choices taken in regards to methodology and strategy can greatly affect the quality of answer reaped from the study.

Body of research rests on four distinct pillars; Research Questions, Design, Observation and Analysis (Babbie, 2008). Following chapters will give a survey of different approaches under each research keystone and argue for the preferences utilized for the purposes of this paper.

6.2. Case Study Research Design

Case studies have been one of the most prominent practices for the business studies (Ghauri & Grønhaug, 2005). They are recognized as competent strategies to explore complex phenomena which involve various, largely abstract, factors interacting with each other. As Yin (2009: 3-9) delineates, case studies are befitting for research that demonstrates the conditions where researcher asks questions of explorative quality such as “how” or “why” questions, and has relatively no control over phenomenon being explored. They allow researchers to obtain a holistic view of the phenomena they are investigating.

Case study method is focused on understanding the operations or functioning of a particular group, person or event (Berg, 2001). Therefore it is an essential characteristic of this method to be limited in its scope (Babbie, 2008) while it seeks to capture the research subject in its context (Yin, 2009). This particular approach enables researcher to direct her attention any particular phenomena in the confines of a given context. As a method it presents a framework which in itself incorporates different methods of data gathering and analysis resulting in data that is detailed and rich in meaning (Berg, 2001). Therefore, concerning the complex structure of knowledge that will be explored in this thesis, case study research proves to be the most suitable choice as a research framework. By utilizing this method, the author of this paper purports to have a transcending access into the complex social and psychological dimensions of knowledge transfer and functioning of a knowledge society. Secondly, questions addressed for exploration in this study are also pertinent to the scope of case studies. As an explorative study, research questions presented in the introduction part of this paper may be aptly utilized through the facilities of case study research.

Yin (2009) emphasizes five factors that are essential to the design of a case study research. These are respectively; research questions, propositions, and unit of analysis, logic and criteria for interpretation.

6.3. Proposition & Research Questions

By the definition of Yin (2009) propositions are the underlying assumptions in a research in regards to the questions posed. They act like pointers to where the evidence should be sought, or what phenomena, concept or event should be studied to extract the answers required by the research questions. Even studies which are explorative in their aim should have certain propositions to ascertain their purpose, nonetheless Yin (2009) recognizes they may be devoid of any fixed assumptions regarding their subjects.

In terms of its propositions, this study starts from the recognition that persons that have studied and brought up through different systems of education and professional background indeed have different perspectives on various phenomena as well as divergent practical applications. Referring to earlier chapter of this study, these imbued cultural differences are argued to be demonstrable on how people view rationality, justification and truth. Thus when dealing with knowledge transfer, it should be perfectly justified to investigate if these epistemological differences are manifest themselves in a significant fashion within an organization. Thereon we can also pose the question how do these differences affect the process of knowledge transfer.

Research questions are the drivers for the whole research as they underpin the entire research design as a foundation (Berg, 2001; Babbie, 2008; Yin, 2009). In regards to their aims research questions can aim to construct new theories, test previously established propositions or classification of recorded observations (Adams, Khan, Raeside & White, 2007).

Questions should be framed in respect to the aim of the research. Thus questions guiding this thesis have been geared towards exploration of the phenomenon of Epistemological Assumptions in knowledge transfer process. Although there are certain assumptions which contributed to the formulation of questions, they nevertheless do not put forward any hypothesis or previously formulated theories to be tested.

Central intent of questions is to firstly to explore the justificational practices and methods employed by organizational departments. Secondly, building on the findings on the first question, study should continue by mapping the various strains of assumptions that will be categorized as derived from the literature review. Finally by combining the findings of first two questions, the final question will analyze how these epistemological differences influence the knowledge transfer process.

6.4. Research Design & Unit of Analysis

Once the topic of interest and the questions for satisfying them are settled the next step is to determine where to look for the answers and how to interpret them (Babbie, 2008). The research design helps connect the questions posed to answers given by creating a roadmap on how to proceed (Yin, 2009). It is consisted of a set of preferences that determines the purpose, general method, target and strategy of the study (Berg, 2001).

With regards to the questions posed, in its purpose a research can be exploratory in ascertaining complexities of different processes, descriptive therefore focusing on content or explanatory in establishing logical connections between propositions hence setting norms and gaining predictive power (Royer & Zarlowski, 2001; Babbie, 2008).

Exploratory studies often used for target topics that have been thus far not adequately investigated, or new to research (Babbie, 2008). The objective in their employment is to gain insight to a certain phenomenon, thereon either to gain valuable understanding for further research (Yin, 2009; Babbie, 2008) or develop new methods for subsequent employment (Babbie, 2008). Although they are conducive to gaining new insights, explorative studies rarely provide satisfactory answers to research questions (Babbie, 2008).

Descriptive studies generally aim to answer those questions posed as what, where, when and how. The researchers conducting descriptive research intents to give an accurate

description of the observed phenomena as it exists. It tries to give clarify the relative constituents of the phenomena and describe them accurately. (Babbie, 2008)

Finally explanatory research is generally described as a follow up on the descriptive research as it aims to explain interactions, causes and relations between different variables to answer to the question of “why” or “how” the phenomena emerges or occurs as described.

In light of the distinctive descriptions given above, this paper will be exploratory in its purpose while taking a qualitative approach via utilization of semi-structured interviews. As previously stated, this paper aim to explore the role epistemological assumptions of individuals & departments in their interactions with other parties in the knowledge transfer process. Emphasizing that epistemological assumptions of units and individuals have been an understudied aspect of knowledge management, thus a research into such assumptions will beget an approach that is directed for probing into the details and constituents of this phenomena, hence justifying the explorative purpose this paper takes.

6.4.1. Unit of Analysis

Unit of analysis is concerned for deciding what or whom to study. Framing the unit of analysis vital to case study research in determining the case that will be investigated (Yin, 2009). However the definition for what constitutes a case is rather fluid. A case can be an individual, group, community or an institution (Gillham, 2000) or a certain period of time (Babbie, 2008). Clearly describing the unit of analysis will allow to distinguish between different units and carry out correct observations in answering the research questions (Babbie, 2008).

In determining the unit of analysis, research questions and propositions play a crucial role. In light of its purpose, this paper will focus on departments as its unit of analysis. Rationale behind this decision is rooted in the proposition that assumes differences

between various epistemological communities which can also be applied to organizational departments. This choice also reflects the intention to investigate the epistemological design and its effects on the individual members as defined by Goldman (2009b). In its analysis, the paper will focus on the department as an epistemological community, thereon to investigate its inner machinations of epistemological interplay and how these inherent qualities affect its knowledge transfer interactions with other departments within the organization.

Once settled the unit of analysis actuates and informs the case design and data gathering methods used in the research (Yin, 2009). Thus following chapters will elaborate on how the case study will be shaped around the unit of analysis.

6.5. Case Study Design

When it comes to case study design there are different types of case study research which differs due their structures and focus. Firstly, Stake (1994: 237-238) defines three types of case studies pertaining to their focus; intrinsic, instrumental and collective. Intrinsic case studies are strategies in which the case itself is the main focus rather than an overarching theory or hypothesis. Researches who undertake intrinsic case studies are particularly interested in the case itself which may be a company or a person. On the other hand instrumental case studies are employed to explore certain phenomena; hence the case is a mere instrument to explore the qualities or mechanics of this. In instrumental case studies the main objective is to supplement a hypothesis, refine an extant theory or provide access to a certain issue. Lastly, collective case studies may be regarded as multiple instrumental case studies being conducted together for the sake of comparability and generalization.

From the perspective of structure Yin (2009: 39-55) classifies case studies in a two dimensional matrix. Firstly case studies are differentiated in their scope which may be single case study or multiple case studies. Secondly, they are also distinguished on the ground of their approach to analysis of each case study which may be embedded or

holistic. Embedded case studies will analyze multiple units and their interactions of each case whereas a holistic study will assess the case as being a monolithic structure.

Single case designs are appropriate for those study that focus on one case for testing an extant theory, a unique occurrence, representative, longitudinal and revelatory cases (Yin, 2009). As described by Yin (2009) revelatory cases are parallel to exploratory studies where the case studied targets phenomena that has been previously understudied or inaccessible. Given the objectives of this study, most suitable design appears to be that of a revelatory single case study.

Yin (2009) warns against the short comings of single case studies when it comes to representing the phenomena for the cases identified may not be sufficiently representative of what is being studied. In order to remedy this short coming it advised that a meticulous data collection should be carried out to correctly determine the suitability of the case to research problem and its unit of analysis. On the other hand, multiple case study design overcomes this problem by corroborating evidence from multiple cases. Nevertheless multiple case studies require greater resources to conduct. Their strength lies in the replication of experiment over different comparable cases (Yin, 2009).

Yin (2009) also informs a case design where it is possible to cover multiple units within a single case study which he names embedded case studies. He contrasts them with holistic studies where the study doesn't differentiate any subunits or constituents within the case itself but rather approach it as a whole. Contrary to that embedded case studies differentiates between varying constituents of a case where the phenomena studied may be affected or in turn affects these subunits on disparate levels. Embedded case studies allow for an in-depth, flexible and practically applicable examination Yin (2009) especially where the dynamics of a phenomenon and thus theories addressing it are not very well defined.

The author of this paper acknowledges the advantages of multiple case study research that might yield more accurate analysis and better validity for the arguments and

conclusions of this paper. Although the ability to compare and contrast cases in the patterns they demonstrate is an important tool, the number of possible cases fall short of the prescribed amount by Yin (2009). Therefore this study will focus on a single case given as the organization. Furthermore, the choice of this study to conduct research at an inter-departmental level as a consequence of its objectives entails the strategy of embedded research. For the sake of exploring knowledge sharing practices and processes between departments, this paper has to delve in to the in-depth relations of departments and their interactions which require each unit to be analyzed individually against the background of the organization. Thus while the main case of study would be the organization itself and its knowledge transfer practices, the evidence will be extrapolated from the analysis of its subunits.

As a result this thesis will employ an embedded multiple case study strategy (Yin, 2009) which in turn is instrumentally focused (Stake, 1994) to explore the justification and acquisition of knowledge throughout the firm, and how it affects the knowledge transfer processes within.

6.6. Data Gathering

6.6.1. Qualitative & Quantitative Approach

In addition to the purpose, there are two different, but not necessarily distinct, approaches to research in terms of data type preference, first one being a quantitative approach that aims to utilize the highly structured data and rigorously deductive logic that is associated with natural sciences. On the other the qualitative approach that takes a more constructive model which utilizes qualitative data with inductive logic and puts more emphasis on the context of problem than solely engaging with the problem in isolation (Baumard & Ibert, 2001). Qualitative research aims to understand the people, their interactions and constructions of meaning with reference to their environment (Bogdan & Biklen, 1992). In the view of public and general research community quantitative approaches hold more

credibility (Dabbs, 1982) mainly due to its lesser exposition to researcher bias and speculative findings (Berg, 2001).

While quantitative data is about measuring and counting, qualitative data is focused on meanings, symbols, metaphors and descriptions (Berg, 2001). Thus quantitative data is a requisite when the purpose of the research is to confirm relations that can be structured in numbers or measurable units. Whereas qualitative data is needed where contextual or inherent elements to the phenomena that cannot be captured in measurable units are essential to the purpose of the research.

The essence of epistemological assumptions calls for an inspection into the shared meanings, cultural perspectives, practices and rituals of a community. Wherefore it is essential to take a qualitative approach to its investigation.

However, determining the purpose and the approach of the study is only a preface in the design of the research. It has to be followed by settling for the correct method from the various different research methods that are suitable to qualitative studies. All research methods have their strengths and weaknesses which makes them more or less suitable for different type of questions or purposes (Babbie, 2008). Although it is usually regarded as a sign of vigor if a research can utilize multiple research methods to exploit the advantages of each according to its own purpose.

6.6.2. Data Collection Method

Data gathering is not distinct from theoretical orientations. Rather, data are intricately associated with the motivation for choosing a given subject, the conduct of the study, and ultimately the analysis (Berg, 2001). In terms of data gathering histories, archives, direct observation and in-depth interviews are many of the options that are viable in a case study (Yin, 2009). Individually the advantages of any of the options is context depended,

nonetheless their strength will increase if they can corroborated. Thus the number sources utilized can said to be proportional to the quality of the evidence (Yin, 2009).

The primary data collection method used by this research will be semi-structured interviews. Interviews are viewed as being the most pertinent choice for exploratory studies where the objective is to uncover new aspects of phenomena (Daniels & Cannice, 2004). Their advantage in enabling construction of context and in-depth elaboration and investigation of concepts, assumptions and meanings (Yin, 2009). Owing to the indirect nature of how beliefs are expressed, epistemological assumptions of individuals asks for a method that is conducive to exposing deeper meanings, contradictions and assumptions that a person is non-immediately aware of. Semi-structured interview due their open ended nature, where conversation is controlled and directed by the researcher through previously defined set of questions, is best suited to explore the present case at hand (Fisher 2004; Yin, 2009). Furthermore, they allow for interviewer to target and further investigate issues that require explanation or clarification (Saunders, Lewis & Thornhill, 2009). Secondly, in a case study documentation can be used best to corroborate the primary evidence (Yin, 2009). Thus in order to bolster the findings from interviews and provide a more cohesive context for the evidence presented various documentation available such as magazines, web pages and instructions concerning IT tools will be used as secondary data.

Interviews have been conducted together with nine (9) individuals on separate occasions. These nine participants were chosen in equal numbers from three different departments; Marketing, Sales and IT. The choice of departments are intended to reflect the possible disparate epistemological contexts each would present through their members as previously divulged in research proposition. Participants from each department were required to possess similar educational backgrounds and work experiences in terms of times served in the department.

Thus the sampling was non-random which can be described as purposive or judgmental sampling. This method involves selecting a representative number of interviewees on the

basis of population knowledge (Babbie, 2008). Purposive sampling assures that interviewers parallel the requirements of the research proposition and questions while at the same time assuring that each department targeted for their epistemological context receives equal representation.

All interviews were conducted within a time frame of three days on the company premises. Each interview elapsed an average time of one and a half hours and the language of interaction was chosen as English. The choice of language can be suggested as a major point of concern since none of the interviewees and the interviewer himself are native speakers of English. However these concerns can be dispelled once it is acknowledged that all of the participants and the interviewer himself has been using English as a primary language in professional contexts, and neither experiences any difficulties in understanding the subtleties of the said language or have any major difficulties in expressing themselves.

Interviewees were directed questions that have been categorized under three topics; assumptions on what constitutes knowledge, interactions within their department and interactions with other departments. Their answers were transcribed within the following day in order to adequately capture their answers and the context which accompanies these answers.

6.7. Analysis

Analysis is the stage research where the collected data is interpreted, examined or tested for evidence to draw conclusion in order to satisfy the research interests (Babbie, 2008; Yin, 2009). A robust analysis should pay attention to all the evidence and address all research questions (Yin, 2009).

As a qualitative study this paper will seek to utilize an interpretive method of analysis which in its strategy will be guided by the research proposition (Yin, 2009). In terms of

analytical tools, the data will be analyzed through utilize both simple pattern matching (and content analysis (Berg, 2001)) and explanation building as defined by Yin (2009). The rationale behind the mixed method is to identify the epistemological idiosyncrasies by matching their demonstration during interviews to the literary background of ideas. From there to launch an explanation on how these idiosyncrasies may be affecting the knowledge transfer project.

6.8. Validity & Reliability

For exploratory studies it is important to pinpoint the target group appropriate to the research interests. Otherwise the answer that is derived from the research can be too diffused and invalid. (Babbie, 2008).

Yin (2009) gives four points of assessment when judging the quality of a case study;

- Construct validity
- Internal validity
- External validity
- Reliability

Validity of research, at its heart, assesses if the body of a research is well designed to answer the questions it purports to answer. It primarily assess the research design as going from propositions and questions to logical method and conclusions (Adams *et. al.*, 2007). Construct validity inquires if the methods used in measuring really address the concepts that it purports to measure (Adams *et. al.*, 2007; Babbie, 2008; Yin, 2009). Secondly, external validity is concerned with the generalizability of the conclusions drawn from the research (Yin, 2009). Nevertheless these concerns are not relevant for the present research for it neither purports to measure any concept nor it is in search for generalization of its conclusions. Purpose of the present research is to explore the interplay of epistemological assumptions within departmental knowledge sharing context. Concepts and constructs

employed cannot be measured in real sense, and the conclusions it will present should wait for experimental verification before they can be generalized.

Internal validity inquires the viability of the inferential relations set by the research (Adams *et. al.*, 2007; Yin, 2009). This is an issue this thesis needs to address due to its aim in drawing parallels between context and epistemological assumptions, furthermore epistemological assumptions and knowledge transfer impediments. To ensure the integrity of the internal validity of the paper, inferences drawn from evidence should be evaluated in all possible aspects to minimize the risk of overlooking other variables and logical method should be sound to eliminate inferential errors. By using analytical methods of pattern matching and explanation building, this paper aims to improve the internal validity.

Reliability is generally concerned with the replication of the results. A reliable study should employ constructs and tools that would consistently provide similar results, even when they are employed by different individuals (Babbie, 2008). Objective of reliability is to eliminate biases and errors in the research (Yin, 2009). The clearly outlined research methods, data collection strategies and type of data utilized aims to establish the basis of replication and ensure the reliability of the research (Adams *et. al.*, 2007).

One of the crucial aspects of reliability comes into play when considering the “concepts” used in research (Adams *et. al.*, 2007). The definitions and operationalization of concepts utilized should address the real dynamics of phenomena and should also clearly defined for third party replication. This study will rely on its extensive literary coverage and proclaimed definition of concepts throughout the literature review. Furthermore as a means of support for the reader definitions of ambiguous concepts are appraised whenever applicable i.e. new concepts or definitions encountered through interview data. On the other various definitions of concepts such knowledge, information and data have been deliberately entertained as following rigid construal in this case would defeat the purpose of the study which primarily is interested in exploring these differences.

Another challenge to reliability comes in the form of objectivity or research bias. The possibility is always present where the various decisions taken by the researcher can affect the ability of the research to offer objective results (Berg, 2001). This issue can be countered by the transparency of the research conduct. Thus throughout the research methodologies the paper aims to describe the research conduct in details and map out the path followed by the researcher through various phases.

7. EMPIRICAL FINDINGS

This chapter aim to present the retrieved data through interviews in a structured and clear manner that will both intelligible to the reader and provide a foundation for further discussion. Findings will be presented in three distinct chapters as to follow research questions.

For the study of this thesis case company has been chosen as a European Multinational Corporation that operates in engineering and heavy industry. The company has operations in 50 countries worldwide and employs over 15.000 people. In 2012 the company recorded revenues reaching EUR 3.338bn of which 99% has been generated outside its host country. Due to privacy concerns and upon request the identity of the company and the interviewee whom belong to this organization will not be divulged here.

As explained in the research methodologies section 9 interviewees have participated in the study whom have been selected from three different departments; IT, Sale and Marketing.

Participants were chosen to reflect a regular background in their field whereas at least one department manager has been ensured participation to have access to the higher dimensional knowledge on both the operations of their departments and their interaction with other departments.

Respondents	Department	Position	Background
IT1	IT Department	Manager	Msc. Computer Science
IT2	IT Department	Specialist	Msc. Software Engineering
IT3	IT Department	Specialist	Msc. Software Engineering
SD1	Sales Department	Manager	Phd. Engineering
SD2	Sales Department	Sales Engineer	Msc. Engineering
SD3	Sales Department	Sales Engineer	Msc. Engineering
MD1	Marketing Dep.	Manager	Msc. Business
MD2	Marketing Dep.	Coordinator	Msc. Marketing
MD3	Marketing Dep.	Specialist	Msc. Marketing

Table 1. Classification of Interviewees

7.1. Justification

The findings that will be described in this chapter will be addressing the second question of the research problem:

- How do organizations justify beliefs and knowledge claims?

This chapter will look into the justification practices utilized by individuals in their daily tasks and professional challenges. As previously stated the analysis method will try and follow a pattern matching method where previously identified indicators will guide the research in ascertaining where each justification belief will fall in terms of categorization. Below table is intended to serve as a primal for reader to understand what the analysis will be looking for in the gathered interview answers when categorizing them. The criteria which constitutes this table is formed in respect to the ideas that have been discussed in literature review of the topic of Justification.

Review of philosophical literature has been condensed into definition of Internalism as having a purely reflective focus in justification (Pritchard, 2009) whereas Externalism is

identified with a process based focus in which the reliability of the process is more important than the rational argument that can be put forward for using it (Morton, 2003). Furthermore, Internalism is a justification style that is categorically individualistic. In contrast the qualities of Externalism favor a justificational process where the validity is defined as detached from the individual. It should be noted however that non-individualistic aspect of Externalism should not be equaled to decisions taken by collectives. On the contrary in a decision process the justification can also be inferentially focused even within a group, in which case the group should be practically examined as an individual body.

The criteria for identifying inclinations for the matter of Foundationalism and Coherentism is harder to define as there are only subtle differences between each approach. Nevertheless, this paper will try to investigate if individuals do differentiate between the chain of evidence and how they are structured. Thus Foundationalism will be reflected as having a stricter adherence to an evidential chain, whereas Coherentism will be defined as being open to a more flexible evidential chain which can be modified in respect to the context.

Finally, the analysis will follow a departmental focus as all gathered data will be grouped, analyzed and interpreted under by each department respectively. Thus the first analysis of justification will start with IT Department, then will be followed by Sales and Marketing.

7.1.1. IT Department

“I would say that we usually take logical decisions. When encountered with any decision the evaluation process should be a matter of checking the facts and if they add up, then I would say that the decision must be correct.” (IT1)

“Personally it would be helpful to see the on which basis the decisions have been taken, data behind it and how they argue for the connection.”(IT2)

As seen above all of the respondents from the IT department display a greater inclination for internal validation. The use of terms such ‘logical’ and ‘connection’ suggests an Internalist view of justification in which the justification process is evaluated by its internal integrity and rule following. The suggestion of internal integrity here can be integrity of the individual or a group since the focus is on if justification is validated within an inferential path.

The validity of a decision is evaluated by the strength of the inferential chain that starts from the evidence:

“...Any decision which can be communicated as a business case need to have strong foundations in evidence, that is an important part of daily decision making process.”(IT1)

Same tendency can be seen in the documentation processed as described:

“Documentation captures data that provides us valuable support in taking decisions.”(IT3)

Support derived from the data banks and other documentation in decision making has been divulged in a manner of individual process for validation.

Quotes below are valuable in documenting the primarily individualistic view of justification whereas also pointing to a malleable Coherentist approach:

“The validity of a knowledge should be evaluated on how it correlates with the knowledge of rest of the organization or the field. If a certain knowledge pops up

in India, then I would like to see if this is true for the rest of the organization.”
(IT2)

“When taking a decision over a body of knowledge, there are usually many factors that come into play in checking the validity of the knowledge in question. It can be evaluated by its source, its conformity with the rest of the knowledge in the field etc.” (IT1)

Although the above descriptions suggest an approach to justification by accumulation, the evidence for Coherentism is less conclusive. Respondents also displayed an equal appreciation for certain sources of evidence and how it should be observed:

“...a good knowledge should have firm grounds, the other option would mean that any contradictory data would make you shift your opinion without any good reason.” (IT2)

7.1.2. Sales Department

“...of course any belief that is held should be justified by the person who holds it.” (SD2)

“Seeking validation for any evidence or knowledge presented to you should be the rational option.” (SD1)

The view of Sales department also reflected a greater inclination towards justification as an internal process. Answer generally displayed a justificational preference for individuality and strong adherence to internal integrity of any belief or knowledge.

However, there have been also instances where the validation via a collective practice also appeared as viable to the respondents:

“I would trust my department more than I trust myself. If there comes a situation where my knowledge is contradicting the department, then I will seek to correct my knowledge before doubting my colleagues.” (SD2)

The collective and practical validation is especially favored when the knowledge regarded in question is more tacit and less structured:

“We are confident in the way we do things. (...) Our success in the field is a good demonstration that we are doing something right.” (SD1)

“...way of doing things is usually passed informally. There are documentations but there is always a freedom in their application.”(SD3)

Just as with the IT department, the preferences on the issue of Foundationalism vs. Coherentism comes out to be too ambiguous to pass a robust judgment. The answers display both preference for accumulative verification nevertheless maintaining a strong adherence to few sources.

“...it should be impossible to tell where my beliefs are grounded. You can always connect one to the other.” (SD3)

“Of course most of my beliefs are due to stuff read and learn (...) sometimes stuff you learn somewhere can be contradicted or changed of course.”(SD1)

7.1.3. Marketing Department

“...in marketing if the data appears to support your practices, then there is no reason to doubt your practices.”(MD1)

“I do find sometimes hard to justify what I do. You learn to deal with the tasks at hand through very little initial knowledge. After a while your experience seems to guide you.”(MD2)

Justificational preferences displayed by the participants mainly signal towards a more intuition and practice based approach that has a balance of collective and individualistic elements. In questions of daily practices marketing department members appear to rely heavily on their intuitions rather strict evidential inferences.

The focus of individual practice is primarily based on applying individual judgment through experience and relying less on procedural concerns:

“In our work you need a high cultural awareness. This cannot be learned through books. You need to go out there and learn local customs by observation and paying attention to details.”(MD3)

Another indicator occurs to be that marketing participants appear to seek more confirmation from their colleagues which has not come up in discussions with IT personnel:

“We do need to act as a team, otherwise there is no point in implementing any strategy. (...) Communication between parts of the department is very important when it comes to using our expertise as efficiently as possible.”(MD1)

The answer regarding the topic of Foundationalism/Coherentism have been predominantly balanced or too ambiguous to reach a clear distinction as has been the case with previously analyzed departments. Answers show an appreciation of collective justification of data however show a preference for dominant source for anchoring the verification.

7.2. Epistemological Assumptions

The findings that will be described in this chapter will be addressing the second question of the research problem:

- Do firms span different epistemological assumptions?

Thus the findings will aim to present the various responses that have been collected in interviews and their categorization by matching the context of answers in regards to given criteria. Categories applied in the analysis of the findings have been derived from the relevant literature as it has been introduced under the literature review. Table given below will delineate the specific categories for epistemological assumptions and criteria for assigning them to the respondents.

The categories in analyzing the epistemological assumptions are Objectivist vs. Process Oriented, and Individual vs. Collective. These categories have been mainly based on the argumentation put forward by Tsoukas (2002) and Cook & Brown (1999). Category of Objectivist describes that assumptions which put priority on the abstract, structured and codified knowledge. It is a direct extension to the epistemological perspective taken in the Epistemology of Possession as described in the literature review. Opposing it in assumptions is the category of Process Orientation which is captures the tenets of Epistemology of Action. This perspective values the tacit knowledge that is primarily a phenomenon of action.

Second categorization comes in the shape of Individual vs. Collective approaches to knowledge. As described in the literature review individual or collective perspective can emerge independently from the categories of Objectivism or Process Orientation. Although many researchers seem to associate individual perspective in knowledge as primarily a phenomenon connected to Objectivism (Blackler, 1995; Schneider, 2007; Nooderhaven and Harzing, 2009), the fact is that the first person is also a crucial part of phenomenology as given in Polanyi and Heidegger. Furthermore Cook & Brown (1999) applies collective perspective to both Objectivist and Process Oriented approaches. Finally the chapter will follow the same method of the previous chapter as it will group, interpret and analyze all answers in respect to the departments each participant belongs.

7.2.1. IT Department

“Knowledge is information where you know about how things work, how to do things correctly.” (IT1)

“Knowledge is the core of this company, the knowledge that is possessed by the employees...” (IT2)

“A lot of knowledge sits in the head of specialists like me.” (IT3)

Responses of IT department participants point to an understanding of knowledge that is predominantly Objectivist, as their views reflect their belief that knowledge is something that is possessed by employees. It is important to note that this perspective is also bolstered by the company mandate which stipulates all important process knowledge be documented and stored through the utilization of the company Intranet. Furthermore company in their guidelines encourages the use of Intranet for knowledge transfer purposes and promotion of interaction. IT department also has under their operations a separate documentation tool that is similar to company Intranet. This tool is used specifically for IT department’s needs and consist of highly detailed and complex data only intelligible to IT professionals.

Interviewee IT1, who serves as a global operations manager in IT operations, describes the vital role of Intranet and documentation in preserving knowledge within the company:

“In IT we aim to document every procedure very clearly and in detail, so if we lose a key person, another person can come in and take over the position without much problem. We try to be less dependent on individuals but keep a process and documentation based structure.” (IT1)

The vital positioning of Intranet is also reflected in the comments of the IT specialists:

“One of the main tasks of my work is to deal with knowledge sharing with the external organization. We mainly achieve this by streamlining and updating our intranet and education other employees on how they can use it effectively.” (IT2)

“Our main focus when it comes to knowledge sharing or change management is documentation. Other means are all complementary to this task.” (IT3)

The view of knowledge as primarily being an asset possessed by employees is reflected in the view of how knowledge transfer, sharing and learning occurs in the company.

Knowledge transfer can be reduced to gathering information through mail correspondence whereas learning is defined in terms of gathering abstract, codified information through databanks, websites or other available resources.

“Reading emails constitute a big part of my day. I get copies of minutes from meetings or updates in new developments that are going on in the company. These emails also constitute a greater part of the knowledge sharing interaction. I wish I had more time to read and gain more knowledge but you have to prioritize certain things more urgent to your work. Some people just want to read and learn more but it is quite impossible to learn about what everyone is doing and what is new in an organization of this size.” (IT1)

Nonetheless the different aspects of knowledge are not completely ignored. Findings do not hint an understanding of knowledge that categorically conceived as abstract knowledge. The importance of tacit knowledge and complications of capturing its essence is duly recognized. Furthermore it is understood that tacit knowledge can be better transferred by application, training and collective interaction:

“Certain types of knowledge such as knowledge of a market is hard to capture in documents.” (IT3)

“Of course it is very hard to transfer all the knowledge through documents and mails. We usually try to support these by arranging training sessions and workshops where people can come together and go through their tasks.” (IT2)

Notwithstanding the recognition given to tacit knowledge, primary drive in knowledge management in IT department emerge as documentation and procedural abstraction. This is also not surprising when we acknowledge the demand for hard deductive drive and inferential integrity demanded for justification. Deductive inferences would beget abstracted knowledge for their function.

When it comes to conception of knowledge as a collective or an individual effort, the quotes previously use as indicators for Objectivism also point to an understanding that is inclined to view knowledge as an individualistic phenomenon. One interviewee fails to recognize communication or overall interaction as a facilitator for knowledge exchange or idea creation:

“I don’t think acquaintance plays a great role in my daily interactions. Communication can be a little less efficient but I believe we can still understand and exchange ideas with a person whom I haven’t met previously.” (IT2)

However responses from other interviewee can be interpreted as contradicting this sentiment:

“There is a lot of interaction in our area. It is mandatory to get things to work. Relationship between people is very important when you need to achieve successful results.”(IT1)

*“A lot of the work is done in teams where there is a lot of formal and informal interaction. This helps when it comes to knowledge sharing and idea generation.”
(IT3)*

Finally another reply also hints that IT department personnel often prefers to work individually which is also reflected in the organizational structure of the department which favors specialization and individual operation:

*“It usually goes this way that when a problem needs to be tackled or a question is need of answering, somebody will send out a mail or a message to a group of people who will then submit their own views on the issue. Finally if the problem is more complex, everybody will come together to discuss and settle the matter.”
(IT1)*

The data gathered thus I believe points predominantly to an Objectivist and Individualistic conception of knowledge possessed by IT department. Although there have been recognitions of value towards tacit knowledge and collective application, they seem to be subdued in their power compared to emphasis given to codified knowledge and individual expertise. Another point that is worth mentioning is that the concept of Actions as knowledge work has been almost none existent in the talk with IT department individuals. Only occasions when application and action as part of valuable knowledge work has been during the talks regarding trainings.

7.2.2. Sales Department

“Knowledge is what we have here in our documentations, procedures and most importantly the knowledge possessed by individuals.”(SD2)

“...expertise of individuals is valuable to us, they are the one in the field and taking decisions. We have to trust their judgment.”(SD1)

Responses of Sales department also point to an understanding of knowledge as a possession. Documentation and supply of data on critical matters appear to be vital to the sales department as a whole. Both tacit knowledge and abstract knowledge have been mentioned as being important to operations. Reflections of the manager, who is identified as interviewee SD1, emphasizes the key role of tacit knowledge that is possessed by the sales personnel operating in market awareness and customer negotiations. It is readily acknowledged that these type of knowledge cannot be easily transferred to other persons or communicated in objective terms such as documentation or reports. Therefore many of the procedures taken in the sales operations are expected to be highly contextual and reside in individual minds:

“No, I don’t think we can teach any one of our employees to function with same efficiency in an area that belongs to another colleague. (...) Documentations or training would certainly help, but how to navigate in the market is a skill that you gain (...) sometimes people even never do.”(SD1)

Aside from the importance of tacit knowledge, codified knowledge and abstracted guidelines also appear to play an important role:

“Correct documentation and data is undoubtedly important. We need correct information on market dynamics, our competitors etc.” (SD3)

“We do keep a lot of documentation. It gives us possibility to track changes in the market or how our relationship can be developed with a customer.”(SD2)

Due to the nature of the product sold which requires high level engineering expertise in sales positions, the amount of structured information required in terms of documentation and blue prints appear to put importance on having access to structured data. Use of Intranet and its importance to the daily operations and knowledge management is also emphasized:

“...Yes, Intranet is a valuable tool that we use very often. All our documented data is stored there for the access of all sales personnel.”(SD1)

“I do go to Intranet often to seek for information to answer my questions. (...)IT tools are important for us, especially in reporting purposes. The information we gather through these tools inform our decisions.”(SD2)

When considering the unit of operation, although previous statements of respondents appear to point to an individualistic understanding, their description of knowledge sharing practices paint a pictures that required greater collective action:

“In our daily work we try to communicate and ask for each other’s help. (...) Our method of operation is mostly the same which is informed by guidelines.”(SD2)

“Our operational guidelines are shaped both with data and personal insight. (...) We depend on our employees and colleagues to share their expertise with us when it comes to taking the right steps.”(SD1)

Sharing of stories and experiences are also deemed valuable insights for sustainable success:

“If by stories you mean sales information and key factors, then yes we do talk to each other and share the details of a sales process.”(SD3)

“Sales expertise is an important skill that needs to be shared with rest of the department. (...) Our senior engineers are encouraged to share their expertise with their colleagues in discussions and workshops.”(SD1)

Finally, Sales Department on the whole presents a picture that is both Objectivist and Process oriented in view of their knowledge while being collectively focused when it comes to knowledge management. The emphasis given to tacit knowledge can be argued to signal a dominantly Process Oriented perspective but the overall understanding still lacks concept of knowledge as a matter of application rather than an asset possessed in individual minds.

7.2.3. Marketing Department

“I do what I do, it is quite hard to put into words why I think our department is successful, or our organizations is better than our rivals.”(MD2)

“Intuition and insight is important to us. Market trends, customer preferences and industry dynamics can change faster than you can capture through data analysis. (...) Good marketing relies on the skill to be able make accurate distinctions.”(MD1)

Marketing department appears to have an inclination to knowledge that is more grounded in practice. The requisite for documentation appears to be minimum and the knowledge seen as being predominantly tacit which is informed in practice and communication describes an understanding that is Process Oriented. Key value of the department is described in terms of its culture and operational activity that is centered on the expertise of its personnel:

“We interact extensively both with internal and external customers. This is the best way to keep an accurate perspective.”(MD2)

The focus of knowledge management is on communication and context sharing which is informed both externally and internally. The emphasis on documentation appears to be minimal:

“We do use some documentation for our processes and information storage. These can be valuable resources. (...) We also do rely on external data sources, magazines and consultants in our operations.”(MD1)

Need for structured data is especially present concerning market information gathered through internal operations and external vendors:

“We do keep track of marketing data... There are tools we use internally that informs us of the company perspective. Then there are also external resources which keeps us updated periodically or when we want to purchase information.”(MD2)

Nevertheless the role of structured data appears to be complimentary to the tacit knowledge required in marketing decisions. Intranet and other IT tools for communication and information sharing are also viewed as a valuable tool in communicating certain structured data:

“Intranet is helpful when I need to search for a certain piece of information.”(MD3)

“For our conferences we make good use of video conference tools. Otherwise it is quit impossible to maintain communication in a global organization.”(MD2)

Unlike IT department the general culture and structuring of the department appears to favor collective working. Both procedural and practical decisions are taken relying on the intuitions and tacit knowledge as much as abstract data which is evaluated within the context provided by the preceding. Knowledge is viewed as a share entity of the whole department rather than something that is possessed in individual minds.

Although individual judgment and knowledge are stated as important, collective knowledge is hinted to be the underpinning premise for these judgments. These answers also correlate with the findings that have been described under Justification which portrayed the department as more collectively focused.

7.3. Effects on Knowledge Transfer

The findings that will be described in this chapter will be addressing the second question of the research problem:

- How do epistemological assumptions affect knowledge transfer process between organizational departments?

This chapter will aim to investigate and interpret the possible effects of epistemological differences on knowledge transfer process as identified in previous chapters. To this end the findings will be presented to allow utilization of the technique of explanation building as defined by Yin (2009) in later analysis. As given this technique being similar to pattern matching as employed in previous chapters but is conducive to idea development and hypothesis generation. Considering the hitherto unexplored effects of epistemological differences in knowledge transfer and ambiguity of the subject at hand this content focused technique emerges as more suitable for the task. Hence findings will structured to allow later interpretation to draw ideas on “how” and “why” certain effects have been observed. Moreover this approach will also generate a foundation for further studies as the ideas given in analysis can be utilized as hypothesis for testing.

As different to the preceding chapters of findings, this chapter will not be structured around departments but will take a holistic approach to present the contingent answer together regardless of the respondent's department. Furthermore it will group the answers through the lens of characteristics of knowledge which have been identified in the literature review section as being connected to epistemological assumptions. These characteristics were Causal Ambiguity (CA), Absorptive Capacity (AC) and Arduous Relationship (AR).

Finally the reader should also be reminded that thesis will not evaluate these characteristics in isolation, but try to take into account their interplay in process.

7.3.1. Findings of Knowledge Transfer Impediments

All interviewees from all three departments in analysis have been unanimous in their view of knowledge as an entity that is hard to transfer. These replies are generally a reflection on Causal Ambiguity characteristic of knowledge. This shouldn't come as a surprise as CA is the most prominent characteristic as duly cited by literature:

"Knowledge within the department is the most crucial tool in our success, I think it would be hard to replicate for our competitors."(SD1)

"...Unfortunately it is hard to transfer what people know from one brain to the other."(IT1)

"...What we call a marketing prowess is hard to replicate, needs years of experience to get to that point."(MD2)

Another common point of agreement is the frustration in transferring knowledge. Especially in the case of IT department communication difficulties with other departments appear to surface:

“It happens often that when dealing with another department we would be talking past each other.”(MD1)

“We always need to change the nature of the data we present when we are communicating them outside the department.” (When asked if there is anything lost in the conversion process) “Well, I think we lose the certain insight that the data represents which we need to communicate in different ways to remedy this loss.”(IT3)

“I have more trust in our department’s communications compared to the rest of the company. I feel more comfortable dealing within our practices and information channels.”(SD1)

Respondent IT3’s answer is quite illuminating in terms of displaying the interconnectedness of AC and CA. Further answers also suggest that background plays a key role in transferring knowledge especially when it comes to highly specialized structured data:

“I think people in our department are more effective when it comes to using the intranet. Certainly that has to do a lot with our technical background in using these tools.”(IT3)

“It is sometimes frustrating to see when other departments fail to see the benefits or the drawbacks a tool or a system we try to introduce. We try to communicate these points as well as we can, however it is sometimes not possible to agree on what constitutes a benefit. Sometimes other departments just have other demands in mind.” (SD2)

Above point emerges as a surprise because throughout literature there has been no real observation made in respect to the type of data when it comes to highly specialized knowledge. The line is often drawn at tacit knowledge as being highly contextualized

should be hard to transfer. However interviewee's from Marketing Department display greater discomfort with IT tools and practices compared to IT and Sales Departments:

"I do prefer reading explanations in words to numbers and schematics that I can barely understand. Dealing with IT guidelines can be difficult at times because of this." (MD3)

"If I have a task at hand that needs IT or engineering input, I usually do not require further explanation or validation but prefer trust the expertise of the persons from these departments." (MD1)

"I am generally happy with the IT tools I daily use. We are mostly able to get the required support from IT when we require it." (SD1)

"I do feel that in certain trainings we give employees from other departments usually overlook the rationale of how things work but simply focus on executing the sequence of tasks that will achieve their goals." (IT2)

Nonetheless that agreement over difficulties concerning knowledge transfer and its frustrations appear to be unanimous, what departments identify as underlying problem and its solution appears to be diverge when it comes to IT department. While the focus is on documentation, the rest of the organization prefers partnerships. It is also interesting to note that IT training for global organization reflects the interactive preferences of rest of the organization:

"One way to improve the knowledge sharing practices in the global organization can be achieved through updating the outdated information on the intranet." (IT2)

“The training for any IT tool is primarily handled through SuperUsers whose responsibility is to disseminate this knowledge throughout their respective departments.”(MD3)

“I think it would be more helpful to have a greater knowledge of how other departments function, what are their problems when dealing with our processes (...) by communicating we can better understand what we each want and compromise.”(MD1)

“Good training should encourage the learner to participate.” (SD2)

These disparate view are also bolstered by the secluded role the IT organization appears to prefer in the organization:

“I see our department has a generally different working style when it compared to other departments. We are more structured and pragmatic in dealing with problems we face.” (IT1)

“An important medium where we share knowledge through organization is our Sharepoint structure where most documentation on how to do things are stored.”(IT2)

“IT being a very technical area our department is structured very differently compared to the rest of the company. I think it can be isolated from the rest in terms of the knowledge we are dealing with.” (When asked to clarify the isolation)

“Well we can work without much interaction with the rest of the organization. We just need to make sure everything works. For most people in our department it wouldn't matter if we sold cars, cement or soft drinks.” (IT1)

Apparent communicative gap is also indicative of the Arduous Relationship that presents itself within the organization when dealings with IT department is concerned. Thus, what appears as causal ambiguity in the beginning, in due process, at a deeper level encompasses problems relating to background and contextual aridness which is exacerbated by the Arduous Relationship between departments:

“I don’t usually meet many people from the IT department. We only interact when a need arises. As a support function, they are the problem solvers. (...) if there is no problem, there is no need to call an IT guy.”(SD2)

8. DISCUSSION

This study aimed to explore the epistemological assumptions and their effects on knowledge transfer process in an organizational setting. The belief of this paper at its outset was rooted in Nonaka and Takeuchi (1995) who argued that philosophical inquiry should precede any exploration of knowledge in organizational sciences. The very sentiment was also shared by others who intended to unearth its philosophical foundations (Spender, 2006; Spender *et. al.*, 2007), describe landscape of ideas (Assudani, 2005), introduce new ideas Blackler (1995), challenge established concepts Tsoukas (1997) and revitalize its understanding Cook & Brown (1999).

Nevertheless it is an agreeable suggestion that the philosophical aspects of knowledge managements has been understudied. As a remedy to the ambiguous concepts (Von Krogh, 2009), insufficient abstractions and general clutter of frameworks, a renewed interest in epistemological undertaking has been prescribed by (Schneider, 2007; Schreyögg and Geiger, 2007). This paper aims to fill a portion of this gap in its exploration of epistemological assumptions by analyzing hitherto unattended effects that can observed in the process of knowledge transfer process.

In its aim the research questions that have guided this study were:

- 1) How do organizations justify beliefs and knowledge claims?
- 2) Do firms span different epistemological assumptions?
- 3) How do epistemological assumptions affect knowledge transfer process between organizational departments?

Following chapters will discuss the findings to above questions under headings of Epistemological Assumptions and Knowledge Transfer Process. First heading will try and recapitulate the different epistemological assumptions encountered in findings, and will attempt to form general ideas on what may be the underlying factors for their emergence. Second heading will attempt to analyze how different characteristics as defined in

knowledge transfer process could be affected by these assumptions. In both cases the analysis will aim to use the lenses of epistemic systems analysis of Goldman (2009b).

8.1. Epistemological Assumptions

Extant research is populated with myriad attempts to describe what constitutes the best framework that can accurately describe the organizational knowledge, its transfer and sharing. These studies in their understanding aim to remedy the problems associated with knowledge and its transfer. Nevertheless it is the case that researchers disagree, sometimes dramatically, on what constitutes knowledge, what types of knowledge there is, their values and best method of their exploitation. Therefore it is surprising that we should assume knowledge workers as described by Drucker (1959) should view indifferently the different types of knowledge they process daily.

In support of this belief and the initial proposition of the research, findings present a disparate set of beliefs held by individuals coming from different back grounds and departments. This finding also parallels the argument of Cohen and Levinthal (1990) that individuals and departments possess a proclivity towards the knowledge they are familiar with. Although in their article this relationship is described in terms of content, the preferences when it comes to type of knowledge also appears to follow the same pattern. IT department, as a collective, displayed a preference for scientific data that is processed and verified through logical connections. This Internalist approach also appears to beget an operation that is primarily focused on individual and revolved around structured data. As described the epistemological underpinnings of IT appear to be built on Cartesian thinking and the tradition of knowledge management which construes knowledge as an asset and demands for more scientifically and logically verified structured knowledge.

Departmental structure of IT also reflects their understanding thus far. The drive for documentation, efficiency and measurement underpins the cultural space. Furthermore demand for inner reflection and personal inquiry further demonstrated in a structure that emphasizes high specialization in tools and individual working what has been described

as isolated from the rest of the organization. Thus IT department studied in this paper appears to be a good replication of scientific society described by Bell (1976).

On the other Marketing and Sales departments display greater similarity. Their preferences both involve an appreciation of expertise that is unverifiable and codifiable in scientific terms. Findings suggest a view that is practice oriented much as described by Polanyi (1958) and Heidegger (Wheeler, 2011). Marketing department showed that they make a good use of collective application of their knowledge through their departmental structure and processes. Expertise demonstrated in application is valued and also preferred as knowledge sharing method within the department. First point is demonstrated in their acceptance of external justification while latter is observed in their collective and inclusive training methods.

Nevertheless the Sales Department appears to be more individually oriented of the two. This can be attributed to their engineering background which demands to expertise in employing and interpreting structured knowledge as blueprints and measurements. Furthermore it can also clarify why Sales Department shows greater appreciation for codified knowledge and tools that enable access to them.

Finally, apart from presenting differences in epistemological preferences, the findings suggest a deeper connection between epistemological assumptions and individual or department employing it. Just as it is suggested that using a tool serves an epistemic function of its own Cook & Brown (1999), findings in this paper points that knowledge itself when viewed as a tool shapes and changes the beliefs and practices of the individual or department who employs it.

Furthermore the connection between departmental structure and epistemological beliefs appears to be reciprocal in its relation although asymmetrically dominated by the latter. In an interpretative qualitative study it is a pitfall for the research to draw any causal relations too readily (Yin, 2009). However as suggested above type of data and the associated processes it begets appears to give shape to departmental structure on primary

level. In addition to the structure as set reaffirms the preferences and shapes further implemented processes accordingly. Of course this is not to argue for epistemological assumptions as the only determinant in departmental structure. Other variables such as the nature of work, organizational strategies, culture, financial constraints and others will undoubtedly play a role in shaping the structure of a department and how it functions. Nevertheless findings of this paper points out that epistemological assumptions should also be considered as a contributing factor.

8.2. Knowledge Transfer Process

Since knowledge has been recognized as a valuable resource and primary driver of competitive advantage, knowledge transfer and its treatment has been a focus of the research (Szulanski, 2000). In the pursuit of ascertaining its functions and dynamics, researchers have identified various variables that contribute to the overall process of knowledge transfer.

Many of these variables were used by Szulanski (1996) under a measure which he coined as *Stickiness* in order to designate the degree of difficulty a knowledge transfer process is expected to encounter. This study as previously stated uses three of these variables which have been identified as Szulanski (1996) as primary contributors to *Stickiness*.

Findings of this study suggest that epistemological assumptions as informing the primary characteristics Causal Ambiguity, Absorptive Capacity and Arduous Relationship shapes and determines the context through meaning, ease of communication and type of knowledge. This approach can be best observed when we see the logical progress of answers as given in the chapter Effects on Knowledge Transfer under Findings. Important factor to see here is that each answer reflecting on one characteristic of knowledge transfer process appears to inform the other. Henceforth the contention is that all these three measures of stickiness should be employed dynamically.

To better elucidate the point, respondents from Marketing Department displayed a greater measure of causal ambiguity when approached for specialized and structured scientific data. It is my contention that this measure of ambiguity is underpinned by their epistemological assumption which is biased for narrative. Furthermore through departmental structure and Causal Ambiguity the Absorptive Capacity of Marketing Department for any similar type of knowledge should be expected to decrease. Thus when faced with the challenge of transferring knowledge while interacting with IT Department whose isolated structure and Internalist logic clashes with Marketing Department also appears to generate a higher degree of Arduous Relationship between parties.

Hence as each characteristic appears to inform a part of what constitutes context. This finding furthermore supports the approach that put context as the primary facilitator of knowledge transfer (Shariq & Vendelo, 2011). A drawback to arguments here would be if Causal Ambiguity as defined is a spurious concept as argued by Powell *et. al.* (2006). In my view this would indeed overthrow the link suggested between three characteristics and leave Absorptive Capacity as sole measure of context.

Finally this paper would suggest interpretation and analysis of characteristics of knowledge transfer process through a holistic method. As stated the section of literature review, the characteristics defined should not be analyzed as being isolated to one of the constituents of communication process as pictured in Signaling Metaphor. The interplay between characteristic as outlined above appear to be a justification for looking into how context can be defined in dynamic terms and what sort of further dynamic relations a longitudinal study of knowledge transfer can extricate.

9. CONCLUSION

In the last chapter of this paper, the study will be analyzed for its weaknesses and limitations. Furthermore it will aim to inform the contributions that were made to literature and managerial implications for practice.

9.1. Limitations

As a qualitative study conclusions of this paper is not conducive to generalization. Findings and conclusions drawn from them should be considered as pointers for further examination and verification. Scope of this study has been limited to one organization as constituting its case and its departments when utilized as embedded subcases. Thus conclusions should be considered valid only viewed through this scope. Furthermore as an explorative study the frameworks used by the research have been borrowed and reinterpreted through previous studies which have dealt with the same topic. Hence there is always the possibility of compromise when it comes to internal validity.

Secondly this study has failed to draw any meaningful conclusion from the analysis of Foundationalism vs. Coherentism under epistemological assumptions. Partly due to the ambiguity and similarity drawn between two concepts, and also owing to vague definition of criteria of their application has rendered their operationalization ineffective.

In analysis, the inferential relations drawn between organizational structure and epistemological assumptions is tenuous. The findings mostly inform their interplay and suggest a direction of influence emanating from assumptions themselves, however as stated in the discussion there are various other variable that could have contributed to this apparent interaction. Confirmation of the hypothesis requires a further targeted study with a robust constructive and external validity.

In addition study was unable to make a distinction as to emergence of context as informed by characteristics of knowledge process defines through individual or collective locus. Literature as presented earlier is also tentative in their arguments as to where the locus of context lies.

However this study would incline for its source as the collective given the discussion of organizational context emerging via interaction with epistemological assumptions of the collective.

Finally, as conducted through semi-structured interviews, the data and its viability relies heavily on the skills and intuition of the interviewer. Acknowledging the fact that this was the first such series of interviews conducted by the researcher, the data acquired can be limited in their quality.

Additionally data collected through interview are strictly anecdotal and can be contaminated with personal biases of the respondents. Further experiment will be needed to confirm the views as explored in this thesis.

9.2. Managerial Implications

This study draws attention to the variety of epistemological assumptions an organization can span. Thus it should provide valuable insight to managers of any professional field when dealing with any interaction that involves exchange of information, data or knowledge. The findings point out the importance of these assumptions in shaping the climate of organizational knowledge management and sharing.

The study shows that these epistemological assumptions can be the cause of frictions and impediments when knowledge transfer is concerned. Thus it suggest that manager pay attention to the type of knowledge, justification processes, evidence awareness and logical inclinations that pervades their departments and organizations. As discussed the

preferences on these variable can greatly influence how a department approaches an interaction for knowledge transfer. Moreover the study concludes that departments with divergent epistemological assumptions can experience greater difficulties when involved in communication with each other. Henceforth it should be the manager's responsibility to anticipate the possible sources of problems and address them through affecting the type of data, organizational structure and justificational methods while trying to close the separation between parties.

9.3. Theoretical Implications and Suggestions for Further Research

This study has contributed to research in its extensive stud of literature to ascertain the philosophical foundations of current knowledge studies, and bring together different ideas to explore their emergence in the organizational context. It attempted to portray the gaps, contradictions and misconceptions extant in current research as well as trying to benefit from the suggestions and resources provided in the field of knowledge management.

Findings of this paper found that there is indeed an array of different epistemological assumptions held by individuals, and these views correlate with rest of their colleagues that they share their workspace as in a departmental structure. Through this finding it also showed that the knowledge can be utilized and construed as a tool in itself. Moreover it identified a possible correlation between epistemological assumptions of departments and their structure by the collective application of these assumptions in practice.

Finally this paper championed a novel way of approaching the analysis of Knowledge Transfer process that is holistic in its nature. Knowledge transfer has been often analyzed in differentiated categories that correlate one characteristic with a limited number of members in the communications process. On the contrary analysis in this research suggests that there are different and valuable perspectives that can be gained through the holistic analysis of process and its constituents.

As for further research, firstly there appears to be an opportunity in conducting a multiple-case study in an experimental study in order to confirm the conclusions drawn from this thesis. Especially connections appeared between organization structure and collective epistemological assumptions needs experimental validation. Likewise holistic approach to knowledge transfer process should be evaluated through a longitudinal case study to test the strength of this framework in application.

In addition, researchers should divert more attention to studies under Social Epistemology. Methods and frameworks offered by philosophers and social scientists in other areas who study communities can give valuable insights into tools that can be applied in management studies. This study attempted utilization of one such tool to generate new perspective in a limited study. More advanced studies and researchers with greater skills should be able to better operationalize constructs involved to gain far better insight.

Finally, knowledge transfer field should focus on the field of data visualization. This flourishing field offers valuable tools and approaches in its aim to provide structured data with malleable context. It is this paper's author's belief that future of knowledge transfer will be at least to a partial extent driven by the studies in data visualization.

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