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**STRATEGIES TO ENSURE
ORGANISATIONAL LEARNING TO GAIN
COMPETITIVE ADVANTAGE IN GE**

By

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A Management project presented in part
consideration for the degree of 'General MBA'

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Abstract

A considerable amount of thoughtful literature suggests that organisations with learning capabilities can gain competitive advantage over rivals. Much of this literature is divided into providing description of learning process led by Argyris and his notion of learning loops, the other proposes a set of management practices to build learning organisations led by Senge. This dissertation's main contribution is to provide structured information about the recommended approach as well as best practices to build a learning organisation. It will examine the extent to which organisational learning concepts and disciplines, developed by Argyris and Senge, could be implemented and practiced in the day to day business and which are elusive. A case study is performed as a way to examine this in GE Company. A limitation of the study is the small number of interviews conducted to develop the case study; hence, generalisation would not be feasible. Moreover, the project has not measured the performance of the company under study to validate the competitive advantage, but the case study was carried out on a company that is well-known by its learning capabilities and recognised as a learning organisation.

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Introduction

The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn.

Alvin Toffler

According to Toffler's statement, companies have to utilise their resources by building future competencies and capabilities, in order to be able to move toward their desired future and as acknowledge, learning is paramount in the 21st century. Before launching on their endeavours, companies should first understand how to learn, unlearn and relearn as Toffler stated.

This dissertation is concerned with how organisations approach learning, and examines how learning organisations are more competitive and better performers than their rivals. The scope of this project will be General Electric (GE) – Health Care Services, which succeeded in applying organisational learning concepts. In the last two decades organisation learning has grown to such an extent that it can be described as institutionalisation of a body of knowledge. Hence, writing about this topic requires sufficient knowledge about organisational learning disciplines. Many organisations today recognise the benefits of being a learning organisation, but they do not know how to become one. By first demystifying and then operationalising the process, by which organisations learn. David Garvin makes a significant contribution by his article "Building a Learning Organisation". On the other hand, despite the importance of knowledge and learning as an asset, few organisations truly understand what it means to be a knowledge-based firm and how to manage to achieve competitive advantage.

Numerous books, researches and articles were written about organisational learning (OL) and how to implement its concepts in organisations. However, when it comes to real implementation, limited practices are presented. Furthermore, various case studies were written

on how organisations implemented OL concepts and became learning organisations (LO). Argyris points out that the success in market place increasingly depends on learning, yet most people do not know how to learn (1991).

The aim of this project is to clarify how organisation could ensure organisational learning to gain competitive advantage. The project will attempt to examine whether there is a positive link between learning capability and competitive advantage. Literature on organisational learning suggests that companies with high learning capabilities can gain competitive advantage. The argument is that learning organisations are better at innovation and at generating new knowledge for solving problems. Learning organisations, as claimed by numerous researchers and academics, are not afraid to experiment with new ways of doing things. Such practices, as described by Goh and Ryan (2008) will give organisations better capabilities to keep ahead of competitors. To validate the latter, a case study on GE is carried out, and the results presented to address these hypotheses. Other research questions that tackle gaps in literature of organisational learning field such as investigating the extent to which corporate level organisational learning policies and practices are translated into business unit policies and practices are included. A list of all research questions is included in (Appendix B).

The project is organised in four main chapters. The scope of 'Chapter 1' is a literature review of what have been written in the field of organisation learning. At the outset, it will offer some definition of some terminology that will be used in the project to create a common understanding, such as competitive strategy and competitive advantage, linking those to the learning in organisation. Then drawing a distinction between two common terms used interchangeably in organisational field, which are 'organisational learning' and 'learning organisations'. It will then present various standpoints and opinions of recognised researchers, writers and practitioners regarding characteristics of the learning organisations and the processes of organisational learning. The purpose of 'Chapter 2' is to describe the two frameworks that will be used to analysis the results of

the case study enclosed in 'Chapter 4'. Next, 'Chapter 3' describes the methodology followed in the project. Chapter 4' includes the case study done in GE. 'Chapter 5' comprises a discussion and analysis of the results. The concluding section will identify the main findings and will offer recommendations that would benefit organisations endeavours in building or improving their learning capabilities

The information in this dissertation may be of interest to researchers and practitioners working in organisational learning and related disciplines. It is also applicable for people involved in planning and initiating organisational learning within their companies. Non-technical management and those wishing to increase their knowledge in the area of organisational learning may find this document useful as well. This document assumes some knowledge of strategic management.

Chapter 1: Literature review

The organisational learning literature includes significant number of debates about learning in organisations and its different approaches and concepts (Huber, 1991; Easterby-Smith *et al.*, 2000; Easterby-Smith *et al.*, 2008). While the body of the literature on both, the applied research and the academically oriented research of the subject is growing, the debates remain surprisingly confusing (Nevis *et al.*, 1995). The two research streams take divergent approaches. One provides a description of the learning process – Argyris' notion of single-loop and double-loop learning. The other proposes a set of management practices or approaches to building a learning organisation – such as Senge's five disciplines, De Geus 'Living Company' and Garvin's 'Learning Organisation' (Goh *et al.*, 2008).

Those two streams have their proponents and opponents and were reflected in the literature and the debates started at the fundamentals and definitions. The basic questions started with 'What is a learning organisation?' and 'how can an organisation learn?' The next section is concerned with the definitions of 'Competitive Advantage' and 'Organisational Learning' and goes to the core of the difference between 'Organisational Learning' and 'Learning Organisations' in literature and in practice. It will then outline two different approaches to learning, which will be the framework used in this project. Those approaches are the notion of the single and double loop learning put forward by Argyris and Schoen in 1974. The second framework is Senge's five disciplines of learning. Those disciplines will be explained and described in the context of the organisational learning and learning organisation. Links to various strategy approaches to gain competitive advantage will be also highlighted.

ARE ALL ORGANISATIONS LEARNING SYSTEMS?

The literature on organisational learning suggests that learning capability can be built only over the long term, and the benefits can only be gained, if the learning capability is sustained over time (Goh *et al.*, 2008). De Geus (1997) had similar idea that companies, which are good at learning, could reach a life span of two centuries or more. He portrays those organisations as 'Living Companies'. Similarly, Collins and Porras (1994) had the same notion that companies that lived for more than seventy years and possess certain traits could be characterised as visionary companies. Some of those traits are part of what Senge (1990b) consider as the five disciplines that are required for building a learning organisation. Furthermore, Goh's research (2008) identified sixteen companies that are renowned as learning organisations. Interestingly, eleven out of those sixteen companies identified, were acknowledged by Collins and Porras (1994) as visionary organisations. This might draw the attention to the point that all companies, especially the visionary ones, engage in some form of collective learning as part of their development. In addition, it might also lead to a hypothesis that long lived companies are learning organisations even if they are unaware of the learning they accumulate over time.

COMPETITIVE ADVANTAGE

Today's business environment is characterised by dramatic increases in competition, customer expectations, and the rate of change. Successful companies are learning to compete, not just by offering superior products and services, but by aggressively using technology, and their own knowledge to craft strategies that respond to rapid changes. The hype of the competitive strategies started in the early 80s when Porter's *Competitive Strategy* (1980), followed by *Competitive Advantage* (1985), introduced the value chain, and made significant contribution to the strategic management field.

Strategy, in essence, is about the future, which is unknown and unknowable. It can be dealt with by taking a broad view of what the organisation should look like some time in the future. The challenge lies in how to choose the paths and strategies for future. De Geus points out that 'the future is multiple'. The problem, however, is that there is no map for the future (De Geus, 1996). Similarly, Hamel and Prahalad (1996) state that 'there is not one future; there are as many potential futures as companies'. Thus, planning consist of accommodating the organisation to the eventualities of an unknown landscape. Admittedly, there are many paths a firm could follow to survive in today's dynamic competitive environment. In many organisations, as well as in much of the academic literature, crafting a strategy is about attempting to predict a foreseeable future, making decisions in advance, and controlling the realisation of strategic plans (Rumelt *et al.*, 1991). Indeed, both scholars and managers have raised serious concerns about the extent to which existing approaches to strategy-making can help the firm in envisaging, conceiving, and realizing more imaginative strategies (Hamel, 1996; Porter, 1991). It is commonly believed that one of the main reasons some firms perform better than others is that they apply superior knowledge and can be more adaptive and agile to changes than others (Senge, 1990a, 1994; Nonaka & Takeuchi, 1995; De Geus, 1997; Easterby-Smith 2000, 2008). But is learning the only way to competitive advantage or there are other ways to pursue?

COMPETITIVE STRATEGY AND TQM

In the 1980s companies were competing mainly on quality differentiation. Hence, gaining competitive advantage was through higher quality. Most of the quality standards, initiatives and approaches were developed during this decade. For instance, the first ISO 9000 standard was developed in 1987 (ISO 9001:1987); Motorola and GE also started their Six Sigma quality programmes in the early 1980s; Malcolm Baldrige National Quality Improvement Act was initiated in 1987 and many other standards were

developed to ensure high product as well as system's quality. This decade could be considered the decade of the quality.

In the early eighties, Deming also coined his Total Quality Management (TQM) concept. It was and still considered one of the most robust management systems based mainly on quality improvement initiatives and Japanese management philosophies. It is founded on the notion of integrating quality in all organisation elements. This includes having a vision, a mission and guiding principles nurtured by the leadership, and supported by the management. Furthermore, integrating the latter in aspects, such as employees, suppliers, customers and systems, embraced with a continuous improvement process, was also a groundbreaking approach before Senge put forward his system thinking theory.

Thus, TQM became a preoccupation of more than two decade and provided competitive edge, especially for Japanese companies, which adopted this concept, before practicing managers pay heed to organisational learning concepts and principles. It could be considered that TQM was the first attempts for building management systems. Even more, TQM was considered as a competitive advantage in itself.

In his commentary on Sterman's article 'Learning In and About Complex Systems' (Sterman, 2000), Stata lend support to TQM endeavours saying that it have had significant impact on the ability of many organisations to continuously learn and improve'. Nevertheless, TQM faced a number of critics especially, in the mid 1990s when Argyris refuted its capability to support learning in organisations, saying that it is merely a linear approach for problem solving per se (Argyris, 1994), what he describes as a "single-loop learning" proposing his notion of "double-loop learning" as pancea. Hence, organisations started to search for the panacea that guarantees or renders equivalent advantage as the one they possessed through TQM. Consulting firms found potential of new business through learning and began to hype it up to the market in the form of successful

case studies, then disparaged old big things they have hyped before e.g. TQM – and promoted OL as a new product to be the 'next big thing'.

COMPETITIVE STRATEGY & LEARNING

Competitive strategy is about finding a strategy that is better than that of the competitors. 'The objective in selecting and following a well defined competitive strategy is to achieve competitive advantage i.e. sustained profits compared to rivals' (Dobson *et al.*, 2004:52). The essential aspect is the ability to win more market share through superior value of products offerings.

Porter (1985) points out that to achieve competitive advantage strategists have to choose from three 'generic competitive strategies': cost leadership, differentiation strategy or focus strategy. Intrinsically, Porter focuses on the competitiveness from the unique value proposition aspect. He also lays emphasis on defining company's position, marketing trade-offs, synchronising all activities together, what he calls 'forging fit among activities' and configuring the value chain optimally, (Porter, 1985, 1996). Notably, Porter did not consider learning as one of his 'Five Forces' that determine the competitive intensity and provides the only sustainable competitive advantage as many scholars asserted (Senge, 1990a, 1990b; Argyris, 1994; Nonaka, 1991; Nonaka and Takeuchi, 1995; De Geus, 1988, 1997, 1998; Stata, 1989).

Conversely, O'Brien raises important points concerning the human factor's role in strategy formation, adding that it is human beings who make the decisions and perform the actions that determine a company's results; hence, 'people are arguably the most important influence on a corporation's performance in the competitive market and consequently on its long-term financial achievements' (O'brien, 2010:29). O'Brien, by this, touches on critical issues, such as the role of human factor in the organisation equation. Human beings, as Senge (1990b) describes them, are designed for learning. For an organisation to move toward its desired

future, it has to utilise those resources by building future competencies and capabilities. Emphasising the same meaning, McKiernan & Faulkner (2003) indicate that a different language is required that can deal with 'soft' rather than 'hard' resources.

LEARNING AND BEHAVIOURAL CHANGE

It is generally accepted that Organisation learning is simply the sum of what individuals learn within organisations. Only a small number of people have significant influence over strategic decision; hence, any mapping of cognitive and learning processes of individual senior management will provide a good approximation of the way organisation think and behaves (Easterby-Smith et al., 2000). This, however, represents only one side of the picture as many studies assert that OL is more than the learning of its individuals. They suggest that the OL is affected by the organisation's set up such as the structure, procedures and governing systems (Dodgson, 1993). What's more, they consider that learning is not only the possession of employees by it is also stored in the organisation routines, such as the procedures, processes, policies and systems (Easterby-Smith *et al.*, 2000).

Hedberg pointed out that though the organisational learning occurs through individuals and through interaction and only takes place in a context of participation; nevertheless, it would be a mistake to conclude that organisational learning is nothing, but the cumulative result of their members. Employees come and go and leadership changes, but the organisations' memories preserve certain behaviours, mental maps, norms and values over time (Hedberg, 1981 cited in Easterby-Smith *et al.*, 2000).

It is widely agreed that competitive advantage is built on a unique bundle of assets that is difficult to imitate (Barney, 1986). From a resource based view, a learning organisation realises the value of the workforce as a capital that needs to be nurtured and developed to improve the

organisational performance. (Barney, 1986). Thus, numerous organisations are putting more focus on building and developing their 'soft' resources, knowing that those need continuous development and a long process to be used as a competitive advantage (Kay *et al.*, 2003:41). Taking this time dimension into consideration, companies need to learn faster than their competitors to remain at a competitive advantage (O'Keefe, 2002).

LEARNING ORIENTATIONS AND KNOWLEDGE

Learning faster means speeding up the learning process that goes beyond data collection and data analysis to convert it into usable information then interpreting the results to produce knowledge. Knowledge as a major dynamic capability is frequently positioned as an extension of the RBV (Easterby-Smith *et al.*, 2008). Easterby-Smith *et al.* (2008) differentiates between two kinds of organisational knowledge, namely explicit and tacit knowledge. The former, which can be codified and written and is therefore easy to articulate, capture and disseminate. The latter is associated with personal skills and experience, hence, more difficult to articulate and distribute (Nonaka & Takeuchi, 1995; Easterby-Smith *et al.*, 2008). An important point to be noted is that knowledge is situated in the practice of everyday's work rather than being in the possession of individuals (Lave & Wenger, 1991).

The latter statement supports Nevis *et al.* (1995:73) stance that 'learning is a systems-level phenomenon, because it stays within the organisation, even if individuals change'. In stark contrast, Schoen (1992) claimed that much of the knowledge possessed by professionals and experts is tacit. This results in knowledge loss by knowledge carriers leaving the company and leads to loss of the competitive advantage.

However for organisations to capture this knowledge, it should first be able to convert the tacit knowledge into explicit knowledge. To achieve this, Schoen suggests a methodology for reflection starting with what he calls 'knowledge in action' to unpack the tacit knowledge and make it

explicit. Schoen defines two types of reflection – ‘on’ and ‘in’ action. ‘*Reflection-in-action*’ is concurrent with action and often involves converting tacit assumptions or behaviours into explicit ones so that they can be examined, demystified and shared. The resulting knowledge can then be passed on to novice or captured into company’s memory. ‘*Reflection-on-action*’ is a retrospective examination of events from a particular perspective. It has the intention of clarifying and learning from experience (Schoen, 1992). A way to do this is to achieve it through social processes within communities of practice to get hold of it rather than being only the sum of individuals’ cognitions (Senge, 1990a, 1990b; Senge *et al.*, 1994; Schein, 1993; Nonaka, 1991; Easterby-Smith *et al.*, 2000, Easterby-Smith *et al.*, 2008; De Geus, 1988, 1997).

THE DICHOTOMY

The terms ‘organisational learning’ (OL) and ‘learning organisations’ (LO) are used interchangeably both by researchers as well as practitioners as a management concept that can impact the performance of an organisation and raises its competitive advantage amongst its rivals (Goh, 2001).

Organisational Learning

One way to differentiate the two terms is to view organisational learning as the experience-based improvement in organisational tasks performance (Argyris & Schoen, 1978:323). It can also be described as the continuous process of information exchange between a system and its environment, allowing the system to monitor change and initiate appropriate responses (Argyris and Schoen, 1974), example of such is the double loop learning to be explained in the next chapter. Others propose to use the term ‘learning in organisation’ as a replacement for organisational learning (Gherardi, 1999), as it describes the learning process followed in an organisations. Furthermore, Goh (2001) views OL as something that all organisations possess, but each utilise it differently. This imposes a shift

from the question of how does an organisation learn to how should it learn?

To answer this question, Stata (1989) and Senge (1990b) articulate similarly that organisational learning occurs through shared insights, knowledge and mental models that build on past knowledge and experience. Building on Argyris and Schoen's loops of learning, Senge claims that organisational learning must go beyond improvements in performance and think of enduring changes in thinking and behaviour (Senge *et al.*, 1993; Argyris and Schoen, 1974; Argyris 1977, 1994).

However, during the last two decades, tension emerged between the ideas of organisational learning and knowledge management. Interestingly, the term organisational learning has been around for several decades, whereas the significance of knowledge has only become apparent after Nonaka popularised this idea first through his *Harvard Business Review* (HBR) article 'The Knowledge-Creating Company' in 1991 then years later by his book under the same. The authors were quite dismissive of OL on the ground that it is mostly dependent on individuals and hardly tackles the issue of knowledge creation. The debate about the relative value of the concepts of learning and knowledge has been sharpened by the popular development of the idea of knowledge management as a key to competitive advantage.

It has been proven that all organisations learn from experience all the time or they would not survive. To improve this 'organisational learning' process, DiBella and Nevis (1998) acknowledged the importance of the culture and asserted that organisations have to examine the learning process from a systemic perspective. Nonetheless, each organisation has its own unique learning style and process and strives to build and improve its learning process and knowledge management capabilities together with upgrading its memory of the future to gain competitive advantage and have the edge amongst its rivals.

Learning Organisations

Hayes *et al.* (1988) refer to learning organisations as those organisations that are able to sustained improvement in performance. Senge identifies five disciplines as prerequisites for learning to occur. He defines LO as those which are continually expanding their capacity to create their future, and where people continually exchange their knowledge and learn together (Senge, 1990a).

Similarly, Garvin (1993) defines LO as those organisations that are skilled at creating, acquiring, and transferring knowledge, and at modifying its behaviour to reflect new knowledge and insights. He adds that LO are skilled at five main activities: systematic problem solving, experimentation with new approaches, learning from their own experience and past history, learning from the experiences and best practices of others, and transferring knowledge quickly and efficiently throughout the organisation (Garvin, 1993). Nonetheless, Garvin indicates that only few organisations are successful at that, by creating systems and processes that support learning activities and instilling them into the fabric of the daily operations.

Building LO, however, requires more than knowing the characteristics and features as stated by Senge and Garvin. To create a LO Garrette (1990) asserts that organisations have to have the intention to go for it and translate this into actions that facilitate the learning of the organisation members and continuously adapt to its needs. Then it has to develop strategies that encourage learning and adopt structures that enables and facilitates learning across the organisation (Dodgson, 1993). Consequently, this learning process will have positive effects for innovation and performance, thus will contribute to the competitive advantage.

Simply stated, organisational learning is a term used to describe certain processes performed within an organisation to facilitate learning, while learning organisations are those that succeeded or are good at learning.

HOW LEARNING ORGANISATIONS LOOK LIKE

After Argyris proposed his supposition regarding the notion of the single and double loop learning, people started to look for recipes to build LO. In the late 1980s Peter Drucker drew the attention to how future organisations should look like and anticipated that the future businesses in twenty years later, i.e. these days, will be information based organisations. He added that they will look more likely to resemble a large 'symphony orchestra' than a typical manufacturing company. He used this analogy to demonstrate how future organisation's structures will go beyond the matrix configuration (Drucker, 1988). This, however, will require greater self-discipline and greater emphasis on individual responsibility for relationships and communication, as they cannot be told how to do their work. Years later, Nonaka (1994) characterised learning organisation as knowledge-creating organisations where inventing new knowledge is not a specialised activity rather than a way of behaving. Furthermore, he shares the same view as De Geus (1988) that companies are living organism.

Many academics have made remarkable contributions to put forward some theories on how to build learning organisations. Learning organisations, however, are not built overnight. Still, some changes can be made immediately. Garvin (1993) defines three steps to build a learning organisation. The first step is to foster an environment that is conducive to learning. This should allow time for reflection and analysis. It should also guarantee psychological safety (Garvin, 1993; Garvin et al., 2008; Edmondson, 2008) to overcome the fear of what Argyris describes as 'defensive reasoning'. The second step is to follow a methodological learning process that comprises the generation, collection, interpretation and dissemination of information (Garvin *et al.*, 2008). The third and last step is to have a leadership that reinforces learning.

Factors for successful learning organisations

Nevis *et al.* (1995) research indicates that there are three learning-related factors for successful learning organisations. The first set is the well-developed core competencies capable of learning and innovating. Second, the readiness of the workforce to support continuous improvement in the business value added chain, finally, the ability to renew or revitalize the organisation. Indeed, an organisation's ability to survive and grow is based on the advantage that stem from core competencies that represents 'collective learning' (Prahalad & Hamel, 1990). As a result of this assumption, it can be deduced that all organisations engage in some form of collective learning as part of their development (Child & Kieser, 1981; Child, 2003). 'All happy families resemble one another', as Tolstoy wrote in his writes 'Anna Karenina'. 'But each unhappy family is unhappy in its own way' he adds. Using this supposition, quoted in De Geus (1988:52) as well as in Collins (2009:19), both using the analogy to argue that 'Great Companies' or 'Living Companies' share same characteristics to achieve their competitive advantage we can say that all organisations are "Learning Organisations"; however, all learning is not the same.

A vital aspect that is commonly overlooked is what Hamel and Prahalad (1994) mentioned regarding the creation of an 'unlearning organisation' since changing mental models requires the forgetting of old paradigms and we are all prisoners to one degree or another of our experience. (Hamel & Prahalad, 1994). On the other hand, numerous scholars lay emphasis on organisational learning and how to improve the learning curve, though, only few of them mention the forgetting curve, which might be best described as removing defective gene, or unlearning bad habits.

In this chapter, we have seen how competitive strategies evolved from Porter's competitive advantages to TQM. We also saw why organisations moved from TQM to learning as the new big thing. Moreover, we revealed the difference between OL and LO according to Goh (2001) Gherardi (1999) and Argyris (1994), that the first one is about the processes each

organisation follows to become a LO and consequently gain competitive advantage. The chapter also represented different view points about the process of learning or OL. It showed that some regard learning as a system-level phenomenon and thus claim that it stays in organisations no matter knowledge carriers – employees – left the organisation or not (Nevis *et al.* 1995; Nonaka & Takeuchi, 1995;; Lave & Wenger, 1991). On the other side, Schoen (1992) and Easterby-Smith *et al.* (2008) argued that because organisational knowledge is mostly tacit knowledge it is lost by knowledge carriers leaving the organisation. The chapter also display how LO should look like based on different view points. It showed how Drucker described 'the coming of the new organisation' in the late 1980s. We also saw how Garvin recommends how 'building a learning organisation' (Garvin, 1993) should take place and the asking 'is you're a learning organisation' (Garvin, 2005). Moreover, the chapter presented briefly how Nonaka anticipated the coming of the knowledge creating company and the role of knowledge in future organisations (Nonaka, 1991). Successful factors for building learning organisation was also presented by Nevis *et al.* (1995).

The coming chapter will present a description of the framework that were used in chapter 3 and 4 of this paper.

Chapter 2: Theoretical Framework

The frameworks used in this dissertation will be based on Argyris and Schoen's single and double loop learning models. Furthermore, Senge's work in 'The Fifth Discipline' will be used as an approach of how LO should look like. The following chapter will present and explain Argyris and Schoen's single and double loop learning models to understand how learning, from their perspective, takes place. Senge's five disciplines will also be represented and used as a lens with which to spot main disciplines required when attempting to build a learning organisations. As this dissertation targets specialised practitioners, as well as people with less knowledge in OL field, hence, the framework might go into details to give more explanation of psychological issues related to learning processes and mental models, especially when explaining the notion of the single and double loop learning.

THEORY IN PRACTICE

The aim of using Argyris and Schoen's notion of single and double loop learning as a framework is to start with how the learning process takes place, before describing how learning organisation should look like. To begin with explaining single and double loop learning models, we also have to understand the rationale behind it. In 1974 Argyris and Schoen released their book 'Theory in Practice' which includes their argument that people have mental maps with regard to how to act in situations. Furthermore, they assert that it is these maps that guide people's actions rather than the theories they explicitly espouse (Argyris & Schoen, 1974).

A good example they have given, '[w]hen someone is asked how he would behave under certain circumstances, the answer he usually gives is his espoused theory of action for that situation. This is the theory of action to which he gives allegiance, and which, upon request, he communicates to others' (Argyris and Schoen, 1974: 6-7). In other words, the language he

uses to convey what he does or what he would like others to think he does can be called 'espoused theory'. In contrast, 'the theory that actually governs his actions is his theory-in-use, which may or may not be compatible with his espoused theory. Furthermore, the individual may or may not be aware of the incompatibility of the two theories' (*ibid.*)

Espoused theories differ widely, but most theories-in-use have the same set of governing values. All of us design our behaviour in order to remain in unilateral control and maximise winning and minimise losing. The purpose of this strategy is to avoid vulnerability, risk, embarrassment and the appearance of incompetence (Argyris, 1994). This, unfortunately, is described by Argyris as 'a recipe for ineffective learning' (Argyris, 1994:80) or even a recipe for anti-learning, as it avoids us from reflecting on the counterproductive consequences of our own behaviour.

In light of this, we infer that defensive strategies discourage reflection and encourage people to leave their own behaviour unexamined. Certainly, not all learning comes from reflection and self-analysis. Sometimes the most powerful insights come from looking outside one's immediate environment to gain a new perspective.

Genuine learning is inhibited by both individual defensive reasoning and organisational routines (Argyris, 1994:81). Argyris assumes that people consistently act inconsistently; unaware of the contradiction between the way they think they are acting and the way they really act, only fewer people are aware of the maps or theories they do use (Argyris, 1991). He makes the case that effectiveness results from developing congruence between 'theory-in-use' and 'espoused theory' (Argyris, 1980). He carries out that each person has many 'theories-in-use', one for every kind of situation in which he more or less regularly finds himself. Argyris and Schoen suggest two responses to the mismatch between both theory and action, which can be seen in their notion of single and double loop learning.

SINGLE- AND DOUBLE-LOOP LEARNING

The terms single- and double-loop learning were first used by Argyris and Schoen in 1974 to distinguish between learning for improving the way things are done and learning that transforms the situation. They based the idea on the concept of feedback loops in control engineering, cited in the book "Design for a Brain" by W.R. Ashby in 1952 (McGill & Brockbank, 2004). Sterman (2000) indicates that all learning depends on feedback. He claims that people make decisions by comparing information about the state of the real world to various goals, perceive discrepancies between desired and actual states, and using that information they revise their understanding of the world and the decisions they make to bring the state of the system closer to their goals (Sterman, 2000). It is also discussed by David Kolb in his well-known 'learning cycle' (Kolb, 1984). However, details and technicalities of these loop is not in the scope of this dissertation. The main aim is to understand the concepts and the differences between the single and double-loop learning, as explained by Argyris and Schoen.

For Argyris, learning involves the detection and correction of error (Argyris & Schoen, 1974; Argyris, 1994). Where something goes wrong, it is suggested to look for another strategy to solve the problem, but within the governing variables available. No radical changes are sought. In other words, chosen objectives and goals, values and rules are operationalised rather than questioned (Smith, 2001). According to Argyris and Schoen (1974), this is '*single-loop learning*'. An alternative response is to question the governing variables themselves, to subject them to critical scrutiny, what he describes as '*double-loop learning*'.

Hence, double-loop learning asks questions not only about objective facts, but also about the reasons and motives behind those facts. It depends on questioning one's own assumptions and behaviour. Furthermore, it is the process of probing to understand underlying problems.

Fundamentally, the main difference between single and double-loop learning is that single-loop learning is a kind of problem solving approach; it addresses a difficulty, but ignores a more fundamental problem. Double-loop learning is a more thorough diagnosis. Simply stated, single-loop learning is maintenance learning or getting better at what we already know how to do, while double-loop learning is basically asking if we are doing the right thing.

Organisational learning context

In the context of organisational learning, Argyris points out that organisations are quite good at single-loop learning and only few are able to learn by double-loop method (Argyris, 1977). He holds firmly to the belief that double-loop learning would lead to an alteration in the governing variables; thus, a shift in the way in which strategies and consequences are framed. Moreover, he argues that double-loop learning is necessary if practitioners and organisations are to make informed decisions in rapidly changing and often uncertain contexts (Argyris & Schoen, 1974; Argyris, 1982; 1994). Argyris asserts that double-loop learning occurs when errors are detected and corrected in ways that involve the modification of the organisation's underlying norms, policies and objectives (Argyris, 1994).

In recent years, some researchers suggested that in practice there is no distinction between single- and double-loop learning and they only use those terms to describe what they regard more as routine learning versus more radical learning (Easterby-Smith *et al.*, 2000).

In the same way, people in organisations have theories that they use to plan and carry out their actions and how they carry out their work. There are two kinds, as aforementioned, the one they espouse and the one which they actually use. Based on their prolonged research, Argyris &

Schoen (1974) prove that the 'theory-in-use' is the same all over the world. They set up two models (Model I and Model II) that describe features of this theory that either inhibit or enhance learning. They affirm that "Model I" would not be different in any culture (Argyris & Schoen, 1974; Argyris, 1977, 1991). They reached the fact that the theory in use is like a '*master programme*' that does not vary. However, the behaviour that people use to implement it may vary. Conversely, they assert that "Model II" encourages open communication and participation (Smith, 2001).

Organisational learning context

Taking the latter in the same context of Organisational Learning, 'Model I' leads to often deeply entrenched defensive routines (Argyris, 1977) and these can operate at individual, group and organisational levels. It can also be said to inhibit double-loop learning. What is more, it can be viewed that the potential for growth and learning is seriously impaired. Consequently, to build a learning organisation people should move from Model I to Model II orientation and practice for organisations to be able to foster double-loop learning. People at all levels of the organisation must combine the mastery of some highly specialised technical expertise with the ability to work effectively in teams, form productive relationships with clients and customers and critically reflect on and then change their own organisational practices.

THE FIFTH DISCIPLINE

This section will attempt to give an overview of Senge's learning disciplines and will highlight the links with Argyris and Schoen's theory of action. Furthermore, it will provide what Argyris (1998) admits is been missing in his theory and covered by Senge's disciplines. Hence, this will be used as a basis in this dissertation, how Learning Organisations should look like.

Senge (1990b) claims that in nowadays increasingly globalised and competitive market only flexible, adaptive and productive organisation will be able to excel. He adds that organisations need to discover how to tap people's commitment and capacity to learn at all levels (Senge, 1990b). He describes a learning organisation as one that demonstrates five main characteristics or disciplines: *system thinking, personal mastery, mental models, shared vision and team learning*. He adds that all disciplines are in this way 'concerned with a shift of mind from seeing parts to seeing wholes, from seeing people as helpless reactors to seeing them as active participants in shaping their reality, from reacting to the present to creating the future' (Senge, 1990b: 69).

In 'The Fifth Discipline' Senge points out that despite the fact that people have the capacity to learn; nonetheless, the organisational environment and setup together with other aspects often do not enable the reflection, which is part of the learning process discussed before. Thus, this might inhibit the learning. As a matter of fact, organisations that are continually expanding their capacity to create their future require a fundamental change in the mental model among their members.

For Senge, real learning gets to the heart of what it is to be human. Hence, survival learning or what is more often termed 'adaptive learning' is important. He appends that for a learning organisation, adaptive learning must be joined by 'generative learning' (Senge, 1990b). Fiol and Lyles (1985) express it more comprehensively, stating that learning

involves change in cognition, while adaptation involves changes in behaviour.

Increasing adaptability is the first stage in moving towards learning organisations. This is why leading organisations are focusing on generative learning, which is about creating as well as adaptive learning (Senge, 1990a). This is similar to the notion of single and double loop learning discussed earlier, where the adaptive learning is similar to the linear learning or what Argyris and Schoen call single-loop learning. In contrast, generative learning is equivalent to the double-loop learning in which goals, norms and assumptions as well as behaviour are open to change.

A great virtue of Senge's work is the way in which he puts systems theory in action. Figure 1 shows the core capabilities of learning organisations (Maani & Benton, 1999). These capabilities are dynamically interrelated and collectively they lead to organisational learning. The figure shows Senge's five disciplines linked together through three boxes and the organisation learning is at the heart of it all. The 'creative orientation' is the source of genuine desire to excel and emanates from an intrinsic motivation and purposeful drive to achieve in order to serve common goals. *Generative conversation* refers to a deep and conscious dialogue and exchange to create unity of thought and action. The purpose of it is to encourage one to 'seek first to understand and then to be understood' (Covey, 1990). On the other hand, *system perspective* is the ability to see things holistically by understanding the interconnectedness of the parts (Maani & Benton, 1999).

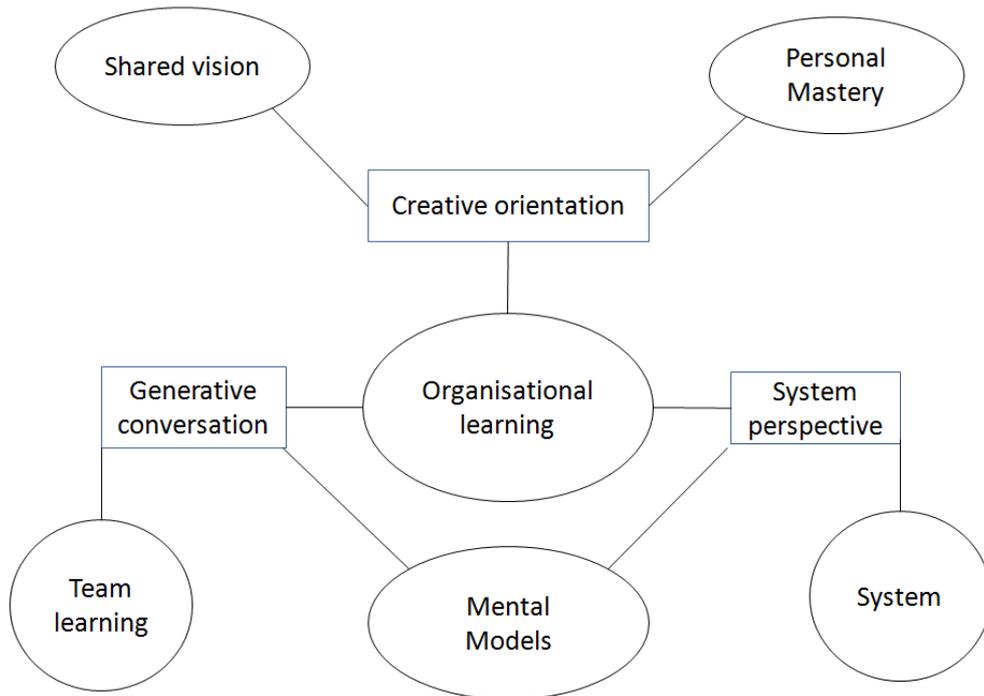


Figure 1 - The core capabilities of a learning organisation
 Source (Maani & Benton, 1999)

'Personal Mastery' emanates of a creative orientation and systemic perspective. It is 'the discipline of continually clarifying and deepening the personal vision, of focusing ones energy, of developing patience, and of seeing reality objectively' (Senge, 1990b:7). By this, Senge suggests that that 'personal mastery' involves learning to keep both, a personal vision and a clear picture of current reality before us. This requires commitment to the truth, which means continually challenging our theories of why things are the way they are. On the other hand, if people do not keep developing, and making progress, their competitors will do. 'Doing this will create a force within ourselves called 'creative tension'. This 'creative tension' comes from seeing clearly where we want to be, our 'vision', and telling the truth about where we are, our 'current reality'' (Senge, 1990a:9)

In organisations, imposed vision statements result in a sense of apathy and complacency and sometimes resentment. There needs to be a genuine endeavour to discern what people will commit to. To obtain commitment from team members, they must feel a strong interest, even

passion, for the outcome. **'Shared Vision'**, seen in Figure 1, is the outcome of a creative orientation and generative conversation. Hence, such vision must emerge from many people reflecting on the organisation's purpose through generative conversations (i.e., dialogue) (Senge, 1994; Schein, 1992). This dialogue is vital as it accounts for double-loop learning. Yet, this is hard to take place in a hierarchical organisation, for that reason such structures have to be broken down to create flatter ones that enables and facilitates the information flow (Senge *et al.*, 1994).

'Mental Models' are deeply ingrained assumptions, generalisations, beliefs and feelings that shape one's world views and actions (Senge, 1990a). We develop them so that we can process information faster, to be able to deal with complex systems. They are formed through family, education, past experiences, as well as religious beliefs and are based for the most on cultural and social norms.

The discipline of mental models starts with turning the mirror inward and look at the world from a different perspective and unearth the deeply held assumptions of the world and question their governing variables themselves and subject them to critical scrutiny, what Argyris and Schoen (1974) describe as *'double-loop learning'*.

A major challenge for organisation to exploit this discipline is the tacit nature of mental models, existing below level of awareness, which are often untested and unexamined (Smith, 2001).

'Team Learning' is the outgrowth of generative conversation (dialogue), shared vision and transparent mental models. It is the manifestation of the transcending of personal goals for the good of the whole (Maani & Benton, 1999). Team learning is not 'team building' and shouldn't be taken on lightly (Senge, 1994). Team learning is the process of aligning and developing the capacities of a team to create the results its members truly desire. In team learning people need to be able to act together. As aforementioned, 'learning-in-organisation' is a social process and only

takes place in a context of participation. If this process took place effectively, Senge suggests, it will not only benefit the organisation, but organisation members will grow more rapidly than could have occurred otherwise.

The discipline of team learning starts with 'dialogue' where the members of a team suspend assumptions and enter into a genuine 'thinking together'. Dialogue centres on the ability of a group to see through meanings and words. This team learning process, as Senge states, needs encouragement from the leader and from one another.

Finally, '**Systems Thinking**' (the fifth discipline) is the art of seeing wholes and the science of explaining complexity. This means that instead of isolating smaller parts of the system being studied, systems thinking works by expanding its view to take into account a holistic approach considering all interactions and elements. Hence, any change in one part of the system, changes the nature of the overall system. A learning organisation must be able to see how the system interacts at the same time for it to be classed as such. Hence, system maps should be created to see how apparent disparate elements are interconnected and creating feedback to see where influence occurs. By using this mapping technique, complex relations are often easier to understand and more holistic decision making can take place.

In fact the notion of systems thinking was brought to mind earlier in the 1980s by McKinsey partners Tom Peters and Robert Waterman in their best-selling book 'In Search of Excellence'. They introduced the firm's 7-S model¹ⁱ as 'the seven factors' critical for effective strategy execution. This model describes how one can holistically and effectively organise a company.

¹ 7s Model developed by Waterman and Peters. See endnote for more details.

According to Senge's, system thinking grows with the discipline of seeing the "big picture" and moving beyond simplistic short-term assumptions about cause and effects (Senge et. al, 1993).

One of the most significant developments in management science is the adopting of the systems thinking in businesses. To be able to apply it, organisations should be able to see the interrelationship between parts in its dynamic form, since seeing the world in static image will not represent the reality. In the same sense, people have to see that they are part of a problem. Blaming the others saying, 'they need to change' will keep them unable to see the interrelationships of the whole picture. Another key issue in systems thinking is that there is no outside to blame for problems; both, people and their problems are part of a single system.

Chapter 3: Hypotheses & Methodology

Hypothesis 1:

The process and ability to build a learning organisation is a competitive advantage.

Hypothesis 2:

The older the company, the harder it is to learn new ways of doing business and change old paradigms.

This project is based on qualitative research. An important value of qualitative research is the description and understanding of the actual human interactions, meanings, and culture that constitute real-life organisational settings (Gephart, 2004). The understanding of how organisation members are thinking and acting is important in itself. Moreover, qualitative research provides insights that are difficult to produce with quantitative research. For instance, holding a meeting or having a conversation with organisation members will include body language and other communication interactions that will reflect behaviours that are not possible or easy to be gathered or sensed from surveys. It also provides memorable examples of important management issues and concepts that augment the results. Qualitative research can thus provide bases for understanding social processes that underlie management (Gephart, 2004).

Especially in a project like this, that engages learning and tacit knowledge, no measurements could be performed to provide unarguable results as there are no standard metrics for knowledge measurements. Moreover, it is an attempt to re-humanise research by highlighting the human interactions and meanings that underlie phenomena and relationships.

A case study, as qualitative research method, is adopted in this project to investigate the efforts done by GE Healthcare business unit. This company is chosen for its widely known reputation as a highly recognised learning

organisation and for its high performance. The study is based on first hand information gathered through direct interviews with members from GE. The data collection was conducted in July and August 2010 through three interviews with executives in charge of learning in the organisation. One interview was conducted with the Senior Human Resources manager for Life Sciences –GE Healthcare, who is in charge of all development and change management programmes inside the organisation (hereinafter referred as interviewee 1). Two further interviews were held with the Director of Learning and Development (L&D) – Emerging Markets – GE (hereinafter referred as interviewee 2). The interviews were aimed to cover in-depth and dense analysis to enable the testing of the project's hypotheses.

The interviews data was coded according to emergent themes (Braun & Clarke, 2006). Those were divided into seven thematic groups each one tackles a specific learning aspects in the organisation. The first group is the 'Shared vision'. This refers to the extent to which the mission and "*raison d'être*" of the organisation is understood, shared and cascaded across the organisation. 'Leadership and Mental Models', as the second group, is defined as the readiness of managers to change the underlying mental models in order to lead the change. It also examines their tolerance to accept criticism without being defensive. Furthermore, it will test whether managers are ready to delegate and empower employees and involve them in the decision making process or not. 'Personal Mastery' includes questions regarding the ability of managers to challenge their assumptions of why things are the ways they are and to encourage new ideas and to experiment them. 'Transfer of knowledge' is defined as the sharing of knowledge and learning of successful practices from other organisations. It also comprises the constructive dialogue within the organisation including failures. Finally, 'Team-Learning' refers to organisational practices that encourage group problem solving and dialogue that helps in the socialisation.

It is important to mention that the project tried to relate data collection to learning needs of the subject. This requirement meant that data were

collected from individuals who are preoccupied with learning in their organisation.

'Although the case study is ideal for generalizing using the type of test that... [is]...called 'falsification' (Flyvbjerg, 2006), however, the aim of the case study in this project is to present best practices from a well know learning organisation. The generalisation used in this project, however, is similar to Tolstoy's proposition previously mentioned that 'all happy families are alike, but each unhappy family is unhappy in its own way'. The generalisation would be that all organisations are learning organisations, but each one has its own way in learning that attributes to it being a core competency.

In addition, the case study might include substantial element of narrative and data that might not be relevant to the theory. The amount of this non-relevant information varies with the individual's motivation to contribute, with the type of topic and with conditions under which the data were collected.

The case study will tell the story in its diversity, allowing the story to unfold from the many-sided, complex, and sometimes conflicting stories that the actors in the case have told. In this project, linking the case with the theories of any one academic specialisation will be minimised. Instead, the study will be related to broader perspective that cuts across specialisations. This will leave scope for readers of different backgrounds to make different interpretations and draw diverse conclusions regarding the question of what the case is. The aim is not to make the case study be all things to all people, rather than to be different things to different people. The case will be described with many facets that different readers may be attracted or repelled, by different things in the case. This might acquiesce what Flyvbjerg (2006) emphasises regarding good case narratives. He holds up to this approach as he sees that 'experts do not use rules, but operate on the basis of detailed case experience. This is *real* expertise', he adds. The next chapter will presents a descriptive account

of how GE went about utilising its capabilities and mobilising different aspects to establish a learning organisation.

Limitations

Despite the contributions of this study, some factors limit the extent to which the findings can be generalised. The major limitation is the small number of interviews conducted to develop this study. This is due to the limited time allowed for the project, as the company proposed other interviews, but those would have been scheduled after the deadline of the submission of this project. The small number may not represent all the views of the organisation's members. Accordingly, this aspect might limit any generalisation about the findings obtained by the study. Moreover, access to company records was also limited and sometimes restricted which yielded in insufficient data availability. Hence, the study was limited mostly to the data obtained from the interviews. The limited time for the project was also a factor that undermined the study from tackling various aspects.

Chapter 4: Case Study Results

This chapter presents the results of the interview conducted with GE Healthcare executives on how the company became a learning organisation. The results are presented according to the five thematic groups explained in the previous chapter. The results of the different interviews will not be presented separately as a question and answer, but the two interviews will be combined, as the interviews covered almost the same questions, so there might be redundant if they are separated. However, in case of having different answers for a same question, both answers are presented.

COMPANY BACKGROUND

General Electric (GE) is a multinational company that was founded by Thomas Edison in 1890. The company has grown up and has been one of the leading innovators in American technology. Nowadays, GE serves customers in over 100 countries and employs more than 360,000 people worldwide. GE started its operations in the UK since the 1930s, and its businesses have seen accelerated growth especially in recent years. It achieved a turnover of £5 billion in 2008 (GE, 2010). The company has four strong business units in the energy- and technology-infrastructure, financial services and in media industries. GE Healthcare is one of GE's successful units and is the scope of this project.

Over the decades, GE leaders have built the company's culture into what it is today, a place for creating and bringing big ideas to life (GE, 2010). It is hard to say when the company exactly started its endeavours to be a learning organisation; however, it is an ongoing process that the company pursues to achieve its goal. Building the company culture was the first step to prepare the medium in which learning will take place.

Through the interviews with GE's executives, the message was received that learning is one of the company's established principles, without it, the

company would not be able to succeed and compete especially in the globalised markets. Globalisation for GE means further learning about different markets, customers' needs and inevitably cultures. As a multinational conglomerate, GE gives organisational culture considerable attention as it employs people from all known cultures across the globe and has to create synchronisation among all organisation members.

Shared vision

GE CEOs are famed with their charismatic style leadership and strong character. Nevertheless, they recognise that an imposed vision statement will result in a sense of apathy and sometimes breeds resentment in staff. As a result, the leaders develop and foster strategic mechanisms to involve all organisation members to in developing its future.

As learning is paramount for GE, the company invests worldwide about \$1 billion every year on training and education programmes for employees to give them unparalleled opportunities to develop their careers and skills (Interviewee 1). Every year thousands of managers from around the world take part in training courses at Crotonville, the famed GE management development centre, which was created over 50 years ago. For GE employees, a journey to Crotonville is considered something of a pilgrimage and a transformative learning experience (Interviewee 2). The centre runs programmes that vary from programme that includes annual strategy meetings and reviews, meetings for developing operating plans, as well as sessions for sharing learning and a special programme for leadership, Innovation and Growth (Prokesch, 2009). For learning purposes, those meetings are taped for managers to use to disseminate and transfer key issues and core concerns throughout the organisation. By this, the company's vision is shared across the organisation (Interviewee 2).

Learning takes place in all the sessions, tacitly and explicitly by sharing findings and concerns, collaborating and questioning the status quo and the existing assumptions. The director of learning and development (L&D)

for the emerging markets in GE remembers the second week of his career in GE when he spoke to his superior about some issues he saw could have been done better in a different way. He was concerned that his superior would neglect his view, as he is just a new comer. Interestingly, his boss asked him to raise his concerns in next forum to be held shortly after. The manager's believe is that new comers are much more to bring ideas than old employees, who became more reluctant and relaxed to bring about new ideas. For the manager, this is a good opportunity to raise real issues and concerns by using real business cases in the forums, what they call 'works in progress' for the sessions to be about reality. The latter example reflects the extent to which corporate level organisational learning policies and practices are translated into business unit routines.

GE is keen about inviting a blend of prominent figures, management gurus as well as academics to these programmes. Professors came from renowned universities such as Harvard, Pennsylvania, Colombia and even from universities in Europe such as Insead, to share their experiences with the employees. Participants were encouraged to speak openly in a positive and constructive way to enrich the discourse and stimulate their thinking with the new experiences. Beyond providing new concepts, these sessions are good means to make the people look at their work and even themselves in a different way. By doing this, the management is giving itself, and its employees a chance to analyse their past to help shape the future. Those programmes are not meant to be an academic exercise, but a way for instituting knowledge.

During the interviews, it has been sensed that the company has foresight to learn from its mistakes much more than it learns from its accomplishments. Therefore, lessons learned are mainly captured and disseminated to other members of the organisation through formal and informal ways. A formal way is to store them on databases that are accessible to all employees of the business unit. However, the most common way is the informal way that is through the network of individuals that are strategically distributed around the globe. GE does not rely only on technology enablers such as IT systems, applications and the

hype of tools used by other organisations, it believes that dialogue and networking is as important as using databases that captures the knowledge and best practices, and is its most efficient way to exchange 'tacit knowledge' among its members. GE realises that while the employees are flooded with a stream of information, it is often hard for them to transform this information into useful knowledge. Hence, GE strives to facilitate creating the knowledge inside the organisation through socialisation and articulation processes to transfer tacit knowledge to others tacitly or explicitly where possible. Once the employees were able to transform the tacit knowledge into explicit one such as in the form of procedures, lessons learned or in a written format, it is possible to store it in the company's database and translate it into routines.

Basically, each business unit has its own database that is used for that purpose. Those databases are not shared amongst other business units. The rationale behind that is attributed to the different types of businesses. That is, lessons learned from aviation will not be applicable or of use in financial services. Nevertheless, an informal collaboration through networking among the business units takes place instead. This can be more witnessed in the sales departments, when for instance, sales persons from healthcare unit are approached with a request related to electrical distribution. There is no formal process to handle this routing issue, even when it is related to the same business unit, it still depends on networking within the company. Each one in the company is encouraged to collaborate with other colleagues even, if not in the same department. The management sees that the customer is dealing with only one entity and any customer request should be dealt with internally.

This systems thinking notion was instilled into the organisation and its employees' attitude and behaviour without coercion or having a formal process. Every one in the organisation knows that they are all on the same ship and it is of their own benefit to collaborate.

Leadership & Mental Models

GE recognises that global competition is intensifying and the company's future success would hinge on agility together with a greater capacity for change. Coping with these changes needs continuous adaptation that is always encouraged by the leaders in the organisation. Everyone is always looking up to their manager as the one with all the answers. Managers in GE are not there to offer ready made solution for their subordinates, but the real duty for them is to be present and available to mentor and coach the employees (Interviewee 2).

Everyone is defensive when it comes questioning his underlying assumptions and mental tryouts. It is not so much that people mind changing as it is that they mind being changed. Stemming from the understanding of that, GE supports open forums to voice opinions and concerns, alongside with encouraging collaborative criticism. Yet, GE's change management mechanisms are uncompromising. A recent example is when they gave up 'Lotus Sametime²' for WebEx, a similar application used for communications and conferencing. After the decision was taken under consensus, the management decided to shut down the old system and work only with the new application. This ensures the elimination of any indolence from employees' side. It also guarantees the abolishment of old paradigms and obsolete mental models. The L&D director supports this action saying that "people often revert to coping strategies and old communication routines when they feel they are challenged, they say, it is easier to do it the way we used to do it".

The role of leaders in GE is not limited only to lead change; it frequently involves engaging the employees in important decisions. This is not restricted to asking them for feedback from a business perspective, but to involve them in making good decisions, let them share their concerns regarding the business, and even let them change their processes, if they see it is inefficient or ineffective enough for the business. Delegation in GE

² Lotus Sametime is a unified communications and collaboration tool developed by IBM. It supports Instant Messenger (IM), email, telephony and web conferences.

is done as part of developing the employees' skills, aptitudes and commitment as well as broadening their experience to become prime candidate for promotion. The L&D director regards delegation as a type of shared leadership that includes entrusting subordinates and passing them the responsibility of the delegated task down the line together with granting them the authority necessary to perform the delegated task. In this manner, the organisation ensures that employees take personal initiatives beyond the scope of their normal work, but within a set of established company values. Still, there is a conviction to exclude some decision from employees. Those are the decision related to the headcount, compensation, and similar HR issues.

Leaders in GE always 'walk the talk' as they believe that what they say should always be demonstrated in their behaviour, not in what is inferred from visible observations of structures, routines in place or slogans. Intrinsically, there is no better time than hard times like a recession to push people outside their comfort zone and shows authenticity of their leadership (Mintzberg, 2009). During the last recession, leaders kept their promises and stood for it, not cutting back on human development. On the contrary, they continued spending around \$1 billion in developing their employees who they assert are their most important asset. Leaders in GE understand that if they are not able to instil the aimed values into the members of the organisation and let it be manifested in their actions, then this contributes to the dichotomy between rhetoric and action and no learning will take place.

Experimentation

Experimentation in GE is encouraged on all levels of the organisation. Organisation members are encouraged to question the way things are done, especially if they are new comers as they have a different perspective than the people who have been inside the system for a long time. A good example is the aforementioned one about the L&D director in his second week of the job and was questioning the way the job is done. It is obvious from this example that the management is open to new ideas

as well as critic. This was also not disregarded or underestimated, but was a good potential of improvement that the manager utilised, first, to enrich the training with a real case of “works in progress” example in the coming forum, hence, get the best out of it for the business. Second, to encourage the new comer – the L&D director – to speak openly whenever he sees there is a problem or a concern that needs the attention. Finally, to allow instil the notion of ultimate intrinsic desire to achieving good results, not just following the routines.

In the same sense, having procedures and policies that govern the business processes, does not restrict the employees to have space for improving their work. As the L&D director points out “improvement is the duty of all the organisation members [...] if you can make it better, go ahead, I support anything that will make the customer experience better”. For the company, each process owner is responsible and accountable for their process and its improvement. The quality assurance (QA) and regulatory affairs (RA) departments are there to ensure that all the processes are working together in synchronisation and to implement what is requested by their customers, which are the departments inside the company. Making minor changes in task is permitted, as the groups are fairly autonomous and encouraged to experiment. Errors and failures are tolerated for the sake of learning and for the people not to be disinclined to contribute, and indeed innovators are rewarded for their ideas.

GE is well-known for its Six Sigma approach that became part of its culture and even became a way of doing business. The Six Sigma philosophy encourages attempts of improvements and hence contributes to the experimentation attribute. The organisation has utilised this philosophy not only in the quality-related issues, but also in the behavioural field. It was pointed out that every employee should go through a Six Sigma training course to be certified (Interviewee 1). This is to ensure instilling the high quality notion not only in the product and service related businesses, but also in the attitude and behaviour of all employees.

Experimentation for GE is aimed at further than trial and error approach or improving existing status per se. It aims to let the organisation see its current reality and question its suitability and capability of rendering the aimed future.

Transfer of knowledge

It has been proven that knowledge transfer is hard to take place in a hierarchical organisation. GE, though being a multinational conglomerate and having a significant number of employees, developed mechanisms that encourage knowledge transfer and exchange across the organisation. Those mechanisms facilitate the information flow across the organisation through its huge network of people. An interesting example is arranging for this project. I contacted a friend in GE to arrange for interviews with the people responsible for organisational learning in the company. Hence, I was connected with the senior HR manager who later on linked me with the learning and development director in emerging markets. Accordingly, I was put in contact with him. He in turn also tried to arrange for some other interviews. Thus, it can be recognised how the employees are utilising their strong network to the utmost.

For a global company, it is easier to keep the institutional knowledge within the company without being lost due to layoffs or people leaving the company. "Still there's always somebody who will have the knowledge", the L&D director says. His main concern is the loss of the institutional knowledge in the emerging markets. "Employees haven't been enough there! They haven't lived it yet". The solution, from his perspective, is to build up a mass of employees and keep them from turn over. Sustaining the knowledge is planned to be through social process within the company's forums and communities – as done through networking - to get hold of rather than being only the sum of individuals.

The company has formal and informal processes and tools to capture this knowledge. GE Healthcare uses its intranet to post best practices or information related to new project awarded. They also have special page

for all the guidelines, processes, forms and handbooks needed for fulfilling the jobs. Moreover, they use shared servers for storing project related files and lessons learned for sharing best practices. Besides, they use after-action-review (AAR) method that is developed and used by the U.S. Army Opposing Force (a.k.a OPFOR). In GE the AAR is not just another way to capture lessons learned or to produce static knowledge assets to file in reports or repository. GE use it to produces material that is fed back into the execution cycle. In addition, it is not only done at the end of any project, but they use it as an extended planning and review tool and all participants are encouraged to take part in it.

Beside the latter, the company has its routine regular staff meeting on different levels. On frequent basis 'Leadership calls' are held to share major successes of different projects or initiatives. PowerPoint presentations are prepared afterwards to capture those meetings and are made available for everyone. Sessions for each function and level are also scheduled e.g. sessions for senior level, others for all employee level and meetings are used as well for sharing knowledge and report any progress or delay in projects.

An interesting example given by the L&D executive when he recently attended a company convention in London early this year 2010, and after they finished they were stranded due to the volcanic ash that caused travel disruption. During the days they were stranded in the hotel, they held a meeting discussing how they could have been better customers – although they are a customer who paid more than two hundred thousand US dollars for accommodation and using the hotel facilities. They also engaged representatives from the hotel in their sessions. This indicates that knowledge is sought anytime, from anyone under any circumstances. It also signifies that the company is ready to question itself to improve any aspect that would be improved. Alongside, it attributes to the boundaryless company notion by engaging their suppliers in their meetings and seeking their feedback and knowledge. By doing this, the company will have more flexibility and be able to respond to different markets needs easily.

Nonetheless, best practices are not shared holistically as aforementioned due to the differences of learning goals. As regards to learning from competitors, GE does not have any mechanism that enables it to learn from them. They consider themselves 'the best' existing learning organisation, thus it does not need to learn from best practices of others, quite the opposite, others should learn from them.

One of the initiatives that were adopted by GE through one of the employees is the failure parties. GE started to celebrate failures. This aims to a dual purpose. The first one is learn from failures and how to prevent it from happening in future. The other purpose is to build a psychological safe environment where employees are safe to talk about their failures and their intelligent experiments that failed are honoured.

Team Learning

In GE team learning is supported and encouraged on all levels. Again, Six Sigma teams are there in all business units. Those groups include employees from a variety of functional areas. It is also possible, to form problem solving teams from within each department, that do the same job of the dedicated Six Sigma teams for less complicated problems, as all of the employees are Six Sigma certified. L&D acts also as a repository or a competence centre to provide resources whenever needed. Sometimes knowledge seekers from other departments and project teams are recruited, because seekers are self-interested, they ask tough, exploratory questions of knowledge originators extracting important nuance.

Moreover, teams are enticed to discuss all ideas before any decision takes place to ensure consensus among the teams. More often unconventional solutions were sought, provided they were correct. Managers recognised that employees who regularly contribute in meetings and forums are those who became more attuned and ready for changing their attitudes and "mental models" than others especially in the sales and service departments where there is much interaction with customers.

The L&D managers, talking about the organisation of the training courses reveals that they are more circumspect to asking the participant questions that probe their assumptions and hence, give the participants more confidence to experiment with their thoughts. Constructive feedback is also encouraged in those dialogue sessions. He adds that when people are more attached and personal to their ideas, they are more fervent to defend their views and ideas. Since dialogue is essential in team learning, GE pays much heed to it. As aforementioned, dialogue takes place in all meetings, forums and reviews. GE takes every opportunity to create this rapport among its organisation members to explore complex issues and see through meanings. All this attributes to the feeling of security by employees and increased also the possibility for them to challenge each other's idea without being antagonistic or intimidating others.

Chapter 5: Discussion and Conclusion

A simple and basic question has occupied the attention of researchers and practitioners for as long as the strategy has been discussed – how could organisations achieve competitive advantage i.e. sustained superior profits compared to rivals? Different approaches to answer this question have been based on two different perspectives. One looked at external aspects and the company environment such as Porter’s five forces model. The other approach focused on the internal capabilities of the firm, which was popularised by Prahalad and Hamel (1990) and elaborated by Barney (1991) who focused his research on the role of the internal capabilities to gain competitive advantage what is known as the ‘Resource-Based view’. Internal and external views of strategy are often juxtaposed with emphasis being put on one or the other as a determinant of success. But during the last two decades the attention was directed to learning as ‘the’ only sustainable competitive advantage.

This chapter will present a short analysis on the literature review and draw the main key issues and relate it to the hypotheses and study carried out on GE. Next, the discussion will continue assessing the study based on the two frameworks of the project, namely Argyris and Schoen’s ‘learning loops’ and Senge’s five disciplines.

The project has reviewed the literature on the topic of organisational learning and how companies could build learning organisation to gain competitive advantage and a number of issues were raised in the review. In general two view points have been denoted that approach the topic of organisational learning. One tackles the topic from a methodological perspective and explaining the learning process based on Argyris and Schoen’s notion of single- and double-loop learning. The other proposes a set of management practices and approaches to build learning organisations – such as Senge’s five disciplines. Those two streams were used as a framework for this dissertation.

Hypothesis 1

'Hypothesis 1' of this project assumes that the process and ability of building a learning organisation is a competitive advantage per se. In the literature review it was pointed out that all organisations engage in a way or another in a learning process, but each one has its own way in learning that attributes to it being a core competency (Child *et al.*, 1981; Goh, 2001). Despite that, we cannot say that all organisations are LO, same cannot be said for pupils who go to schools. When pupils go to schools, this should not necessarily indicate that all pupils learn. It only indicate that they go through the teaching process and have the means available to learn. But the learning goes beyond sitting in classes to be taught some subjects or sitting at work doing routine work. Learning is not just coping or adapting, but a process of assimilation (Piaget, 1983) or what Senge (1994) describes as the generative learning.

Hence, we can deduce that all learning is not the same. What separates the effective learning from the ineffective one is the ability to utilise, manage and increase the learning for the benefit of the organisation. This differentiation is its core competency that provides the competitive advantage, as this project claims. Though, Porter (1985) offered a comprehensive recipe for crafting a competitive strategy based on differentiation; nevertheless, it is limited only to products and offerings. While this had the floor for some time, nowadays, learning processes inside organisation would take its place beside products and offerings as an additional aspect, or even as the key aspect in crafting a differentiation strategy.

Another challenge for organisations is to handle incredibly large and rapidly increasing amount of information available these days (Nonaka, 1991; Mayo, et al., 1994). The real competitive advantage of organisations is their ability to use the information available to them, and the capabilities of all their people to provide better products and services for their customers. This could be achieved through a formal and an informal way, as it has been presented in the case study. We have seen

how GE has a formal process for learning represented through the formal training session and forums. However, the most effective learning takes place in an informal way through dialogue that is encouraged in all meetings and events. Schein (1993) supports this idea saying that dialogue is in the heart of any organisational transformation endeavour. So, organisations wanting to build a learning organisation have to use the dialogue technique to share visions and communicate messages. Furthermore, networking and socialisation plays an important role in the know-how transfer across the organisation. Combining the formal and the informal way to will result in outstanding results. While this could be valid for an organisation, such as GE, it should not be generalised on all organisation. But Drucker (1988) anticipated the future of organisations to be comparable to the orchestra in its conduct; he also pointed out that it will require greater self-discipline and greater emphasis on individual responsibility for relationships and communication. This, however, is not easy to be obtained in all organisations. Hence, the learning process could be considered as a core competency that is hard to be imitated even if copied by other competitors.

One can copy a Mac-Apple application and try to run it on a Windows operating system. However, the message sometimes says that the two systems are incompatible, as the master programme does not support it. Similarly in organisations, sometimes the master programme, which is the learning process or the culture, does not support the adaption of processes that did not emerge or are customised according to the 'OS configuration'. Hence, this copied CD or processes will not fit into another medium rather than the one it was created or developed for.

On the other hand, learning could also be a competitive advantage if the knowledge that is generated during this process is unique and utilised effectively. A common example is when Shell was the first to use scenario planning and scenario management during the 1970s (De Geus, 1996). They were able to use their knowledge to create the future. They studied how children learn by assimilation and accommodation and how they could –Shell – use this to obtain entry from one stage into a different

changing reality. They also learned how does the human brain deal with future by charting courses through the future and prepares an action of each possibility and stores these to be prepared for the future. Using this knowledge, they developed a memory of the future and constructed a library of actions accordingly. Scenario management in Shell was gained by continuous learning and experimenting. This collective learning process was able to provide them with a competitive advantage that led to be the only company prepared for the 70s crises and hence, have an edge over its rivals.

For GE the case was also similar. By being able to envisage the future and create memories of the future, GE was able to visualise the future and launched a program intended to develop "tomorrow's solutions" such as solar energy, fuel cells, lower-emission aircraft engines, efficient lighting, and water purification technology. This example leads to the point of the shared vision that will be discussed further.

Hypothesis 2

The second hypothesis that was tested is whether the learning capabilities of companies decline – as in human beings – by time. As learning in organisations was compared to learning in humans, so proponents to this statement support the latter statement. They argue that old established companies are less likely to learn new technologies and resist any temptation to change. Admittedly, this is valid in most public sector companies where there is no motivation or incentive to make a difference, but talking about private sector companies, this is completely the opposite. As aforementioned, Collins and Porras (1994) set out a criterion for visionary companies to be those companies that are in business for more than seventy years. Although their interest was not in knowing what it takes to survive, but it indicates that their ability to cope and accommodate is what kept them surviving (Senge, 1990a, 1990b, 1994). The adaptability, as Argyris (1974) describes it, is the result of continuous questioning of one's governing variables and own assumption and behaviour that will be reflected in adopting new mental model.

Accordingly, we can deduce that those companies have not lived over the years by coincidence, but because they learned how to learn, and used this learning on how to survive. Therefore, we can say that they have built their fortune on knowledge.

This is very much akin to how humans in the primitive society developed and survived. Primitive food-gatherers had to learn which fruits were edible and which were poisonous. Primitive hunters, too, had to learn which trees supplied the best wood for making bows or arrows. The resulting know-how was then passed down from generation to generation (Juran, 1998). And this is how long lived organisations obtain it. De Geus (1997) in his Harvard Business Review article describes the living companies as those who 'have a personality that allows them to evolve' (De Geus, 1997:52)

An example of how GE adapted to the new environment to survive dates back to the beginning of the last century, when they used their long experience and know-how in the power generation field to move into the new field of aircraft turbo superchargers (GE, 2010). This related diversification, at that time, reflects a breadth of learning capabilities to see beyond the time horizon. Not many companies could change their mental model and escape from seeing themselves interdependent and limited to their horizon. GE, however, succeeded to expand its spatial horizon and look from all perspectives for not missing the whole picture.

This was not the only act that reflected their capability to survive, but they have also perused other competitive strategies when they moved into investment services, through GE Money, which is considered an unrelated diversification. In order to stay in synch with the outside world, GE knew that it must be able to alter its strategy, its product range, its organisational form and how it does its manufacturing. This is not an easy task without valuing their people through nurturing them and developing them as they are the knowledge carriers. Since GE believes that the mere presence of traditional training and development activities is not sufficient

and that one is never finished learning and practicing, it is committed to lifelong education at all levels of organisation.

OBSERVATIONS ON THE CASE STUDY

The case study provides best practices on how GE approached learning. It has, as well, raised numerous issues that are of paramount when aiming to build a learning organisation. Nonetheless, some concerns were witnessed. The observations will be highlighted according to certain themes as followed in the case study.

Shared vision

Senge (1990b) described the shared vision as the outcome of creative orientation and generative conversation. Hence, such vision must emerge from many people reflecting on the organisation's purpose through generative conversations (i.e., dialogue). Shared vision and employee beliefs emanate from them wanting to be the best. This can be clearly seen in GE practices when they hold their events and programmes in Crotonville, where all employees are engaged in conversations and sharing their ideas and knowledge in creating their own future. Employees are also trained to speak openly about the truth of their 'current reality' (Senge, 1990a). This is what creates the creative tension as a result of the gap between their vision and their status quo. GE, over the years, mastered this learning discipline to the extent that it became a 'cult like culture' (Collins & Porras, 1994).

Inviting management gurus and external speakers and consultants to their session and forums, enriches the discussion and encourages the dialogue. Speaking to people from outside the circle of work is sometimes more convenient as there will not be any embarrassment of the appearance of incompetence. GE realised that invites people to facilitate and share their experience with the employees. Argyris (1991, 1994) warned from the defensive theory used by employees when they feel vulnerable or at risk, and that it blocks learning. It seems that GE learned

this lesson quite well that it has set ground rules for meetings that is called 'badges out' in reference to the managers to leave their authorities outside the meeting rooms for the employees to feel more comfortable to talk and discuss all the issues without the fear of being punished or deliberately harassed. This environment of openness succeeded in instilling the sense of belonging in all employees and provided confidence that their voices are listened to. Moreover, employees felt they are part of a whole.

However, one concern is raised about the involvement of employees in decision making except the decision related to headcount and compensation (interviewee 2). This actually raises some question marks regarding the transparency of that case. It is commonly believed that those issues are not discussed with employees and are the responsibility of the management alone. I believe that when people lose their jobs they understand why. And employees should be talked to in good times as well as in bad times. It is not going to work if they were only involved when they are needed. Most people understand that business have to make trade-offs as Porter asserts.

However, managers are always there for their subordinates to discuss their future, whether they want to leave, being transferred internally or want a raise. All these issues are discussed openly, which is very crucial these days, where some corporations try to entre new markets taking the easy way by acquiring the resources of their competitors. They follow similar Japanese strategy in developing core competency through acquiring competitors. An interesting case that I have witnessed is what happened in Egypt in 2007 when a third mobile operator entered the market. The case is not really reflecting a shared vision example, but it tackles the issue of the lack of shared vision and dialogue and what it could lead to. it starts when the new company started to offer double and triple the salaries for people who are already working by the other two competitors and succeeded sometimes to hire entire departments from both companies. Doing this, they weakened their competitors and got hold of the required knowledge for the start up. This has put both competitors

in a serious disadvantage and allowed the new company to obtain almost 25 % of the market share. Interestingly, after three years this organisation is now competing not only locally, but also regionally.

From the latter case we can see how critical openness is required in every single aspect that relates to the employees, especially the commonly unspoken one. A critical point that will be discussed in further details in the knowledge transfer section is the tacit knowledge that is in the possession of the employees. Another point that has to be raised is what Lave & Wenger (1991) and Nevis *et al.* (1995) defend that the knowledge is situated in the practices of everyday's work rather than being in the possession of individuals. They also add that this knowledge stays within the organisation even if individuals change. The aforementioned example provides evidence that their statement has little ground and can be easily refuted. The only action that might support their statement is that there should be a process that ensures capturing this knowledge to utilise it in the everyday's work. Similarly to what GE does by capturing this 'tacit' knowledge of its employees through the formal and informal socialisation and networking processes. Else, as Schoen (1992) states, not capturing this tacit knowledge jeopardise the company's position as it results in knowledge and competitive advantage loss.

At any rate, an important point to be raised here is that learning behaviours are likely compromised in punitive environments. People on the defence are just saving their rear-ends and not thinking about how to better themselves through a learning experience. Adopting Argyris Model II theory should lead to minimally defensive relationships, high freedom of choice and increased likelihood of double-loop learning.

Experimentation

Experimentation in GE is widely encouraged across the company. This is inevitable for an innovative company. This is also not lip service as this

was reflected in their new slogan 'imagination at work' replacing the long-time slogan 'we bring good things to life'.

From the study we saw how new comers – L&D director in his second week – was encourage to question existing paradigms and mental models. He was also empowered to take personal initiatives. This tolerance of idea persuades people to speak with no fear as Edmondson (2008) labels it with 'safe to say'. Hence, there will be no difference between employees' espoused theory and their theory in action, as Argyris describes it. There will be only one master plan and double-loop learning will take place.

Although, no example where giving from situation where the people or the organisation learned from their mistakes, but it is known that the greatest learning takes place in failure when things do not go as expected. And again, as long as the people feel that their mistakes will be tolerated, they will keep questioning, experimenting and learning. Undoubtedly, people in GE feel that inventing new knowledge is not a specialised activity of only some departments; it is everyone's responsibility and by time it became a way of behaving. For any organisation that is aiming to build a learning organisation, knowledge and learning shall be at the very centre of their company's human resources strategy as knowledge always begins with individuals. Again, here the point of the tacit knowledge is raised once more. This is a problem when there is no firm wide programme to capture this tacit knowledge.

Leadership engagement in such experiment is inevitable. This can be seen in the practices of GE's leaders over the last three decades. They experiment themselves and act as an example. This conforms to what Mintzberg (2009) proclaims that a community leader should be personally engaged in order to engage others, so that anyone and everyone can exercise initiative. He adds 'If you doubt this can happen, take a look at how Wikipedia, Linux, and other open-source operations work'.

Transfer of knowledge

GE is a multinational conglomerate; hence we can imagine the complexity of the organisation structure. We just have to imagine that each business unit has a CEO and a complete structure. Despite this complexity, GE achieved to prevail over it and create a virtual matrix-like structure that has the capability to act like a neural network. This neural network enabled maximum agility and responsiveness.

Critics might argue that in such organisation structure that is not hierarchical and highly formalized, employees are not subject to close monitoring and do not have excessive controls in their job environment (Goh, 2008). However, proponents such as Drucker pointed out that companies will look more likely to resemble large symphony orchestra, thus will depend on autonomous models and the decisions are more passed down the line. This also will attribute to the agility of the organisation, and the high responsiveness of the decision making that might guarantee first movers advantage.

On the other hand, sharing the knowledge is a vital task for all organisation members. It is important for the organisations as it is for the employees. For the organisation to ensure capturing the tacit knowledge of its members to be able to use it and share it with existing or new members. As for the employees, some of them think that it is their competitive advantage to keep their knowledge for themselves and not share it with anyone, as this will keep them a valuable source of information in the organisation, ignoring the fact that information and even knowledge if available on the internet before it is available in books. The benefit of sharing one's knowledge is to gain more knowledge from others and continuously validate one's own knowledge. This is the main idea of sharing knowledge and experience of others. Assuming we have ten people each with a work experience of ten years and all are sharing their knowledge, hence we will be having a collective experience of one hundred years. Basically, learning organisations like GE knows this fact and utilised it to the utmost.

It can be recognised how they encourage the networking and socialisation events, to be able to take hold of the employees' tacit knowledge. A dangerous point was raised by the L&D manager, saying that the databases they use are only shared within the department and not across the whole company, asserting the reliability of their networking and socialisation process that helps in communication. However, the following example shows the risk that GE might face in the future, if it did not take serious measures to solve this issue.

I worked as a consultant in a project in one of GE competitors in 2006 that was about solving a similar conflict that happened due to a deficiency in sharing knowledge, or to be precise not sharing anything. They had similar organisation configuration and structure, namely seven different business units; each unit acts as a separate entity or company within the organisation and has its own structure, databases and clients. But, due to similarities in some products and supplementary, problem started to rise. It happened when some clients received two different offers with different prices for the same product from two different departments. The other issue is that the business units started to compete with each other and not focusing on the bigger interest of the company. There were no coordination between departments and this in turn led to duplication of data and redundancy of efforts. The solution as visualised by the CEO was to have a share point (database) where all the projects data were stored on and even all the offers are stored and access guaranteed to all relevant people across the organisation to ensure that the information is shared within the organisation. This enabled all the departments to see each others projects and offers and decide whether there is a potential benefit for them or not. Up to here, this could be a reasonable solution but what's more, to ensure all the departments share their information and utilise other people's information, the CEO tied up all departments business target agreements with each other. Meaning, that each business unit target includes a certain percentage that should be achieved through cross selling activities, i.e. activities from selling other departments products. This had created momentum in the organisation that not only

encourage sharing the knowledge through the systems and databases, but created a dialogue between the different departments after they were acting like separate islands under one name – GE.

The challenge that is still facing numerous organisations is how to convert the discrete pieces of the explicit knowledge into a new whole into manuals that could be passed to organisation members even if have not meet or seen the originator or owner of the tacit knowledge. This is how organisations should capture knowledge and translate it into routine and policies that will benefit the business conduct and hence provide competitive advantage. Numerous organisations complain that they have superb routines and governances and the most recent technology available at their premises though they do not feel any advantage over their rivals. Their problem lies in the implementation and utilisation part. Hence, the problem shifted from being a sharing problem to being a utilisation problem – i.e. from a behavioural problem to an attitude problem. In that case, solutions like the one of the CEO in the previous case are optimal.

Once a company has adopted a new solution it has to be able to invent new behaviours and establish a process for transmitting skills from individuals to the entire community to overcome what De Geus (1998) warns from that knowledge travels with people not on paper.

Mental models

Senge *et al.* (1990) explain the mental models briefly in the context of organisation that it is the deep-seated assumptions that we base our actions upon it. Learning as Argyris' double-loop learning model suggest is based mainly on questioning our mental models. In the business context, GE is successfully creating a 'can do' mindset in their employees by offering them to experiment and try new things. The company prepares them always to question the company's routines.

In essence, this requires firstly to stop thinking in short-term and look at the bigger picture and regard the system as a whole not as a small disconnected pieces. By acting and behaving based on this systems thinking notion, employees will know that each of their action, no matter trivial or significant will affect the whole. Accordingly, to be fully effective in delivering sustainable benefits, employees should switch their attention to the long-term goals of the company. A 'Knight's move thinking' approach is also adopted in their problem solving methodology.

With the uncertainty and ambiguity that surround us, Leaders must have the creative and intuitive ability to draw mental pictures of the organisation's future they wish to achieve (shared vision), telling the truth about where they are (Senge creative tension), and directing the organisation towards the lighthouse beacon in the storm (Mayo & Lank, 1994). Continuously expanding their capacity to create their future

Fostering an atmosphere in which organisation members feel 'safe to say' or express themselves and feel respected, pays off and results in people eager to work. When people know their ideas are welcomed, they will offer innovative ways to lower costs and improve quality, thus laying a more solid foundation for their company's success. When managers empower, rather than control; when they ask the right questions, rather than provide the right answers; and when they focus on flexibility, rather than insist on adherence, they move to a higher form of execution (Edmondson 2008).

Team Learning

GE is continuously optimising their people competencies as it is optimising its capital. Their people carry the knowledge and, therefore, the source of competitive advantage. The engagement efforts create sense of belonging to and caring for something larger than themselves inside the employees. GE achieved this through the previously mentioned forums and meetings that are used to promote and cultivate learning inside the organisation. GE's conviction is that team learning is the medium and means that

ensure learning takes place inside the organisation. Engaging in team learning force people to enter the learning cycle even if they were reluctant to do, as everyone will feel the openness to share their knowledge and experience as well as concerns. This in fact is precisely what Argyris explained in his double loop learning notion of the interaction between the information feedback and the mental models of the real world, which is the link that differentiates the single and double loop learning.

In conclusion, it is the duty of managers to convert their companies into communities because it is the glue that binds the company together for its greater good (Mintzberg, 2009). Numerous researchers have reached the same opinion about the collective learning inside the organisation; nevertheless, they disagreed in the way how to achieve it. My conviction is that this is part of each company's competitive advantage and how it utilises its capabilities. The modern 'brain rich company' as de Geus (1998) defines it is a community of people that to succeed must maximise its available brain capacity. Alike humans, each one utilises his brain in his unique way and that what makes people different than each other and this is how it should be for organisations. The latter conforms also with the view Mintzberg (2009) that Organisations function best when committed people work in cooperative relationships based on respect.

It can be presumed that team learning has benefited the six sigma approach and vice-versa. It can also be said that the six sigma approach, which is designated by the culture of high quality, has benefited GE from a cultural perspective more than it helped them from a quality perspective. They might have Six Sigma project that failed, however, it succeeded in promoting a culture of high quality, like Kaizen philosophy that also aims to improve the quality in organisations, but achieves this through the change in the master programme rather than making corrective actions. This approach depends completely on focusing and improving the drivers that consequently will affect the results.

Learning for GE is not just a vision. It took its place in their strategy as one of its missions. A company that invests yearly one billion US Dollars in people's development and training is considering learning as one of its missions. From that we infer that GE looks beyond the short term returns, and regards learning as the spearhead with which they conquer the market. Peter Drucker once said that 'Profit for a company is like oxygen for a person, if you don't have enough of it you are out of the game'. Nowadays, we should say the learning for a company is like oxygen for a person. Learning and knowledge are now the driver of the company; profits are only results of the business. If companies were able to improve the efficiency of the drivers, the results will be outstanding. Hence, "Learning for a company is like an engine to the car, if you have an inefficient one, you won't go far".

The main question emanating from the many paradoxes of organisational learning does it provide competitive advantage? The answer is simply "Yes". However, the way to achieve that is not simply as the answer. Learning is a very long process that takes much effort and time. Argyris learning-loops are a good framework for understanding the concepts of learning and reflecting and Senge's five disciplines are a good structure to fleshing out the skeleton of the organisational learning. The process of fleshing provides the competitive advantage to the organisation. Books are full of theories and models and disciplines, on "How-To" build LO, but the real competitive advantage lies in the 'Know-How' or the 'know-how-to' that differs from the 'How-To' by the knowledge. Data and information could be easily found everywhere, but knowledge is the true cognitive and analytical ability that is only encompassed in a genuine learning process. The first hypothesis proved its argument that the learning process is a competitive advantage per se. What should be kept in mind is how to differentiate oneself in learning? What makes a student better than his classmates is the same thing that will make an organisation better than its rivals. The way it assimilates information and creates knowledge. What made the titmice gain advantage in the interspecies competition over the red robins in the well-documented example of the milkmen in Great Britain during the 1930s. It is their ability to learn from each other

thorough socialisation (De Geus, 1997). The examples are plenty, but in the end one cannot follow a copycat strategy. It is about how to become number one, rather than to be like number one. The only way to do this is by taking a learning orientation. Briefly this means involving everyone in the system in expressing their aspiration, building their awareness and developing their capabilities together.

Finally, no final study can definitively determine final say in this topic. Learning now is not the learning of tomorrow. The methods, tools and techniques differ from generation to generation. Hence, the competitive advantage depends on who will be able to have the superior method and tools in gaining information and knowledge and how to utilise it for the benefit of the organisation. Future researchers could perform longitudinal studies that investigate the potential improvements in the existing method or the creation of new ones. Care must be taken to control for the firm-specific cultures.

Appendix A

Questionnaire

Organisational Learning in GE

General *

1. What is the aim of becoming a Learning Organisation?
2. How did GE implement Organisational Learning (OL) concepts?
3. What was achieved and what was elusive? In that case, what are the areas/disciplines that are hard to be implemented and why?
4. How did GE sustain OL over the years?
5. Did OL really provide GE with the intended competitive advantage?
6. What are the critical success factors that led to success?
7. What are the failures?
8. How long did it take to become a Learning Organisation?
9. How do you measure OL? And when to say that GE became a learning organisation?
10. To what extent are corporate level organisational learning policies and practices translated into business unit policies and practices?
11. Do you think that the absence of OL is a primary cause of organisation decline?

* Main themes are adopted from (Goh, 2008)

Clarity of Purpose and Mission

1. Is there a widespread support and acceptance of the organization's mission statement
2. How is the mission of the organization achieved?
3. Does the organization's mission statement identify values to which all employees must conform?
4. Do you have opportunities for self assessment with respect to goal attainment

Shared Leadership and Involvement

5. Do senior managers resist change?
 - a. If yes, why?
 - b. If no, what is the evidence?
6. Do senior managers and employees share a common vision of what the work should accomplish?
7. Do managers accept criticism without becoming overly defensive?
8. Do managers often provide useful feedback that helps to identify potential problems and opportunities?
 - a. If yes, by what means?
9. Do managers frequently involve employees in important decisions?
 - a. If yes, to what extent do they empower and support their employees?

Experimentation

10. Are people who are new in the organization encouraged to question the way things are done?
 - a. If yes, how?
11. Are the managers encouraging team members to experiment in order to improve work processes?
12. Are innovative ideas often rewarded by management?
 - a. Are new ideas from employees treated seriously by?

Knowledge Transfer

13. Do employees have the opportunity to talk to other staff about successful programs or work activities in order to understand why they succeed?
14. Are failures discussed in meeting?
 - a. If yes, constructively or negatively?
15. How do employees know about new projects, contracts etc. within the organisation?
16. How are new policies/processes/procedures communicated to the employees?
17. How do you encourage knowledge sharing in the organisation?
18. Do you have a system that allows everyone to learn successful practices from other organizations?
19. Do you share lessons learned from each project within the organisation?

Teamwork and Group Problem-solving

20. Does the current organizational practice encourage employees to solve problems together before discussing it with a manager?
21. Do you have specific problem solving groups in the organization?
 - a. If yes, how is it formed?

Organization Design/Structure

22. Is there an overlap in work between different units in the organization?
23. Does the organization have too many levels of hierarchy?
24. How do you introduce new work activities/processes?
25. Do you follow a certain management system
26. Do you have a department/function responsible for overlooking the implementation/maintenance of those systems?
27. Do employees work usually closely monitored and inspected by management?
28. Do you have established standard operating procedures (SOPs) for every work situation?

Research questions

- How did GE implement OL concepts?
- What would be achieved and what would be elusive? In that case, what are the areas/disciplines that are hard to be implemented and why?
- Could all Learning disciplines (5 disciplines) be implemented?
- How did GE sustain OL over the years?
- Did OL really provide GE with the intended competitive advantage?
- What are the critical success factors that led to success? What are the failures?
- How long did it take them to become a Learning Organisation?
- How to measure OL in an organisation? i.e. when to say that GE became a learning organisation?
- Investigating the extent to which corporate level organisational learning policies and practices are translated into business unit policies and practices.
- Is the absence of OL a primary cause of organisation decline?

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ⁱ The 7s Model consists of: Strategy, Structure, System, Shared Values, Style, Staff and Skills. A simplified description for each of the 7 elements can be given as:

- Strategy: The company plan or route-map to maintain competitive advantage
- Structure: The company hierarchy
- Systems: The day-to-day processes and procedures throughout the company
- Shared Values: The core values of the company
- Style: The company leadership style
- Staff: The company's employees and their broad abilities
- Skills: The skills and competencies of employees