A CASE STUDY ON KNOWLEDGE TRANSFER AS AN INTEGRATIVE APPROACH TO COMPETITIVE ADVANTAGE

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ABSTRACT

Knowledge has been recognised as a source of competitive advantage. Knowledge-based resources allow organisations to succeed by providing the ability to adapt products and services to the marketplace and deal with competitive challenges. One critical factor is the ability to transfer knowledge as a dimension of the learning organisation. There are many elements that may influence whether knowledge transfer can be effectively achieved in an organisation such as leadership, problem-solving behaviours, support structures, change management, absorptive capacity and types of knowledge. Based on a framework suggested by Goh (2002), an exploratory case study was conducted to explain how knowledge transfer can be managed effectively and to identify emerging issues or additional factors necessary in the process. As a result, a refined model is proposed for a better understanding and effective management of knowledge transfer process that could enable competitive advantage.

Keywords: Knowledge transfer, learning, competitive advantage, case study

1. INTRODUCTION

To gain sustainable competitive advantage, it is imperative for organisations to be knowledge-intensive, apply reuse economics, create knowledge and deliver quality to keep pace with changes in the marketplace. Firms need to harness knowledge and learn faster than competition. In order to achieve this, they need to firstly organise and manage the process of knowledge transfer within the organisation itself. The purpose of this paper is to provide some insight into how knowledge transfer is perceived and managed by those involved and what are the factors required to enable learning and dynamic capabilities within the organisation for competitive advantage. A framework was adopted to test its applicability on managing knowledge transfer in an engineering firm in Australia. Semi-structured interviews with managers in the organisation confirmed various strategies and factors involved in the flow of knowledge from both internal and external sources. The findings and analysis show that knowledge transfer is dependent on a wide range of factors, and as such, a revised model is proposed for the effective management of the knowledge transfer process for competitive advantage.

2. LITERATURE REVIEW

2.1 IMPORTANCE OF KNOWLEDGE

Knowledge has been recognised as a source of competitive advantage (Nonaka *et al*, 1996; Penrose, 1959). The key to understanding resource-based strategic formulation involves examining the relationship between resources, capabilities, competitive advantage and profitability; and how these can be sustained with knowledge as the bottom line (Grant, 1991). Other authors such as Spanos and Prastacos (2004) also

postulate that knowledge and human actors are underpinning to organisational capabilities. They are not only restricted to human capital, but also found in organisational routines, processes, practices and norms (Davenport and Prusak, 1998). These knowledge-based resources allow organisations to succeed by providing the ability to adapt products and services to the marketplace and deal with competitive challenges (Ciborro, 1991). The generation of knowledge is the key element that enables an organisation to renew itself and expand its boundaries (Barney, 1999). People develop an understanding of the way things work in a particular way, and how they can be replicated in other settings. This in turn triggers another kind of knowledge that involves exploration and problem solving (Polanyi, 1958). Organisations therefore need to manage its intellectual capital effectively. Some firms outperform others through acquiring new knowledge and at the same time leveraging on existing knowledge.

The new business environment today consists of high growth and knowledge-intensive industries where firms have to develop capabilities that allow them to be very flexible and agile, and at the same time, be able to incorporate new (product and process) technologies that enable them to develop and exploit better practices. This flexibility and agility calls for companies to increase their effectiveness, exploit synergies, and learn throughout all areas of their operations. Learning is central to innovation and improvement. To build innovative capabilities, organisations need to develop and encourage learning behaviours (Hyland *et al*, 2003). Learning according to Argyris and Schon (1978), allows people to question and challenge existing paradoxes that various workplace systems institutionalise as standard behavioural patterns. At one extreme, existing or repetitive learning appears to occur through standardised and routinised behaviour, often called single-loop or lower-level learning (Fiol and Lyles, 1985). At the other extreme, behaviours that verify, challenge, and question the paradox of existing routines has been labelled double-loop or higher-level learning (Senge, 1990; Argyris and Schon, 1978). The development of capabilities will most likely result from a culture of learning, established over time, where learning behaviours are clearly evident. Capabilities can only be developed by the progressive consolidation of behaviours, or by strategic actions aimed at creating new assets or by reorganising the stock of existing resources. Knowledge and information can be termed as a key driver for competitive advantage. In most organisations, people acquire and generate new knowledge internally and once it has been acquired there is a push to utilise this new knowledge in innovative ways (Soosay and Hyland, 2004). While knowledge and information is generated internally, it is often based on information acquired from customers, suppliers and competitors.

Management is increasingly aware that knowledge resources are essential to the development of their organisations. Knowledge and information technologies are the critical success factors for strategic formulation. Such strategies and their implementation should be supported by a set of informational data and a knowledge development process (Carneiro, 2000). Organisations should develop a feasible strategic knowledge system. The valuable asset of any organisation owes to its human attributes, and managers should distinguish between the different levels of knowledge. For instance knowledge workers such as strategists, engineers, technicians and researchers render valuable insights and values to the company. They are the core intellectual competence of the firm, and know how to optimise the situation relevant to decision making. They are the ones that create the most value in some industries, and increase innovation. Knowledge management is a valuable strategic tool, as it could be

a major source in the formulation of strategies. Companies often use it in the decision making process to envision competitive strategies. Combining knowledge management with innovative efforts, updated information technology and knowledge development could assist an organisation achieve a set of capabilities to increase its innovativeness and competitiveness. In a dynamic business environment, the competitive advantage of firms is rooted in their efforts to develop or capitalise on knowledge development. Managers should ensure that there are opportunities to harness knowledge development for competitive strategies, and possibilities based on innovation and competitiveness (Carneiro, 2000). In this necessary circumstance, firms could use their capabilities to generate radical changes in the processes and technologies to become flexible and adapt the resources to the strategic formulation (Page, 1993). As such, knowledge is considered a key factor for the organisation's performance. Knowledge management is about harnessing the intellectual and social capital of individuals, in order to improve organisational learning capabilities, recognising that knowledge (and not simply information) is the primary source of an organisation's innovative potential (Marshall, 1997; Castells, 1996).

Organisations have always depended on the experiences and know-how of management and employees. However, organisations have recently come to understand that in order to succeed in the dynamic marketplace, they need to view knowledge as a significant organisational resource (Alavi and Leidner, 2001). Knowledge management involves the management of knowledge processes, which are often categorised by whether they involve knowledge creation or knowledge reuse. Knowledge creation is typically viewed as more important than knowledge reuse since it is more difficult to manage and is less amenable to information technology support. However knowledge reuse can also derive benefits in terms of knowledge resources.

2.2 KNOWLEDGE TRANSFER CONCEPTS

Knowledge transfer within an organisation may be considered as the process by which an organisation makes available knowledge about routines to its members, and is a common phenomenon that can be an effective way for organisations to extend knowledge bases and leverage unique skills in a relatively cost-effective manner (Kalling, 2003). English and Baker (2006) proposed that rapid knowledge transfer involves the discovery, learning, creation and reuse of knowledge that eventually becomes intellectual capital for values and profits. It is a process that combines best practice knowledge management, learning, intellectual capital creation and reuse in an integrated improvement framework. Knowledge transfer can discover, create and replicate successes, enhance quality and productivity performance, and concurrently foster the rapid innovation of new knowledge-based products.

The concept of the learning organisation has been well articulated by Senge (1990). One important attribute is the ability to transfer knowledge quickly and effectively from one part of the organisation to others. If knowledge is just a repository of information in a database or private knowledge domain, then the organisation cannot use it to learn. Knowledge can be shared among employees or teams to improve a product or work process. O'Dell and Grayson (1999) suggest that transferring knowledge can yield enormous benefits. The example of Texas Instruments was cited as having increased their annual fabrication capacity by $1.5 billion through transferring best practices across their subsidiaries. Goh (2002) suggests that one way to encourage knowledge transfer is to focus on a selected value such as increased customer satisfaction. Employees can then focus on capturing knowledge specifically and business solutions

directed at increasing sales, improving service delivery and resolving customer problems more effectively. The results will be captured as best practices and the knowledge transferred to other employees and even to the customer (Goh, 2002). Secondly, technology can be used to facilitate knowledge transfer. This can incorporate virtual teams or networks across subsidiaries or departments within organisations and allow for knowledge sharing. By investing in technology, employees can network and exchange critical information across geographic locations.

The culture of an organisation can also be an enabler of knowledge transfer. Despite its broad concept and many dimensions involved, the critical factor of knowledge transfer is cooperation and collaboration. Managers should impart mechanisms to encourage cooperation, structured or technological interventions to facilitate knowledge transfer. It requires employees' willingness to work with others and share knowledge to their mutual benefit. One fundamental aspect of cooperation is the level of trust. Goh (2002) also postulates that certain management practices can influence the level of trust in an organisation. When decisions are made openly, information is widely available and accessible by employees. Apart from that, an experimenting and innovative culture needs to be established for employees to be constantly problem solving or seeking (Basadur, 1992). As a result, a culture of experimentation with trust and a collaborative climate will have a positive effect on knowledge transfer.

Knowledge transfer theory has obvious overlaps with general knowledge management. Kalling (2003) purports that the specific focus of knowledge transfer is the processes by which members within the organisation learn from each other, without interacting with the environment. The absorptive and retentive capacity of the recipient is central in knowledge transfer situations (Simonin, 1999; Cohen and Levinthal, 1990). There are various factors that need to be considered in the knowledge transfer process. These can be classified into cognitive factors and organisational context. For cognitive factors, the nature of the transferred knowledge affects the success (von Hippel, 1994). The more tacit, complex or ambiguous the knowledge, the more difficult it is to accomplish transfer. Secondly, the cognitive abilities of both the source and recipient are important factors (Tsai, 2001). Thirdly, the value of knowledge at the source can be a potential factor; because the more valuable it is, the more likely the recipient will attempt to use it (Gupta and Govindarajan, 2000). Fourthly the commonality, uniqueness and inimitability of the knowledge are important factors in terms of competitive advantage (Barney, 1999). The organisational context refers to the following factors. Firstly, geographical proximity assists to intensify communication between individuals. Successful knowledge transfer is more effective when there are meetings, personal acquaintances and face-to-face interactions (Ingram and Baum, 1997). Secondly, intensive integrative practices such as interaction from cross-functional areas increase the likelihood of successful transfer (Hoopes and Postrel, 1999). Thirdly, the existence of communication channels, social sub-networks and inter-relations of organisational members also affect the impact of knowledge transfer; and lastly the perceived trustworthiness of the knowledge source is reported to be a factor (Tsai, 2000).

In a recent study of a knowledge transfer program, Kalling (2003) found that motivation was a key driver to success. Cognitive factors such as causal ambiguity, tacitness, absorptive and retentive capacity were affected by motivation. The stronger the motivation, the more likely individuals will work harder on trying to learn and pick up new knowledge. Kwan and Cheung (2006) also distinguish two types of motivation present. Intrinsic motivation includes an individual's propensity to share as a pro-social attitude and is directed towards maintaining the well-being of others and the

organisation. There is the desire to benefit the organisation, getting useful information and expected reciprocal sharing (Fraser *et al*, 2000). Extrinsic motivation is when the knowledge culture fits in with the existing culture of the organisation. Kwan and Cheung (2006) illustrate this through five methods. These are 1) linking knowledge sharing with solving problems, 2) tying sharing knowledge to a pre-existing core value, 3) introducing knowledge management that matches the organisation, 4) building on existing networks, and 5) encouraging peers and supervisors to exert pressure to share.

2.3 PROBLEMS IN TRANSFERRING KNOWLEDGE

According to Guzman and Wilson (2005), the main problems of knowledge transfer are related to the complexity of the social processes that occur during the transfer process, to structural organisational factors and to the degree of abstraction in which organisational knowledge is packaged for transfer. Organisational knowledge is complex because the transfer of knowledge is primarily based on individual interpretation, cognition and behaviour. These in turn are affected by contextual factors. In order for knowledge to be transmitted effectively, it must be congruent with the existing social context. The structural issues include the conflicting goals within the organisation (Perrow, 1979), between organisations, the low levels of trust (Child and Faulkner, 1998), the limits of human rationality (March and Simon, 1958) and the limitations of the approach used (Brown, 1992).

3. FRAMEWORK FOR KNOWLEDGE TRANSFER

Goh (2002) proposed an integrative framework to explain how effective knowledge transfer can be managed in an organisation. Several key factors have been identified as significant influences on the ability to transfer knowledge within an organisation. The framework is presented below as Figure 1.

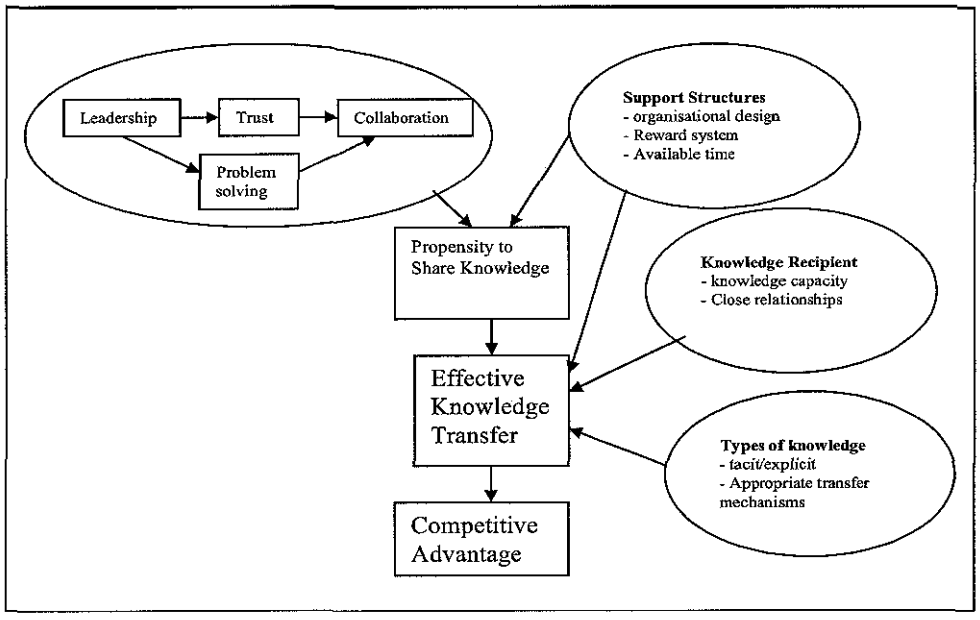

Figure 1: Framework for effective knowledge transfer

Firstly, leadership plays an important role in establishing some of the key conditions required to facilitate knowledge transfer. They influence the organisational culture and

the support conditions needed for knowledge sharing. Leaders need to show a willingness to share information and knowledge freely and to seek it from others in the organisation. They have to convey the attitudes and knowledge to solve problems and improve operational effectiveness. This attitude can create an environment of trust and influences attitudes throughout the organisation about information sharing and collaboration. Serving as role models, leaders can encourage the willingness in other employees to emulate them and simultaneously convey a culture of collaboration, sharing knowledge/information and increase the propensity of employees to participate.

Secondly, problem solving or seeking behaviours are ways of driving the information sharing and knowledge transfer. All employees should be encouraged to adopt an attitude of continuous improvement and learning. This should be focused on a value that is important to the organisation, such as customer service, product quality or cost effectiveness. Knowledge sharing can then be encouraged around each value. The support structures can be classified into technology, training and skills development, rewards and organisational design. By investing in the right technology, they can support a change to a culture of openness and accessibility to information critical to problem solving. Technology can also facilitate horizontal communication and simplify the sharing and access of information and knowledge databases. Employees, similarly have to be trained in using the technology and maximising its potential to increase communication and information sharing. The organisational design could be implemented in such a way that allows for cross-functional work teams. Boundaries could be established without hierarchical barriers or restrictions.

Furthermore, the absorptive and retentive capacity of individuals can encourage knowledge transfer. The organisation has to ensure that both parties have the necessary knowledge base to learn and understand each other. The new knowledge gained during the transfer needs to be institutionalised in the organisation. Positive relationships and ease of communication have to be developed between parties to the knowledge transfer. Finally, the type of knowledge transferred needs to be considered and matched to the process used to make the transfer. Managers need to examine the relative frequency with which their structured processes are used to facilitate knowledge transfer. They can ensure an appropriate balance in the use of these processes (adapted from Goh, 2002).

4. METHODOLOGY

In this study, a qualitative, grounded theory methodology (Strauss and Corbin, 1990) was used. This method is especially suited for the current research and has been used in investigating knowledge transfer in other case studies (Guzman and Wilson, 2005; Newell *et al*, 2003). Consequently, this study was exploratory in nature as the learning and transfer of knowledge within the firm evolved over a period of time. In line with qualitative research methodology, information was gathered from interviews and other relevant documents. Semi-structured interviews were held with several managers and employees from various levels in the organisation. It was felt that responses from different perspectives could provide greater depth and quality when writing up the case study. This triangulation was deemed to be indispensable for the analysis of qualitative data (Punch, 1998). When analysing the data, emerging themes were clustered together. Data analysis involving data reduction and verification were undertaken throughout the duration of the study (Miles and Huberman, 1994). A case study of this kind has some limitations in terms of generalisation to population. A one-case approach also meant that the characteristics of the particular case (such as the knowledge, strategies, heterogeneous, local, character of markets, etc) may have an impact on the

interpretations. The findings however are discussed in relation to existing theories and the paper proposes extensions or refinements in relation to the model (Yin, 2003). The research examines various characteristics of the organisation, including both soft and hard aspects for knowledge transfer. It intends to test the framework for future refinement in order to investigate knowledge transfer in an organisation. The research questions are 'What knowledge strategies are evident in the exploration and exploitation of knowledge?' 'What factors enable effective knowledge transfer in the organisation?' 'How does knowledge transfer facilitate competitive advantage?' The study adopted the framework as proposed by Goh (2002) in an engineering firm in Australia to analyse its applicability and to explain how effective knowledge transfer can be managed in the organisation.

5. FINDINGS

The case study is an established engineering firm located in Sydney, Australia; largely involved in research and development of renewable technologies involving photovoltaic (PV) solar panels. The firm is a wholly owned subsidiary of a large multinational corporation based in Europe. For the purpose of anonymity, the firm is referred to as Firm SPV. The company in Australia comprises some thirty employees mostly involved in the design and development of a second generation photovoltaic technology based on crystalline silicon on glass hexanate. There is heavy emphasis on breakthrough research with radical new technology. The firm in Australia only invents and develops the prototype modules for new products, whilst all manufacturing is conducted in their factory in Germany. The market for the products is predominantly in Germany with a small percent in Australia- currently the remote area power suppliers, where there is no electricity grid. About 20 percent of the demand in Australia is from rooftop PV panels due to a host of reasons. Some customers are altruistic in that they are realising they want to make a contribution to the environment. Some customers are installing it because of rising electricity prices, and others are doing it as an economic investment. Firm SPV is extremely knowledge-intensive since almost all employees possess a tertiary education. Half of them possess at least a Masters degree or a PhD. There is constant research and product development through continuous innovation at Firm SPV. The employees are involved in improving existing products, designing new products and developing the manufacturing process line in Germany. The existing generation one technology in PV is based on wafers of silicon, which is 300 microns thick. The wafer technology is still being improved given its high cost limits. Generation two technology however utilises a thin film technology using sheets of glass as thin as 1.5 microns. Firm SPV is renowned as a knowledge-intensive, innovative firm comprising highly intelligent, skilled and competent professionals who constantly strive to improve products and processes. We investigated the knowledge strategy and how knowledge transfer was effectively managed in the organisation.

5.1 ORGANISATION OF INTERNAL KNOWLEDGE

The workforce at Firm SPV is both an amorphous structure and a team-based structure. There are two broad groups identified as the R&D group comprising people who operate the pilot line and define new ways of improving the technology, and the engineering group comprising people who are constantly upgrading products and designing the manufacturing process for the factory. The project team structure works exceeding well because it was both 'motivational and effective' in the implementation. Employees are classified into engineers, scientists and technicians. The leadership team

for Firm SPV is located at a separate office in the city, whilst the rest of the employees are situated in an industrial building equipped with research and production facilities in the south of Sydney. The leadership team meets with the employees during the weekly meetings to update on the progress of projects, costs and various matters.

Most of the new knowledge is created from within the firm itself through brainstorming in project teams. A project plan structure is developed to achieve objectives, and ideas are generated and tested on the pilot line. Employees are empowered and encouraged to experiment as part of learning and creating new knowledge. The manager cited an example where a team experimented with the time allowed for silicon to be deposited given the 300 variables and parameters of production. They found that an increase in the deposition time of 10 minutes made a huge improvement in the performance and quality of the solar panel with more energy displaced. As a result, it could be sold at a higher price. A deputy research director was placed in charge of statistical experimentation techniques where when they changed more than one variable in an experiment, they could pinpoint what caused the improvement. All knowledge generated within the organisation is captured through a database software called POEM. All employees whether scientists, engineers or technicians have access to POEM and are encouraged to learn from other people's experiments, outcomes, new methods and processes. At the same time, a costing tool is also put in place to every project for employees to check that the new products and processes are reasonably cost effective to produce at the factory. Similarly, Firm SPV is ISO 9000 certified with all processes fully documented and controlled to be a quality organisation.

Secondly, a formal research direction meeting is held every Friday evening where all employees give a status report on their projects to management. At this meeting, everyone gives feedback and suggestions to improve processes and methods. Additionally, informal meetings are continuously held within and among teams all the time. One scientist interviewed reiterated that the meal room is a great resource area with a casual environment where people are more likely to interact and share ideas. Firm SPV adopts an open environment where all information and documents are accessible to everyone. There is knowledge transfer across subsidiaries and with the parent organisation through the intranet and a virtual private network, which provides a collaborative platform to share and exchange ideas. Employees are seconded to Germany to undergo training in photovoltaic technology, to learn German, to impart their knowledge on manufacturing process or production of a solar module to the German factory. Employees are also encouraged to attend international workshops and conferences to obtain new knowledge and effectively transfer them within the organisation upon return.

5.2 KNOWLEDGE TRANSFERRED FROM EXTERNAL SOURCES

Firm SPV obtains knowledge from several sources through its dealings and transactions with other organisations. For instance, the customers of Firm SPV are mainly wholesalers who distribute the solar panels to retailers in Australia. There is continuous feedback sought on the requirements and performance of solar panels. This feedback could serve as possible ideas for future projects, research or product development. Secondly, the suppliers provide valuable information and technology in developing their manufacturing process. Firm SPV currently uses the technology from inkjet and laser printers, not to print, but to cut very tiny holes in the silicon at micron levels. They have developed a relationship with an inkjet printing company to assist them in the technology. Instead of ink, a caustic solution is utilised to cut the hole using inkjet

technology. Firm SPV is also able to transfer new knowledge and skills while outsourcing services. The general manager gave an example how they employed a consultant to join their firm who was from Price Waterhouse Coopers and contracted to manage the administration and financial operations at the time. They strive to bring skills in-house if it is more cost effective, and believe that they can 'gain external knowledge through gaining the people themselves'. Firm SPV also engages with senior academics at the University of New South Wales to provide research and development advice and guidance. Another source of information is through a partnership agreement with a German manufacturer, who provides feedback and suggestions on the production of solar panels.

5.3 Outcomes from a Knowledge Strategy

During the interviews, the managers commented that through the new knowledge, they have developed new technologies, increased efficiencies in production, giving them a competitive edge and are able to develop a better business strategy. The knowledge that is transferred to the firm can form a stronger foundation for the design of knowledge management systems. The managers interviewed highlighted the increased quality and productivity performance which created a competitive advantage for Firm SPV. By focusing on a knowledge program as a priority, they developed propositions, policies and approaches to increase knowledge utilisation, manage tacit knowledge and innovative ways to reuse best practice knowledge and intellectual capital. Firm SPV also adopts an attractive reward structure for maintaining or increasing the high motivation and productivity levels of employees by means of a remuneration bonus, offering shares as ownership of the business and joint decision making with management. A summary of the type of knowledge transferred, their sources and their importance to competitive advantage is presented in the following table.

Type of Knowledge transferred	Source		Importance to Competitive Advantage		
	int	ext	High	Medium	Low
Information Technology consulting	X	X	✓		
Marketing related	X			✓	
Research and Development	X	X	✓		
IP-related, legal and accounting	X	X	✓		
Management of Product Development	X				✓
Engineering of Product Development	X	X	✓		
Recruitment and Human Resource	X				✓
Strategic business development	X		✓		
Environmental impact	X				✓
Community		X			✓
New Product development	X		✓		
Support work functions		X	✓		
Relationship building for policy awareness					✓

Table 1: Types, Sources and Importance of knowledge to Competitive Advantage

6. Discussion

The case study served as an exploratory study to explain how knowledge transfer can be managed effectively. Firm SPV has an organisational culture of highly intelligent, skilled and motivated professionals dealing in new product development and continuous improvement. Senior management although located in a separate office, regularly met with employees and engaged in brainstorming, feedback and knowledge sharing

sessions. The organisation was designed for cross-functional, amorphous structures facilitating constant interaction and learning behaviours. Incentives and attractive reward systems maintained the motivational levels in employees, whilst close relationships with external parties also expedited the knowledge capacity in the firm. The knowledge generated and transferred was effectively captured and stored through documentation and supporting technologies. The knowledge was administered as best practice methods accessible to everyone. The model suggested by Goh (2002) considers factors such as leadership, collaboration, trust, learning behaviours, support structures, technology, organisational design and relationships. However, the case study findings indicate additional factors which render the model worthy of refinement. For example, knowledge flows from a variety of external sources (such as industry association, consultants, research organisations and the supply chain) can contribute to competitive advantage in the firm. Management needs to be committed to constant improvement and renewal through exploration and exploitation of knowledge from both internal and external sources. The characteristics of the required knowledge, organisational context, the perceived reliability of the source, the relationships between other parties and the strength of social ties play a part. Secondly, employees need to be willing to share or learn the knowledge. This applies when they are motivated and committed. The concept of absorptive capacity lies in the competencies of individuals to assimilate knowledge related to the existing knowledge base. Therefore, this aptitude of employees in Firm SPV can be seen as a potential source of competitive advantage for the firm. When firms develop capabilities through knowledge acquisition, they form strategic knowledge-based assets that cannot be imitated quickly. The learning and improvement not only involves organisation processes but covers the products, technology, system, and other aspects of the business. The environment or organisational culture should be established to facilitate this motivation and absorptive capacity in employees. Thirdly, the model overlooks the application of new knowledge once it has been transferred to the firm. Managers need to address the retention of knowledge after achieving satisfactory results with the transferred knowledge. The practices could become institutionalised and form part of firm objectives. The knowledge has to be retained in an organisational repository and should be easily retrieved and applied effectively. Therefore, we propose a revised model to address the additional points identified from the case study in managing the knowledge transfer in an organisation. The model is depicted in the following figure.

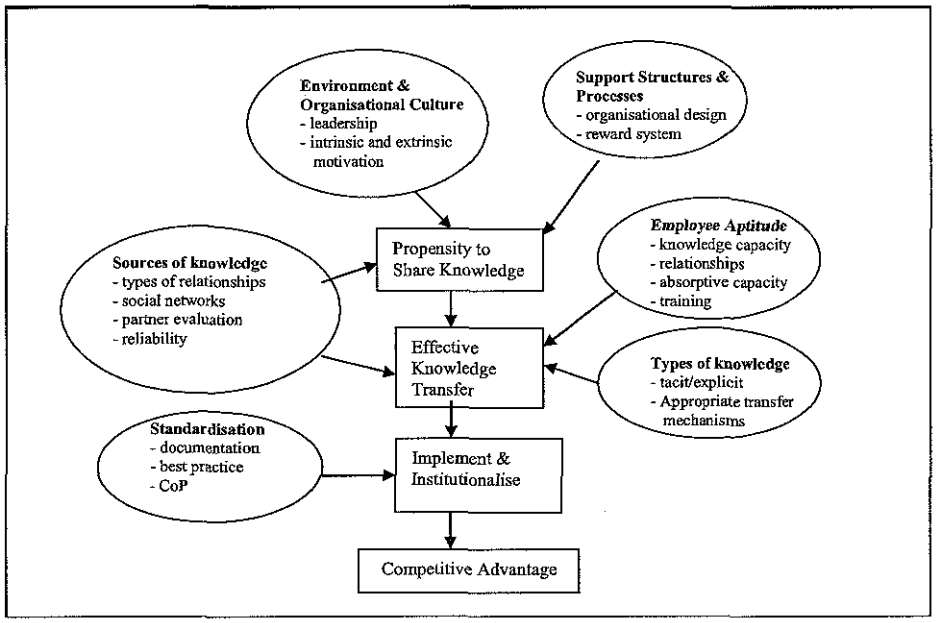

Figure 2: Improved framework of the knowledge transfer process model

7. CONCLUSION

Empirical work has been conducted on the factors and determinants of successful knowledge transfer. Based on a framework by Goh (2002) and an exploratory case study, we propose a refined model to support the management of knowledge transfer as a stronger foundation for the design of a knowledge strategy in organisations. This framework could also provide the basis for a methodology in managing the knowledge transfer process. The model can include management procedures as well as knowledge management tools and techniques for controlling various factors that can impact on the outcome of competitive advantage. The limitations to this study are its exploratory nature and concentration on a single case study. It is expected that the capabilities and strategies of firms will be apparent, but in varying degrees and in unique ways for each firm; and the responses from managers, being subjective in nature, were difficult to quantify. It is recommended that further studies incorporate a comparison of firms, with quantifiable results and conducted longitudinally. Given these reservations, this study has demonstrated that through planning and analysis of resources and factors, managers can embark on knowledge strategies to achieve successful knowledge transfer and competitive advantage.

The unfolding attention to the field of learning and knowledge transfer is primarily attributed to the sustainable competitive advantage that emanates from continuous improvement and innovation. This case examination reveals the utility of the general literature on learning and knowledge transfer for a better understanding of the relationships among multi facets of issues and capabilities required to be competitive. It can be seen that the process of knowledge generation and its transfer are inexorably intertwined in some areas. Nevertheless, the study offers perceivable contributions in terms of the theoretical investigation adding to the body of literature, and providing implications for managers in their quest for an effective knowledge strategy.

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