A Qualitative Analysis of Knowledge Transfer in Global Supply Chains: Case of Thai Distributer of Imported Products

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Abstract: This paper is the final phase of a larger research project that investigates knowledge transfer in global supply chains from the perspective of South East Asian reseller companies. In a previous study a theoretical model for knowledge transfer in global supply chains was developed and quantitatively validated for the case of Thai resellers of laboratory equipment where equipment resale companies (donors) provide training to their customers (recipients). Results from that previous study indicated that the *transfer capability* was the most important issue for the donor firms. Furthermore, the most critical factor for the recipient firms was their *absorptive capacity* in the form of certain capabilities for the successful utilization of the technical knowledge received from the donor firms. By adopting a qualitative sense-making research approach and a two-round focus group interview method for data collection and analysis the current study attempts to provide further deeper explanations for the results of previous quantitative survey. Five participants were chosen for two-round of focus group meetings for this purpose.

Keywords: knowledge transfer; inter-organizational relationship; Thailand; South East Asia; global supply chain

1. Background

Stronger trading ties between South East Asian (SEA) reseller/dealer companies and their global supply chain partner organizations in developed countries has created additional external pressures on the former companies. Such external pressures to SEA companies are mainly in the form of new demand services for adhering to certain global product and process quality standards. While such additional service requirements are expected to eventually create an overall enhancement of the quality of Thai products and services (in this case, the laboratory equipment) in the long term, in the short term however the SEA companies need to respond to these external pressures by being able to provide timely responses to their end customers if they want to remain competitive in global markets.

In a series of previous studies investigated inter-organization knowledge transfer was investigated for the case of suppliers of laboratory and scientific equipment, the donor firms, and their clients, the recipient firms (e.g., Worasinchai and Daneshgar, 2012). These studies identified certain inherent characteristics in both donor and recipient firms in this particular sector. The quantitative analysis of the results suggested that intra-organization characteristics of reseller companies had no significant relationship with the nature of transferred knowledge, or with their inter-organization management capabilities (Ibid). Furthermore, no statistical significance was found in the intra-organization relationships within the client companies. On the other hand, *transfer capability* was shown to be the most critical issue for the donor firms whereas for the recipient firms the recipient's *absorptive capacity* happened to be *a critical factor* for successful utilization of the technical knowledge received from the donor firms. It was also speculated that the reason behind the above findings could be partly due to the fact that knowledge of working with laboratory equipment is *technical* by nature, and this type of knowledge is generally characterized as being *ambiguous*, *tacit*, and *complex* (Simonian, 2004).

The above conclusions clearly indicate that both donor and recipient firms need to possess certain capabilities in order to facilitate effective transfer of knowledge. However, due to certain limitations associated with quantitative surveys in identifying deeply rooted socio-cultural and behavioural factors in the above quantitative study, authors identified a need for qualitative research in order to further investigate relevant contextual factors as such qualitative investigation was not possible through administration of a survey instrument; and this constitutes the major motivation behind the current study. It is expected that by adopting a qualitative research as a complement to the previous quantitative survey study realistic insights can be gained for enhancing the success of knowledge transfer activities in this sector. The current study focuses on the characteristics of knowledge that is

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transferred between the donor and recipient organizations. More specifically, it attempts to provide insights and explanations in relation to the following research questions:

- What is the nature of (technical) knowledge involved in transferring knowledge between the donor and recipient firms?
- What appropriate policies and strategies the donor and recipient firms should adopt in order to enhance effectiveness of their knowledge transfer process?

2. Research methodology

A positivistic epistemological position has been adopted in the current study with *multiple case study* research approach. The research instrument for the collection of the results is a two-round focus group meeting with representatives from both the donor as well as the recipient organizations that together constitute the case study organizations of the study. Adoption of a positivistic epistemology implies that achieving generalizability is desirable, whereas adoption of case study approach and focus group instrument indicate that generalizability is not the primary objective of the study but instead the main objective is to explore deeply rooted factors for enhancing the knowledge transfer process in the case study organizations. This implies that the responsibility of achieving *generalizability* is delegated to the readers who will decide the applicability of the findings of the current study to other situations and sectors within the economy (adopted from Denzin and Linclon, 2000).

3. Case study organisations

The case study organizations selected for the study are (i) resellers of scientific and laboratory equipment in Thailand (the 'donor company') and (ii) the recipient/client companies of the donor company. The donor company buys their products from global markets and resell the value-added imported product along with relevant training and other service outputs to their global client firms in Thailand and few other Asian countries. In Thailand alone there are in excess of 150 companies that supply scientific equipment (STTAT, 2552). Most of these companies are dealers of equipment for laboratory analysis. Their clients are mainly consumer product manufacturing companies, universities, and state agencies involved in scientific and training activities mainly in SEA countries. Ideally, effective use of these equipments would require highly specialized training and expertise in both software and hardware areas, as well as knowledge of at least one other scientific discipline (domain knowledge). The above dealer companies are mainly importers of technology and do not possess, nor operate, those technologies themselves. Their main business activities involve transferring necessary knowledge and technology required to their clients to operate the equipment by organizing workshops focusing on the use and maintenance of the equipment and related activities. These knowledge transfer workshops in turn are expected to impact upon the recipient firms by enabling them to (i) use the equipment – both software and hardware – (ii) analyze/interpret relevant data, and (iii) perform equipment maintenance and upgrade.

One participant was chosen from the supplier/donor company, three from the client companies, and one from the industry acting as an 'expert'. One of the researchers played the role of coordinator of the meetings and the other one recorded dialogues, gestures, and other relevant inter-personal and contextual factors. The following paragraphs explain details of the focus group sessions:

The first meeting lasted for two and a half hours with a breaking time 30 minutes in between. During the first half of the meeting the theoretical model of the study was fully explained to all participants, and they were asked to provide their initial assessment, based on their own personal experience in knowledge transfer activities in the past. They were specifically asked to focus on the correctness and relevance of the theoretical model; the model that had already been used in a previous similar study using quantitative methods. The aim of this exercise was to mentally prepare the participants for various discussions in future sessions. In the second half of the first meeting the above estimated assessments were discussed among all participants and they were provided ample opportunity to explain any discrepancies among various views, if any. During their discussions all communications and interactions were recorded. This was expected to expose views of both sides, that is, dealers and recipients, to each other as a basis of discussions, and to ultimately use that for preparing realistic results that reflects ll views, perceptions, and interpretations.

Throughout these discussions one of the most common problems encountered by the dealer company has been failure of their clients in achieving maximum efficiency when using the equipment.

It was mentioned that in majority of situations clients cannot solve some minor and recurring maintenance problems arising from the normal usage of equipment, which in turn will result in the dealer companies' equipment advisors and technicians perform same service tasks over and over again. Views from the opposite side of the discussion are discussed later.

4. Theoretical background

An organization normally acquires knowledge from two major sources: internal sources and external sources. These two generic types of knowledge sourcing are referred to as intra-organization and inter-organization knowledge transfer respectively (Argote, McEvily and Reagans, 2003). Holmqvist (2004) further argues that there are also interactions between inter- and intra-organizational knowledge transfers in which case the boundaries would play a major role in distinguishing between inter- and intra-organizational processes; and this he calls a "fundamental characteristic of modem organizations" who are involved in dynamics of *exploitation* and *exploration* in intra- and inter-organizational learning processes. The terms 'exploitation' refers to creating reliability in experience, and striving for higher productivity and refinement. The term 'exploration' on the other hand is concerned about developing variety in experience, experimentation, and free association, hence the term "experimental learning" (Ibid). In practice however, achieving successful intra- and inter-organizational knowledge transfer is not easy and several factors will affect effectiveness of such transfer (Szulanski, 1996). The issue becomes even more complex at inter-organizational levels because factors for knowledge transfer would also include scope of knowledge transfer, differences in practices each individual company adopts, risks associated with knowledge transfer, and trust towards the partners (Ibid). These factors in turn will determine the nature of relationship among various supply chain organizations which in turn can affect the type of knowledge that is transferred among those organizations.

In a recent study, Easterby-Smith et al. (2008) provide a framework for investigating the nature of inter-organizational knowledge transfer that is marred by *complexity, ambiguity* and *tacitness*. The present study adopts a synthesized conceptual model extracted from the above study in order to investigate dyadic knowledge transfer between donors and recipient organizations, as shown in Figure 1. The adopted model is based on two other milestone studies that together provide insights into the major characteristics of donor and recipient firms, the attributes of knowledge (the focus of the current study), and the knowledge transfer process (see Grant, 1996; Argote, McEvily and Reagans, 2003 for more details). More specifically, the proposed theoretical model comprises of the following three groups of factors:

- Resources and capabilities of both the donor and recipient firms,
- Nature of knowledge that is being exchanged, and
- Inter-organizational dynamics.

A brief description of the key factors of this model follows.

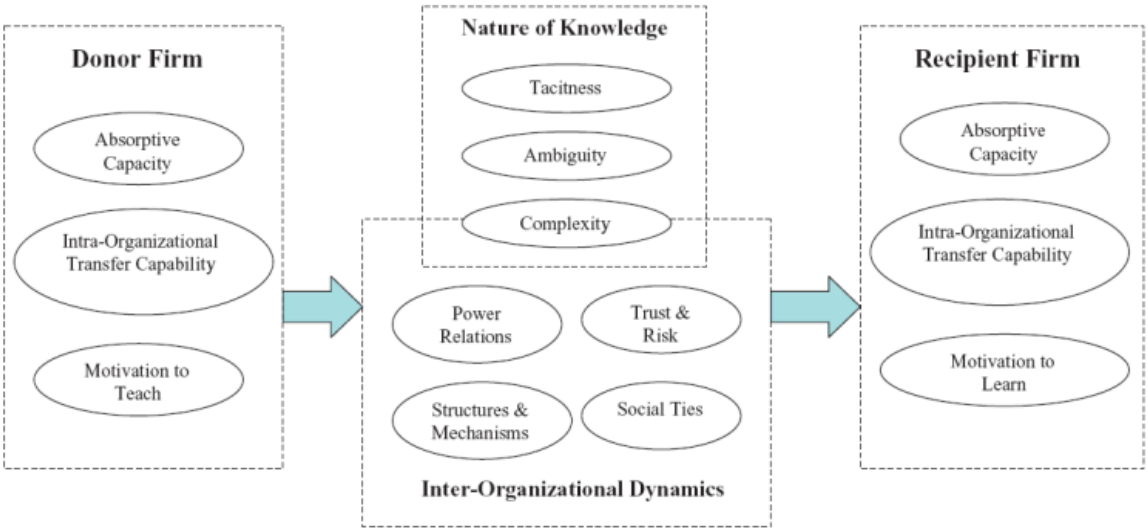

Figure 1: Knowledge transfer between organiziatons (adopted from Easterby-Smith et al., 2008)

Absorptive capacity: refers to the "ability (of both donor and recipient firms) to recognize the value of new knowledge and to assimilate and use that knowledge" (Cohen and Levinthal, 1990). In particular it has been argued that firms are increasingly relying on knowledge acquired from other firms to facilitate development of their own capabilities (Lane and Lubatkin, 1998).

Intra-organization transfer capability: the ability for intra-organizational knowledge transfer to diffuse the knowledge within the organization so that it can be assimilated and utilized. This concept is clearly related to the *absorptive capacity* in the sense that an organization which is good at absorbing external knowledge should also be well equipped for diffusing the knowledge within its own boundary (Easterby-Smith et al., 2008).

Motivation to teach and to learn: Both the recipient's intent to learn (Hamel, 1991) and donor's motivation to teach (Ko, Kirch, & King 2005) are established factors for IO-knowledge transfer. The two may affect one another; for example, the lack of motivation to teach may dampen the enthusiasm for learning, and vice versa (Easterby-Smith et al., 2008).

Nature of Knowledge being transferred: it has been shown that this factor can potentially affect both the intensity and the quality of the knowledge transfer. In other words, the properties of knowledge affect "the ability to transfer that knowledge", "the rate at which it will be assimilated", and "how much is retained" (Holmqvist, 2004). Simonian (2004) argues that the ambiguity of knowledge has a direct and negative relationship with the knowledge transfer. The 'ambiguity' in turn is more associated with 'tacit' knowledge than with 'explicit' knowledge.

Inter—organizational (IO) Dynamics: The IO knowledge transfer involves at least two organizations, and as a result, understanding the dynamic forces between these organizations seems to be important factors in transferring knowledge between these organizations. Four major factors were identified for the current study that together represent IO dynamics; these are: 'Power relations', 'Trust & Risk', 'Structures & Mechanisms', and 'Social Ties' (see Kale and Anand, 2006 for a detailed review).

5. Data collection and analysis

As mentioned earlier, qualitative interviews mandate understanding of the context by the researcher so that interpretations provided can be evaluated by the readers themselves. In this section context of the interviews and detailed procedure for data collection and analysis are discussed.

A mixed mode of interactive interviews and focus-group discussion methods was used during two long sessions with five co-located individuals including one from the donor company, three from the recipient company (one government testing agency, one pharmaceutical company, and one representative from the food industry), and a private company representative who acted as an expert who also directly deals with both of the above groups providing them with auditing, testing, and consultation services in scientific areas. The primary purpose of the meetings was to collect information and insights in relation to the nature of knowledge that is transferred between the donor and recipient firms.

The data collection process consisted of two rounds. In the first round a total of three discussions were coordinated one with each of the three groups of participants (see below) while allowing others to interactively provide inputs and/or raise issues and questions. The major goal of these interviews was to understand the dynamics of knowledge transfer, the nature and type of knowledge being transferred, and that how various characteristics of this knowledge affect success of the knowledge transfer between them. The second round was held after a two day break, and all three groups were asked to provide their perspectives in the light of the discussions and learning in the previous meeting.

Profile of the participants: Three groups of respondents were present in both meetings: three from the recipient/client side ('RC1', 'RC2' and 'RC3'), one from the donor side ('DN'), and one expert ('EX'). In addition, both of the authors were present in the meetings and played active roles in coordinating and recording of the discussions. The recipient representatives are senior scientists performing scientific experiments on soil, food and drug using laboratory equipment in order to detect traces of various elements. The donor representative 'DN' is the CEO and Managing Director of a major Thai firm that imports scientific analytical instruments. The expert representative 'EX' is a business development

engineer for medical products, environmental protection, and aviation. He is also the CEO of a chemical company as well as Managing Director of a government research institute for discovering innovative methods for transferring technology by conducting lab testing and research for both private and public sectors as well as providing technical advice to other government offices. The 'EX' himself is not a direct user of the lab equipment but closely works with both groups in auditing, testing and consultations in various scientific and IT fields, and his presence in the study was mainly for providing specialised opinions on various related issues as well as providing third party independent opinions and insights.

Interview Plan: Due to the qualitative nature of the study the following three issues related to the 'rigor' have been considered for this research:

- Credibility of the research: To remain methodical in reporting sufficient details of data collection and the processes of analysis to permit others to judge the quality of the resulting, attempt was made to test rival explanations wherever possible. Furthermore, triangulation of method was partially adopted by: (i) comparing discussions data with the previous survey data, (ii) comparing what participants say in public with what they say in private, and (iii) comparing the perspectives of participants (donor vs. Recipients) from different points of view (adopted from Patton, 1999).
- To enhance quality of the results from the focus group mini-case studies, Zeller's rhetorical criterion of *simplicity* and *clarity* (Lincoln and Guba, 1990) has been adopted. According to this rhetorical criterion strength of any case study is in its accessibility to many persons who could not comprehend a typical scientific technical report. Attempt has been made to present results and discussions in simple and understandable manner.

Interview Sessions: During the firstt round of interviews, the interviewees were directed to discuss their opinions about the theoretical model, its appropriateness, and commenting on other interviewees' comments on the same issues. Their discussions in this first round helped researchers to prepare directed discussion questions for the second round of the group meeting, in order to achieve some level of consensus among them, to resolve misunderstandings about each other's perspectives, or to capture dynamic factors that could not be captured by previous similar studies that adopted quantitative methods. The above rounds of discussions allowed researchers to draw conclusions by identifying major themes from those discussions. Below is a summary of the discussions that took place during both rounds. Discussions were centered around three main thems and are shown below:

Theme 1: nature of domain-specific knowledge:

Question to be primarily be discussed by the 'RC': What is it that you, the recipient, would like to learn from the donor through various workshops?

Question to be primarily discussed by the 'DN': What is it that you, the donor, would like to learn from the recipients in order to satisfy your client's needs?

The 'RC' was quick in mentioning that she expects to learn how their machines can help her to perform specific tasks (e.g., analysing soil & water):

> *RC: This will also help me to decide/manage my budget & other related issues.*
>
> *EX: I believe the donor should also provide knowledge (K) related to the economies of using the new technical K (functional/organisational objectives). Donors need to go beyond the technical K, and provide economic benefits (strategic issues) that the equipment can potentially provide to their customers.*
>
> *RC: I agree with 'EX'.*

In her above answer, the 'RC' specified needs for learning two types of domain-specific knowledge: the first one is technical knowledge related to the donor, and the second one is related to organisational dynamic forces in her own firm.

Theme 2: Internal capabilities of the donor and recipient organisations:

Questions related to the theme 2 were: what is it that you (donor and recipient) expect to learn from your own organisation that would assist overcomiung the current problem that was earlier mentioned by the donor company?

> *RC (summary of major comments): new employees learn from a senior member, and have to pass on some capability….. On-job training every year …. no monetary rewards in government organizations for learning so why should anyone bother? ….*

The 'DN' mentioned that he is fully aware of the importance of knowledge sharing within his firm:

> *DN: we are highly morivated to learn; we have a well established program of sending our trainers overseas for training ….. no monetary rewards though in doing a perfect job by trainers!….. three teams exist: (i) service team: provides services, (ii) sales team: mainly sells, and (iii) application team: trains both the customers and the sales and service team members.So, knowledge-sharing is institutionalised in our firm.*

The concern was raised by one of the researchers on the separation of the above three teams who are involved in fundamentally highly inter-related activities in relation to the customers' needs. The 'DN' responded that such separation is mainly due to specialisation which is an internal issue for us rather than a facility for collaboration with the recipients. The 'DN' however acknowledged the importance of the raised concern and on the spot provided few solutions:

> *DN: I believe we need more collaboration among our teams as well as between us and clients. We need to share our learning with each other and with them in order to create new ideas, etc. Doing joint reserarch projects, discussion forums among ourselves and even with research centers/universities. The trend is now collaboration for sure.*

And the expert also emphasised the above by the following suggestion:

> *EX: Forming professional asociations with membership etc. Which is the next step after collaboration (an official form of collaboration).*

To the surprise of the researchers, none of the respondents acknowledged necessity of learning about the organisational capabilities of the other side:

> *RC: budgetary and other issues are my concern and donor firms are not expected to help me in that.*
>
> *DN: we do everything we can to make sure the recipient's need for technical knowledge is met, however we do not want to perform their job for them.*

When both were challenged by the researchers as to "why not" they both implied that this does not work that way in Thailand. The researchers emphasised the importance of donors learning from their customers in order to provide more competitive services. The 'DN' acknowledged such matter and talked in length about their customer relationship management system which partly satisfied the curiosity of the researchers, but there seem to be room for improvements in this particular area that can potentially create benefits for all parties involved; and that is an integration of CRM and knowledge management, that is, the *customer knowledge management.* This is probably the most important conclusion that the researchers drew out of the above discussions.

Theme 3: sources of knowledge that is exchanged:

This theme addresses generic nature of IO transfer. Easterby-Smith et al. (2008) argue that inter-organizational knowledge is characterized by *complexity, ambiguity* and *tacitness*. These general characteristics were applied to our case study in order to explore more functional and specialized understanding and interpretations of the above characteristics, sources of ambiguity/complexity, and remedies for enhancing effectiveness of transferring the IO knowledge. In the current study, the above characteristics are evaluated in the light of the three widely accepted characteristics of 'knowledge' in general, that is knowledge being 'dynamic', 'actionable' and 'contextual'. The justification for adopting such integrated approach is that (i) this will prevent misinterpretation of 'information' as 'IO knowledge' and vice-versa, and (ii) such integrated approach will facilitate understanding of what constitutes the 'clarity of IO knowledge in a particular IO context'. The justification for using the characteristics of the IO knowledge in the first place is that unless we are

clear about the *nature of the IO knowledge in a particular context* we will not be able to manage the IO knowledge transfer process properly; information exchange is not what we are after..

The current study provides some understanding about what constitutes 'clarity of the IO knowledge in a particular context' using the above two sets of characteristics.

Based on the above argument the researchers prepared the following discussion questions during the second round of interviews:

For both 'RC' and 'DN': *What is your understanding of the 'ambiguity' (and 'tacitness', and 'complexity') of the IO knowledge as related to your particular situation as a recipient or donor firm in the case study?*

For 'ambiguity':

> *RC: the source of ambiguity is that recipients already have some theoretical knowledge but not the technical knowledge related to a particular new instrument.*

The above notion points to the 'contextuality' of the knowledge in general, and the IO knowledge in particular. Furthermore, by mentioning the term 'new instrument' the 'RC' implies the 'dynamic' nature of the IO knowledge.

> *EX: we should consider the level of K-transfer both at operational level and at strategic level…….*
>
> *E:not enough time to learn/teach. More time/experience needed to learn/teach this kind of knowledge*
>
> *RC: Training time is too short, when the trainers visit us our employees may become busy with other emerging tasks that would require their urgent attention, so they may not attend the workshops. To solve the problem the trainees must be sent to the donor's site for training.*
>
> *DN: we provide two types of training: onsite and on the client's site. We take them to restaurant for good food, this happens both before & after the sale.*

The first quote by 'EX' reflects the 'actionability' of the IO knowledge. His second quote and the quote by 'RC' indicate the 'ambiguity' and 'tacitness' of the IO knowledge. Furthermore, the 'RC' and 'DN' open a variety of possibilities for resolving this particular problem. One such possibility is the adoption of ubiquitous workplace eLearning systems (see Daneshgar and Van Toorn, 2009 for more details on eLearning at workplace).

The tacitness and ambiguity of the IO knowledge were discussed in length by all interviewees. Below is a summary of the discussions:

> *RC: when I see a particular knowledge that is not in the manual, I ask the donor, if the donor does not know, they will find out from external sources*
>
> *DN: sometimes clients open the instrument (that are not allowed to). We have advanced training for fixing the problems that relate to the things that clients are not allowed to do (e.g., opening the back of the machine). So, we deal with 'tacit' knowledge this way. Other example is that compared to India (the manufacturer of some of our equipment) we deal with different samples, different climate, etc; all these will affect the operation of the instruments here. When any of our branches find new tacit-technical K, we share it by putting it on the Internet.*
>
> *RC: ambiguous problem is when we don't even know what the problem is, or cannot clarify the problem. For example, I try to do my best, try to classify the problem, and if cannot solve it, then I ask the donor.*

When asked by one of the researchers as "how do you go about the problem that can not even be identified by the recipient?" the donor responded:

> *DN: we listen to the client and analyse the symptoms. Then we use our traditional K to solve it, if no luck, then we use the trial & error, if we still don't get results, we use external sources (either an expert or a partner, etc). Scientific K is not easy to teach/learn*

> *(compared to general K). We need expertise for both teaching and learning it. Also experience of the teacher is very important so is the experience of the learner.*

The above responses and similar other responses by the 'EX' brings a new characteristic for the IO knowledge for the case study firms: the notion of 'technical knowledge'. While this particular characteristic resembles the general description of a tacit K, it also carries a specialised meaning within the context of our study. In other words, the tacit IO knowledge in the context of the current study is in fact technical in nature.

While no attempts will be made in this study to introduce a new characteristic to the current list of IO knowledge characteristics, the authors of this study claim that by integrating the two sets of characteristics a rich set of combinations of characteristics can be defined that would be able to accommodate the needs of IO knowledge transfer. The following quotes are presented that support the above argument:

> *EX: Ambiguous technical K: when the K is new for both donor and client.*
>
> *EX: Tacit technical K is when hiring experienced experts who have been in many other similar situations and can share those experiences with us.*
>
> *EX: Complex technical K: when K involves a variety of factors with many variables, as well as a variety of methods/techniques for using and transferring the K.*

We would like to bring the study to conclusion at this stage as more investigation would be required to further clarify the nature of technical K and its relationship to tacit and explicit K. This constitutes the authors' future study.

6. Recommendations, limitations and future work

Results from a previous quantitative study suggests that *transfer capability* of the donor company in the case study was the most important factor for effective transfer of knowledge. In the recipient's side the most critical factor was the latter companies' *absorptive capacity.* However, due to certain limitations associated with quantitative surveys in identifying deeply rooted socio-cultural and behavioural factors that may underpin the above quantitative finding, the present study was designed to investigate relevant contextual factors that may have been missed out from the previous quantitative research. By adopting a qualitative research the current study attempted to develop insights into the nature of the (technical) knowledge involved in transferring knowledge between the donor and recipient firms in the case study; a summary of these results were presented in section VI. Below is a summary of recommendations for enhancement of the knowledge transfer process within the case study organisations:

Two types of domain-specific knowledge were of interest to the recipients: (i) technical knowledge of using the equipment, and (ii) organisational dynamic forces within the recipient's own firm that are affected by the above technological knowledge. This suggests a strategic dimension for the knowledge transfer and both donors and recipients must take this new dimension into consifderation. One such strategic focus can be an emphasis on 'experiential learning' that has been proposed and successfuly implemented by Holmqvist (2004) in Scandinavian technology firm, and seem to have relevance to the current case study organisation. According to this proposed learning method the two intermediary learning processes, 'opening-up' and 'focussing' will tie together exploitation and exploration of technicl knowledge. The case study orgnistion can host such learning processes as a kind of inter-orgnistiona collaboration, by creating a learning working/environment that captures and utilises dynmics of inter-organistional exploitation and exploration of the knowledge of working with highly specilised and technical equipment, Holmqvist's proposed conceptual framework describes the nature of such learning dynamics (Ibid). The latter argues that experiential learning is a driving force behind much intra- and inter-organizational change in the form of transformations between exploitation and exploration. Further details can be found in.

During the interviews it was noticed that the company's website expects additional cognitive loads from the 'lerners'. For exmple, This will prevent problems that currently exist as a result of presence of a dual interface that the user/lerners must adjust to. For example, the user is expected to know/remember when to call the 'service team' and when to call the 'sales team'; an issue tht is relted to the internal limitations of the donor compny and lerners do not need to know about and such load deems to be troublesome to the lerner/users simply because it does not match with their cognitive mental model. As a result, we propose that in designing user interface for any future training

workshops donor must provide a unified interface that hides unnecessary complexities related to the donor company's internal limitations.

On a similar note, the current literature suggests that collaboration among various experts in the donor firm (and within their upstream supply chain) will result in better understanding of the supply side of the customer chain (Mason and Leek, 2008). This matter was rised by the uthors during the discussions, however interviews showed tendency to redirect the discuission to a different direction. Both groups seem to agree on the importance of collaboration and the benefits that it can generate for both sides. They mentioned that such collaboration must e supported and encouraged by both sides and should not be seen as the sole responsibility of one side; although the nture and type of such support may differ from company to company according to the strategic importance of such knowledge trnsfer to a particular company.

- Despite various inter-organisational barriers, understanding of the donor firm and their clients of each other's context will facilitate sharing of knowledge rather than exchange of information.
- Assisting recipients to discover the link between their theoretical knowledge and technical knowledge provided by the donor will reduce knowledge ambiguity for the clients.
- Knowledge ambiguity for the donor firm will be reduced if a standard language and an associated process exis for identifying and reporting problems experienced by the recipients when using the equipment. This must be complemented by a softer procedure to be followed by the donor firm for decoding and interpreting the clients' requirements. Currently the donors sometimes even don't know what the problem is to solve it

In future studies the authors intend to replicate the above two studies and assess validity of recommendations for various sectors.

As mentioned earlier the main consideration in the current paper has been to achieve deeper understanding of some of the results from earlier quantitative studies in relation to two issues: (i) the *transfer capability* was the most important issue for the donor firms, and (ii) the most critical factor for the recipient firms was their *absorptive capacity* in the form of certain capabilities for the successful utilization of the technical knowledge received from the donor firms. Authors believe that future complementary qualitative studies need to be conducted to gain deeper understanding of other factors. One such factor is the motivational fctors of recipients for gaining knowledge that hs not been addressed in the current study. Future studies need to address this issue, not in isoltion, but simultaneously with the other factors surrounding the knowledge tranfer in inter-orgnistionl settings so that the interplay nd dynamics among the above vrious factors cn also be assessed qualitatively.

Another limitation of the current study is a lack of consideration given to the organisational culture and power-related issues in global supply chains, It has been argued that national cultural differences become more obvious and criticl when knowledge is transferred within organisations, whereas power issues are more pronounced in inter-organisational knowledge transfer (Van Wijk et l., 2008). Future study need to address both of the above issues.

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