

## **Dynamics of capability development in the early internationalizing knowledge intensive service firms**

### **Abstract**

In recent studies, there has been much interest in the early internationalization of firms and in the notion of capabilities as an important source of competitive advantage. The emphasis has been on the question of where and how capabilities emerge. The present paper is an attempt to address this question. On the basis of a case study of the evolution of three knowledge intensive service firms (early internationalizing), this study explores how different capabilities emerge and play an important role in the international growth of these firms. The study shows that developing capabilities for global service delivery is crucial for the survival and growth of these firms, and these capabilities emerge through a mix of experiential and deliberate learning processes. These capabilities also continuously evolve with the changes in the situation.

## Introduction

International business researchers agree that in order to be successful in international business, international firms should develop specific competences that are relatively unique and inimitable, in order to maximize their utility for international performance (Barney, 1991; Penrose, 1959; Nelson, 1991, Wernerfelt, 1984). Based on the notion of firm specific competencies, an assumption in most prior research is that firms go abroad to exploit strategic assets, that they command, and take advantage of market imperfections (Dunning, 1980). It is these strategic resources that the big, older, and established firms typically have relied upon to drive their performance in international markets. In contrast, international new ventures (or born globals) that operate internationally from an early stage in their development lack financial, skilled human resources, routines, and tangible resources that characterize most businesses operating internationally. These early internationalizing firms begin with a global view of international market, and in due course develop the capabilities needed to achieve their goals (Oviatt and McDougall, 1994; Knight and Cavusgil, 2004). They leverage innovativeness, knowledge, and capabilities to achieve considerable international market success (Knight and Cavusgil, 2004). As firms managerial time and efforts are scarce and firms need to allocate these recourses among initiatives to acquire relevant capabilities, then it is important to know the specific capabilities and their influence on the firm's international performance. Yet, little is known about the specific capabilities early internationalizing firms need to successfully enter and grow in international markets (Zahra et al. 2000).

It is also important to note that, the majority of studies on born globals or early internationalizing firms have focused on the exporting activities of manufacturing firms, particularly those manufacturing technology-based products and very little attention has been paid on the international service firms. As prominent businesses expand their operations globally to satisfy investors' desires for growth and superior performance, the demand for support services in these operations, such as enterprise resource planning (ERP), decision support system (DSS) development, business process management (BPM), IT and business process alignment, research and analysis of business data, etc. increases (Hitt, Uhlenbruck, and Shimizu, 2006). This phenomenon has given rise to the demand of support services also referred as outsourcing business. In this paper such support service providing firms have been identified as knowledge intensive service firms, which is more than outsourcing. These service firms follow their clients into international markets to service their clients growing needs. In this way service firms facilitate the growth of multinational enterprises (MNEs) by providing specialized services and at the same time they also get opportunity to expand internationally. Service firms especially knowledge based service firms, differ from industrial firms in the sense that their services are highly customized and customer focused. Although the service requirements may differ from one client to another, through the process of service development and delivery, these firms are able to build a knowledge base of the business area they are serving in. Also they are developing a strong understanding of their clients' activities, both from business and behavioral perspectives. These capabilities in turn enhance the quality of the services provided to clients, while simultaneously reducing the costs of providing those services (Ethiraj, et al, 2005). These capabilities can also be

useful in internationalization of services to other markets, where these capabilities can be successfully applied and give competitive advantage (Eriksson et al. 1997). Yet, little research has explored the process of developing and leveraging capabilities, critical for the internationalization process of knowledge intensive service firms. These gaps in exiting literature indicate that our understanding of the knowledge intensive service firms going international shortly after their inception is still limited. And therefore in this study I seek to advance the understanding of the knowledge intensive service firm's internationalization process. More precisely, critical *Capabilities* necessary for the survival and growth of these firms are identified and it is examined *how* these capabilities have an effect on the internationalization process and the international performance of knowledge based born global service firms.

### **Literature review:**

#### **Internationalization experience as a source of knowledge:**

The importance of market experiential knowledge in the internationalization process has been well captured in the internationalization process model of Johanson and Vahlne (1977). The model proposes that the firm's learning process shapes its internationalization behavior. Thus it is the firm's activities in a market that is of importance to the firm's learning process because it provided the firm with the experiential knowledge (Penrose, 1959). The concept of international market experiential knowledge was further developed by Eriksson et al. (1997) into the following three different types of knowledge: *internationalization knowledge*, *business knowledge*, and *institutional knowledge*. Eriksson and his colleagues (e.g., 1997) have argued that the initial market perspective on experiential knowledge is too limited a conceptualization and that it forgoes the broader explanatory character of experiential knowledge, as discussed in Johanson and Vahlne (1977). They argue that business knowledge and institutional knowledge are market specific, gained within that particular market, but the accumulated experience in internationalization is neither specific to a country nor a mode of entry. Experiential internationalization knowledge is a firm's experience of organizing internationalization, means what is required in different situations and different setting connected with internationalization and where to seek this knowledge. Acquiring international experience in several countries will allow firms to develop rich stock of knowledge (Ghoshal, 1987). Subsequently firms will learn how to handle a variety of issues when conducting business in foreign markets. Erramilli (1991) found that an increase in international experience also leads to entries into markets that are culturally more remote.

The development of new market knowledge is important for success in international markets (Bartlett & Ghoshal, 1987). This knowledge influences a venture's ability to adapt its products to local market conditions, capitalize on market dynamism through rapid new product developments, and identify emerging technological changes that can influence firm performance. According to evolutionary economics (Nelson and Winter, 1982), the superior ability of certain firms to create new knowledge leads to the development of organizational capabilities (Wu, Sinkovics, Cavusgil, & Roat, 2007), consisting of critical competences and embedded routines and firms prepare for international venture by developing an appropriate set of competencies (Knight and Kim,

2009). In the next section the concept of capabilities and its importance in internationalization is explained.

### **Capabilities and its importance in the internationalization process:**

Penrose (1959) conceptualizes firm as a bundle of physical and human resources whose productive services are released and made cohesive within and by specific administrative framework. She explains that *“it is never resources themselves that are the ‘inputs’ in the production process, but only the services that the resources can render. The services yielded by resources are a function of the way in which they are used—exactly the same resource when used for different purposes or in different ways and in combination with different types or amounts of other resources provides a different service or set of services (p.25).”* Thus she makes a clear distinction between the resources and the services of resources. As resources are not self sufficient reason for a competitive advantage but how they can be applied through processes determine the advantage. It also means capability to deploy resources productively is not uniformly distributed.

Building upon this and other earlier works, recent literature on the resource-based view conceptualizes resources and capabilities along two lines. One set of researchers tends to define resources rather broadly so as to include all assets, capabilities, organizational processes, firm attributes, information knowledge etc. controlled by a firm that enable it to conceive and implement strategies efficiently and effectively (Barney, 1991:101). While other researchers make a clear distinction between the resources and the capabilities, by arguing that resources consist of assets, know-how that can be traded (e.g., patents and licenses), financial or physical (e.g., property, plant and equipment), human capital etc., whereas capabilities differ from assets in that they cannot be given monetary value, as can tangible plant and equipment, and are so deeply embedded in the organizational routines and practices that they cannot be traded or imitated (Dierckx and Cool, 1989; Amit and Schoemaker, 1993). More distinctively, capability refers to the ability of an organization to perform a coordinated set of tasks, utilizing organizational resources, usually in combination, for the purpose of achieving a particular end result (Helfat and Peteraf, 2003: 999). Capabilities are complex bundles of skills and accumulated knowledge, exercised through organizational processes that enable firms to coordinate activities and make use of their assets (Teece, Pisano, and Shuen, 1997). Unlike resources, capabilities are based on developing, carrying, and exchanging information through the firm’s human capital. Capabilities and organizational processes are closely entwined, because it is the capabilities that enable the activities in a business process to be carried out. And the business will have as many processes as are necessary to carry out natural business activities. Dosi, et al. (2000) define ‘capability’ as a fairly large-scale unit of analysis, one that has recognizable purpose expressed in terms of the significant outcomes it is supposed to enable and that is significantly shaped by conscious decision both in its development and deployment.

The strategic importance of capabilities lies in their demonstrable contribution to sustainable competitive advantages and superior profitability (Day, 1994). A sizable literature has emerged to explain how capabilities serve as a source of competitive advantage and also accounts for the durability of these advantages (Amit and

Schoemaker, 1993; Peteraf, 1993; Knight and Cavusgil, 2004). The choice to invest in acquiring a capability depends on the benefits of having such capability (Peteraf, 1993; Ethiraj, et al. 2005). Simply because different capabilities are likely to yield different benefits to the firms, making the investment in such capabilities should be a careful choice. As firms managerial time and efforts are scarce and firms need to allocate these recourses among initiatives to acquire relevant capabilities, then it important to identify the relevant capabilities and examine their effects on the firm's performance. Capabilities are especially important to global knowledge intensive service firms, because they deal with diverse environments across numerous foreign markets (Luo, 2000). Possession of such capabilities helps born global firms to attenuate their liabilities of foreignness and newness (Oviatt and McDougall, 1994). Whereas the liability of foreignness involves the extra costs spend in doing business abroad comparative to local firms, the liability of newness concerns the extra commitments (to product, market, technological development) a newly entered firm must make to compete against older firms already operating in the market (Luo, 2000). In a more pragmatic view, strategic researchers agree that both resources and capabilities are assets with rent generating potential.

Studies have examined and explained the role of capabilities in the international growth of firms (e.g. Knight and Cavusgil, 2004; Knight and Kim, 2009; Camison and Villar, 2009; Ekeledo and Sivakumar, 2004; Sapienza, et al. 2006). Researchers agree that developing capabilities is needed to achieve the international goal. Knight and Cavusgil (2004) highlight the importance of several key organizational capabilities that engender international success in born globals. Most notable they found that emergent globalization and high technology trends, while necessary, are insufficient to account for the widespread emergence of born globals. In addition to the presence of facilitating environmental factors, firms must possess firm specific knowledge based capabilities that support both early internationalization and subsequent success in the foreign markets. In a subsequent study Knight and Kim (2009) identify international business competencies as intangible capabilities that engender superior international performance. Applying a resource based view Ekeledo and Sivakumar (2004) enumerate a number of firm specific capabilities and examine their role in the foreign marker entry mode choice. In a similar approach (applying resource based view) Camison and Villar (2009) confirm that capabilities are a positive predictor of propensity for cooperative internationalization and thus suggest, firm's that aim for international expansion should accumulate internationally transferrable capabilities. Hitt et al. (2006) also use RBV to examine the importance of two firm resources, human capital and relational capital, in professional service firms derived from relations with corporate clients and foreign governments and finds that these resources, teamed together, have positive effect on the internationalization. Thus they support the importance of resources in the internationalization of firms. While studying the role of capabilities as a source of competitive advantage in the internationalization of software firms from India, Ethiraj et al. (2005) find two broad classes of capabilities namely client-specific capabilities and project management capability, significant for the firm's project performance in international market. Sapienza et al (2006) studying the effects of early internalization on the firm survival and growth posits that early internationalization may threaten the survival of firm and emphasize the development of capabilities that has moderating effect

on the survival and growth. Some other studies Luo (2000) and Tallman and Lindquist (2002) have also explained the importance of capabilities in the internationalization of MNEs. Thus we find studies reaffirming the role of resources and capabilities in the internationalization and international performance of firms.

### **Learning mechanisms and the evolution of capabilities**

Organizational learning is a key capability building block for new capabilities. Learning is a process through which organizations encode experiential inferences into behavioural routines. Taking it forward, Zolla and Winter (2002) focus on organizational learning as a source of dynamic capability, which they define as “a learned and stable pattern of collective activity through which the organization systematically generates and modifies its operating routines in pursuit of improved effectiveness”. Zolla and Winter (2002) posit that capabilities are not merely the result of tacit accumulation of experience embedded in routines and learning by doing. They are also the result of deliberate investments in organizational structure and systems to make constant improvements in those routines and practices. Particularly in the context where technological, regulatory, and competitive conditions are subject to rapid changes, persistence in the same operating routines quickly becomes hazardous.

Zolla and Winter (2002) contest that behavioural tradition in the study of organizational learning consist of lack of appreciation of the deliberative process through which individuals and organizations figure out what works and what does not in the execution of certain organizational task. According to them important collective learning happens when individuals express their opinions and beliefs, engage in constructive confrontations and challenge each other’s viewpoints. And organizational competence improves as members become aware of the implications of their actions.

Another important part of this deliberate learning mechanism is the codification of knowledge. Individuals codify their understanding of the problem such as software codes or process models. Zolla and winter (2002) think that codification of knowledge is an important and relatively underemphasized element in the capability building picture. The literature on knowledge management has emphasized that the codification facilitates the diffusion of existing knowledge (Zander and Kogut, 1995; Nonaka, 1994) as well as the coordination and implementation of complex activities. Codification therefore is potentially important as a supporting mechanism for the entire knowledge evolution process not just the transfer phase.

I consider the above discussion as the theoretical background to my study and conduct my research in the light of the derived understandings.

### **Research Method:**

The nature of my research objective provides a ground to opt for a case study research approach. I chose a longitudinal multiple case study approach (Eisenhardt, 1989; Yin, 1989) consistent with the evolutionary and interpretive nature of analyses and the prior research on the capability dynamics (e.g. Laamanen and Wallin, 2009). I studied three knowledge intensive service firms and their evolution from their establishment (1981, 1987, and 1991) to the current state. An overview of the selected firms is presented in

table I. The research focuses on the different internationalization capabilities these firms have been able to develop over the period of time. The companies were established in different segment of the knowledge intensive service industry. Choosing firms that were similar in many aspects made it possible to go deeper in elaborating the capabilities, however they were different in many ways.

\*\*\*\*INSERT TABLE I HERE\*\*\*\*

When I started my analyses, I had already collected an extensive amount of pre-study material on the three knowledge intensive service firms. I had access to internal analyses reports project reports, and customer feedbacks, generated during their different phases of evolution. The top managers and founders had also participated in various video-recorded events, such as at seminars, university lectures, and conferences to tell their firm's stories and what they had been thinking at different points in time. Some of these videos are available on YouTube. Many of these video appearances provided valuable archival material on the evolution of the firms. Since the three firms have been very visible in the economy, with high growth expectations, there is an extensive archive of public presentations and newspaper articles on the three case firms. The firms also communicate actively with their stakeholders and prospective clients through the website and news releases. An analysis of over 35 case studies, accompanied by an analysis of 10 annual reports, provided a solid basis for examining the early and post internationalization periods. Retrieving these events and records provided an excellent way to go back in time in the firms' historical thinking. Through this process the research focus was on how these firms made sense of the external situation and how this affected capability development during the different stages of the firm's evolution.

In order to collect the primary evidence, I carried out two rounds of interviews. The first round was conducted in June/July 2009. At that stage, I interviewed senior level managers, allowing them to tell his firm's story freely. These interviews lasted between one and two hours. Later on I expanded the interviews to comprise a total of 9 individuals who had been involved as project managers and engineers with the three companies. I had the opportunity to interview engineers at offshore (Bengaluru, Hyderabad,) and onshore (Stockholm, Brussels) sites. In the first round of interviews, notes were taken which were used to draft interview reports. These reports were then further sent back to the interviewees of the respective case companies, allowing them to comment on the correctness of my interpretations. The second round of interviews was carried out in January/March 2010. These interviews were semi-structured and done over the telephone and Skype. The interviewees received a set of open-ended questions that probed the underlying reasoning in the different stages of their firm's evolution, challenging them to elaborate on the reasons for the emergence of different kinds of capabilities and their significance to the firm's international operations. At this follow-up stage my own interpretations were confirmed by the follow-up interviews from the two firms, I relied on the publicly available material and insights gained in the interviews with the management teams of the other firms. At this stage, I also complemented my interviews with a more structured text-based analysis of the customer experience cases reported by the three case firms in order to provide further validation of my interpretations.

### *Case analysis:*

Table II summarizes the analysis process applied in this research. First I analyzed the data by developing case histories (Brown and Eisenhardt, 1997). On the basis of the founders' video presentations and feature articles about the three firms, I wrote case histories of each firm, describing their evolution over time. I used the case histories in thematic analysis to establish the overall timeline and to understand the main patterns of development. In the next stage, I analyzed the various activities that the companies reported in their press releases and website updates. These included new service introductions, business alliances, sales successes, organizational restructuring, acquisitions, and divestments. Altogether, I selected 33 press releases covering the most active parts of the firms' histories. I coded these press releases according to management's reasoning provided in the press releases and the operational capability areas. While initially I categorized the capability areas according to the literature on capabilities, I kept the categories relatively loose, allowing the final capability categories to emerge from the data. Thus, although the literature tends to favor entirely open coding according to instances of observation (Rindova and Kotha, 2001; Strauss and Corbin, 1990), I felt that some initial categories were needed because of the abstract nature of the capability concept.

\*\*\*\*INSERT TABLE II HERE\*\*\*\*

The third stage of my analysis focused on uncovering the interrelationships between environmental changes (outsourcing, technology innovation, skilled human resources, Y2K bug, terrorist attack on USA, and tsunami in Asia), opportunity discovery, and capability development. As the different interviewees explained their views of the company's evolution, it was possible to start drawing inferences between the reasoning by management, the subsequent actions of the firm, and the resulting capabilities. The timeline and sequence of events helped the interviewees pinpoint the time at which a certain event had occurred, making it easier for them to explain how and why the company had acted. The information provided in the first round of interviews enabled me to develop understanding on how management's emphasis shifted from one capability category to another, depending on the area which was perceived as the next most important or the next bottleneck.

### ***Case 1: Development of global service delivery capability in the firm AI:***

In the beginning firm AI had to face several challenges in finding customers abroad. The concept of working with an IT services firm based in India and run by Indian engineers was new to the western clients of the firm AI. The firm had to first establish its credibility by demonstrating its capabilities in maintaining systems that were not mission critical. After firm AI had proven itself, clients began asking the company to handle more critical tasks and to take on the development of custom tailored software applications from scratch. This was an opportunity for firm AI to learn and develop skills on handling projects, as firm AI did not have those skills. Firm AI took on more and more critical work, and its profit margins rose. But the challenge was to keep the service delivery cost



minimum. To reduce the cost of travel of engineers from India and leverage a vast pool of talented, technologically savvy, English-speaking engineers in India, firm AI began to experiment with a radical change in the way it was operating. It was also necessary for the company to adopt the change in the global security environment as post 9/11 terrorist attack obtaining visas for Indian engineers were becoming increasingly difficult. The company began moving some of the project work from the client site to a distant location in India. Early attempts to handle projects from a distant location far from the client's site achieved only limited success. Data links between the United States and India were essentially unavailable, so firm AI sent software code back and forth by courier and fax. Because clients demanded tight timelines, Firm AI teams could not simply remain idle during communication delays. Programmers on site and in India worked on the same software application in parallel. Ensuring that the portions of software codes developed in each location were consistent. Firm AI later called this arrangement a global delivery model (GDM).

During the testing phase of software development project it was almost impossible for Firm AI to shift work offshore. Tests needed to be conducted on the client's systems, and testing required multiple iterations. The company wanted to keep the cost low, and the solution before the company was to create a simulator at its India office and test the software in a simulated environment. That time the company could not afford a mainframe system so simulators were created on PCs. In some cases, Firm AI tried to test the software by duplicating client systems in India, but this method had its own complexities. The simulations were never perfect.

As time passed, Firm AI established its first direct communications link to the United States in 1989. That time U.S. visas were becoming harder to acquire and therefore without a distant development and delivery arrangement, Firm AI would not have been able to grow. AI direct communication link was a big support for the delivery system. At the same time some global political and economic changes were taking place at dramatic pace and these changes turned out into the favor of the company. In the early 1990s, Indian government began a deregulation of its economy and many of the previously required licenses became obsolete. The magnitude of the change can be assessed from this fact that while at the beginning the founder had to visit government offices several times for obtaining necessary approvals for his projects, after these changes he hardly required visiting. After deregulation move of Indian economy, telecommunications companies made massive investments in communications links from the rest of the world to India. Costs of using these communication links declined dramatically and speed of using these links increased substantially, and the economic potential of Firm AI's Global delivery model multiplied. Now, it was possible to send software back and forth in a fraction of time. Firm A could connect to mainframe systems of their clients in the United States from terminals in India, and this enabled a new range of services to be delivered remotely, including ongoing maintenance and user support.

As early as 1990s, Firm AI started experiencing the full potential of the GDM. The first project was from the one of the largest manufacturing company in the USA, where Global Delivery Model was applied. This was one of the biggest projects they had ever worked on. It was one of the first corporate migrations from mainframes to client-server architectures based on Oracle databases and the first project experience in which 75 percent of the workforce was based in India. Due to the time difference it required

some of the engineers to sleep in day and work in night. Because email systems were still primitive and it required constantly to be on the phone to India, clarifying customer's requirements specifications and running tests. The company managed to hit the targets in a very tight timeline. But this was great learning experience for the company. Now the company had started realizing the potential of this capability and gaining confidence in this model. This became the backbone of the firm's international growth in different geographic markets. By now the company has made considerable improvements in the system and is continuously evaluating it for improvement.

Despite the Global Delivery Model's capability to substantially reduce costs of service development and delivery, many clients were apprehensive about this approach. They were not sure about the success of such arrangements. It was opposite to the long-established tradition of IT services professionals working on site, and therefore hard to accept. Part of their fear was rooted in the complications of dealing with a foreign, unfamiliar culture which was 12 time zones away. In spite of all these apprehensions, the Global Delivery Model soon became a formidable competitive advantage for the firm. It even delivered an unanticipated benefit in form of improved efficiency. Previously clients were approaching the firm with a loose, unstructured requirements and it required a long and time consuming process of understanding the requirements before precisely defining it, now clients were more aware of the necessity to be precise about their requirements, and this improved a software development project's efficiency regardless of where the code was written. Firm AI's growth continued through the 1990s and it began its internationalization process to other markets. In 1993, it opened its first Europe-based sales office, followed by offices in other countries across the world. It continued to gain confidence of large companies by delivering mission critical projects timely and cost effective manner. By the late 1990s, Firm A's credibility was firmly established, and the "Y2K" bug and the Internet boom drove a dramatic growth spurt. From 1998 to 2001, revenue grew at over 80 percent per year. In 1999, Firm A became the first India-registered company to be listed in the NASDAQ. Firm A's strategy of using global delivery model in the North American market was proving powerful indeed and the company started leveraging its competitive position to other markets. The global Delivery Model was a force multiplier for the rapid international growth of the firm. Firm AI also began to tackle more complex projects than software development, such as helping clients manage their transitions from mainframe systems to modern new-technology platforms, and launching software solutions for specific industrial sectors such as software for banking companies. This kind of move was a result of the experience gained from the clients through previous projects.

In summary, the above case illustrates how a knowledge intensive service firm developed its capabilities through interaction with its clients and changing environment through internally oriented learning process to serve international clients in efficient and cost saving manner.

### ***Case 2: Knowledge sharing Capabilities of the firm DS:***

In the firm DS, global delivery model is a combination of people, process and knowledge management. Any international project is handled by a geographically distributed team. The team is arranged in a combination of onsite/onshore, near shore, or offshore project

members. Projects are handled mainly by teams located remotely from client site but often a small team stays onsite. And a small number of team members travel between locations for short visits. Onsite and remote teams transfer the work packages back and forth until the task is completed. The geographic arrangement is made on the basis of expertise and knowledge that reside at various locations within the firm. An onsite team includes project members, project leaders, program manager, transition head, relationship manager, quality assurance, human resources and organization development. A similar structure is present at the remote site.

The firm DS faces some critical issues regarding this type of global delivery arrangement. Main issues are how to gain the confidence of clients in their delivery system, that is, the firm is capable of delivering quality service and in timely manner. It is also important to address the concern of clients' regarding how the knowledge of the client firm is captured by the servicing firm in a short project time period, the same knowledge is used for service development at a remote center, and delivered back in form of service. This requires knowledge gathering, transfer, and retention within geographically dispersed teams. Eliminating expertise gaps between onsite and offsite teams is particularly important for global service companies like firm DS. This is achieved by developing the same level of expertise at the remote site and its corresponding onsite team. This helps to remove the doubts of the client regarding the quality of the service. Standardized templates based on a glossary of terms are used to transfer the knowledge between onsite and offsite teams. The onsite team is responsible for codifying and documenting the knowledge on specific templates, and transferring this to remotely located teams working on the same project. The remote team then decodes the information and makes sense of it. The remote team makes it sure that the information is clear and in case of any knowledge gap the team makes further request for information. The remote team also makes it sure that it has absorbed the knowledge and can use it in problem solving scenarios. This is achieved by developing a presentation, explaining the functionality of the application as they understand it, and is based on the information provided by the onsite team. The remote team also demonstrates its knowledge by problem solving and by day to day service to client which is scrutinized by the client.

The internal transfer of knowledge is a painstaking process. As it involves the tacit knowledge, it suffers from stickiness and communication problems. To overcome this problem firm DS has developed a glossary of terminologies and standard templates. These glossaries is widely understood and shared among the teams, which helps in minimizing misunderstandings. Also templates are carefully designed and used as standard tool for sharing knowledge. The objective is to minimize the chances of misunderstanding and maximize the clarity of the scope of the project. It is important for the project members to have a clear understanding of the project scope. The scope of the project is also communicated back to the client so that there is no deviation in the project scope. The firm DS clients are represented by business people and most of the time they do not have the technical understanding of the project scope, so it is not always possible for clients to have an objective approach towards the project efforts. Also service requirements are not always well defined and explicitly explained by the clients. Thus it is highly important for the firm DS to be very clear about the scope of the project and mutually agreed deliverables. Otherwise the firm faces high risk of project getting

delayed and mostly resulting in cost escalation. This has also the potential to affect the on-going relationship between the firms DS and its client.

Initially the firm had to face several problems regarding managing the projects internationally. The onsite team had to travel back and forth several times before the project was finally delivered. But with mix of experiential and deliberate learning the firm was able to overcome these barriers in knowledge transfer between clients and the firm and within the firm. They developed the mechanism for codifying knowledge and through their learned experience are now using it as a standard tool. The codified knowledge, the technique, and the glossary of terms are unique resources of the firm and are found in the organizational routines and procedures. For team members to be able to understand such codified knowledge they undergo training programs and therefore even without sitting together at one location they are able to share their knowledge. It is a shared mind-set of the team members of firm DS which makes this task easy. This shared mind-set is also a unique resource of the firm DS, where employees across the firm have the same level of skills in understanding and solving the problem.

### ***Knowledge retention capability of the firm DS:***

Firm DS is also facing the problem of high employee turnover; it has some serious consequences on the knowledge building process of the firm. High employee turnover can lead to knowledge loss between onsite and remote service provider sites. The firm DS realized it needed to ensure that the knowledge transferred and captured by the remote teams would be retained even if the project members leave the organization. The aim was to make the individual knowledge as the organizational resource and accessible to all. The firm developed a knowledge retention technique, which is based on succession plan that combines both the process and the people dimensions. Project managers' select identify individuals who could be their successor in case the project manager leaves the project or the organization. This process ensures that the successors are trained to replace the manager and are prepared for future role. Successors are also made knowledgeable about the clients for whom the project manager was responsible and the ongoing projects. Therefore when they take over the charge they require little or no time in starting working with the existing clients or on the ongoing projects.

Firm DS has also learned from its experience that no two clients or two projects of the same client are alike, but most share certain characteristics. And, while no two people or project teams approach a solution in the same way, most can benefit from the firm's previous experience, translated into consistent approaches that improve productivity and quality and set the stage for successful solutions delivery. The codification of knowledge has positively affected on this. The firm has developed a knowledge search process for locating expertise within its vehicle for developing and sharing knowledge. This is part of the internationalization capability of the firm DS.

### **Case 3: Customer relationship capability of the firm EH**

EH has a client base comprising several global organizations. EH provides solutions that translate into tangible business outcomes for their customers. EH 'partner-in-business' approach generates high business value for customers and rich dividends to EH in the

form of a continual stream of repeat business. EH's head of the operations commented on the firm's customer and market understandings as follows:

"EH operates on a global platform, working with several Fortune 500 customers in North America, Europe and Asia Pacific. This gives us a unique understanding and access to not only the business practices but also the cultural and work-ethics in different regions and industry sectors. We also keep track of the technological changes, and prepare ourselves to the new challenges and opportunities. For instance in the recent financial crisis we have sensed that customers are trying to avoid large capital expenditure on IT, days are gone when customers used to spend huge money on technology, customers are looking for cost saving, technology is also driving them in that direction. Thus we have to continuously innovate in our process and methods to be able to meet the changes in customer requirements and the market. We have the ability to demonstrate adaptability and flexibility in our operations to suit the dynamic needs of our customers." (EH's COO, 2009).

Firm EH's customers are many times large in the size and revenue in comparison to EH and it gets reflected in the relationship behaviour with these firms. Thus EH has to adjust this factor into its moderate behaviour while dealing with its clients. For instance one customer demanded 30 people onsite for a project development, EH tried to explain that it can manage the project with 5 people onsite and can get the required support from its delivery center in India. Firm EH was quite clear about the scope and the requirements of the project and was very confident with this proposal, but the customer was not ready to accept this proposal and continued to insist on its demand. If firm EH thinks it in terms of money it would simply mean waste of resources, as it involved over expenditure on transportation and accommodation, and also these extra people might have contributed on other projects as well. As EH employees share their knowledge with their colleagues and relocation for a longer period would mean loss of this benefit. But the firm EH decided to station the number of people as per the demand of the customer. After a few weeks, as the project progressed, the client firm realised that the firm EH's recommendation was correct and all the employees were competent in handling the project. This impression made them believe that the employees based in India are equally competent and they can rely upon them. Thus they agreed to keep only 5 people stationed onsite while the remaining employees moved back to their base. Firm EH's COO commented on this as follows:

"The company has demonstrated capability in meeting resource and infrastructure requirements for large projects, at the same time remaining small enough for relationship comfort."

Timely completion of any project is very important for any long term sustainable business relationship, and firm EH understands this very well. Firm EH understands that any delay in project has very high cost implications not only to its clients business but also it reduces EH's profitability. Timely completion of any project depends upon the

correct assessment of the project scope, deliverables and decision making. In the beginning firm EH had to go through many trials and errors but. Latter EH invested in building significant onsite delivery and consulting capability to absorb the process overheads of offshore by locating its business practice leaders, account managers and top management team in North America. This structure enables quicker decision-making and ease of access to customers. The company's onsite/offshore delivery model provides significant cost and time savings. EH's development centers are assessed at SEI CMMI-Level 5, and are also ISO 9001:2000 certified. These help EH to continually provide high value, high quality deliverables to its clients. Firm EH's COO comments that:

“We have consistently delivered to client expectations and have established long lasting relationships with them. We have taken large projects and, always completed on time, successfully and customers continue to be with us, and give references to other prospective customers.” (EH's COO, 2009).

Being a technology oriented company the firm has to keep itself up-to-date with the new technologies and market demands. This requires continuous technology training and upgradation. But only technology is not sufficient for the customer satisfaction, firm EH has to understand the business of its customers and develop solutions that meet their business goals. Firm EH's project manager comments on this as follows:

“Customers expect more value to their business, not pure technology. Technology they use is primarily provided to their business users, so the understanding of their business process, how technology can improve their business process, how technology can enable or incrementally improve their business process, is important. We are trying to provide services where we have the expertise” (EH project manager, 2009).

The COO of EH further comments on its customer servicing capability as follows:

“Every interaction with customer generates valuable and new knowledge that needs to be absorbed into the organization system, for future use, and the best practice development. We focus on developing best practices to achieve high efficiency and customer satisfaction. We constantly train our workforce on new range of technology platforms, and wide range of customer problems. Every new learned experience is shared across the organization, to enhance the customer and project handling capabilities of the firm.” (EH's COO, 2009).

In summary, firm EH through its continuous learning mechanisms has been able to meet the customer requirements and strengthen its relationship. This has positively affected the international growth of the firm.

## **Discussion & conclusion**

In this paper I focus on the development of capabilities and show that how knowledge intensive firms adapt to and exploit changes in their business environment. The analysis

of cases shows that capability building in these firms is an incremental process and it continuously improves with the changes in the environment. Firms in the beginning had little capability base in the terms of organizational structures, routines and competencies, but they rapidly improved it to the level of a competitive advantage. These firms are investing in developing capabilities which they find crucial for the performance. A key requirement in such firms is the ability to service customer operations worldwide; this depends on their ability to establish mechanisms to facilitate organizational learning and the transfer of knowledge across markets. Development of operational links among activity system across markets and regions helps strengthen the firm's competitive position especially against local competitors or firms operating on a decentralized basis. This requirement has resulted in the development of global service delivery capability. I found that to be a global knowledge service company a firm has to develop global capabilities. These capabilities are necessary to take advantage of the low cost skilled human resource available in developing countries, take advantage of the time difference between different continents, and avoid the natural / political / terrorist / strikes or any other unexpected disturbances which is beyond the control of the firm. Development of such capabilities have been possible due to factors like rapid advancements in the information communication technologies, global integration of the economies, standardization of the trade practices, difference of currency exchange rates, difference in wages, and availability of a large pool of untapped talent in different parts of the world. In the presence of favorable factors these firms have been able to accumulate the early internationalization experiences and convert them into firm specific competences. This finding improves our understanding of the market commitment decision as described in the internationalization process model of Johanson and Vahlne (1977). My findings suggests that knowledge intensive service firm's market commitment decisions are not measured in terms of financial investment or subsidiary expansion decision, but as a strategic choice of where to locate the development center and where to market the service. In the I-P model it was more disintegrated and understood as headquarters subsidiary type relationship, while in this study I find that the emphasis is on linking the operations across the globe. For instance the presence of 2 men in a country with a small or rented office may give the impression that the firm has low commitment to the market, but in-depth investigation will reveal that the market is giving profit in the millions of dollar. This has been made possible through the global integration of operations.

Developing global service delivery capabilities require careful investment in building knowledge bases and other complementary capabilities, such as knowledge sharing and retention capabilities. Multiple teams across the globe are engaged on the same project, this requires managing time differences, and a good project management, for instance, how to allocate different teams on the different modules of the project, then how to integrate them, how to monitor the work process and final testing. It also involves coordination with the clients and continuous feedback. They all work in harmony, with little margin of getting derailed. Any new knowledge emerging from the client experience or market / technological changes is incorporated into the learning and capability up gradation. This insulates the capabilities from becoming obsolete. Thus these capabilities require continuous monitoring and modifications and are not static in nature. Improvement in capabilities will result in improved project profitability and that different capabilities yield different benefits.

Another major finding has emerged out of the case studies is that these firms have global footage. Their internationalization process is different from the one discussed by Lopez, et al. (2008). In all the three cases, firms begin their internationalization of operations in USA and Europe, and not in the cultural proximity. Their major focus has been on western developed markets and not the local and neighboring developing countries. After a few years of their existence they have successfully managed to start international operation in different geographical areas across world and can be said that they have global footprint. These firms are providing services in various fields, and are not limited to a niche. Firms attribute this to their confidence in the global service delivery capabilities.

**Relationship based capabilities:** The capability of building an effective working relationship with clients is one of the most important assets held by knowledge intensive service firms. Relational capital refers to the joint benefits embedded in a relationship between two or more parties that is highly important to those parties (Dyer & Singh, 1998). It includes knowledge and understanding of the other party leading to shared meaning, commitment, and norms of reciprocity. Thus, knowledge based service firms must be responsive to clients and provide services that satisfy their needs (Griffith & Harvey, 2004). These firms use their technological, business domain, and experience of working with client's knowledge to satisfy clients' needs, transferring some of this knowledge in the process. The continuity of a relationship and the amount a client is willing to pay for services reflect the quality of the relationship between client and provider (Saparito, Chen, & Sapienza, 2004). Relational capital is generally understood to be composed of three components: trust, information transfer, and joint problem solving (Uzzi, 1997). Relational capital exists when a relationship becomes embedded and thus exhibits these three dimensions. The three components are interrelated in that trust often leads to significant information sharing, which in turn produces knowledge about a partner and thus allows more joint problem solving (Yli-Renko, Autio, & Tontti, 2002). The development of norms of reciprocity leads to trust in the relationship. A superior client specific absorptive capacity often translates into greater relational capital (Dyer & Singh, 1998). The trust and information-sharing components are usually affected by the volume of exchanges and the length of time a relationship has existed between parties (Dyer & Singh, 1998). That is, repeated exchange allows service firms to develop client-specific capabilities. These capabilities in turn enhance the quality of the services provided to clients, while simultaneously reducing the costs of providing those services (Ethiraj, et al. 2005). Customized service is based on and leads to further joint problem solving between a firm and its client. Thus, customized, high-quality service based on idiosyncratic knowledge is valuable, rare, and difficult to imitate, and it thereby provides a professional service firm a competitive advantage (Dyer & Singh, 1998). Additionally, longer relationships tend to afford stability and continuity that contribute to norms of reciprocity and trust, which in turn generate referrals and endorsements (Nahapiet & Ghoshal, 1998). Accumulated experience with a particular partner also helps a service firm to extend its knowledge base, which is instrumental in obtaining new clients.

Thus it is my understanding that these capabilities are backbone to the internationalization process of the knowledge intensive service firm. Without these capabilities these firms would find it difficult to sustain in the globally competitive



market place. These capabilities also require continuous monitoring and improvements according to the changes in the situations.

### **Limitations and future research**

This study like any study, suffers from some limitations. First, it is based on single service industry with its own peculiar characteristics. It is not clear to what extent the substantive results of this study are generalizable across industries. At the same time I must stress that capabilities are usually context specific. Other limitations are that not all capabilities have been enumerated in this study, and some capabilities have been merged into one construct. For instance, global service delivery capability includes international project management capability of the firm. This study is based on data from three firms and I believe including more firms into study would have provided opportunity to make comparison across the firms. Also it would be interesting to study those firms which have done fairly poor or could not survive long whether they tried to develop these capabilities or not.

In spite of these and other limitations, I believe this paper provides some unique and insightful data on the capabilities development in knowledge intensive service industry and makes an attempt to uncover the micro foundations of capabilities and how they affect the performance. I hope the spirit of this paper in advocating the importance of contextually grounded studies of firm capabilities will spur further research along these lines.

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Table I: An overview of the selected firms

Profile	AI	DS	EH
Founding year	1981	1987	1990
Founder profile	Engineers from IIT, Contacts in USA	MBA from Ohio University	Chartered Accountant earlier founded a computer training company, contacts in the Indian government.
First internationalization	1981	1995	1995
No of countries where the firm has presence	22	55	13
No of employees	104,850	52,865	5041
Total revenue USD	4,663 million	2,138.10 million	51.64 million
Percentage of the total sales from international market	89	82.9	90
Core services offered by the firm	Software development  Software maintenance  Software reengineering	Software development  Software maintenance  Software reengineering	Software development  Software maintenance  Software reengineering
Initial stage projects and learning	Non critical projects, system maintenance, testing etc.  Experimentation with new methods of service delivery.  Building trust and skill based relationships with clients	Non critical projects, system maintenance, testing etc.  Experimentation with new methods of service delivery.  Building trust and skill based relationships with clients	Non critical projects, system maintenance, testing etc.  Experimentation with new methods of service delivery.  Building trust and skill based relationships with clients

International growth stage	<p>Development of new capabilities (technological, operational, configurational)</p> <p>Handling critical projects, design, development, innovation</p> <p>Entry to new markets, new clients search, vertical integrations,</p>	<p>Development of new capabilities (technological, operational, configurational)</p> <p>Handling critical projects, design, development, innovation</p> <p>Entry to new markets, new clients search, vertical integrations,</p>	<p>Development of new capabilities (technological, operational, configurational)</p> <p>Handling critical projects, design, development, innovation</p> <p>Entry to new markets, new clients search, vertical integrations,</p>
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Table II. Stages in theory development using the grounded theory method

Analytical goal for stage	Raw data used	Analytical procedure used and its outcome	Implications for new theory development
Describing the evolution of case firms	Feature articles, industry reports, and video recordings of founder/COO appearances over many years.	Thematic analysis. Producing time lines of the evolution of the three case firms.	Sensemaking in firms with different backgrounds and capabilities causes them to converge to the same emerging knowledge intensive service sector.
Identifying the situations, the capability development actions and the resulting capabilities	Case histories, company reports, and press.	Coding of different types of capability development actions according to broad capability categories to break down and then reconstruct the data.	Simultaneous action on multiple capabilities depending on what is perceived as important and how management's effort is allocated to the different capability domains.
	First round of interviews with the members of the management team. Stories of the key persons' interpretations of firms' evolution	Coding of the different types of capability development actions sequentially into a timeline according to the capability categories.	Capability development would seem to shift from one capability category to another depending on what is the next bottleneck on a company's evolutionary path.
Uncovering the dynamics between the sensmaking and capability development actions	Second round of interviews with the project managers and members of the project team. Recorded interviews with a focus on the formation of learning mechanism and the subsequent actions. (In total 9 persons interviewed.)	Revision of the earlier frame work.	The changes in experience cause 'changes on multiple capability categories making the evolution take place over time in a manner from one capability arrangement to another.