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ENSURING CLIENT PARTICIPATION TO CO-CREATE VALUE IN KNOWLEDGE INTENSIVE BUSINESS SERVICES

An Empirical Study on Finnish Software Firms

Master´s Thesis
in International Business

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1 INTRODUCTION

1.1 Evolution of Marketing Concepts and Knowledge Intensive Business Services

In the beginning, the formal study of marketing was focused on the distribution and exchange of commodities and manufactured products, where its foundations were laid in economics (Marshall 1927; Shaw 1912). Commodity exchange (Copeland 1923), marketing institutions that make goods available and arranged for possession (Nystrom 1915) and the functions that needed to be performed to facilitate the exchanges of goods through marketing institutions (Cherington 1920) were the primary areas of concentration of the preliminary marketing scholars (Lusch & Vargo 2006a, 3).

By the early 1950s, the transformation began from the *functional school* to the *marketing management school*, which was characterized by a decision making methodology to accomplish the marketing purpose and with a predominant focus on customers. McCarthy (1960) and Kotler (1967) characterized marketing as a decision making activity engaged towards satisfying the customers at a profit, by aiming at a market and then assembling optimal decisions on the marketing mix – of the '4 Ps'. The prominent marketing management textbook of Kotler (1972, 8) declared that:

> *"Marketing management seeks to establish the settings of the company's marketing decision variables that will maximize the company's objective(s) in the light of expected behavior of non-controllable demand variables".*

Beginning in the 1980s many new structures of references, which were not based on the 4Ps and were fundamentally independent of the standard macroeconomic paradigm, began to emerge. What appeared to be separate lines of thoughts became visible through concepts of relationship marketing, market orientation, quality management, supply and value chain management, resource management and networks. Conceivably most notable was the development of service marketing as a sub-discipline, following the scholars' challenges to break-free from product marketing and recognize the dominant logic for dealing with service marketing's subject matter (Dixon 1990). Many scholars believed that marketing thought was becoming more fragmented during this time. On the surface, this appeared to be a reasonable characterization (Lusch & Vargo 2006a, 4).

In the early 1990s, thought became more fragmented, as scholars Webster Jr. (1992, 1) argued that:

> *"The historical marketing management role, based on the microeconomic maximization paradigm, must be critically examined for its relevance to marketing theory and practice in the 1990s".*

By the end of 1990s, the 4Ps were being regarded as a mere handy framework by academics and researchers (Day & Montgomery 1999).

Fragmented views and opinions, awareness about the future of marketing, appeals for a paradigm shift and controversy over *service marketing* as being a distinct area of marketing – all were being considered as disquieting. As a result, marketing had relocated much of its dominant logic away from the exchange of tangible goods and towards the exchange of intangibles, specialized skills, knowledge and processes (Martin 1999, 325). These shifts were believed by the scholars as the appreciation of marketing toward a more comprehensive and inclusive dominant logic – one that establishes integration between goods and services, and provide a stronger foundation for the development of marketing thoughts and practices. The service-centered assessment of marketing advocates that marketing is an unceasing series of social and economic processes that is largely attentive on operant resources, with which the firm is persistently striving to create better value propositions than its competitors. (Lusch & Vargo 2006b, 4).

Contemporary marketing literature and practice congregate around the concept that especially in case of service business, clients play different foundational roles in value-creation mechanisms (Ordanini & Pasini 2008, 289). In the mid-2000s, the service dominant logic (Vargo and Lusch 2004a) has introduced the concept that *the client is always a co-creator of value and not a target of that value, as the client mobilizes knowledge and other associated resources which influence the success of a value proposition*. According to this view, the client is embedded in the service offering and ultimately is accountable for the value *added* to the process (Vargo and Lusch 2004a).

Service firms anticipate utilizing these concepts, predominantly in business markets where clients take active, dynamic and tangible roles. As such, professional firms completely recognize the value of serving a knowledgeable client, and some recently have established formal initiatives to *educate* clients (Anand, Heidi & Morris 2007, 422). Moreover, innovative service offerings based on strong modularization also have been launched by technology service firms that can be managed directly by clients (Miozzo & Grimshaw 2005, 1421). Consequently, *the latest conceptualization of marketing is dominated by the value co-creation concept*, where the clients play vital roles to create the ultimate value.

As the shifts of marketing paradigms were evolving over the century, another reallocation in the world economy has been observed. The rise and growth of information technology has created totally new opportunities, platforms and competitions for firms around the globe. At the same time service sector became the dominant economic player in almost all developed countries. Using intangibility as the determinant as considered by most of the contemporary literatures, a list of examples of service businesses could be long: finance, insurance, real estate, transportation,

communication, utilities, wholesale trade, retail trade, education, health, personal services and many others. (Heskett 1986, 3). Considering US as a leading example of developed economy, between 1953 and 1984 nearly 9 out of 10 of the 48 million jobs added to US payrolls were provided by the service sector. By 1984, US service economies were accountable for 74 percent of all nonfarm jobs, 68 percent of all non-government jobs and 69 percent of all national income. The same high dominance of service sector is visible in other industrialized countries. For example, the service sector accounted for 70.6 percent of employment and 61.3 percent of gross domestic product in the UK in 1996 (OECD 1998).

From the 1990s wider acknowledgement has been awarded to the ways in which services can be significant contributors to wealth creating activities through innovation and knowledge (Miles 1993). Knowledge intensive services, especially *Knowledge Intensive Business Services (KIBS)*, were identified as of particular importance in this creation and distribution of new knowledge and innovation (Antonelli 1999; Miles, Kastrinos, Flanagan, Bilderbeek, Hertog, Huntink & Bouman 1995). *The Knowledge intensive business services are firms whose primary value-added activities comprise the accumulation, formation or dissemination of knowledge for the purpose of developing a tailored service solution to fulfill the client's needs* (e.g., information technology consulting, database activities, software design, technical engineering) (Miles 2005, 41).

In this new economy dominated by service sectors, highly skilled service employment is continuously increasing. Knowledge workers and knowledge assets contribute high rewards and commanding and increasing amount of value of output in all sectors of the economy. Knowledge intensive business services will account for a progressively higher share of innovation and value creation, which is already apparent by the rising economic significance of this sector. Considering value-added statistics from the International Standard Industrial Classification (ISIC), it is revealed that ISIC 8, of which knowledge-intensive business services form a vital part, contribute over 30% of the aggregate value added from services in the United States and the UK (Bettencourt, Ostrom, Brown & Roundtree 2002, 100).

It has even been argued that knowledge has become the solitary resource that can produce a continuous competitive advantage for a nation. Natural resources are no longer considered as a guarantee of competitiveness. Capital resources are vastly mobile and so cannot be depended upon to protect a nation's competitiveness. Systems of knowledge and innovation creation and dissemination, which include knowledge workers and appropriate institutional structures, are indispensable assets for nations seeking to protect economic competitiveness in the twenty first century (Roberts, Miles, Hull, Howels & Andersen 2000, 1 - 4).

Software industry is sub-sector of the larger information and communication technology (ICT) sector, and comprises an important part of the knowledge intensive business services (KIBS). The significance and dimension of the ICT sector has increased rapidly accounting currently for approximately 5.4% of the global GDP, and is estimated to account for 5% of total GDP growth between years 2003 and 2008 (Dutta & Mia 2010, 10). The role of software industry is substantial within the ICT sector. For example, according to a recent report of European Commission, half of the total ICT employments in Europe were comprised by computer services and software sub-sector in 2007 (Turlea, Nepelski, Prato, Lindmark, Panizza, Picci, Desruelle and Broster 2010). As software consultancy and tailored software services form a major portion of the entire software industry and thus the KIBS segment of country level economies, those businesses are identified in this research as *'Professional Business Software Development Services (PBSDS)'*. PBSDS firms generally serve business clients, require higher input from their client to co-create value, and serve the clients with value propositions created through professional knowledge.

The business software industry is progressively more characterized by services, while products are more and more becoming tools for the service providers to deliver the services. This trend continued in recent years, and is predicted to further accelerate in the upcoming years (D3 – Baseline Scenario for 2020, technical report 2009). For the Finnish software industry, this advancement of the business process can mean that the traditional *software product* business and associated competences may have lost their importance in favor of services based competences and revenue sources (Hertzen & Laine 2009, 14). Consequently, it is becoming increasingly difficult for the Finnish software firms to generate profits and growth around the traditional *'packaged software and license'* model. Many software market segments are mature and saturated, persistent to the trend of moving towards services that started already in the 1990s (Rönkkö, Ylitalo, Peltonen, Parkkila, Valtakoski, Koivisto, Alanen & Mutanen 2010, 4). Thus, the need of higher market understanding and producing and delivering the software according to the latest marketing concepts is increasingly felt.

The excellence of a PBSDS (Professional Business Software Development Services) business evidently depends upon the client particularly in the sense that *'client participation'* in the value co-creation process determines the final service delivery and thus the level of satisfaction (cf. Ernst 2002). For example, *if a client firm does not communicate its business complications, strengths, and weaknesses accurately, a PBSDS firm may be bound to provide sub-optimal service - not because of the service provider's own deficiencies but due to inadequate client participation*. The notion of a PBSDS service matches with the latest marketing concept of Service Dominant Logic, according to which a service offers a solicitation of knowledge and competencies for the advantage of another entity, making it the basis of any economic or social exchange

(Vargo & Lusch 2004). Moreover, the *service dominant logic* puts forward the client at center stage, that the client is every time a co-creator of value and the service provider does not deliver value, but value propositions. (Bettencourt et al. 2002, 100). This declaration fits well with the concept and business processes of Professional Business Software Development Services (PBSDS).

The emerging concept of service based competencies and revenue models are changing the way how the software businesses are conducted, especially in developed economies similar to Finland. In this shifting economic circumstances, application of the contemporary concept of value co-creation through client's participation can be proved vital and give the Finnish software firms advanced competencies to cope up and progress forward. It can also provide superior competitive advantage to those firms to compete both in the domestic and the international market (Tax et al. 2006, 32).

1.2 Research Positioning and Motivation to Study the Phenomena

1.2.1 Research Positioning

The rise of knowledge economy has put knowledge intensive business services top on the contemporary research agenda. Significant growth of their overall impact on national economies is the main reason behind this increased importance. Since the mid-1990s, there have been significant increases in the attention paid to KIBS, their characteristics and their roles and functions in innovation systems. Especially in Europe, as shown is figure 1, the number of publications on KIBS are much higher compared to other geographical regions of the world. Although if evaluated against the manufacturing sectors the studies of KIBS are completed below par in quantity by analysts of innovation and technological change. Similarly, their future advancement has seldom been considered in terms of policies and roles in their respective innovation and productive systems (Muller & Doloreux 2007, 1).
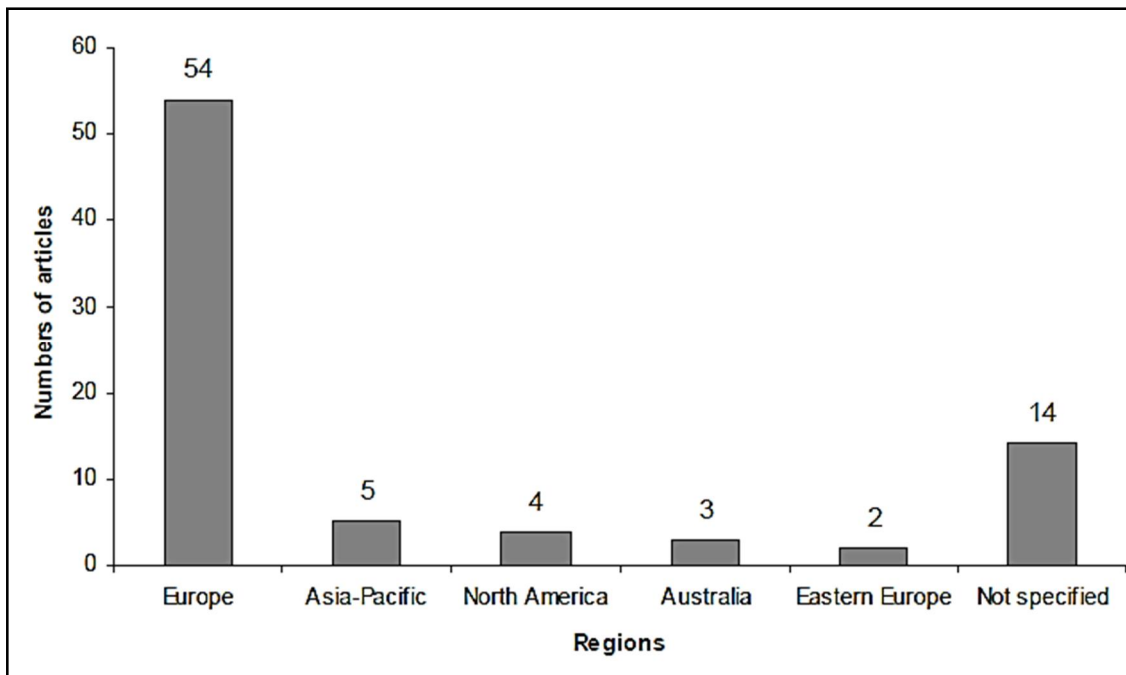
Figure 1: Publication on KIBS during 1989 – 2005 based on geographical region
(Muller & Doloreux 2007, 4)

Specific research on KIBS has been carried out since the middle of the 1990s (Muller & Doloreux 2007, 7). From a broader perspective, researches were mainly based on NACE[1] data and had investigated topics such as patterns of innovation and sources of competitiveness (Camacho & Rodriguez 2005; Hollenstein 2003; Tether 2003; Tether & Hipp 2002; Evangelista 2000), innovation and sectorial performance (Cainelli, Evangelista & Savona 2004; 2006; Evangelista & Savona 2003; 2002), and innovation and inter-firm collaboration (Tether 2003). In addition, scholars have also developed their own database based on relatively large scale surveys directed towards KIBS and sub-sectors in order to provide a comprehensive picture of KIBS's innovation patterns (Koch & Stahlecker 2006; Freel 2006; Leiponen 2005; Wong & Singh 2004; Djellal & Gallouj 2001; Koschatzky 1999). There has also been recognition that innovation undertakings and activities in KIBS are distinct from those in manufacturing firms (Gallaher &Petrusa 2006; Camacho & Rodriguez 2005; Sundbo & Gallouj 2000). (Muller & Doloreux 2007, 7-9)

As one can observe from the above discussion on KIBS research, most of the researches have been done to find out the specific definition of KIBS (Muller & Doloreux 2009), their precise functionality (Strambach 2008), input and importance in

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[1] Statistical classification of economic activities in the European Community. Published by Eurostat, European Commission.

innovation (Hertog 2000) and formation of generalized concept (Kuusisto & Viljamaa 2004). In other words, *KIBS study till date have been mainly conducted with three major objectives: (1) Mapping different characteristics of this specific categories of business organizations, (2) Find out their innovation details and (3) Their role as generator and knowledge accumulator and thus their positive impact on the client firms and overall, the society* (Muller & Doloreux 2007, 7-9). However, excluding the few exceptions (see, e.g. Amit & Zott 2001) there has been almost no literature available which guides or assists to apply the basic business discipline concepts to KIBS. Thus, it is almost impossible to find out any scholary material which studied about marketing, management, financing, human resource management or the likes for businesses which are engaged in knowledge intensive business services.

Although the concept of *value co-creation* is a relatively new research area too, research done till date are much more diversified when compared to KIBS. On top of the seminal works (see, e.g. Vargo & Lusch 2004a; 2004b; Prahalad & Ramaswamy 2004a; Håkansson & Prenkert 2004; Grönroos 2000; Normann & Ramirez 1993), literatures available not only present a broad spectrum of conceptualization about a wide range of focuses, studies have been done on issues corresponding process of value co-creation (Payne et al. 2008), barriers and facilitators of value co-creation (Tax, Colgate & Bowen 2006; Stefanou, Sarmaniotis & Stafyla 2003), industrial buyer-seller interdependencies (Forsström 2005), role of competencies (Möller 2006), marketing interaction (Ballantyne & Varey 2006) and (to some degree) practical guidelines to engage consumers in value co-creation (Prahalad & Ramaswamy 2004a). Nevertheless, although there are some studies available on applying the concept of value co-creation in KIBS on a generic level (see, e.g. Bettencourt et al. 2002), there have been almost no study done on applying the concept of value co-creation in professional business software development services (PBSDS) firms, although these firms form a large part of KIBS segment itself.

Software firms follows a variety of business models and their value propositions also differ in several ways, not all of which can be considered fitting for the KIBS sector. For this research, software firms which are most appropriate to be considered as PBSDS firms and thus fall under KIBS category were selected. The activities of software companies can be classified into four categories as shown in figure 2 in the next page.
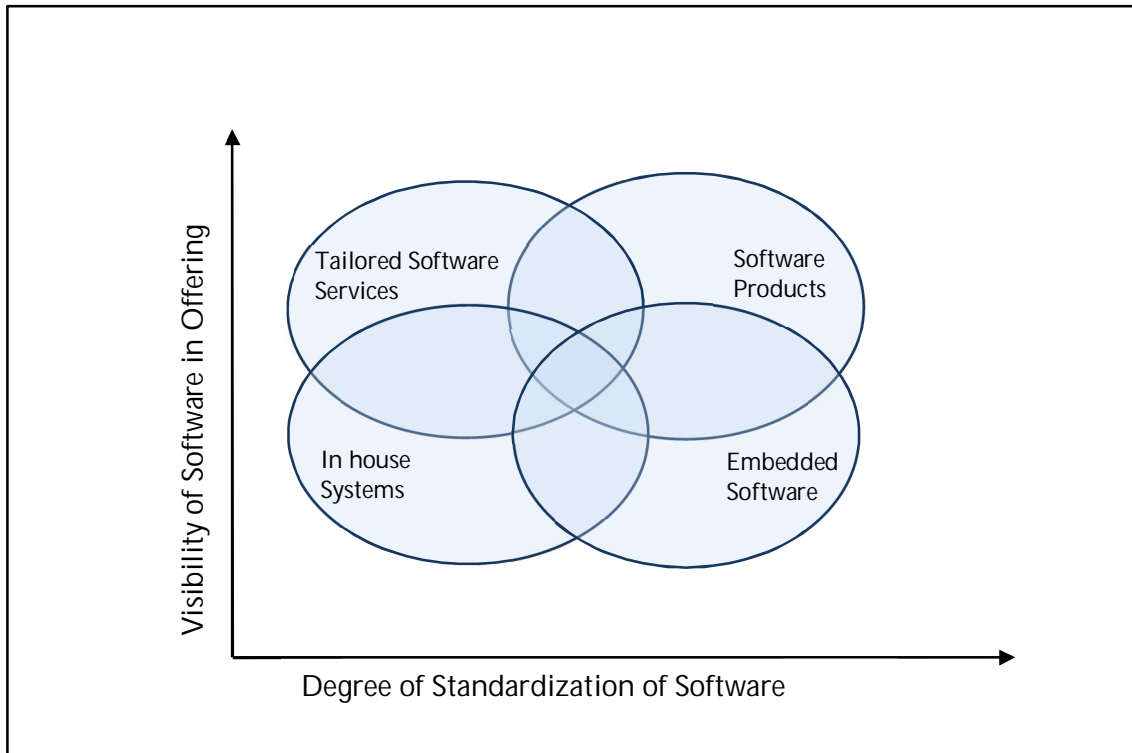
Figure 2: Categorization of software offerings (Rönkkö et al. 2010, 2)

The traditional categorization of software businesses which divides the same into *software products* and *custom-made software* is reflected on the horizontal axis of this classification (Nambisan 2001, 72). The vertical axis, *visibility of software in the offering*, denotes to the deceptiveness of the client organization about the central component of the purchase being made (D2 – The European Software Industry, technical report 2009, 3). According to this classification, software firms can be differentiated in four broad categories based on their value propositions – (i) *Tailored Software Services,* (ii) *In-house Systems,* (iii) *Software Products* and (iv) *Embeded Software*.

In this research, emphasis will be given on the first category of the software businesses called '*tailored software services*' as their offerings fits best with the concept of *knowledge intensive business services*. Additionally, these businesses also deserve high attention from a '*value co-creation*' perspective as they require maximum degree of participation from the client firm to deliver the final value (cf. Finland National Software Survey 2011, 2).

1.2.2   Motivation

Considering the central importance of *value* in business markets, it is critical for firms to understand the mechanisms and means of value creation (Flint, Woodruff & Gardial 1997). Along with co-creating unique value with clients, knowledge intensive business services are assumed to *serve as bridges* for knowledge flow between firms and other organizations, as well as across the industries. Hence, they act as carriers, facilitators and sources of innovation in the economy (Miles 1995).

Motivation to study the PBSDS segment as the prime example of KIBS sector has been sparked not only by the growth of the sector itself, but also for (i) the increased recognition that knowledge intensive business services have an effect on overall economic growth, (ii) the wide range of association of PBSDS with the other segments of KIBS and (iii) the potential positive impact it creates on the other KIBS businesses.

When both the professional business software development service (PBSDS) providers and their clients excel at performing their individual roles, it brings about efficiencies (e.g. cost and time savings). High quality clients are also aware about the importance they possess in the value co-creation activity and tend to put active engagement to yield superior value (cf. Tax et al. 2006). However, although the importance of client engagement are evident to both service providers and clients, it is observed quite frequently that clients become unsuccessful to participate appropriately in the value co-creation process, and thus the overall output of the total process fails to meet desired expectation (Bettencourt et al. 2002). Hence, the principle motivation behind this research is to eliminate the client participation challenges which should result in superior value co-creation by Finnish professional business software development services (PBSDS) and their clients.

The research can also be helpful to understand the value co-creation concept when applied to a specific knowledge intensive industry context. It focuses on the client participation dimension, build preliminary framework based on existing knowledge, tests the framework against reality through multiple case studies, and identifies new challenges and solutions which were not present in the preliminary framework.

The study may also assist to draw positive managerial implications, as the composite application of the value co-creation and KIBS concepts are based on real life dimensions. Higher degree of client participation in the value co-creation process should result in better profitability, less cost, superior productivity and optimal value and thus itself become a source of competitive advantage for the firm.

From a personal point of view, the conceptual depth and possible but unidentified practical implications of contemporary concepts corresponding value co-creation and knowledge intensive business services appeared as a motivating scholarly challenge. Conducting scientific research on the topic, testing existing theories through the

preliminary framework and building modified constructs not only offers academic satisfaction, but also provides contentment to solve a complex set of intellectual puzzles.

1.3   Research Question

To identify the root causes behind clients' failures to participate in the value co-creation process and to find out the solutions to overcome those challenges, the principal research questions this study seeks to answer is:

- **How to ensure client participation to co-create value in knowledge intensive business services?**

To answer the research question appropriately, it has been divided into three sub-questions with the intention that when the answers of the sub-questions are combined together, they will provide a comprehensive and vivid answer to the main research question.

The KIBS sector comprises a wide range of industries from business consultancy to legal activities. So to specify the focus of the research, PBSDS segment has been chosen to serve as the prime example of KIBS with the expectations that the results found analyzing this segment can be applicable and generalized to some extent to other KIBS segments. Accordingly, the sub-questions are derived from the principal research question are as below:

- How value is co-created between professional business software development services firms and their clients?
- What are the challenges to engage the client in the value co-creation process?
- How to overcome those identified challenges to co-create value?

Characteristically, knowledge intensive business services involve close interaction with the client firms and imply a learning process, which is often mutual in nature. In the value co-creation process in KIBS sector, generic and localized expertise are combined with client interaction which can not only lead to superior value co-creation but also lead to a dynamic and fertile ground for innovation (Kuusisto & Viljamaa 2004, 283).

From a managerial point of view, finding methods to ensure client participation provide valuable information for both the clients and service providers as they have the potential to increase client performance in the value co-creation process. The research problem is also relevant for the academic community, especially for those who are interested in understanding the emerging concept and practice of value co-creation, where interdependence can be considered as a positive force (cf. Forsström 2005, 55).

1.4   Boundaries of the Research

The first boundary of the study is set by selecting a specific theoretical standing. From a theoretical point of view, the borders of this research are set to study the value co-creation concept through the *service provider-client interaction* perspective. Other possible choices to examine the service provider-client relations could be a more classical transactional view, network theories, the value chain, the marketing mix model or theories related to the strategic alliances etc. However, as this study strives to examine the challenges of client participation to co-create value and provide solution for those challenges, the value co–creation concept appears as more appropriate for this research. Rather than applying attention on a wide range of actors, this study focuses on the service provider and the client in order to get a deeper understanding of their joint participation to co-create value and the dynamics of value co-creation in the focal dyad (cf. Forsström 2005, 17).

Co-creation of value is a well-required goal as it can assist professional business software development services (PBSDS) firms in highlighting the client's point of view and in improving the front-end process of identifying client's needs and wants (Lusch & Vargo 2006c). But regardless of their pivotal roles, value co-creation does not solely depends on the primary actors (service providers and clients) but also includes network members, reflects industry practices, the business environment in which they operate and the policies, rules and regulations applicable to them. However, the second boundary of this research is set by putting spotlight on the prime actors' appropriateness to co-create value and by excluding the peripheral factors.

The third boundary is set by choosing a specific market and industry for this research. The notion of value co-creation is applicable to both the product and service markets and consumer and business-to-business market partitions. For this research, the focus is solely set on business-to-business markets and a specific sector of the Finnish economy – knowledge intensive business services (KIBS). Moreover, as the term knowledge intensive business services (KIBS) covers a wide range of industries, this research concentrates on a specific but larger and very important branch of KIBS – the professional business software development services (PBSDS).

The fourth boundary of the study was set through the selection of the firms which participated in this study. Knowledge Intensive Business Services (KIBS) denotes mainly to business-to-business markets where both the service providers and their clients are business organizations. In this study the focal functions of the participant firms are of service providers (professional business software developers) and thus the results found and presented largely reflects the service providers' perspective. However the service providers in the KIBS sector also acts as business clients to their suppliers,

and from that standing client's perspectives on value co-creation has been added too in this study to some degree.

Setting boundaries for this research was never intended to have a narrow examination on the topic. Rather the boundaries were established to concentrate on specific areas of interest with the intension to attain deeper understanding and generate new knowledge through empirical investigation.

2 CLIENT PARTICIPATION FOR VALUE CO-CREATION IN KNOWLEDGE INTENSIVE BUSINESS SERVICES

2.1 Businesses Based on Knowledge

2.1.1 Knowledge Intensive Business Services

Knowledge intensive business services (KIBS) are service organizations which primary business activity is to provide knowledge-intensive inputs to the business process of other organizations. The KIBS sector consists of firms which have been developed specifically to assist other organizations to deal with challenges where external sources of knowledge are required (Miles 2005, 39.) As suggested by Hertog (2000, 505), knowledge intensive business services (KIBS) firms depend profoundly on professional knowledge, i.e., knowledge or expertise related to a specific (technical) discipline or functional-domain to deliver services that are knowledge based. KIBS are imperative features of the developed and knowledge-based economy.

The expansion of KIBS reveals demands for knowledge inputs from professional organizations, mainly to assist them dealing with developing technologies and changing social conditions. The growth also reflects organizational strategies and management thoughts such as outsourcing and focusing on core competences by the client organizations, and escalating importance of service and intangible elements of production and products (Miles 2005, 39).

The distinctive characteristic of KIBS is the knowledge intensity of their product, or the service they provide. Miles, Kastrinos, Flanagan, Bilderbeek, Hertog, Huntink and Bouman (1995) identified three principal features of KIBS based mainly on knowledge intensity: (i) they rely heavily on professional knowledge, (ii) they either are themselves primary sources of information and knowledge or they use knowledge to create intermediate services for their clients' production processes and (iii) they are of competitive importance and serve primarily to other businesses. Hence, knowledge intensive business services (KIBS) firms could also be defined as organizations whose primary value-added activities comprise the accumulation, formation or dissemination of knowledge for the purpose of developing a tailored service or product solution (e.g., information technology consulting, database activities, software design, technical engineering) to fulfill the clients' needs (Bettencourt et. al. 2002).

One issue becomes evident from the above discussions that although there are common characteristics available in various KIBS businesses, there is no universal definition of KIBS which could be applied to all the firms engaged in the knowledge

intensive businesses. However, based on the above mentioned definitions Muller and Doloreux (2009, 65) derived three core elements of knowledge intensive business services:

- The term 'business services' or specialized services, which are demanded by firms and public organizations and are not produced for private consumption.
- The phrase 'knowledge intensive', which can be interpreted either in terms of labor qualification or in terms of the conditions for transactions between the service provider and the service user or procurer.
- The term 'knowledge intensive firms', which refers to firms that undertake complex operations of an intellectual nature where human capital is the dominant factor.

Although there is no standard approach and generally accepted identification criterions of KIBS, well accepted consensus exists about the branches and firms that comprise the KIBS sector. The prominent classification that is widely used across Europe is the NACE classification (NACE revision 1.1 – An European Commission classification of economic activities). To identify KIBS, the NACE classification was first introduced by 'European Monitoring Centre on Change (EMCC)' in their publication '*Sector Futures – The knowledge intensive business services sector*' (2005, 2). Table 1 below illustrates the detailed sectors and sub-sectors of KIBS, which has been used as KIBS guideline by both researchers and policy makers since its introduction[2].

Table 1: Main KIBS sectors based on NACE Rev. 1.1 nomenclature (European Monitoring Centre on Change)

NACE division 72: Computer and related activities
72.1: Hardware consultancy
72.2: Software consultancy and supply
72.3: Data processing
72.4: Database activities
72.5: Maintenance and repair of office, accounting and computing machinery
72.6: Other computer related activities
NACE division 73: Research and experimental development
73.1: Research and experimental development on natural sciences and engineering

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[2] The broad NACE divisions 70 –74 include some sub -sectors that are not strictly KIBS, and thus have been omitted from this list: some parts of 74.6 (Investigation and security activities); 74.7 (Industrial cleaning); 74.82 (Packaging activities); 74.83 (Secretarial and translation activities).

73.2: Research and experimental development on social sciences and humanities
NACE division 74: Other business activities
74.11: Legal activities
74.12: Accounting, book-keeping and auditing activities; tax consultancy
74.13: Market research and public opinion polling
74.14: Business and management consultancy activities
74.15: Management activities of holding companies
74.20: Architectural and engineering activities and related technical consultancy
74.3: Technical testing and analysis
74.4: Advertising
74.5: Labour recruitment and provision of personnel
74.8: Miscellaneous business activities n.e.c.
74.81: Photographic activities
74.84: Other business activities n.e.c.

The KIBS sector includes a range of business activities such as computer services, research and development (R&D) services, legal, accountancy and management services, architecture, engineering and technical services, advertising and market research, among others. Strambach (2008) argues that the knowledge intensive business services (KIBS) industries is one of the most dynamic segments of the service sector in European countries since the mid-1980s, and they are also among the rapidly growing sectors of the EU economy.

In the 1990s, knowledge, innovation and spatial proximity became the three major magnitudes that have guided the KIBS research (Muller and Doloreux 2007). Research into service innovation and systems of innovation, in particular, has revealed that KIBS firms are playing a more central role for innovation as knowledge carriers, producers and mediators in national and regional economics (Hipp and Grupp 2005; Wood 2002). Among this KIBS sector, the professional business software development services (PBSDS) hold one of the most important place and continuously becoming stronger, as the significance and size of the ICT sector has increased rapidly accounting currently for approximately 5.4% of the GDP worldwide (Rönkkö et al. 2004, 5).

2.1.2 *Professional Business Software Development Services (PBSDS) Business in Finland*

Software industry is sub-sector of the broader information and communication technology (ICT) sector, and over the years the significance and magnitude of the ICT sector has augmented rapidly. ICT sector is currently accounting for around 5.4% of the

GDP worldwide and was estimated to account for 5% of total GDP growth between years 2003 and 2008 (Dutta & Mia 2010).

As a sub-sector, the role of software industry is substantial within the ICT sector. For example, half of the total ICT employment in Europe was accounted by computer services and software subsector in 2007 (Turlea, Nepelski, Prato, Lindmark, Panizza, Picci, Desruelle, & Broster 2010). Moreover, this sub-sector produced 42% of the total ICT sector value added. Table 2 below provides summarized figures of worldwide ICT spending and growth in 2009 and 2010.

Table 2: Worldwide IT spending forecast (billions of U.S. dollars)

	2009 Spending	2009 Growth (%)	2010 Spending	2010 Growth (%)
Computing Hardware	334	-12.4	365	9.1
Software	222	-2.6	229	3.1
IT Services	763	-5.3	786	2.9
Telecom	1,905	-3.5	1,970	3.4
All IT	3,225	-4.9	3,350	3.9

Source: Gordon, Forecast Alert: IT Spending Forecast, 2Q10 Update

Globally Europe is the second biggest single software market after the U.S. with 36% of the global market share (PriceWaterhouseCoopers 2011). The software and software-based services market in EU27 area was about 231 billion Euros in 2009 (Giron, Poujol, Bonneau, Leimbach, Friedewald & Salsas 2010).

Finland – a technologically advanced European country – is one of the most highly developed and ICT capable countries in the world. Software business is considered as a corner stone of the Finnish economy (See, e.g. Tekes). The '*Finland National Software Survey – 2011*' highlights some key international benchmark of the Finnish software industry, which includes: (i) after the U.S., Finland positions as the second most conductive environment for the development and growth of IT firms in the world, (ii) in 2010 Finland ranked number four in European Software and IT services competitiveness index behind Denmark, Ireland, and Sweden, according to the comparison by Fraunhofer Institute and (iii) when comparing the number of companies per country in the global top 200 list of software companies, PriceWaterhouseCoopers ranked Finland in the sixth place in 2008.

Furthermore, the ratio of ICT dedicated R&D and GDP in Finland is highest in the world (Turlea et al 2010, 30) and the ICT sector contributes to the GDP in Finland more than in any other country in Europe, and its share in total employment is only second to Sweden. Economist Intelligence Unit (2010) provided another important indicator of ICT industry's importance in Finland by ranking the coutry as fourth globally in the

digital economy rankings, displaying the quality of a country's ICT infrastructure and the ability of its consumers, businesses and governments to use ICT to their benefit.

In the last 25 years the Software and IT Services industry in Finland has grown faster more than in most of the other EU member states. Since 1985 the share on the total employment in private business tripled from 0.92% to 3.18% in 2007 (See, e.g. Finland National Software Survey – 2011). When the share of software goods and services on the total trade with goods and services is taken into account, with a 7.9 % share Finland ranks second in the world. Expenditure on software per person in Finland also ranks high globally. Figure 3 and 4 show 'Per capita spending in Software and IT Services' and 'Share of software goods and services exports on total exports' of Finland compared to some other European nations.
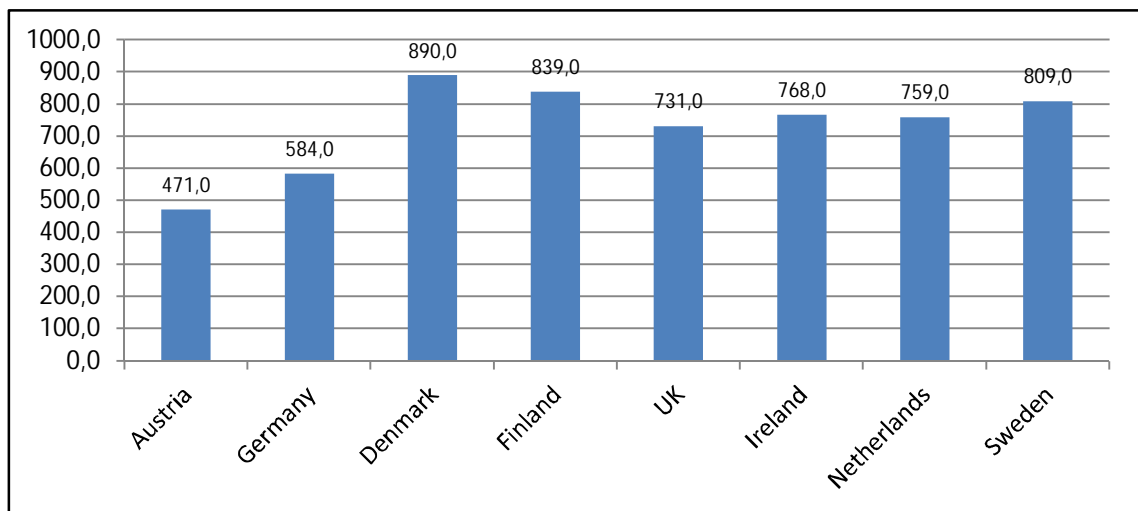
Figure 3: Per capita spending (USD) on software and IT Services in 2008 (Finland National Software Survey 2011, 16)
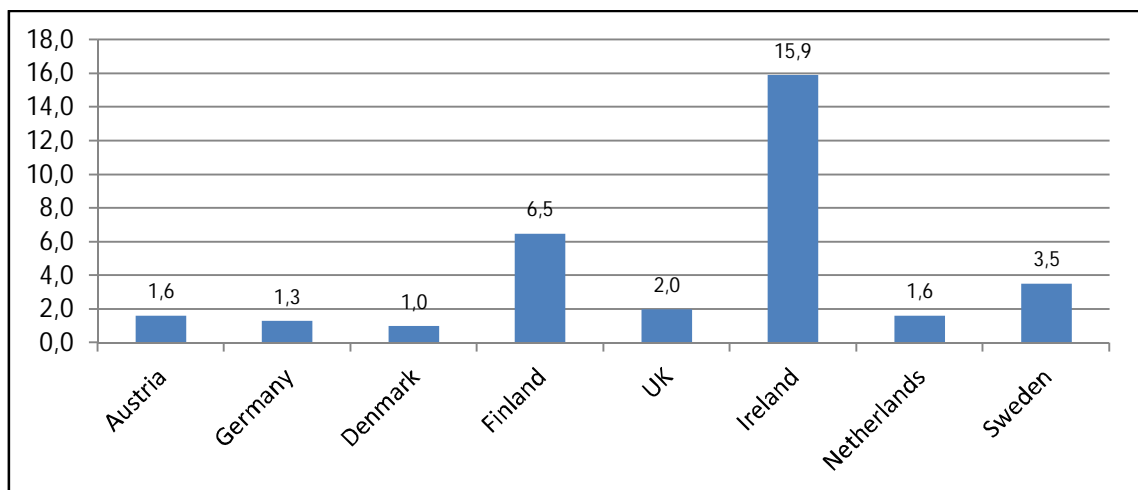
Figure 4: Share of software goods and services exports on total exports in goods and services 2008 (Finland National Software Survey 2011, 16)

The software service business in Finland plays prominent role in the economy and is enjoying fairly continuous growth since the nineties. In fact the growth is so rapid that the availability of new personnel is a serious threat to the computer service companies (Tähtinen 2001).

As the industry has matured, more and more software packages have been developed to cover the needs of business clients. Nowadays software packages cover the information systems needs in for example, accounting and wages payment bookkeeping reasonably well, but sales, production and order management are areas in which Finnish companies rarely have depended on standard software (Tähtinen 2001[3]). Therefore Finnish software firms continue to develop tailor-made softwares built in areas close to their core competencies to satisfy the clients' needs (Tähtinen 2001[4]). Another option that the Finnish business clients employ is to acquire enterprise solutions, which are then customized by the professional business software development services (PBSDS) firms by adding additional features to meet the clients actual needs (Savolainen 1998).

Today when B-2-B solutions are discussed, it is essentially referred to offerings that incorporate a number of diverse services into the client's value chain and that form a non-dissociable whole – an integrated solution (Sawhney 2006). Professional business software development services, therefore, perform as a unique combination of numerous elements which will contribute to producing value for the clients (Cova & Salle 2008, 272; Stremersch, Wuyts & Frambach 2001). In such situations, especially in Finland which still faces a deficit in software despite strong industry position and high R&D investment (See, e.g. Software Industry Survey 2011), ensuring clients to participate in the value creation process may give this sector a competitive edge (cf. Tax et al 2006, 32).

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[3] Original text:

   (1) Mattila, J. T. (1997) Räätälöinnistä kilpailuetu [Competitive Advantage from Tailoring]. Tietoviikko (7.2.1997) 10.

   (2) Pollari, M-L (1997) Kemira Agro päätyi räätälöityyn. [Kemira Agro Chose Customised Software]. Tietoviikko (28.11.1997)

[4] Original text:

   (1) Savolainen, I. (1998) Räätälöidyt ohjelmistot vähenevät rajusti. [A Drastic Decrease in Customised Software]. Tietoviikko (6.3.1998)

   (2) Siltala, T. (1998) Asiakaskohtaiset järjestelmät eivät kuole. CCC valjastaa ohjelmistotuotteita vientiin [Customised Software Will Not Die]. Tietoviikko (3.4.1998)

2.2   Value and Its Creation

2.2.1   The Concept of Value

The perception of value in business markets has attracted attention from both academics and practitioners and has been broadly used in the marketing discipline (Parasuraman 1997; Anderson 1995; Wilson & Jantrania 1994; Anderson, Jain & Chintagunta 1993). The rudimentary notion is that business markets can solitarily be understood by applying the concept of value (Walter, Ritter & Gemünden 2001, 367). Indeed, Slater (1997, 166) has argued that "*...the creation of customer value must be the reason for the firm's existence and certainly for its success*".

Contention over the characterization of value is an ancient issue which could be traced back at least to Aristotle (Vargo, Maglio & Akaka 2008, 147). Aristotle[5] introduced the formal concept of value and first differentiated between two meanings: '*use-value*' and '*exchange value*' (in Vargo et al. 2008, 147). In the middle ages, medieval Schoolmen were documented for stressing *use-value* in economic exchange and proposing that the basis of exchange was found in the needs of consumers (Dixon 1990). Prior to the proper development of economics, use-value was frequently acknowledged by those who accepted the role of satisfaction and fulfillment in value. Galiani[6] (1751, 304 in Dixon 1990) noted "*it is certain that nothing has a price among men except pleasure, and that only satisfactions are purchased*".

Adam Smith (1776) introduced the dialogue on value and value creation into the enlargement of economics and the study of market exchange. According to Smith[7] (in Vargo et al. 2008), "*the word VALUE, it is to be observed has two different meanings, and sometimes expresses the utility of some particular object, and sometimes the power of purchasing other goods which the possession of that object conveys*". After that, in the neoclassical economics the 'products' (good) embedded with 'utilities' (exchange-value) became the focus of value creation in marginal utility theory (Marshal 1927; Walras 1954).

Studying the phenomenon of value and how value is created and consumed is challenging and complex in numerous ways. First of all, despite extensive interests from academics and businesses, the concept of '*value*' has often not been evidently defined in studies of the subject. Indeed, according to Khalifa (2004) the idea has become one of

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[5] Aristotle 4th century B.C.

[6] Galiani, Ferdinando (1751) Della Moneta.

[7] Smith, Adam (1776/2000), Emphasis in original.

the most *clichéd* and *misused* concepts in the social sciences in general and in the management literature in particular. As an intangible concept, the study of value is complicated due to the different number of meanings and definitions depending on the perspective taken. The phenomenon is dynamic – value is not constant, but changes over time. It is also context and actor dependent – what is considered as *value* depends on where this judgment is made and by whom.

This lack of settlement among scholars with respect to the conceptualization and measurement of '*value*' is a result of its rather nebulous nature which has been labeled as 'complex' (Lapierre 2000), 'multifaceted' (Babin, Darden & Griffin 1994), 'dynamic' (Parasuraman & Grewal 2000) and 'subjective' (Zeithaml, 1988). Nevertheless, recognizing the concept of value is important, as Anderson, Narus and Das (2009, 10) appreciated value conceptualization by way of "*the cornerstone of business market management because of the predominant role that functionality or performance plays in business markets*".

In short, value can be viewed as a trade-off among benefits and sacrifices (Flint et al. 1997; Biong, Wathne, Parvatiyar 1997). Some scholars define value with the perspective of business markets monetarily (Anderson & Narus 1999; Anderson et al. 1993), whereas others use a comprehensive value definition, which also embraces non-monetary revenues such as competence, market position, and social rewards (Biong et al. 1997; Wilson 1995; Wilson & Jantrania 1994).

In the context of this study, value is recognized as the perceived trade-off between various benefits and expenses gained through interactions between client organization and the product/service provider firm. Those benefits and expenses can originate from the interaction under question as well as from associated relationships on which the focal interaction has an influence or is stimulated by those other relationships (cf. Walter et al. 2001).

Understandably, the measurement of value by an objective measure such as the monetary measurement is greatly relative considering multifaceted value creating systems. The argument for selecting and using the value perception in this study rests on the commonly understood meaning of the concept – relative usability, worth, importance or merit (cf. Forsström 2005).

2.2.2   *Traditional Understanding of Value Creation*

Until the mid-1980s, value creation mechanisms and processes was understood based on the conceptualization that value is produced by the firm through a sequential and established set of activities. After the value is *produced by the firm*, it is *delivered to the customer* in exchange of money or some other valuable returns. The legacy concept of

value production can be understood by the application of 'value chain management' framework of Michael Porter (Porter 1985, 11 – 15), as shown in Figure 5 below.
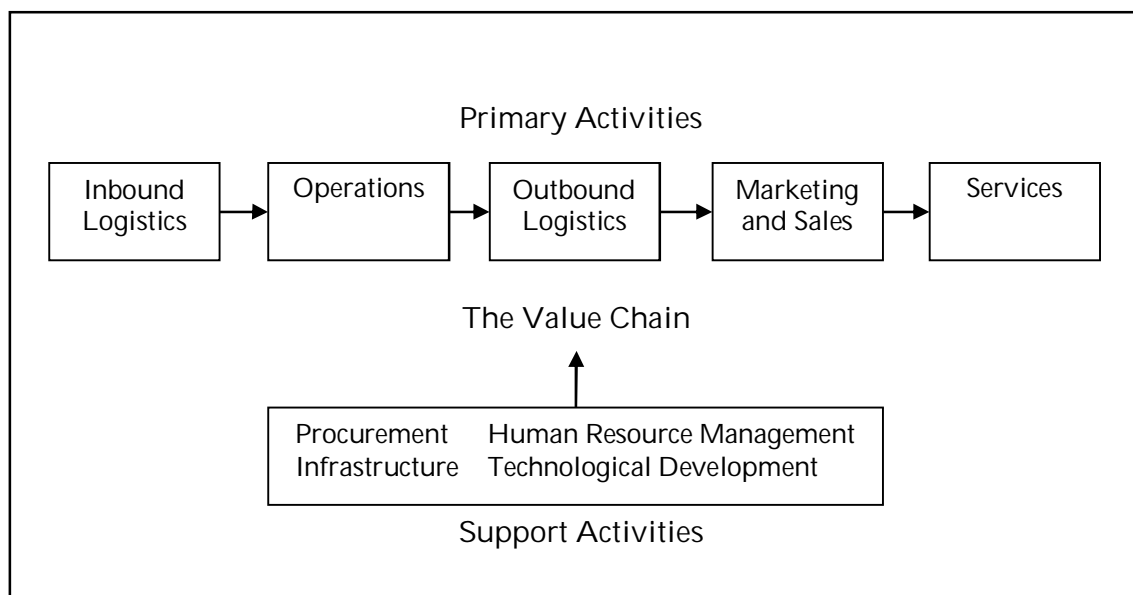
Figure 5: Value chain of a firm (Porter 1985, 12)

Porter's (1985) value chain framework considers value creation at the firm level. Value chain analysis recognizes the activities of the firm and then studies the economic implications of those activities. It comprises four steps: (1) outlining the strategic business units, (2) classifying critical activities, (3) defining products and (4) determining the value of an activity. The firm-centric view of the traditional value creation concept shows in the way Porter (1985, 38) defines value:

> *"The amount buyers are ready to pay for what a firm supplies them. Value is measured by total revenue ... A firm is profitable if the value it commands exceeds the costs incurred in creating the product".*

According to the traditional value chain framework, value can be generated by differentiation along each step of the value chain, through activities resulting in products and services that decrease buyers' costs or raise buyers' performance. As the figure 5 shows, the customer or client is not present in the 'value chain', leaving the perspective on the firm as the 'sole creator' and 'deliverer' of value. According to the traditional approach, the interactions between companies and customers are not considered as a source of value creation (Normann & Ramirez 1994; Wikstrom 1996).

In the legacy concept, the firm and the client seized precise roles of production and consumption. The market – considered as an accumulation and combination of different sets and subsets of clients – contemplated as a 'target' for the offerings by the firms (as shown in figure 6), which indicates the company-centricity of the traditional concept of a market. Subsequently, client relationship management was conceptualized by the

firms as pointing, achieving and managing the 'target' clients (Prahalad & Ramaswamy 2004b, 6).[8] Figure 6 below depicts the traditional perspective of value creation.

Traditional Concept of Value Creation

The Firm:
Creates   Value

The Market:
Exchange of Value
(Products and Services)

The Client:
Target of the firm's
offerings

Service provider and client are separate in the value creating process.
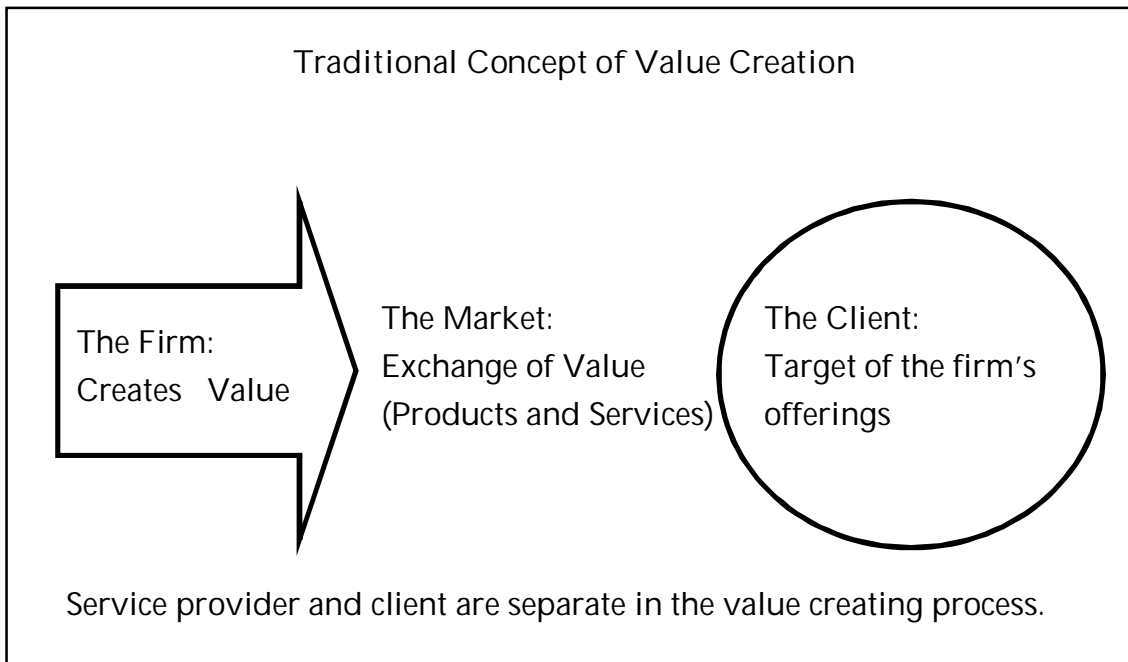
Figure 6: Traditional understanding of value creation (Modified from Prahalad & Ramaswamy 2004b, 7)

The traditional view of value creation is referred to as *goods-dominant (G-D) logic* and is grounded on the *value-in-exchange* meaning of value (Vargo & Lusch 2004a). According to G-D logic value is created (manufactured) by the firm through manufacturing and associated activities and distributed in the market, typically in exchange of goods and money. Customers or clients are considered as entities that are exogenous and abolishes value through consumption (Ordanini & Pasini 2008, 290). From this G-D logic perspective, the roles of '*producers*' and '*consumers*' are distinct.

To understand the traditional concept of value creation further, an automobile can be considered as an example. An automobile is constructed out of metal, plastic, rubber, and other parts by a manufacturer. In their basic form, the metal and other raw materials components cannot be used as transportation. The manufacturer produces or sources

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[8] From a firm's point of view, IBM's goal provides a clear picture on how value creation is perceived from a traditional perspective, as the firm states that its goal is to '*Strive to lead in the creation, development and manufacture of the industry's most advanced information technologies, including computer systems, software, networking systems, storage devices, and microelectronics. We translate these advanced technologies into value for our customers through our professional solutions and services businesses worldwide*' (Source: IBM Egypt official website).

components, assembles them together and delivers the automobile to customer, hence creates the value for the customer. In other words, by transforming raw materials into something that customers want, the automobile manufacturer embeds value in the automobile. In this understating, value is created by the firm in the form of a good. After the value is created, this valuable good is exchanged in the marketplace for money (or possibly other goods), and value is measured by this exchange transaction (Vargo, Maglio & Akaka 2008, 147).

Needless to say, the inheritance perception of a market is company-centric. So is the understanding of value creation. Subsequently, targeting and managing the 'right' customers/clients is what the firms conceptualize as customer relationship management. In doing so, firms concentrate on the locus of interaction – the exchange – as the center of economic value extraction. *The interactions between companies and clients are not considered as a source of value creation* (Normann & Ramirez 1994; Wikstrom 1996) in the conventional perceptions. Value exchange and extraction are the principal functions executed by the market which is detached from the value creation process, as shown in figure 6 above (Prahalad & Ramaswamy 2004b, 6). In the conventional system as firms choose the products and services they will produce, by implication they make a decision that what is of value to the customer/client. In this traditional system customers or clients have little or no role in value creation and the roles of 'producers' and 'consumers' are distinct.

2.2.3   *Shifting Dynamics of the Market*

From a service and firm centric view, the meaning of value and the process of value creation are swiftly shifting to *customized client involvements*. An increasing number of academics are pointing to the critical importance of business interactions for value creation (see, e.g. Biong et al. 1997; Sheth & Sharma 1997; Ravald & Grönroos 1996; Anderson, Håkansson & Johanson 1994). In addition, value creation is regarded as the utmost purpose for a client firm and a supplier firm engaging in a relationship (see, e.g. Grönroos 1997; Anderson 1995; Wilson 1995).

As the market dynamics are shifting, informed, networked, empowered and active clients along with the firms are increasingly participating in the value creation activities. This two way interaction between the firm and the client is turning into the locus of value creation and value extraction. Prahalad and Ramaswamy (2004b) argue that clients today have more options of products and services than ever before, but the choices are not being able to satisfy them properly. Conversely, firms are less able to differentiate themselves irrespective of investing in greater service and product variety.

Clients are fundamentally altering the characteristics of the market where the market has become a setting in which clients play an active role in creating and competing for value. The major changes are identifiable and distinguishable – formation of client communities, management of client diversity and formulating client specific experiences. (Prahalad & Ramaswamy 2000).

Due to the wide range of information and communication technology development, it's simple for the clients in the new economy to form virtual communities by their own. Moreover, these connected client communities can be quite tightly knit, which could accommodate a wide range of traits. These client communities can exercise a powerful influence on the market (Algesheimer & Dholakia 2006, 1). Clients now have access to information networks to control their selection of choices and diversions. So huge promotions from the service providers' side do not create sufficient impact on their supplier selection decisions (Weber 2009). Rather their active information search, accumulation and analysis works as their major decision making factors.

As firms embrace the market as a setting or forum, they turn out to be more exposed to client diversity. Clients' experiences of a product or service and therefore their judgment and decision of that product or service will differ according to their individual ways of realizing values. To develop product portfolios and affective design in the changed market, the diversity in clients' needs must be understood and considered (Khalid 2006, 409). In the changing contemporary market dynamics clients are not satisfied to accept generalized and imitated services fabricated by knowledge intensive service providers, like professional business software development services (PBSDS) firms. Progressively more, they pursue to shape those services by themselves, both individually and through interaction with experts or other clients. Here, it is of importance to differentiate between personalization and customization. Customization concept accepts that the firm will design and deliver products or services to suit client's needs. On the other hand, personalization is about the client's embryonic as a co-creator of the content of their experiences. (Prahalad and Ramaswamy 2000).

As value shifts to specific and tailored client experiences, the market is becoming a setting for participations, interactions and combined efforts between client communities and firms. Client's participation in the new '*market*' concept is a magnitude of infringement from the goods-dominant perceptual simulations that no longer assist the continuous renewal of strategies and competencies (Ballantyne & Varey 2006). In the present context exchange activities are of combined expressions of three features: *knowledge renewal, communicative interaction* and *relationship development*. For successful value creation companies along with their clients will have to select opportunities with the highest potential pay-off, as well as structure relationships to manage risks while reducing the effort required to fully realize the new value as the market modify its dynamics (Kambil, Friesen & Sundaram 1999).

2.2.4   *Co-Creation Approach of Value Creation*

As a result of changing dynamics of the market, there has been a paradigm shift in stance and understanding of value creation in the last few years. Contemporary marketing literatures and practices congregate around the impression that especially when it comes to services, clients or customers play different foundational roles in value-creation mechanisms. As recently presented through the notion of the *service dominant logic (SDL)*, the customer or client is always a co-creator of value, not a target of that value, because the customer/client mobilizes knowledge and other resources, and these customer/client efforts affects the success of a value proposition.

Rendering to this view, the client becomes embedded in the service offering and eventually is responsible for the value added to the process (Vargo & Lusch 2004a). As an example, if a client organization does not share its business challenges, strengths and weaknesses appropriately, a consultant may be obliged to deliver sub-optimal service – not due to his or her own deficiencies but because of poor client participation (Ordanini & Pasini 2008, 290). The excellence of a service exchange visibly hinge on the customer or client in the sense that the way they, particularly in a B-to-B context, contribute in the process determines the ultimate service delivery and thus the level of satisfaction (Ernst 2002, 4).

The progressively knowledgeable nature of the clients and their increasing awareness of the negotiating clout are working as main change agents for the service providers to adopt an implicit (if not an explicit) negotiation with the clients. It also requires the service providers to employ high-quality interactions which facilitate a specific client to co-create value with the firm. *Values are cooperatively created by both the firm and the client* (Prahalad & Ramaswamy 2004b, 7).

According to service dominant logic (S-D Logic), a service firm offers an application of knowledge and competencies for the benefit of the client firm, which makes it the basis of any economic or social exchange (Vargo & Lusch 2004a). Both the firm and the clients have their unique abilities, characteristics and inputs, and these elements from both sides are put together to function in a synchronized way and hence co-create the value jointly. Figure 7 below provides visualization of the concept.

<figure>

Firm-Client Interaction

Interaction is the locus of co-creation of value

The Firm:
Collaborator in
co-creating value
through unique abilities,
characteristics and inputs

The Market:
Co-creation of
Value

The Client:
Collaborator in
co-creating value through
unique abilities,
characteristics and inputs

</figure>
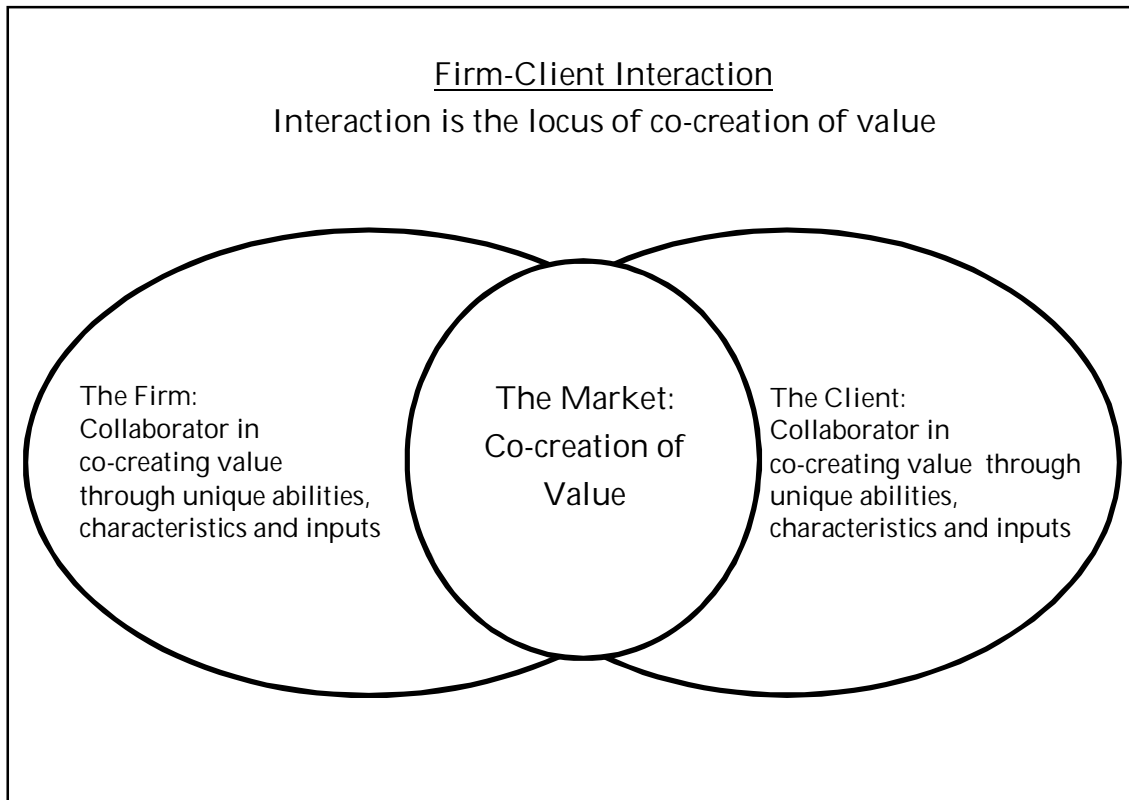
Figure 7: Co-creation approach of value creation (Modified from: Prahalad &
    Ramaswamy 2004b, 11).

The basic idea of S-D logic (Vargo & Lusch 2004a) is, marketing inherited a model
of exchange which was rooted in economics. It had a dominant logic grounded on the
exchange of goods with manufactured output. The goods-dominant logic concentrated
on tangible resources, embedded value and transactions. In the contrary, S-D logic also
recognizes clients as well as suppliers are resource integrators, consistent with the
concept of co-creation of value (Cova & Salle 2008, 270).

The assumption that artifacts, human beings and society can be considered as
mutually separated entities is no longer valid. In the physical world, they are thoroughly
interconnected to each other, so it need to be understood that value is created through
interaction between them (Ueda, Takenaka & Fujita 2008, 55). To appropriately create
value of a service and to realize the same, it is required that clients and service providers
work together to transform some state such as material goods, information goods or
networks and processes that is possessed or controlled by the client (Hill 1977; Gadrey
2002).

This shift from a *firm-centric view* to a *co-creation view* is not only about negligible
changes to the traditional system, as co-creation is neither the transmission or
outsourcing of activities to clients nor a customization of products and services, nor is it
a scripting or performing of client proceedings around various offerings the firms
(LaSalle & Britton 2002; Schmitt 1999). In the co-creation notion, every point of

interaction between the company and the client are prospects for both value creation and extraction (Prahalad & Ramaswamy 2004a). Moreover, from the traditional company-centric view the co-creation notion differs in the firms' approach that companies have gone downstream toward the clients:

> *"They've moved beyond the factory gate to tap into the valuable economic activity that occurs throughout the entire product life" (Wise & Baumgartner 1999, 133).*

S-D logic forwards the orientation of marketing from a 'market to' attitude where customers are promoted to, targeted, and captured to a 'market with' attitude where the client and the service provider are collaborators in the entire value creation process (Lusch & Vargo 2006b). For Lusch and Vargo (2006c, 283) *"Organizations exist to combine specialized competences into complex service that provide desired solutio*ns[9]*"*.

Co-creation of value is collective generation of value that creates an effective solution as a whole system through mutual interaction between varieties of agents. In a co-creative system, unlike a simple emergent system, the elements are agents that make a decision (Ueda et al. 2008, 53). The idea of collective value creation can be visualized in figure 8.
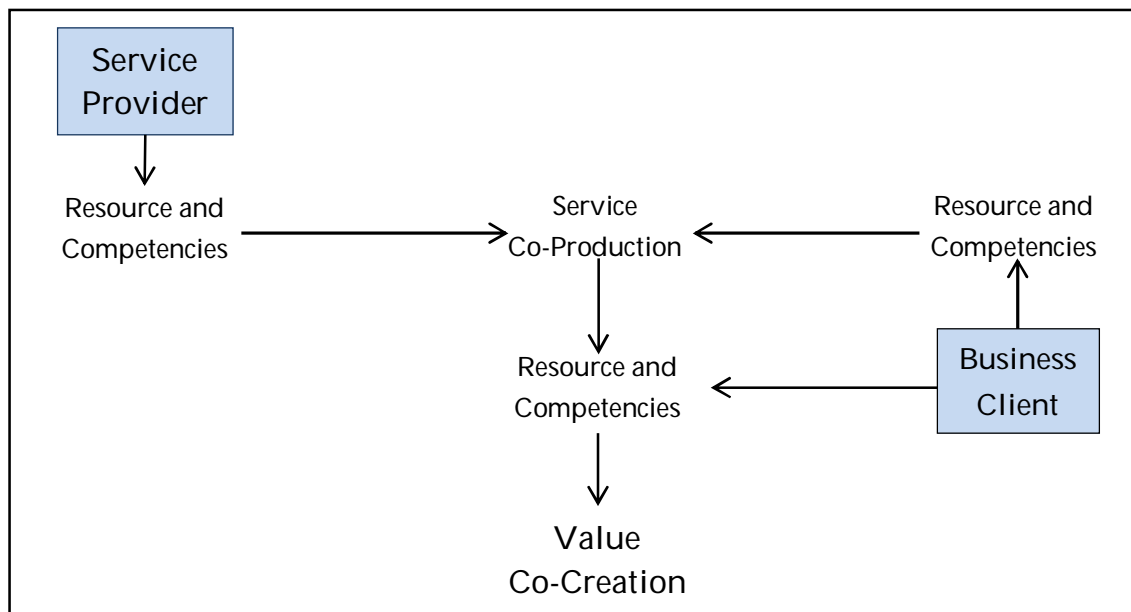
Figure 8: collective value creation according to S-D Logic (Ordanini & Pasini 2008, 291)

As the figure shows, in a co-creative system the agents cause a behavioral solution to emerge through organization of their own internal structures and moreover they interact

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[9] S-D Logic: Fundamental Premise no. 9.

with each other (Ueda et al. 2008, 53). Through the interactions of resources and competencies of the service provider and the client the ultimate value is co-created.

To create value through co-creation system, the building blocks of interactions between the firm and consumers that facilitate co-creation are: *Dialog, Access, Risk-benefits* and *Transparency* (DART), which are emerging as the basis for interaction between the consumer and the firm as shown in figure 9 below. (Prahalad & Ramaswamy 2004b, 9).

```
                    Dialogue

                    ╱╲
                   ╱  ╲
                  ╱    ╲
       Transparency  Co-creation   Access
                      of Value
                  ╲    ╱
                   ╲  ╱
                    ╲╱

                 Risk-Benefits
```
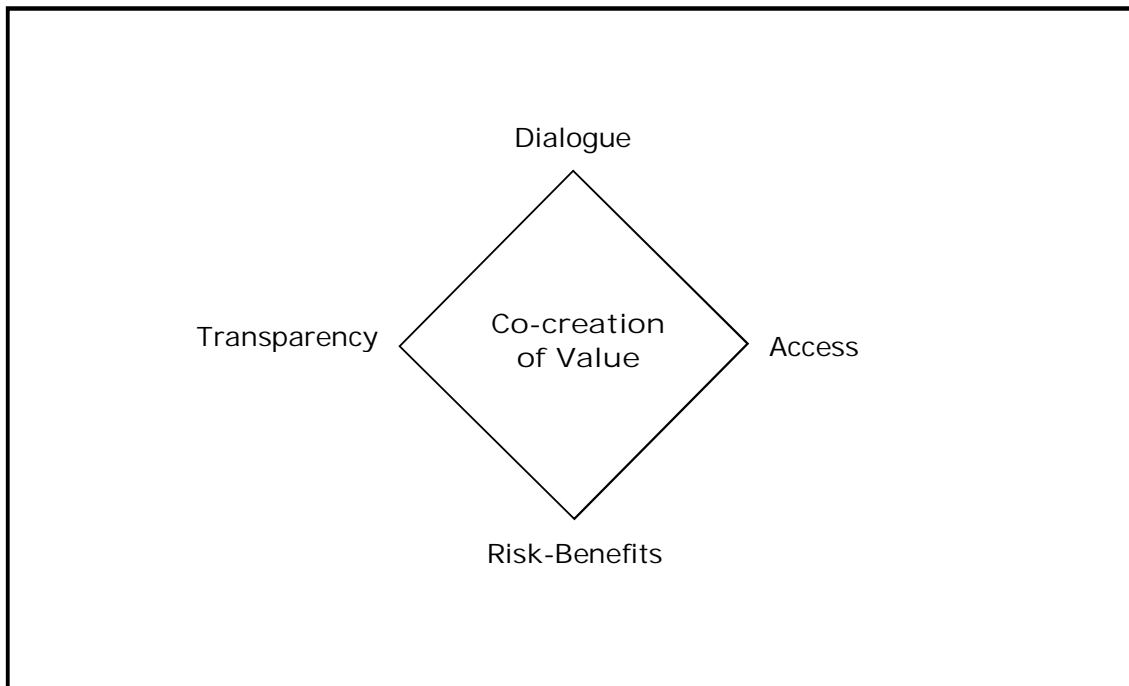
Figure 9: Building blocks of interactions for co-creation of value (Prahalad & Ramaswamy 2004b, 9)

Dialog is an imperative element in the co-creation notion from the perspective that markets can be regarded as a set of conversations between the client and the firm (Levine, Locke, Searls, & Weinberger, 2001). Dialog ensures interactivity, higher cooperation and the capability and aptitude to perform to both the service providers and their clients. However, engaging in dialog can be difficult for clients if they do not possess similar level of access and transparency to information compared to their service providers. Thus, both access and transparency plays vital role to ensure a meaningful dialog. More importantly, dialog, access and transparency can lead to a flawless evaluation by the client about the risk-benefits of any decision and thus the service performed. (Prahalad & Ramaswamy 2004b, 9).

2.2.5   Value Co-Creation Process

The process of value co-creation includes procedures, tasks, mechanisms, activities and interactions which drive the co-creation of value. Understanding the process of value co-creation accentuates the prerequisite to view the association between the provider and the client as a longitudinal, dynamic and interactive set of activities and experiences performed by the provider and the client within a framework. The understanding also requires appreciating the co-creation tools and practices that are partially overt and deliberate and partially based on routine and unconscious behavior (Payne et al. 2008, 85).

The value co-creation process comprises the supplier creating superior *value propositions*, with *client is partly responsible and determining the value* when the goods or service is consumed (Payne et al. 2008; Payne & Frow 2005). Together, supplier and client have the opening to create value through tailored, co-produced offerings. *The co-creation of value is an anticipated goal as it can support firms in highlighting client's point of view and in refining the front-end manner of ascertaining clients' needs and wants* (Payne et al. 2008; Lusch & Vargo 2006).

In the value co-creation process, business clients typically participate at several points in the service progression (Bendapudi & Leone 2003). From a generalized perspective, the first initiative taken by the client is to select the service provider and take preparation for their own tasks in the service. Then while the service is being performed, clients complete their principal responsibilities, along with frequently interacting with the service provider, technology or other customers. Finally, after the service is co-created and value is realized, clients may provide feedbacks and often continue executions of the tasks essential to maximize the benefits of the service (Tax et al. 2006, 31).

The process of value co-creation can be divided into three interrelated sub-sets, namely: (i) client value-creating processes, (ii) supplier value-creating processes and (iii) encounter processes (Payne et al. 2008, 86). Figure 10 in the next page illustrates the step by step procedure of the value co-creation process and the interconnectivity present between them.
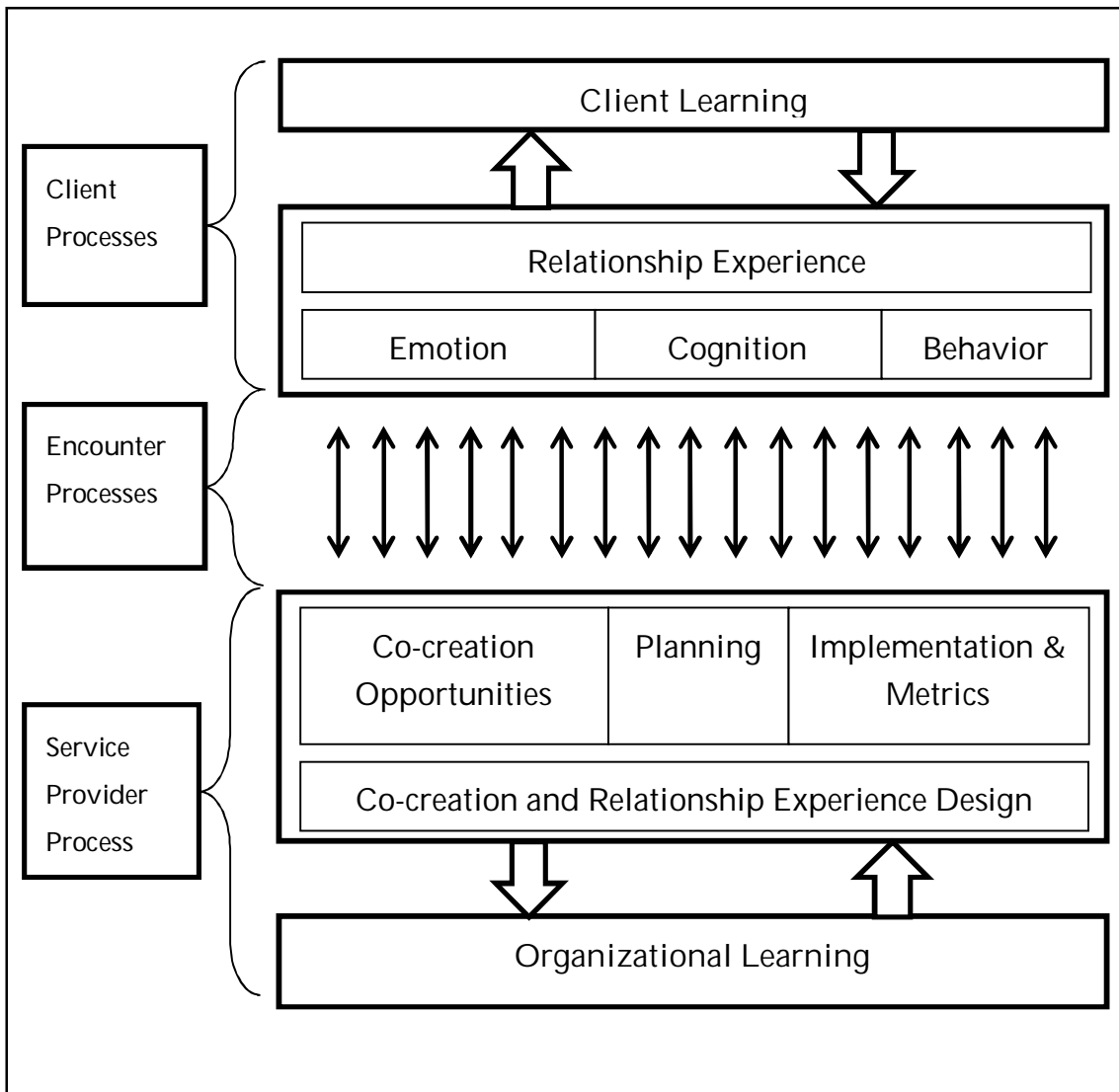
Figure 10: A conceptual framework for value co-creation processes (Payne, Storbacka & Frow 2008, 86)

This framework illustrates an interrelated set of procedures and the recursive nature of co-creation. The arrows in the middle of figure 10 denote varous encounters between the client and the service provider which transpire as outcome of their respective value-creating processes. These arrows pointing to both directions are emphasizing the collaborative nature of encounters.

The arrows between the client processes and client learning specify that the client engages in an education process based on the experience that the client faces during the relationship. This client learning has impact on how the client will involve in future value co-creation activities with the service provider.

Similarly, the arrows between service provider processes and organizational learning designate that as the service provider learns more about the client, more opportunities become accessible for the service provider to further advance the design of the association experience and enhance co-creation with clients. (Payne et al. 2008, 86).

A firm can consider various entities as a client: a customer (payer), a consumer, a competence provider, a controller of quality, a co-producer and/or a co-marketer (Storbacka and Lehtinen 2001). Hence, Normann and Ramirez (1993, 69) argues that "*the key to creating value is to co-produce offerings that mobilize customers*".

As shown in figure 10 above, in the value co-creation process the client's part can be accepted as a sequence of actions performed by the client to accomplish a specific objective. One crucial characteristic of the client's capacity to generate value with the provider is the extent of information, knowledge, skills and other operant resources that they can access and use (Normann 2001).

The second part of the process – the supplier processes, assists co-creation through the design and delivery of relevant resources, skills and professionalism. It involves an assessment of co-creation potentials and designing, analyzing and prototyping value co-creation prospects with clients. It also includes employing client solutions and managing client encounters and developing metrics to measure whether the enterprise is crafting right value propositions (Payne et al. 2008, 88). In the supplier process, establishing relationship with the client itself can also have a key influence on the total value perceived by the client (Ravald and Grönroos 1996), as value is created and delivered over time as the relationship advances (Grönroos 1997).

The encounter process comprises a sequence of reciprocal interactions and transactions occurring between the client and the service provider. Encounters between clients and service providers can be considered as exchange performances, in which the parties involved exchange resources (for example: money, products, work, information, time etc.) as well as collaborative applications in which they jointly perform activities (Payne et al. 2008, 90).

In the value co-creation process, value finally results with the participation of the beneficiary and also determined by the same identity (Holbrook 1987). To summarize it can be stated that a service process to co-create value is an assemblage of resources (For example people, technology, information etc.) combined to other systems by value propositions (Spohrer, Vargo, Caswell & Maglio 2008; Spohrer, Maglio, Bailey & Gruhl 2007). A service process's function to co-create value is to exploit of its own resources and the resources of the client to create the value together (Vargo et al. 2008, 149).

2.3 Increasing Client Participation

Being co-creator of value means the client firms not only have an influence on the quality of the value they realize, but also they influence the satisfaction of other clients and they can assist or hinder productivity of the professional software service provider (Tax et al. 2006, 30). Clients also frequently fail in their co-creation role (Chase & Stewart 1994). Research shows that about one-third of all service complications are caused by the clients' failures (Zeithaml & Bitner 2003). As challenges can arise in all the phases of value co-creation, specific and careful measures are needed to manage and develop client participation in the value co-creation process. Figure 11 in the next page highlights the co-creation management framework.

As the figure shows, developing client participation starts with analyzing and determining the role of the client. As is conventionally completed for own employees, determining client's roles in service process involves conducting a *job analysis* of client accountabilities (Schneider & Bowen 1995). Research suggests that identical factors which are considered as being critical to enhance employee job performance – namely *role clarity*, *motivation* and *ability* – are also important in case of clients' *job analysis* to perform their role successfully (Bowen 1986). Once the tasks for the client is defined in detail and mutually agreed by both the service provider and the client, the *client participation development process* should start. Bettencourt et al. (2002, 103) suggest that client participation management is completed in two stages: (1) *performing client's roles & responsibilities* and (2) *strategies for developing high-performance clients*.

This comprehensive framework (Figure 11) developed by Bettencourt et al. (2002) for client participation management provides academic understanding as well as managerial apparatuses to conduct the task effectively. The first part of the framework, *client role responsibilities*, consists of seven elements: (i) communication openness, (ii) shared Problem Solving, (iii) tolerance, (iv) accommodation, (v) advocacy, (vi) involvement in project governance and (vii) personal dedication.
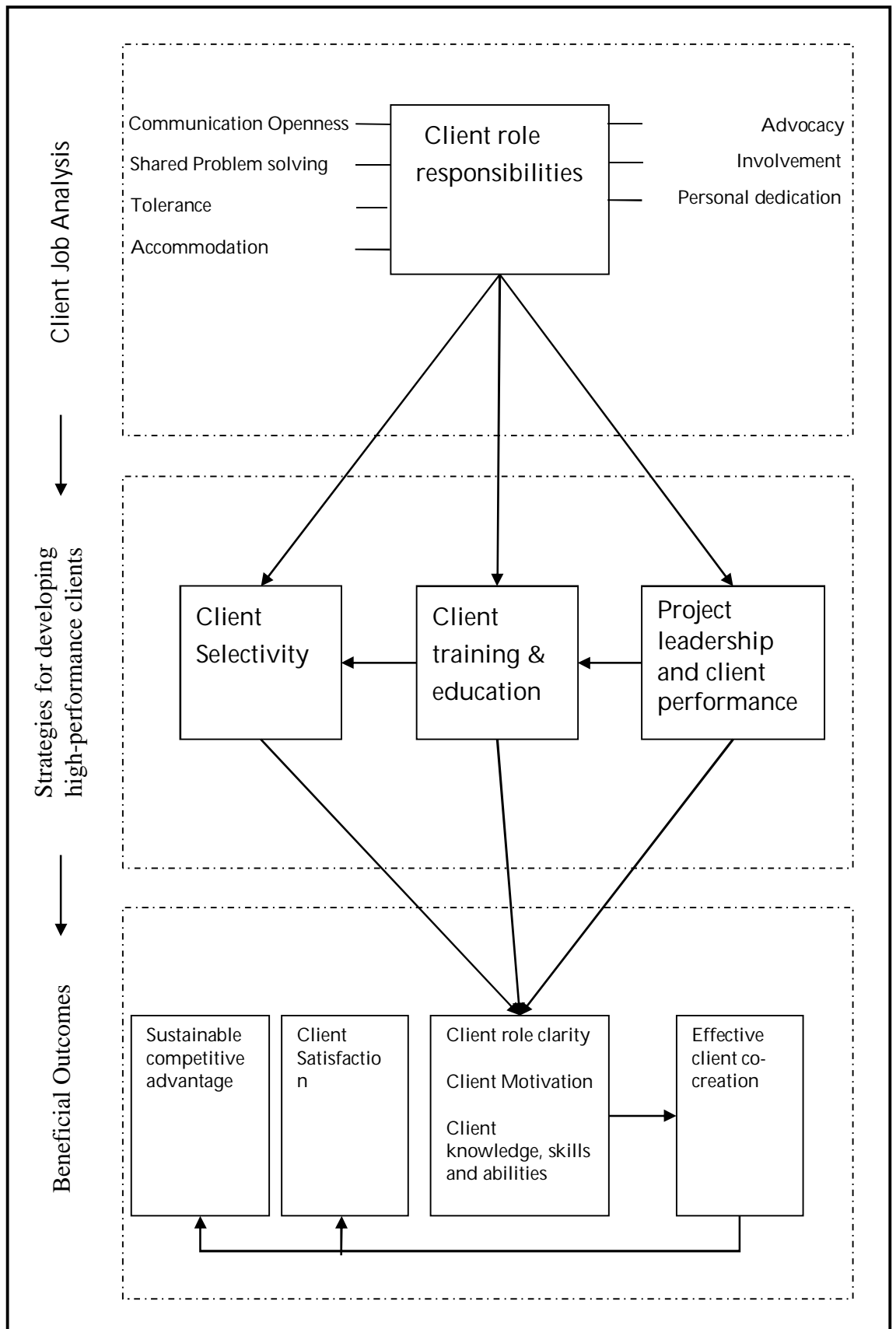
Figure 11: Effective management of value co-creation (Bettencourt et al. 2002, 103)

As shown by various researchers earlier, *open communication* between service provider and the client is a source of partner satisfaction, channel coordination and effective partnerships (Mohr, Fisher & Nevin 1996). To be successful, contiguous connections and coordinated actions required between service providers and clients. The second element, *shared problem solving* is important as knowledge-based projects often means complications and adjustments are un-avoidable because the complex and customized nature of the value co-creation activities. Thus, optimal knowledge-based solutions require cooperation between the service provider and the client.

Efficacious collaboration encompasses large degree of mutual engagement, discussion and collaborative decision making (Rogoff 1990). The third element, *tolerance,* is considered significant as some clients may not be receptive to the input and recommendations of the service. Rigidity and sub-optimal results are natural consequences of those situations and partnerships (Smith & Barclay 1997). As operative partnerships depend on flexibility and the willingness of both the partners (service provider and client) to accommodate the needs and approach of the other partner, tolerance plays a crucial role in value co-creation process.

Client participation also cover a central role of client's part, as effective projects are defined by clients not only in terms of operative solutions, but also in terms of cost and scheduling of project deliverables, and relationship with the client can affect their evaluation on their satisfaction (Goodman, Fichman, Lerch & Snyder 1995, 1312). As the service is performed, relationship evolves and physiological constructs change (Rousseau & Parks 1993). Clients can also assist as a *supplementary check-and-balance* to the service provider that the project is moving in the direction of project objectives rendering the expectations. *Personal dedication* from the client's project lead is particularly essential for operational partnerships and value co-creation, even though many individuals from the client side may be involved in the project. The client lead functions as a connection and decision maker for the client organization. As the process of constructing and sustaining client relationship includes both investment and opportunity costs, the service provider can identify the individual in client firm with receptive attribute and leadership quality and benefit from sustaining co-operation with them (Bendapudi & Leonard 1997, 17).

Successful co-creation of value depends on clients knowing their tasks properly in the value co-creation process (role clarity), are interested to engage in desired behaviors (motivation), and possessing the required knowledge, skills and capabilities to fulfill their responsibilities (Schneider & Bowen 1995). With the assumption that the client possess those attributes, the second part of the client participation development process – managing client co-production behaviors – consists of three elements: (i) client selectivity, (ii) client training, education and socialization and (iii) project leadership and client performance as shown in the framework.

In terms of *client selectivity*, one of the most imperative selection benchmarks that a service provider can apply is the priority and urgency of a project to a client. An indication of this attention assurance from the client side is identifying the resource allocation from the client firm for the project. Prior research indicates that dedicated project resources is a sign of commitment from the client firm to the project and therefore their level of motivation to offer a high-level of cooperative behaviors. (Skinner, Gassenheimer & Kelley 1992).

Working philosophies and organizational cultures of prospective clients also acts as vital client selection benchmarks for the service provider. In an ideal situation, clients who have similar business orientations and operating procedures as the service provider should be able to form the high quality partnerships. Such compatibility in working philosophies will expedite the development of supportive relationship norms between partner organizations and aid to overcome the natural tension that subsists between service provider and client (Kanter 1994)

Client training, education and socialization are other important elements of managing client co-production behaviors. The professional software service providers need to provide necessary training and education to the client in order to ensure their successful participation in the value co-creation process. Moreover, effective social relationships should be developed through the application of reliance and loyal relationship standards when individuals are expected to provide concepts and feedbacks, exhibit flexibility, offer assistance and refrain from being hypercritical (Moorman, Zaltman & Deshpande 1992).

Additionally, another vital motivational base is trust between the service provider and their clients, particularly in situations when the challenges of complex service relationships emerge. Also, research shows that interpersonal conflict is less probable when authority levels of contact persons between the service provider and the client are of same level matched (Bucklin & Sengupta 1993). Positive interactions between people of both the side, the PBSDS and the client, can lead to improved interpersonal choice, involvement and conceptualizations which could be proved as central elements to form motivation to help one another (Doney & Cannon 1997), and thus increasing the possibility to co-create optimal value.

The third element of managing client co-production behaviors is *project leadership and client performance evaluation*. Along with a key person from the client organization working as the project leader from client's side, regular evaluation procedure of the client's performance needs to be employed while the project is progressing, so that any deviation from the expected level of performance could be detected and corrective measures could be taken. However, some research indicates that comprehensive client performance monitoring and performance-based rewards can

reduce client cooperation as they are considered as exceedingly intrusive and controlling (Murry Jr. & Heide 1998).

So to avoid the negative implications of client's performance evaluation, the service provider needs to achieve trust and respect. This could be achieved through demonstrations of knowledge on strategy, industry, and product and by displaying the kind of partnership-building behaviors that they desire in return, which includes systematic and frequent interaction with client contact persons, undefended sharing of information and compliance in conflicts and unexpected situations (Morgan & Hunt 1994).

To positively affect the role clarity, motivation, knowledge, skills and abilities of client organization, performance-increasing tools discussed above need to be applied by the service provider. Proper completion of client participation development methods should result in positive benefits or outcomes for both the service providers and their clients. As this study mainly covers the service provider's perspective, benefits of client participation development includes *better client performance, client satisfaction, role clarity, client Motivation* and *client knowledge, skills and abilities* from that standing (Bettencourt et al. 2002). From the clients' horizon, successful participation is beneficial for the client organizations too as it ultimately yields in better value for the organization.

2.4   The Preliminary Framework for Client Participation

Knowledge intensive business services (KIBS) are defined as businesses whose principal value creating activities encompass accretion, creation or distribution of knowledge for the purpose of creating customized and professional service solutions to fulfill client's needs (cf. Miles 2005, 41). Through innovation and knowledge service sector can contribute significantly to generate wealth in an economy (Miles 1993). In this creation and distribution of new knowledge and innovation Knowledge Intensive Business Services (KIBS) are considered as of particular importance (Antonelli 1999; Miles et al. 1995). Professional Business Software Development Services (PBSDS) firms of Finland which are studied in this thesis as example of KIBS sector are examples of these benefits, as software business is considered as one of the cornerstone of Finnish economy and provides a large share of total employment (cf. Finland National Software Survey 2011).

Especially in case of service business, clients play various important and essential roles in value-creation mechanisms (Ordanini & Pasini 2008, 289). From this realization, the new notion of marketing in the form of *service-dominant logic* has been developed and introduced, which declares that the clients are not targets of value solely

produced by suppliers, rather are always co-creator of value. As clients mobilize knowledge and other associated resources which influence the success of a value proposition, recognizing them as co-creator of value offers many challenges and opportunities to service providers (Vargo and Lusch 2004a). Client's recognition as value co-creator also stresses the importance of their participation in the value creation process.

By performing their individual roles and responsibilities appropriately, KIBS firms (PBSDS firms in this study) and their clients can generate better efficiency and higher effectiveness. Those increased performances results in superior value for the client. Accordingly when the clients participate in the value creation process and optimal value is created, the service provider also becomes beneficial. From this study's viewpoint, client's involvement in the software development project can bring additional knowledge, resource and perspectives which assist the PBSDS firm to develop software that could show high performance when implemented. Moreover engaging client in the software development (value creation) process helps to build long term relationship with them by the PBSDS firms. This combination of high performing clients and long term relationship can provide unique to imitate advantage for the PBSDS firm, which can become a competitive advantage for the service provider in the long run (cf. Tax et al. 2006).

However, although the significance of participation from the client to develop tailor-made professional software and thus to co-create value is evident, it is often observed that clients often fail to participate in the total process (cf. Bettencourt et al. 2002). Poor and low participation from the client then leads to below par developed software (sub-optimal value) and client dissatisfaction, and results in undesired situations for the service provider. To overcome those circumstances both PBSDS firms developing business software and their business clients should take appropriate initiatives.

Framework (figure 12) in the next page is developed from the earlier discussions on value co-creation, its advantages, challenges and catalysts to understand client participation. The framework contains three stages which advanced along with the process of co-creating value. *Co-creation requirement* is the first stage which denotes the requirements of successful client participation during the process. The second stage is *co-creation challenges*, where the problems to participate in the software development process are identified. This challenge section covers both the PBSDS firms and their clients' problems against client participation. The third stage, *co-creation enablers*, suggests the probable solutions for PBSDS firms to facilitate client participation and the client firms to participate in the value co-creation process appropriately.
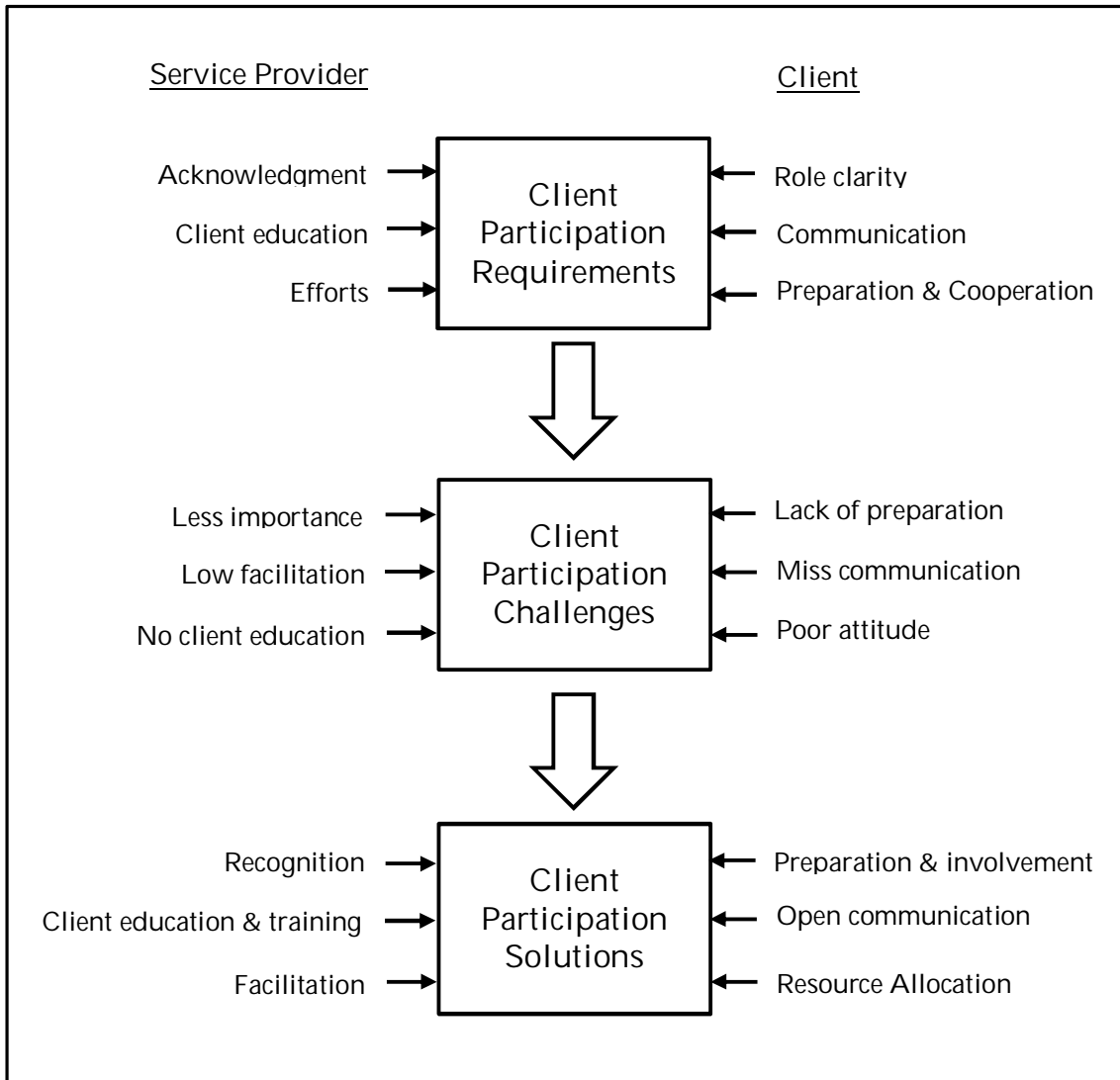
Figure 12: Initial framework to ensure client participation.

Value co-creation can be better understood from a process perspective, so is the client participation framework. In the initial stage of value co-creation when the process starts, *client participation requirements* need to be established and developed. Requirements for client participation are noticeable from both the service provider's and client's side. For the professional business software development services (PBSDS) firm, the first task is to acknowledge that *participation from their client is important.* When the importance of client participation is acknowledged by them, the PBSDS firms can take initiatives to *train and educate* clients to contribute in the software development process. Additional efforts are also required from the service providers in the form of *knowledge sharing, inter-organizational conflict resolution* and *guidance* to facilitate client participation.

In the initial stage of the client participation framework, the first requirement from the client is *role clarity* – clients need to know which activities are expected from them and how. The second requirement is *open and flawless communication* from the client. As clients hold a signification amount of knowledge and information needed to develop high quality business softwares, flawless flow of information only increases the possibility to develop better software. Moreover, developing the softwares is not the only objective of professional business software development projects. To realize its value, clients need to implement and use it appropriately. Hence *the clients should prepare themselves* to implement the softwares in their business processes. As the service providers play vital roles in software development and implementation process through their value propositions, the clients should cooperate with the service providers throughout the software development and implementation process.

The second stage of the client participation framework is *client participation challenges*. From literature reviews and theoretical discussions it is understood that both PBSDS firms and their clients can cause client participation problems. From the service provider's side, the first challenge is not giving enough attention to the importance of client participation which can lead to un-accommodation of client's inputs by the service provider. Second is the problem of low facilitation of client's participation behaviors which hinders overall productivity of the project. Not providing appropriate education and training to the client creates problems too, especially if the client is in a non-technology business as they might not have sufficient technical skill to participate in the software development tasks or even to use the software after implementation.

In a professional business software development project, probabilities are low that client will be able to participate without any preparation. Preparations are needed to improve technical skills, employee education and training, infrastructure development and so on. In situations whether the client does not take preparations, it becomes challenging for them to participate in the value creation process. Additionally, similar to the PBSDS firms' side, client also needs to communicate their problems and strengths to their service providers. Furthermore, PBSDS firms need client's technical and business process information to develop professional business softwares and miss-communication restricts that information flow. People in client organization may also possess negative attitude towards the project due to various reasons which also leads to poor or non-participation form the client in the value co-creation (software development) process.

As *client participation challenges* may appear from both the client's and the PBSDS firm's side, solutions to overcome those challenges also reflects the situation – initiative from both the parties. The first initiative that the PBSDS firms can take is to *recognize the importance of client participation*. When the importance of client participation is recognized and understood by the service provider, other initiatives to increase client

participation can be adopted relatively easily. Secondly, service providers should take initiative to provide education and training to the clients so that clients can contribute to the software development project and thus the value co-creation process. Facilitation towards client participation is also essential which can be applied in the form of conflict resolution, lowering inter-organizational (service provider-client) tension and continuing long term relationship with the client.

From the client's side, they need to take appropriate preparations to take part in the value co-creation process. Preparations may include employee training, education and infrastructure (hardware, network, connectivity etc.) improvement. Clients should also remain involved in the software development process throughout the project rather than expecting high quality business software tailored for their business without making any contribution. Secondly, the service providing PBSDS firm may missing several vital information imperative to develop the software. Hence the client should provide those necessary information through open communication. Quality communication is also central in the implementation and operationalization of the software through means of suggestions and feedbacks from the client. Lastly, as a form of their participation in the value co-creation process, client should allocate enough resources towards the project to develop high quality software and thus to co-create optimum value. Sufficient funding, time, manpower, management engagement and hardware apportionment can be considered as resource allocation from the client.

3 RESEARCH DESIGN

3.1 Research Approach and Method

During the period of building up the conceptual understanding of value and value co-creation, it became clear that *value* has been studied quite extensively within marketing. But the traditional concepts of value creation that has dominated for decades are consistently losing its dominance due to the escalation of the co-creation concept. Thus the challenge was to design a study which could disclose some of the more interesting aspects of value co-creation. In doing so, the researcher adopted qualitative research methods to gain deep understanding of the problems and then find the solutions of the same.

By its nature, qualitative research search for answers to a question, scientifically uses a predefined set of actions to answer the question, collects evidence, produces findings that were not determined in advance and yields outcomes that are applicable beyond the immediate boundaries of the study (Mack, Woodsong, MacQueen, Guest & Namey 2005, 1). As Poovey (1995, 84) stated: *"There are limits to what the rationalizing knowledge epitomized by statistics can do. No matter how precise, quantification cannot inspire action, especially in a society whose bond are forged by sympathy, not mare calculation"*.

Qualitative research methodologies are essential modes of inquiry for the social sciences and applied fields, such as education, social work, community development and management. Its genres exist in great multiplicity and many excellent texts serve as guides to their suppositions and approaches (Marshall & Rossman 2010). Compared to quantitative research, the role of research is somewhat different in this research stream, as the researcher's capability of theoretical knowledge and analytical skills are not generally considered enough to forward the research. Along with those capabilities, the researcher needs to be equipped with reasonable amount of imagination. This specific method of research helps to realize opinion, denotation, act and cultural standing behind a phenomenon, as shown in figure 13.

Qualitative research is strong for the attention to detail, the capability to embrace both verbal and non-verbal behavior, to pierce fronts, discover meanings and reveal the subtlety and complexity of cases or issues. In qualitative research, actions are contextualized within situations and time, and theory is generating from the empirical data, and accordingly there is 'closeness of fit' between theory and data (Woods 2006).

Qualitative Research

Human knowledge and understanding

Opinion

Cultural forces and meaning systems

Culture

Denotation

Emotional drivers, both conscious and unconscious

Act

Action and Behavior
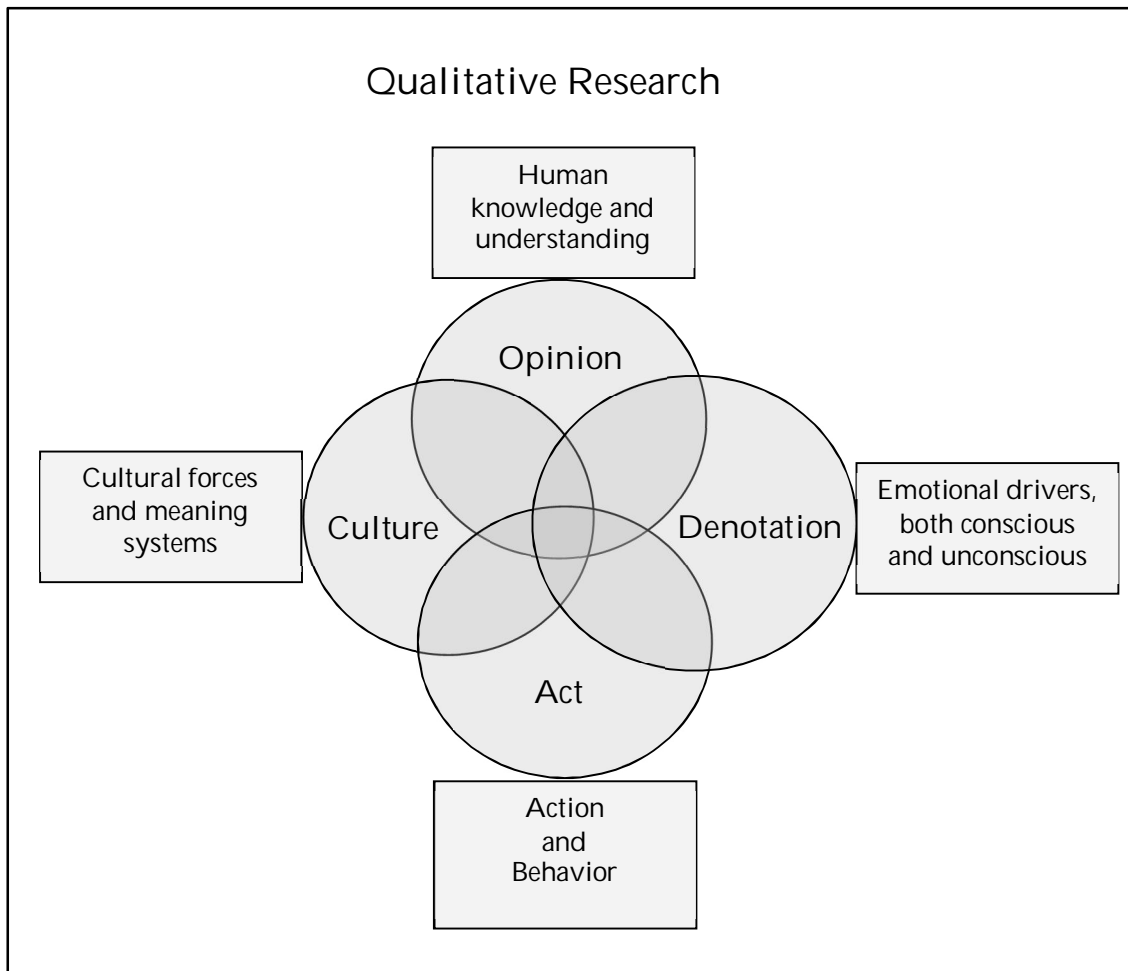
Figure 13: Multiple focal points of qualitative research (Modified from
QSRinternational.com)

The objective of qualitative research is not to make statistical generalization, but to fully understand and describe an action and provide theoretical feasible analysis and solution (Yin 2003, 10). As the figure 13 shows, understanding the opinion of the subject involves understanding and possession of knowledge by the subject and researching their conscious mind. Denotation refers to conscious and unconscious emotional drivers of the people and understanding their psyche. Understanding acts involves understanding actions taken by the subject and their own perception about it. Culture is within which the phenomena is molded and contains shared meanings, norms and codes (See, for example, QSR International). As this research was conducted on real life situations, understanding the opinions and practices and analyzing behavioral drives formed the constructs for this study, and thus qualitative research provided a greater depth of understanding in the phenomena (Woods 2006).

The empirical study of this research can also be considered as *qualitative multiple case studies*. The case study is a research approach which focuses on understanding the dynamics present within multiple settings. Case studies usually combine data collection methods such as archives, interviews, questionnaires and observations (Eisenhardt 1989, 534). Case study as a research approach was especially well appropriate for this research as it allowed the gathering of comprehensive and thorough information on service provider-client relationships and its reliant variables (cf. Hirsjärvi, Pirkko & Sajavaara 2001, 123). As the empirical study was exploratory in nature, case study was also measured well suited for the purpose of understanding phenomena that were not well known previously (cf. Nieminen 2003, 58 – 59; Hirsjärvi et al. 2001, 128).

Furthermore *multipcle case studies* permitted exploration of all the relevant dependencies in the environmental context of the case associations from a holistic viewpoint. Using qualitative case study seemed as a well-suited investigation approach, as the aim was to answer questions regarding 'how'. Beside that multiple case studies seemed most appropriate for studying inter-organizational, social and multifaceted processual phenomena, which played an vital role in the preliminary framework of this study (cf. Yin 2003, 13 – 14). These issues were particularly relevant in this research as the interdependencies in the preliminary framework were complex in nature. Therefore it seemed more sensible to try to understand a selected number of cases appropriately rather than trying to capture aggregate outputs from a large number of selections (cf. Nieminen 2003, 58 – 59).

In this research the researcher did not set up artificial experiments, rather depended on *'natural experiments'* which were events that occurred naturally in real life business situations. Importance of value co-creation with the client and the significance of clients' participation in the value co-creation process are well recognized by both the business and academic community. However, as there are challenges available in doing so, following the 'natural experiment' approach to observe the interaction between service provider – client relationships should provide deeper insight into the problems and their probable solutions (cf. Nielsen 2010). Angrist and Krueger (2001, 74) mentioned that, using the 'natural experiment' is a signature technique in qualitative research.

Answers to issues can be found either by the process of deduction or the process of induction or by a combination of the two. *Induction* is the method where the researcher observes certain phenomena and arrives at conclusions through pattern recognition and testing hypothesis. In contrast *deduction* is the method by which the researcher attains reasoned confirmation of existing theories (Burney 2008). A combination of induction and deduction has been used in this research as shown in figure 14 below.
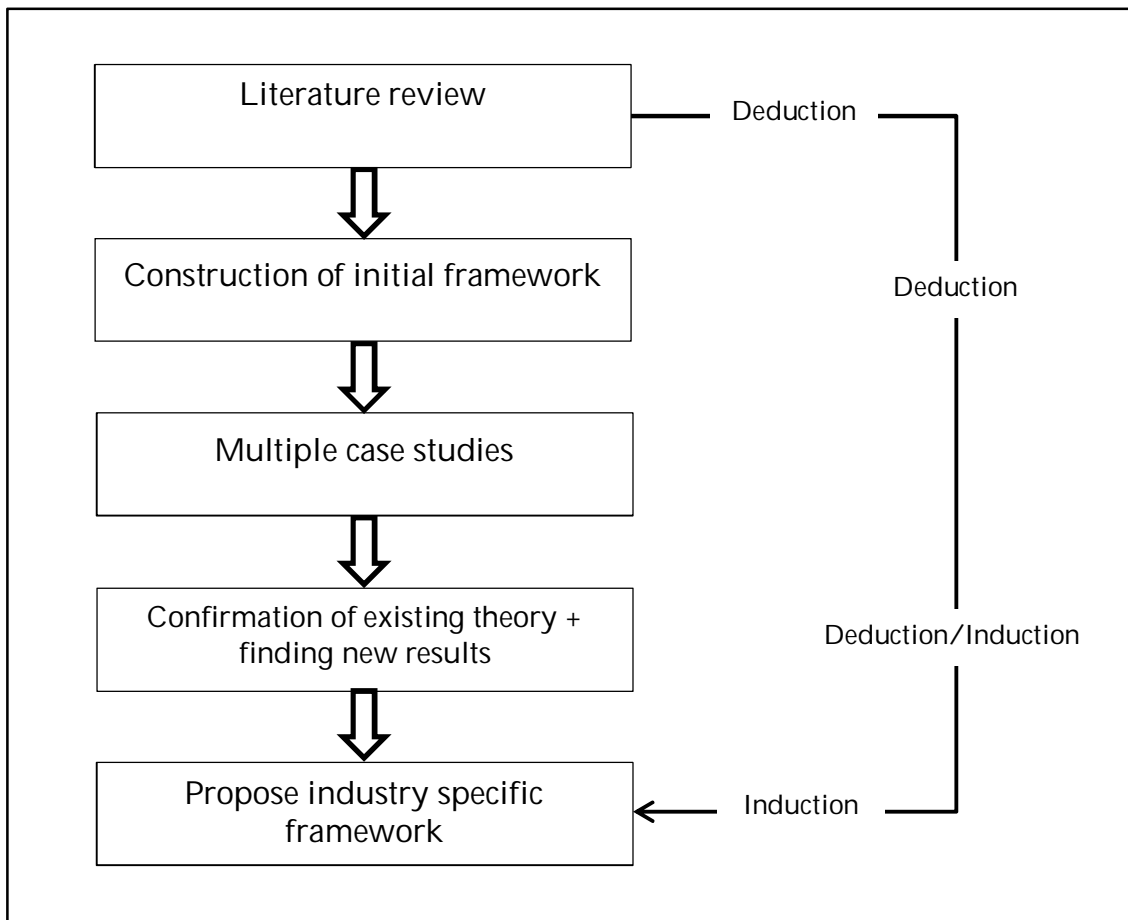
Figure 14: Research methods applied in this study (cf. Akpinar 2009, 24)

The first step of the process was to review existing literatures. Literature review helped to develop deeper understanding on value co-creation concept. Literatures available were also useful to know and understand about knowledge intensive business services (KIBS), their importance in society and the vital roles they play in the Finnish economy (cf. Akpinar 2009, 24).

The knowledge and insights gained from the literature review was then applied to develop the preliminary framework. The framework tried to cover the probable value co-creation challenges and their possible solutions in *professional business software development services (PBSDS) context*. This preliminary framework was used to operationalize the research question.

The third stage of the research was the empirical study, the aim of which was to test the preliminary framework against reality. Another objective of the empirical study was to observe the patterns of value co-creation challenges against it and the probable solutions by the PBSDS firms. This method of empirical study helped to apply both inductive and deductive reasoning in the following stages.

In the fourth stage the basic concepts of the existing theories were confirmed to a high degree, which is considered deducting reasoning output. At this same stage the existing theories of value co-creation challenges and their solutions was modified to PBSDS context. Moreover some new challenges were identified and solutions were developed accordingly, which reflects the inductive reasoning method.

The fifth and the final stage of this research was development of a sharper industry specific framework for assisting value co-creation in Professional Business Software Development Services (PBSDS). The framework considers value co-creation from a *linear process* perspective and suggests idealistic behaviors and approaches to co-create value. This last stage denotes inductive reasoning.

When studying value co-creation process, its challenges and possible solutions from the participant companies, situations were considered to be imperative as they influence behavior (Woods 2006). Knowledge intensive business services like PBSDS firms are complex in range and variability and operate at different levels. These businesses have 'many layers of meanings' (cf. Berger 1966, 34) and the researcher had to 'lift veils' (cf. Blumer 1980, 39) to determine the innermost meanings. Furthermore, in order to gain access to inner levels of understanding of the phenomena the researcher needed to develop a certain affinity with the subjects and supporters of the study and win trustworthiness from them. Unnecessary to say that this trust and business sensitive information must not be abused afterward following the completion of the research (Woods 2006).

Value free research could be a utopia, as generally research works are affected by the norms and values of the researcher, formed by the culture and society of which the researcher is a product (Forsström 2005, 34). As human beings, researchers constantly conceptualize the reality in which they live. Concerning epistemology, the constructivist paradigm shoulders a subjectivist epistemology with connotation that the knower and subject create understandings, that the judgments are created as the process of investigation goes on. Due to the inconstant and subjective nature of social constructions, it can only be refined through interaction between investigator and respondent. Hence, the intention of this study was to generate a more informed and sophisticated construction than the assemblies presented before (cf. Guba & Lincoln 1985, 206).

Understanding the co-creation of value in knowledge intensive businesses services required apprehensive understanding and conceptualization of the phenomena in an exceptional knowledge rich business process, where existing theories have built the framework to advance the research further. The research process is influenced by the insights that the researcher gained during preparing the bachelor thesis with a related phenomenon and then the progression of this very research (Forsström 2005). Service dominant logic (Vargo and Lusch 2004a; 2004b) was considered as the base for

proceeding with the real life encounters, and then gradually progressed to construct the solution advancement based on multiple case study analysis of the Finnish PBSS firms with the expectation to test existing theories and propose modifications to reflect realities.

3.2   Conducting the Case Studies

3.2.1   Selection of the Industry

As the term knowledge intensive business services (KIBS) covers wide range of businesses from architecture to market research, it was not practical in the sense of time and scope to try to cover all the industry sectors which fall under KIBS category. Hence the study is based on professional business software development services (PBSDS) industry which reflects most of the characteristics used to describe KIBS businesses.

The choice of sector was influenced by a number of factors. As the study was conducted in Finland, it was more logical to consider PBSDS than other KIBS industries due to the key roles it play in Finnish economy. The rapid expansion of the world market for computer software – which has grown by 15-20% per annum in the last decade – presents good growth opportunities for Finnish software firms. Secondly, the software business around the world is being quickly consolidated and standardized software are produced by a few number of giant companies, mostly dominated by the U.S. firms (PriceWaterhouseCoopers 2008, 48). As such, it is very important for the Finnish PBSDS firms to concentrate on the 'tailored' software market where specialized services and professional knowledge plays the key role and provide growth opportunities.

Additionally, although the Finnish PBSDS firms do not face a strong competition in the domestic market, due to the relatively small size of the same their orientation is becoming increasingly international. Hence contemporary marketing theories and practices are needed to empower them with competitive advantages to contest in the international market. Moreover the concept of value co-creation is especially applicable in case of PBSDS firms as by nature these organizations are highly knowledge intensive and require superior degree of input from the client organization to deliver optimum services. This characteristic of PBSDS businesses also influenced the industry selection decision.

3.2.2   Selection of the Case Companies

To select the firms which can participate in the case studies and provide high quality empirical data, business models that software firms follow were used to categorize and select probable case companies fitting for this study.

At the generic level a business model is the design of content, structure and governance of transaction to create value through the exploitation of business opportunities (Amit & Zott 2001, 499). It refers to the means of creating value for clients and the methods a firm uses to convert market opportunities into profit through compositions of actors, activities and collaboration (Rajala & Westerlund 2007, 118).

In case of software firms there are two vital issues under business model focus. The first important issue is the subject of standardization versus adaptation of the value proposition. The second concern is the degree of client involvement in value co-creation process. Considering the characters and purposes of value propositions presented by software firms in Finland, Rajala (2009, 9) noted the divisions among offerings in two broad categories. The first types of the value propositions are those which adopt the product standardization focused business models. The second types of value propositions are based on the client actions in the customer proximity-focused business models.

Considering the above product homogeneity/diversification and client involvement orientations criterions, two dimensions were employed to classify software business models: the level of involvement in client relationships and the level of homogeneity (i.e. Standardization) of value propositions by the software firm. This categorization outlined four generic types of models, as showed in Figure 15 below (Rajala & Westerlund 2007, 118).
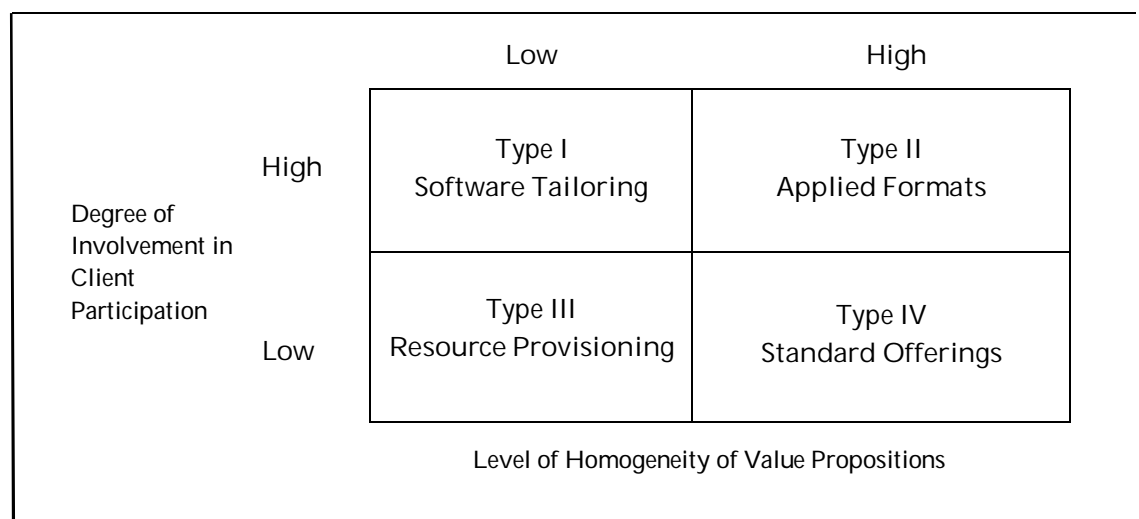
Figure 15: Classification scheme for identifying different types of business models (Rajala & Westerlund 2007, 118).

Both the aspects of business models were taken into consideration to select participant companies. First, a customized solution to the client was preferred over homogenous offerings. Second, client–supplier relationships were examined in terms of involvement in which high-involvement relationships were considered as extensive coordination and interaction between the service provider and the client. Considering both the features decision was taken that software firms which follow *software tailoring* business model would be appropriate for this study.

The thesis has been written under the *Value Chain Management of Internationalizing Software Firms* project[10]. The project was funded by TEKES[11], the Finnish funding agency for technology and innovation. The primary population which fitted the required business model consisted of 23 (twenty three) software companies in South-Western Finland. The list of those twenty three companies was generated by the chief technical advisor of TEKES. After further scrutiny grounded on their client base, the researcher contacted with eight professional business software development services (PBSDS) firms in South-West Finland (Where Turku is the regional capital). Communication was established with all eight companies over telephone and e-mail, five of which agreed to participate in the research. In addition to these firms located in South-Western Finland, one leading KIBS firm from Helsinki also participated in the research. A list of the case companies participated in the research is given below with their permission.

Table 3: List of case companies participated in this study.

Organization	Offering	Official Website	Interviewee	Date	Duration
Acentra Oy	Data management solutions, business intelligence solutions, customer specific solutions, professional services.	http://www.acentra.fi/	Chief Executive Officer	29.04.2011	0h 57m
ATR Soft Oy	Data and custom property management tool.	http://www.atrsoft.com	Manager, Marketing and Sales	08.04.2011	0h 56m

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[10] *Value Chain Management of Internationalizing Software Firms* (VCM) is a joint research project of Technology Business Research Center (TBRC) at Lappeenranta University of Technology (LUT) and Turku School of Economics (TSE). The goal of the project is to model the international growth of software firms from the viewpoint of the entire value chain. See project details in official website <http://tbrc-community.lut.fi/vcm>.

[11] Tekes is the main public funding organization for research, development and innovation in Finland. For more details, check the official website <http://www.tekes.fi/en/community/Home/351/Home/473/>.

Cerion Solutions Oy	Leadership model and management development in the following areas: (i) Strategy, business activity model and service supply, (ii) Processes and organization structures, (iii) Human resources and skills, and (iv) Information systems.	http://cerion.fi	Business Area Manager	14.04.2011	1 h 02m
Omnitele	Strategic technology advisory services, along with network design and network quality development.	http://www.omnitele.com/	Business Development Manager	06.04.2011	0h 54 m
Sofokus Oy	Commercial web and mobile applications and services.	http://www.sofokus.com/	Chief Executive Officer	28.04.2011	0h 47m
Qbrick Oy	On-line video platform for business customers.	http://www.camtenna.com	Chief Executive Officer	27.04.2011	0h 51m

These Finnish software firms (except Omnitele, which provides consultancy and expert services) develop tailor-made software for business clients, or at least modify a basic software to meet business clients' specific needs. Hence the level of homogeneity is very low in their offerings. In other words their value propositions are vastly heterogeneous for each of their clients to fit their unique needs. Besides high degree of cooperation and contribution from the clients are expected and required by these software companies to develop those software which denotes to advanced client participation in the value creation process.

3.2.3 *Data Collection*

In case of qualitative research, the opportunities to select and accumulate research data are ample. However, the data collection methods should be carefully evaluated according to the necessity of the specific research. Different ways of data accumulation, called as triangulation, can be applied simultaneously, as diverse source of information generally presents broader picture of the phenomenon being studied (Eskola & Suoranta 1998, 69). In this thesis, data were accumulated from two different sources, namely: (i) existing company documents and (ii) interviewing.

Existing company documents are considered as valuable source of data in case studies, but they need to be selected carefully to establish trustworthiness (cf. Eisenhardt 1989, 534). To review company documents (official web-portal, press releases, annual reports etc.) information were retrieved from their official web-portal

where archived press releases and annual reports were found. Retrieved information were then contextualized within the circumstances of their construction. Hence the task was not to take such documents at face value, but to find out how they were constructed and how they are used and interpreted (cf. Wood 2006). Information about the case companies were also collected from newspapers and journals. As the existing documents were mainly in Finnish language, significant amount of time and effort were needed to translate those documents and understanding their meanings.

To collect primary data face-to-face interviews was conducted with one person from each organization. Before the interview, the interviewees were supplied with an introductory electronic-mail about the basic ideas of value co-creation and the probable questions of the interview. Business terminology was restricted to the minimum to elicit understanding of respondents' perceptions before asking for specific information, for example the process of value co-creation and its difficulties. The open-ended questions of the interview were emblematic of multiple case studies, and provided a superior depth of data than structured interviews as it attempted to "*understand the complex behavior of members of society without imposing any a priori categorization that may limit the field of enquiry*" (Fontana & Frey 1994, 362).

The open ended questions were particularly appropriate as it was vital to recognize the insight that the interviewees use as a basis for their views or beliefs about a particular topic (Easterby-Smith et al. 2002), a factor which was noteworthy in this research.

From review of the existing literatures, it was evident that the people engaged in software businesses generally do not possess sufficient conceptual and communication skills to participate in a discussion about value co-creation in business terms and jargons. To overcome this challenge and to establish common platform of understanding, the 'Critical Incident Technique' was applied in the interview structure.

The 'Critical Incident Technique' is an effective mean of obtaining detailed description of events from the respondents in a defined situation (Hussey & Hussey 1998). Developed from the widely cited effort of Flanagan (1954), the technique in general is not a set of rigid rules. Rather a line of questions in everyday terms which are easily understandable by the interviewee were employed by the interviewer. The comparatively generalized questions aimed to draw narratives from respondents about a definite visible activity (The incident). The interviewer also attempted to acquire particulars of vital aspects related to the event such as impetus to action, precise activities and the consequences (cf. Hintzman & Curran 1994).

To advance the success of the interviews further, the technique was applied in a more open and less structured way. For example, when asked about the identification of participation of the client in value creation process, questions in below form were applied:

When designing customized database for a mobile network service provider (Like Nokia-Eriksson Networks, Huawei Technologies or ZTE), how database platform needed is selected? How do you select query languages for the project? Do you ask client about their opinion?

The operationalization of the research question was done on the *basis of the preliminary framework* that was developed from the existing literature, as shown in sub-chapter 2.4. The operationalization was completed in three steps. At first the *main research question* was divided in three *research sub-questions*. Next each research sub-question was separated into their *operational equivalents*. Interview questions which were to be used in the interview were derived from the operational equivalents in the third step. After the first interview taken interview questions were modified according to the information received, as the first interview provided real life experience over theoretical understandings and allowed the researcher to understand the phenomena more deeply. Operationalization of the main research question is showed table 4 below.

Table 4: Operationalization of research question

The Research Question	The Research Sub-Questions	The Operational Equivalents	The Operationalized Questions
How to achieve client participation to co-create value in knowledge intensive business services (KIBS)?	How value is co-created between the PBSDS firms and their clients?	What roles clients play during service design?	How people from the client organization provide input to design the deliver the service?
			What are the attitudes of the client firm's employees and management that are considered helpful by the service provider?
			To deliver and implement new professional business software, what kind of preparation is needed from the client's side? Why?
			What kind of impact does proper communication play to deliver an optimum service?
		How clients can improve service performance?	What kind of technical knowledge the clients need to possess in order to use the service? What are the trainings that are required?
			What are the hardware/technological infrastructure needed by the client to implement and run the business software?
		How software firms can provide better value proposition?	Which technical advantage does your professional business software service hold? What are the possible areas of improvement?
			How the knowledge and skill of your employees could be improved to provide a better service?

			How much negative effects can shortage of knowledge and skill cause? Why?
	What are the challenges to co-create value by those businesses and their clients?	What are the difficulties from client's side?	What are the challenges that can arise if the role of the client's employees are not clearly defined?
			How poor attitude and effort from the client organization can distress the service delivery procedure?
			What are the negative effects of insufficient preparation and poor communication by the client?
		What are the deficiencies from the service providers?	How challenging is the software service that you offer to implement and use? What kinds of special technical knowledge are needed?
			Do the client need to understand and main technological platforms, technical codecs, query languages and programming languages? How they can perform the regular maintenance of the system?
			What are the communication and interpersonal skill problems that your employees have? How they can impede the client to communicate properly with you?
			Can the academic and technical skills of your employees be improved? How?
	How to overcome those identified challenges of value co-creation?	What clients can do?	How communication openness from the client helps to deliver better service?
			How clients can share their case specific knowledge and solve problems together with you?
			It is understandable that there are challenging times during a professional business software service delivery. How the client can tolerate and accommodate those kinds of situations?
			How the project lead in client organization can advocate for the project? How does it help?
			How the client's involvement in project governance plays role in the success of service delivery?
			What role 'personal dedications' from the client's employees play in the service delivery?
		What service providers can do?	How can you select high performing client? How the low performing clients can be disadvantageous for your organization?
			How you can provide training and education to your clients to work with

			you and design and implement better professional business services? How can you socialize with the clients?
			How long term relationship can be formed with the client to deliver better professional business software service?
			What are the other means that you can use to assist the client to improve their performance?

Yin (2003, 90) advised that face-to-face interviews are most suitable for qualitative research, as it facilitates receiving both fact based information and personal opinions and allow further inquiry if necessary. One key person from each organization was interviewed. The interviews were conducted face-to-face at the organization where the interviewee works, either in a conference room or at the office of the interviewee to get feedback in a comfortable surrounding for the interviewee (cf. Raukko 2009, 340). To gain proper insight into the phenomenon the researcher tried to build up empathy with interviewees to win their confidence and be modest in order not to impose researcher's own influence on the interviewee (cf. Wood 2006). Duration of the interviews varied between 50 minutes to 1 hour and 20 minutes and interviewer used the preliminary framework to move forward the interview session and keep the discussion in track. Leading questions or suggesting outcomes were avoided and intellectual stimulations were employed in the conversation to aid clarity, depth and validity (Wood 2006).

Usually interviewees speak more freely in their own mother tongue (Welch, Marschan-Piekkari, Penttinen &Tahvanainen 2002, 622). But as the researcher does not speak Finnish language, careful consideration were made when selecting interviewee for this research, and all the interviewee were able to communicate in fluent English. Moreover as the interviewees were of top management in all six participating companies, they possessed high quality academic backgrounds. All of them have completed at least master's degree from Finnish universities usually from a technological discipline.

The interviews were tape-recorded with the consent of each interviewee through digital voice recorder and the quality of the recording was equal to a face-to-face interview. Notes were also made during the interviews, merely to explain some concepts or write down the essentials of the answers in case the tape recording failed for some reason. Some quantitative data was also collected during each interview with the expectation that establishing cross-reference between quantitative and qualitative data would aid deeper understanding of the phenomenon under scrutiny (cf. Hurmerinta-Peltomäki & Nummela 2006).

Identifying the challenges or obstacles to co-create value between the case companies and their clients was a challenging task. First of all, the concept of value is

not concrete and rather an elusive one. Secondly, the interviewees from the case companies were of technical background in most of the cases except *Cerion Oy*, and they were not very comfortable to participate in an interview which is investigating about business concepts and theories. Thirdly, engaging clients in the software development process and progress of intra-organizational relationship with the clients is considered as a strategic issue by the case companies, and thus they were cautious to reveal those issues to an academic researcher who is not part of their organization. Thus, this researcher had to dig deep to recognize the conceptual perceptive and achieve a sufficient amount of trust to reveal actual facts.

3.2.4   *Data Analysis*

To start analyzing the empirical data, each interview was transcribed by the researcher with the assistance of 'Express Scribe' transcription software. The transcribed interviews were read through many times then in order to identify key elements and themes.

The collected empirical data for this study consisted of extensive technical terms as well some non-related issues. Information in their raw forms was scattered and ambiguous. Moreover data were not integrated in a way that it would provide academic or managerial understandings. Thus the researcher's task was to "*Create an interpretation of the setting or some feature of it to allow people who have not directly observed the phenomenon to have a deeper understanding of it*" (Fieldman 1995, 1).

Gummesson (2005) also emphasized the role of analysis in qualitative research and argued that reports based on qualitative data often devote more attention to the data collection rather than interpretation of the data. He commentated that unlike quantitative research, the interpretation and analysis of qualitative research is not as orderly, explicit or transparent and thus more focus should be put on analysis and interpretation.

After collection and accumulation of empirical data, the study arrived at a point where the data had to be organized and analyzed in logical manner. The accumulated data was first analyzed as a whole and read through for many times to get a wholesome view of the total scenario. Later when data had taken the form of information in the researcher's mind, they were cassified according to *research sub-questions* and each of the categories was analyzed individually (cf. Forsström 2005).

The researcher did recognize the fact that data were fluid, processual, multi-perspectival and a bit disorganized. Hence in order to understand it some tentative order was imposed on the empirical data. As the data was classified against the *research sub-questions* by then, data under each category were thoroughly classified with assistance

of tabulation, figures and diagrams (cf. Forsström 2005). Members of the thesis group also helped to analyze the data in unofficial sittings.

After classification of data against research sub-questions and organizing them, each category of data was tested against the *preliminary framework*. The testing showed confirmation of the major portion of the *preliminary framework*, especially regarding the process of value co-creation in knowledge intensive business services. However, some mismatch was also found against the theories and those were noted separately. Subsequently some value co-creation challenges and solutions that were previously unnoticed are also identified and suggested. In addition to theory confirmations and new finding, a value co-creation framework is developed in this study – which is grounded on the existing theories but developed specially in the professional business software development services (PBSDS) context based on the empirical data.

Getting guidance and direction from the thesis supervisors and receiving constructive criticism from the fellow participants of the master's thesis group was also important to guide the course of this study. Moreover, the preliminary findings of this study were presented in an international research workshop titled '*Collaborative Service Development and Innovation Workshop*[12]'. Valuable feedbacks from other participating professors and researchers were received from the workshop which also helped to improve the results.

3.3   Evaluation and Limitation

One of a researcher's challenges during the entire qualitative research progression is how to assure the readers of the scientific nature of the research, in terms of its eminence and dependability (Hägerström 2010). Association between the results and reality should be the primary target in every research (Hirsjärvi et al. 1991, 128). Implementing different evaluation criteria increase the transparency of research and provide opportunities to identify its strengths and limitations. The four constructs that reflects the assumption of a qualitative paradigm are: (a) *credibility*, (b) *transferability*, (c) *reliability* and (d) *dependability* (Marshall & Rossman 1989; Lincoln & Guba 1985).

Credibility was established in this study by demonstrating that the research was conducted with the ensuring capacity that the subject was accurately identified and described (cf. Lemmetyinen 2010, 65). As mentioned in the data collection part, the case companies for this research were selected with careful consideration of business

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[12] Collaborative Service Development and Innovation Workshop. Vanhalinna Estate, Lieto, Finland. 17th – 18th May, 2011. Organized by Turku School of Economics, Finland.

models and with the suggestions of TEKES, which maintains a wide range of networks with knowledge intensive business services in Finland. The accounts of respondents are documented throughout this study too.

Transferability denotes the métier of a qualitative research, as the strength of qualitative research lays in the flexible and direct interaction between the interviewer and the respondent (Sykes 1990). Ödman[13] (in Bergum 2009) advocates the uses of multiple sources, establishing chains of evidence and studying secondary material for this purpose. Transferability was achieved in this research by selecting and collecting empirical data from multiple PBSDS firms, which are diverse in their offerings but similar in their technological standings and knowledge intensive nature of the business. Hence it is expected that the findings of this study can be beneficial and useful to other knowledge intensive business services (KIBS).

Reliability of any study is a strong scientific standing to measure any research. In empirical studies the researcher is an important factor in data collection, as the researcher can influence respondents' reactions. Interpretation is another central part of the researcher's work. (Bergum 2009, 70). Marshall and Rossman (1989) argue that qualitative researchers can respond to the demand for replicability by keeping through notes that record the rationale behind the design decisions. To establish the reliability of this study the operationalization of the research question is mentioned in detail. The raw data from all six interviews, together with general analysis, are kept as computerized files for future records.

Dependability is the fourth construct to evaluate a research. Dependability refers to the researcher's attempts to account for changing settings in the phenomenon being studied - such as changes in the design driven by a progressively refined understanding of the setting (Lemmetyinen 2010, 67). Hence one positive characteristics of this study was the semi-structured questions, which helped the respondent to explicitly express their thinking rather than being limited by options provided by the interviewer. Also the timing of the study need to be taken into account as all the interview was taken during April 2011, when the ICT industry in Finland had got rid of the economic downturn and enjoying 4 – 5% growth (See, for example, Software Industry Survey 2011).

Limitations are unavoidable part of any qualitative research. Qualitative research aims to concentrate on questions concerned with developing an understanding of the connotation and experience dimensions of social worlds. The core of good qualitative

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[13] Original text: Ödman, Per-Johan (1979) Tolkning, förståelse, vetande : Hermeneutik i teori och praktik (Interpretation, understanding and knowledge: Hermeneutics in theory and practice). Almquist & Wiksell, Stockholm.

research depends on whether the research participants' subjective meanings, activities and social contexts as conceptualized by them, are illuminated (Fossey, Harvey, McDermott & Davidson 2002, 717).

In this context, this research has several limitations. First of all, it has considered one specific industry (professional business software development services) within the knowledge intensive business services (KIBS) segment. Subsequently, the results are not totally generalizable to other industries within KIBS (cf. Yin 2003). Secondly, the data collection is based on one data collection periods. A longer time frame would provide a more reliable result and a better understanding of the phenomena, especially in situations where someone tries to understand the value co-creation perspective of the Finnish PBSDS firms over a longer timeframe. Thirdly, the participants companies in this study were mainly based in Turku as only one company was from Helsinki. Hence it might provide results which are connected to business cultures and practices of Turku area only, and does not reflect the other regions of Finland. Nevertheless, this study has ascertained the rationality and trustworthiness of the research by several means and thus should provide reliable findings within the limitations of this study (cf. Raukko 2009, 346).

4 VALUE CO-CREATION, CLIENT PARTICIPATION CHALLENGES AND SOLUTIOINS IN CASE COMPANIES

4.1 Value Co-Creation by the Case Companies

The common characteristic that can easily be noted among the six case companies participated in this study is knowledge intensiveness. Regardless of size, market share, client base, service type, sales, profit and other parameters, the services they provide – professional business software development – are highly reliant on on technical and professional knowledge. Table 5 below provides basic descriptions about the case companies:

Table 5: Details of the case companies

Company	Location	Value Proposition
Acentra Oy	Turku, Finland.	Acentra offers data management solutions, business intelligence solutions, client specific solutions and professional services to its clients. Acentra designs and implements automated data processing, reporting and business intelligence solutions.
ATR Soft Oy	Turku, Finland.	ATR Soft offers *CustomTools 2011* - a professional and easy-to-use data and custom property management. *CustomTools 2011* automates repetitive tasks in *SolidWorks*, saving clients' time and minimizing distractions.
Cerion Oy	Turku, Finland.	Cerion Oy assists clients in the following leadership model and management development tasks through software development: (i) strategy, business activity model and service supply, (ii) processes and organization structures, (iii) human resources and skills and (iv) information systems.
Omnitele Ltd.	Helsinki, Finland.	Omnitele's value propositons includes strategic technology advisory services, network design and network quality development. Omnitele is experienced in HSPA design and development, and LTE upgradation & LTE network design and network upgrades roll-outs.

Sofokus Oy	Turku, Finland.	Sofokus offers turnkey solutions to help their clients grow in on-line businesses. The company's portfolio spans software services including: consulting, user interface design, installation, software development, system integration, testing, training and maintenance.
Qbrick	Turku, Finland.	Qbrick provides cloud-based video management solutions for multi-screen delivery worldwide. They offer an end-to-end technology platform - *Qbrick OVP* - for managing Internet Protocol (IP)-based video assets across browser, mobile device, gaming consoles and IPTV set-top box-enabled television set to their media, enterprise and governmental clients.

Companies listed above which participated in this case study develop unique or tailored software with the participation of their client based on their specific needs, and form long term relationship with them (Except Omnitele, which provides consulting and expert services). Four of these six companies, except Qbrick and Omnitele, also need professional knowledge to some degree along with a set of technical skills to write and encode the software. In case of Qbrick, their offering enables them to operate with technical knowledge solely. On the other hand, Omnitele is engaged in strategic technology advisory services to network design and network quality development. Similar to the existing literatures on value co-creation in knowledge intensive business services, most of the case companies also necessitate client involvement of varying degrees in their software development projects.

Except *Qbrick* and *ATRSoft*, the other four case companies agreed that significant amount of knowledge needed to develop softwares are owned by their clients. For *Qbrick* and *ATRSoft*, perhaps it is the nature of their value proposition which enables them to provide services without much client contribution. For example, to present on-line video streaming service, Qbrick's basic video streaming technology remains same regardless of the client. The company needs client's opinions only to make cosmetic changes (color, design etc.) of the webpages which contain their video streamer, hence requirement of client participation is low from this case company. However, though minimal, input are needed from clients to deliver service in case of *Qbrick* and *Ommitele* too.

Nevertheless, it was not the situation for the other four case companies. One case company provided an example of the importance of contributions from clients. The company was developing business software for a mobile service provider. Objective of the software was to optimize and efficiently manage client's network traffics. To

develop effective software, the service provider needed participation from the client in almost every step of the software development process.

First, the company needed wide range of information about existing network infrastructure of the client, the software and hardware they were using, their network traffic pattern, their client-base and their usage pattern, the scopes of improvement, their future expansion plan etc. – just to name a few. Providing information was not the only participation task by the client. In the software development phase, the client had to allow access to its network infrastructure to the service provider, along with generating and providing technical feedbacks. In the implementation phase, people from both the companies needed to actively engage in implement in the software. The client also had to acquire technical competencies from the case company (service provider) to keep the software up and running. Thus participation of the client was an un-detachable part of the value creation process. Respondent from the *case company* stated that:

> "*Without all these helps from the client, we would never be able to develop a high quality effective software*".

Other four case companies also mentioned similar kinds of experiences where contribution from the client helped them to develop better software. Respondent from *Cerion Oy* even mentioned that:

> "*It would be very hard for us to design high quality software without contributions from the clients*".

This study considers a conceptual platform where the service is performed as *service podium*. Based on the *theoretical understandings* on value co-creation and then using *case-specific contexts* as received from the case studies, it is understood that value propositions of the case companies consists of *professional knowledge*, *expertise* and *experience*. Their value propositions also contain *hardware and software infrastructures* which they use to develop softwares, *service design capabilities* and *business networks*.

As per the case companies, to contribute in the software development and implementation project, their clients also come to the *service podium* with *case-specific capabilities*. Though the *case-specific capabilities* can differentiate to a greate degree based on client's abilities and circumstances, the common elements identified from the case studies are *detailed requirement, technical knowledge* and *feedback*. Case specific capabilities can also be formed of elements such as *client's environmental facts*, *performance data* and *the business network in which they operate*. Figure 16 below has been developed to combine these inputs from the case companies in a structured manner.
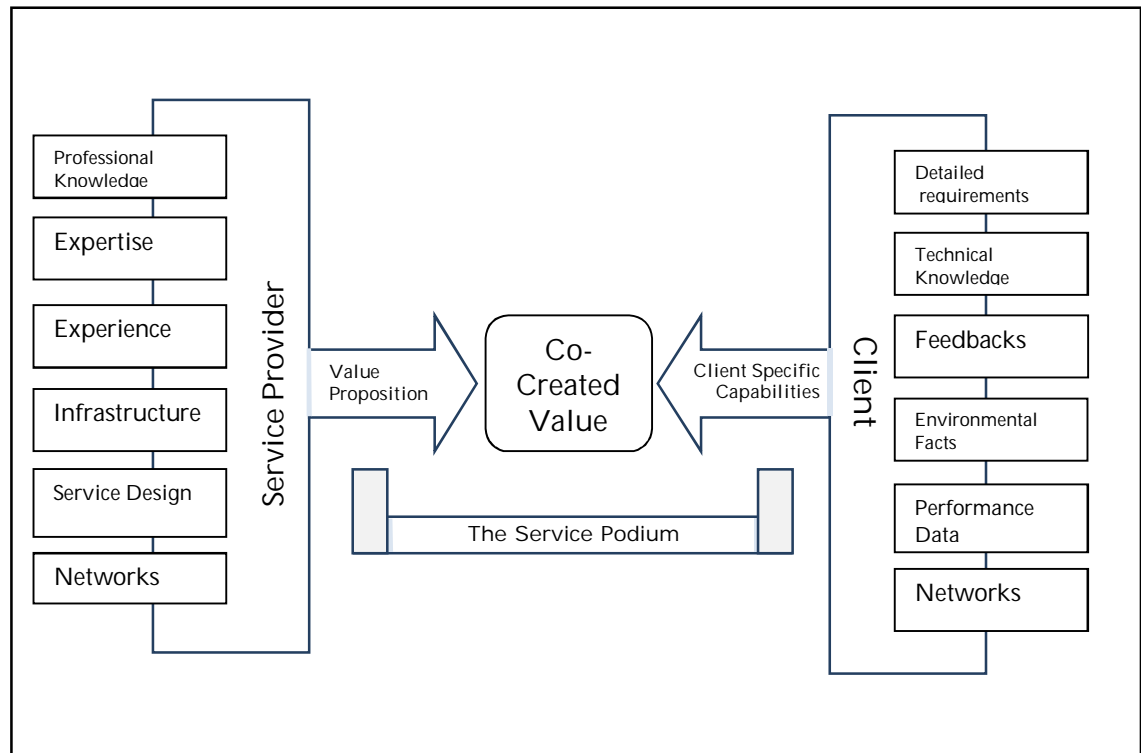
Figure 16: Value co-creation in case companies.

When both the *value proposition* by the service provider and the *case-specific capabilities* of the client organization interact together in the service podium with a positive drive – *the value is generated, or co-created*. This form of joint value creation was observed in five of the six case companies except *Qbrick Oy*, which needs minimal participation from clients to provide their service. Hence it can be stated that up to this stage – how value is co-created in knowledge intensive business services – the case studies supported existing value co-creation theories with a high degree of resemblance.

For the case companies, the collective creations of value (software development, consulting and expert services) generate operative solutions through the constructive mutual interactions which take place between the service providers and their clients. In addition, clients possess experience-based predictability of the probable outcomes of a project, hence are able to steer the creation of value towards the expected results. Additionally the clients are also able to analyze comparative benefits and risks of the project, thus providing the unique window to avoid risks and maximize yields.

4.2   Value Co-creation Challenges in the Case Companies

The case companies of this research were mainly studied as service providers. However as business organizations operating in a knowledge intensive industry, they also act as

business clients when working with their suppliers. Thus the case companies were able to provide information not only from the service providers, but also from the client's perspectives.

As the term itself describes, *co-creation of value* in knowledge intensive business services involves both the parties - the *service provider* and the *client*. As such, the preliminary framework indicated that challenges against client participation can also arise from both sides. *The case studies also supported this argument, as it became visible that client participation challenges are bi-modal: both service providers and clients can create them.*

4.2.1   Challenges from the Clients' Side

Though the identified problems were diversified in natures and degrees, commonalities were found between the problems and hence categorizations of the problems were formed. The major categories of problems or challenges faced by the case companies from their client are discussed below. *As value co-creation is considered from a process perspective in this study, the findings are also presented in sequential order, i.e. as they arise along with the advancement of value co-creation process.*

4.2.1.1 Poor Need Assessment

All the six case companies stated that, clients usually contact with them for services when the clients identify that there are problems in their existing business processes or set-up, or there are possible areas of improvement in their businesses. Except *Qbrick*, empirical data from other five case companies show that after identifying a problem or possibility for improvement, the common tendency of the client is to hypothyse a solution by themselves and then develop technical requirements to support the solution accordingly. While this was not a major problem for *Acentra* as a large portion of their projects comprise of working as third party software developer, the other four companies - ATR Soft, Cerion Solutions, Omnitele and Sofokus – had identified this approach as the first major challenge again client participation. Regarding this problem, one interviewee responded that,

> *"This whole process – problem identification by themselves, preparing technical details and only then contacting with us – is seriously flawed. If the client is not an expert on the problem area, it is highly unlikely that they will be able to recognize the correct problem. And if the correct*

problem is not identified, the whole project will head to a wrong direction."

Though this was not a major challenge for *Qbrick* and *Acentra*, when asked all the six companies agreed that it is not beneficial for the client to formulate the solution alone. According to the case companies, rather the client's task should be to find out the bottlenecks in their process, identify possible areas of improvement, collect systematic data, plan how they want to achieve further efficiency and effectiveness and then convey the details to the service provider. After constructing those information the solutions and thus the technical details can be formulated together by the client and their service provider, not by the client alone.

ATR Soft provided an imaginary example of poor need assessment without revealing any client details. As provider of *data and custom property management tool*, their clients often includes electronic equipment manufacturers who maintain large database of electronic components. For example, to produce one television set the manufacturer needs to manufacture, outsource and assemble hundreds of complex components. Maintaining a large set of information about those components which may include information from technical details to inventory levels is a complex task, and requires sophisticated database. One manufacturer found that their organization is not being able to maintain information details of their product components as they expect.

In such a situation, the manufactures took decision that the problem remains within their database architecture, and thus they develop a detailed technical requirement of the planned changes in their existing database. However the actual problem was in the *query language* which was not optimized and hence creating conflicting results. According to *ATR Soft*, the actual problem could easily be identified if the client contacted with them earlier and jointly investigated the situation.

Cerion Solutions also informed about problems with poor need identification. In an instance the company was developing an ERP solution for one of their client. Similar to the example of *ATR Soft*, they developed the ERP system according to the client's requirement. However when the software was implemented it failed to fulfill the client's needs due to poor performance. After careful investigation, *Cerion Solutions* found that the client failed to identify actual problem in their business process, and hence the requirement they submitted for the ERP system was incorrect. To describe the problem, the interviewee from *Cerion Solutions* stated that:

> *"...the experience was, we developed the software exactly according to the client's technical requirements, and then found that the client is not happy with the solution".*

Sole need identification by the client may not be able to point out the *actual* need that they have, and disengages the software developer firm from the very first step of the value creation process. Thus, it works as the first challenge against united effort to co-

create value between the service provider and the client and leads to sub-optimal value creation.

4.2.1.2 *Excluding End User Involvement in the Client Organization*

The second challenge against client participation to co-create value is labeled as e*xcluding end user involvement*. This participation challenge was not mentioned in any existing literature that the researcher reviewed on value co-creation or knowledge intensive business services. Rather the challenge was identified from analysis of empirical data. While two case companies – *Omnitele* and *Cerion Solutions Oy* – described this problem, the other four case companies did not mention about the same.

From the respondents' perspective, an organization is not only a systematic set of infrastructures, assets and procedures. One very crucial component is human beings who run the organization, and the second problem to co-create value between the case companies and their clients resulted from the inappropriate practice of excluding the end users' opinions when any purchasing decision is made in the client organization to use their service. At lease that was the case for *Omnitele* and *Cerion Solutions Oy*.

Excluding end users from the decision making process harms in two ways. *Cerion Solutions Oy'*s experience is, when a problem with the existing technologies or procedures arises, the end users are generally the people who notice and experience it. The same also goes for improvement scopes. From their technical and tacit knowledge to their peer group intra- and inter-organizational networks, frontline employees often notice improvement scopes earlier than their top management and are able to suggest the most appropriate service provider to perform the task. Hence excluding the end users during the selection process reduces the chance for selecting the optimum solution and service provider selection probabilities. And failing to do so means focusing on the incorrect issues and selecting the inappropriate software developer, which works as barriers against value co-creation.

According to *Omnitele*, the second problem that arises from end users' non-engagement is the psychological barrier against value co-creation. When the end users in the client organization find that a service provider has been selected without their opinion which is not the best available option in the market, they tend not to co-operate with the service provider, whether consciously or unconsciously. Figure 17 below shows the circumstances.
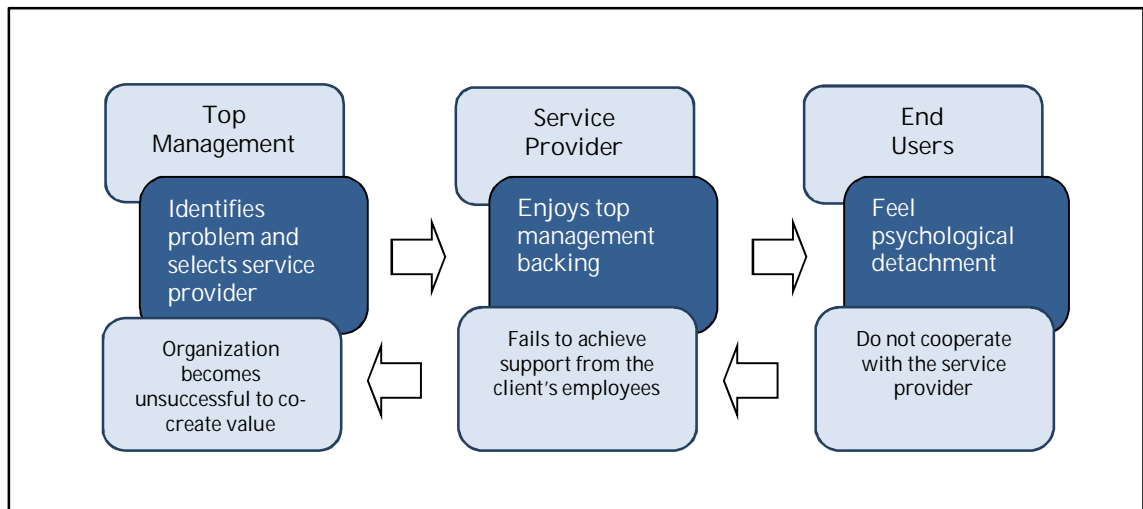
Figure 17: Co-creation challenge resulted from end-user exclusion

As shown in the figure above, empirical data from the case studies indicates that being selected and backed-up by the top management of the client organization, the service provider requested for support from client's front line employees to develop the software. But due to psychological barriers of those employees, the service provider may become unsuccessful to achieve cooperation from them and thus unable to co-create optimum value.

4.2.1.3 Internal Conflict in the Client Organization

Three of the six case companies reported *internal conflicts* in the client organization as a challenge against client participation. The other three case companies did not indicated anything about this issue. One interesting findings from the empirical data is that case companies which work directly with business clients and where the size of the client organizations were relatively bigger faced this challenge quiet frequently. Also in software development projects where the number of end users were relatively higher, or more than one department in the organization were involved, this problem appeared in a higher frequency than in projects where the software were being developed for an already automated business process or a single department or section of the client organization.

According to the case companies, internal conflicts in the client organization about a software development projects appear when *individual or group interests* are present *for or against* the project, and the interests can conflict. One interviewee provided an example of internal conflict which is described below.

The case company was developing one new and customized financial software for a client to upgrade their financial reporting performance. Acquiring and implementing the software might have different types of effects on the employees and departments of the organization – both positive and negative – and thus created conflict. First of all, disagreement occurred between the finance department and the stake-holders of the organization, as the later were concerned about the high cost of using the service of the case company.

Secondly, implementing a new financial system had probabilities of change in duties, responsibilities, workloads and position within the finance department. These possibilities created anxieties within the finance department employees and thus generated inter-departmental tensions. Another disagreement took place between the finance department and the IT department of the client organization, who had different views and opinions on several issues ranging from which PBSDS firm to select for developing the software to what kind of technology to use and which department should *own* the project.

According to the case companies, persons or department involved in the conflicting situations generally try to maximize their own interest rather than emphasizing on the organizational concern, which ultimately leads to the formation of barriers against their participation in the value co-creation process. As per the empirical data, internal conflicts may result in less or no cooperation from individuals or departments of the client organization whose participation are essential to advance the project. Moreover one case company had experienced that internal conflict worked as a source of wrong information and misleading supervision from the client's side, thus bringing the software development process to a standstill and ultimately resulting in sub-optimal value.

The problem of client conflict seems to be related with the preliminary framework. The framework shows requirements for client participation includes *(i) role clarity* and *(ii) preparation and cooperation.* If the roles of the client's employees and departments in the software development process are not clearly defined, probabilities of internal conflict could be maximum. Moreover, preparations about the project by the client generally include clear communication about the possible positive and negative (if any) effects of the project. Thus is proper preparations are not taken by the client it could lead the employees to speculate and become concerned about the possible outcomes. Hence, it seems that the experiences of the case companies about client's internal conflicts reflect the preliminary framework in this case.

4.2.1.4   *Lack of Importance and Communication Gap*

Expert and consultancy services by *Omnitele* or business software services by the five other case companies which are knowledge intensive and tailor-made are sophisticated projects and require high importance from the client. However one common problem against client participation which was identified by all six case companies was *lack of importance and communication gap.*

The first common problem which was confronted by all the six case companies was *lack of importance* from their client about the expert service or software development project. While the problem had of varying degrees of negative affects on their projects, the case companies agreed that higher importance results in higher concentration on the project from the clients side.

For *Qbric* and *ATR Soft*, this was not a vast challenge as the requirement of information and infrastructure access are minimal to perform their service, and thus they could develop their service with lower client participation. *Acentra* was also not very adversely affected from the non-importance issue, because as a small company they can work on *sub-contract* basis, where the actual project is being implemented by their contractor and the contractor's client. However this was not the situation for other three case companies, as they work directly with the ultimate clients and the nature of their value propositions require inputs from clients' *case specific capabilities* to co-create value. Thus if the clients did not participate in the project, it was difficult for them to develop and provide high quality expert and consultancy services. The problem was visible from the opinion of *Omnitele*'s respondent,

> *"The main problem is, I would say, people are busy. Everybody is busy in the client organizations, and they do not have enough time for us".*

The statement from *Cerion* and *Acentra* also showed same kind of client participation challenge in the case companies. Cerion described the situations as,

> *"Clients sometime expect that they assign us a project, and by the end of deadline we will give them a totally developed software for their use. In between, they do not need to check what is going on!"*

After further analysis of the empirical data a pattern was identified about *lack of importance*. First, the client assigns the project to the service provider and expects to get the developed software without any further involvement from their side. Then, with this temperament the management and the employees are not enthusiastic about the project. This results in less or no importance about the project from the client's side. Consequently people in the client organization do not feel the drive to participate in the project, thus creating impediment to co-create value.

Analysis of empirical data also suggested that *lack of importance* and formation of *communication gaps* are closely related. Three of the six companies mentioned

situations where due to lack of importance and/or enthusiasm about the project, clients did not communicate properly with the service provider, thus information needs from the case companies were not fulfilled. When those case companies did not receive the information they need to develop the software or received late, the quality of the developed software were not of expected level or the software were not developed in time.

The case companies also described about situation where *lack of importance* and *poor communication* also worked as catalyst for *poor feedback*. Hence after developing software when they implemented the same in the client organization, they neither received feedback about the performance of the software, nor did they receive any improvement suggestions. Thus empirical data shows that *lack of importance* and *communication gap* from their clients *hindered coordinated actions* in many situations, which were essential to create superior value due to the complex relationship structure and customized output nature of their software services.

4.2.1.5 *Change Resistance in the Client Organization*

Another interesting finding about client participation as experienced by three of the six case companies is *change resistance*. This problem was not mentioned in the theoretical frameworks.

Analysis of empirical data shows that, as per the experiences of case companies *resistance to change* by clients and their network members is more of a psychological issue. The problem can appear during the development, implementation or adaptation phase(s) of a business software project. As the software developed by the case companies are likely to make changes in process, productivity, working style or culture in the client organization, client's employees, customers, suppliers or other network members might resist to the development and implementation of the software. The reasons behind *change resistance* may include protection or enhancement of personal interests. In situations where the resistance is coming from outside the organization – normally from suppliers or clients – the resistance basically arises from protection of organizational interests. Figure 18 in the next page shows how changes can take place in a client organization due to development and implementation of a new professional business software, and how the resistances can occurs against those probable changes.
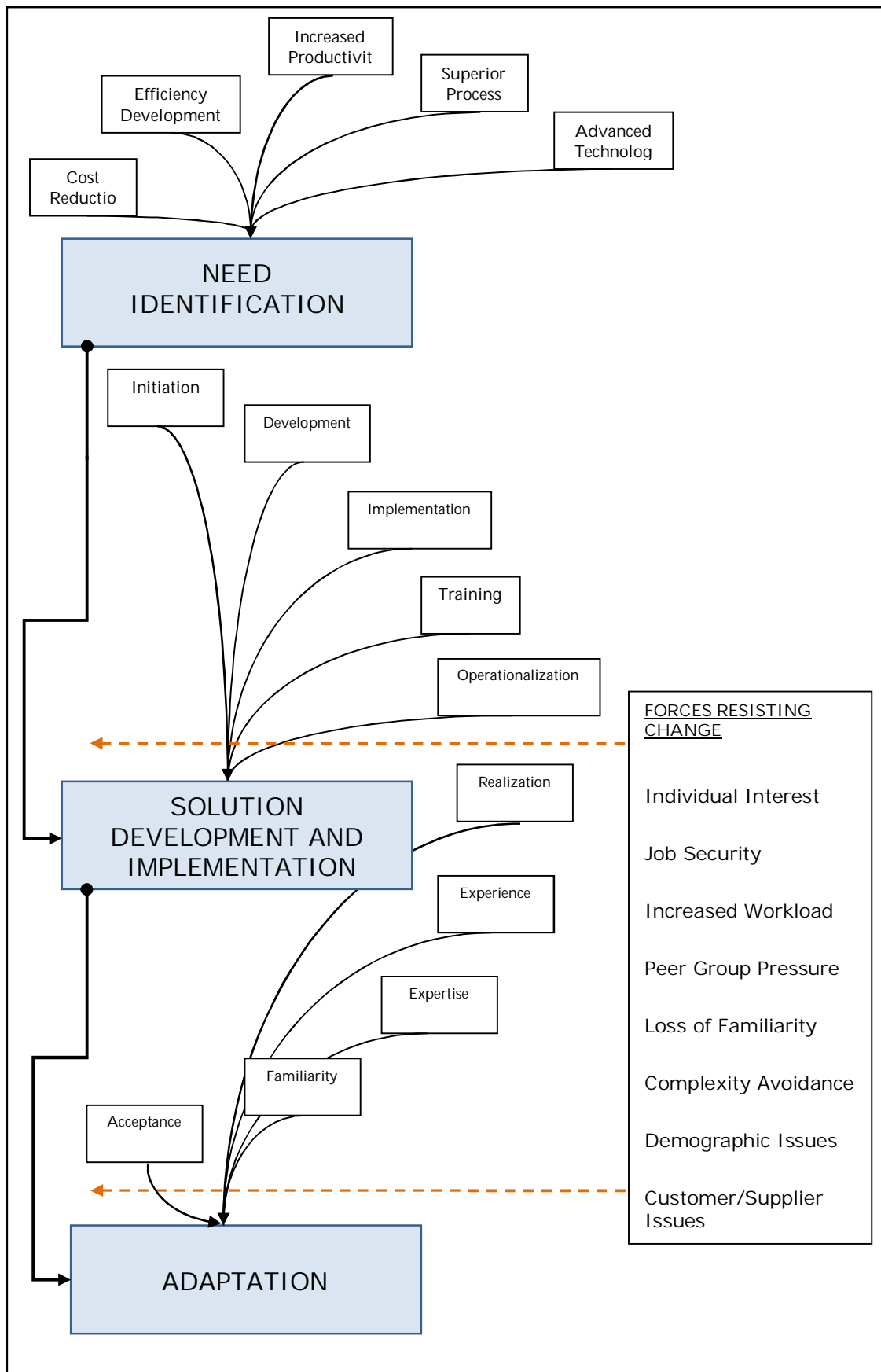
Figure 18: Change process and obstacles in professional business software development services.

Among the six case companies, *Obrick* and *ATR Soft* needs minimum amount of client input to develop their service. This might be the probable reason that they do not need to work in close cooperation with the client's employees, and therefore they did not notice or face this challenge. Similar type of reason can also be identified for *Acentra Oy*, which may operate as *third party developer* and hence does not make face-to-face contact with the *actual client*. Thus probability was low for them to experience this problem. However for *Sofokus*, though they extensively work with the ultimate client for their software projects, this problem of change resistance was not identified.

Nonetheless the other two case companies – *Cerion Solutions* and *Omnitele* – have faced this problem to vaying degrees. According to their experiences, the occurrence of change in the client organization can be broadly categorized into three phases.

As the figure shows, the first step is *need identification*, where the client feels the need of improvement. Need identification can be triggered by many reasons, for example necessity to reduce cost, develop efficiency, increase productivity, apply superior process concepts, introduce advanced technology etc. After the need for a change or improvement is identified, clients normally contact with the case companies in the second step, which also includes joint development and implementation of business software by the case companies and their clients.

Business processes of case companies show that this second step includes several steps: (i) *initiation of the project*, (ii) *solution development*, (iii) *solution implementation*, (iv) *management and stuff training* and (v) *operationalization* of the new business software. The third or the final step consists of acceptance of the new business software by client's employees/customers/suppliers/network members, getting *familiar* with it, generating *expertise,* acquiring *experience* and *realizing* the usefulness of the new software. As per the analysis of empirical data, figure 18 in the next page highlights the change process of a professional business software development project. The figure also indicates the change resistance obstacles during the change process.

In the figure, the orange lines depict resistance against changes. The resistance to change can emerge due to various reasons. Those reasons can include specific individual interest, fear of job loss, increased workload during training and implementation, pressure from the peer group like promotion or alteration of career paths, avoidance of complexity or demographic issues like difficulties faced by the elderly employees to adapt complex modern software, or the requirement of change in the business processes by the customers and/or suppliers of the client organization.

Case companies which indicated this problem of change resistance have found that it usually appear in the second and/or third step of the change process. Client's employees (or customers/suppliers/network members) resisted changes when new softwares were developed and implemented. The case companies also felt lack of support during the training and operationalization of the softwares.

For two of the six case companies, *resistance to change* was another major obstacle to get contribution from clients while developing softwares for them. As the users entities (employees, customers, suppliers etc.) of the client organization resisted the changes, lack of cooperation and participation from the clients' side were strongly felt by these case companies, which worked as obstacle to co-create value.

4.2.2 Challenges from the Service Providers' Side

Similar to the challenges from the client's side, the case studies showed that various incidents of *failure to facilitate client participation* can be identified from the service provider's side as well. Empirical data shows that for most of the time the failures were not explicitly identified by the case companies. Rather they mentioned of different circumstances where their action created obstacle against participation from their clients. Those incidents are categories according to similarities and are presented below. *Similar to 'challenges from the clients' side (Sub-chapter 4.2.1)', the findings here are also presented in sequential order, i.e. as they arise along with the advancement of value co-creation process.*

4.2.2.1 Perception regarding client participation

The first challenge against client participation by the case companies is their perception about the issue. Analysis of the empirical data clearly shows that most of the case companies did not put sufficient emphasis on client participation. *This finding is a sharp contradiction against the earlier findings of this study.* That is, when asked about specific projects and situations, most case companies identified and pointed out the important contributions that clients made in their value co-creation process. However when asked about the overall importance of client participation in their projects, case companies did not explicitly recognize it as an important factor to develop softwares. One of the interviewees replied about client participation as:

> *"Well, I think this is not very important and we have other important things to do. Like sales, finance or accounting of the company..."*

This finding was also contradicting with the theories and frameworks of value co-creation. The theories and framework stretch the importance of client participation to optimum. According to existing literature, probabilities are high that value created without client participation or contribution from the client would be sub-optimal. However empirical data shows that the case companies do not unambiguously recognize

the importance of client participation as high and consider that they are able to create optimum value without contributions from clients.

As per the theoretical framework, sometimes *client education and training* is needed to be provided by the service provider to enhance the clients' participation capability. The service providers should also arrange these *client educations* willingly, as trained and educated clients show better performance in the long run, and high performing clients could be a source of competitive advance for the service providers. However, majority portion of the case companies considered client training and education as extra costs for their organization, and from that consideration, they were not willing to provide training and education for their client. As one of the interviewees said:

> *"Yes, of course we can arrange trainings for them and try to educate them. But only if they are ready to pay for that!"*

Further analysis of empirical data suggests that, failure to identify the importance of client participation resulted in *less facilitation*, *poor information sharing* and *communication gap* with the client. It also leaded *to loose long-term relationship* with the client and lower performance of the software developed compared to the desired level of expectation.

4.2.2.2 Unnecessarily Advanced Solution

The second challenge against client participation in the case companies rose from using too advanced technology in their solution. While it was not a major challenge for companies which work on sub-contracts or which offerings do not need high degree of client participation, the other three of the six case companies identified this as a major challenge.

When developing new professional business softwares, people in the later three case companies seem to use the latest available technologies and advancement in their softwares. They also try to make cutting edge feature available. According to the experiences of these case companies, straightforward application of latest advancement and technology can result in difficulties for the client to employ and use them.

Tailor-made professional business softwares are not self-sufficient systems by themselves. Rather they depend on number of other elements, for example end-user familiarity, hardware platform, business processes, customer and supplier network, associated applications and so forth. Sometimes advanced features and technologies developed by some of the case companies were considered as *too advanced* by the end-users in the client organization. These softwares can also become complex for technical integrations. Hence it becomes demanding for the clients to effectively use the software and thus considered by the client communities as *fancy prototypes* or *showcase of*

advanced technology rather than a practical tool that they can use. As one of the respondents said in the interview:

> *"…because sometimes we offer highly advanced technical solutions which are not needed. They want to go from place A to place B. We offered them a Ferrari, when actually they need a bicycle for that purpose!"*

Experience of some of the case companies shows that, *too advanced solutions* fail to generate interests among the clients. The clients also try to avoid those solutions due to the fear of *higher cost*, *longer training requirement* and *extra complexity*. Subsequently that *avoidance mentality* leads to client's non-participation in the value co-creation process.

4.2.2.3   Unfeasible Value Proposition by the Service Provider

Related with the second challenge of too advanced software solution, the third challenge against client participation is the problem of *unfeasible value proposition* developed by the service provider. While the challenge was explicitly mentioned by one of the case companies, the five other companies did not mention anything about this challenge.

The case company which mentioned the challenged had experience that the value proposition which they developed were not considered feasible by their clients in practical business situations despite their advanced functionality. Hence it failed to generate importance and significance in the client organization to use the software to its maximum. An example of the situation received from the case company is mentioned below.

The case company developed a software to keep record of organizational meetings at operational management level, convey the minutes and decisions to top management, and get their direction about the issue through the same system. In a normal circumstance, participants of a meeting simply write down the important points and then convey the information to the management – orally or by electronic mail. However implementing the new software means, instead of simply writing down the main points of the meeting and sending those via an e-mail to the top management, the employees presented in the meeting had to *start the software and log-in > provide inputs in different sections of the database > organize the inputs > inform the management that the meeting minutes are available in the system for their consideration*. All these are efforts additional to the *costly*, *complex* and *time consuming* nature of implementing a sophisticated business software.

The case company failed to create attractiveness to the clients with this type of value proposition. In situations when they were able to sale the software to some clients,

general users in the client organization almost resisted using the software. About the circumstances, interviewee from the case company commented:

> *"The nice, glorious features...., they don't understand them, they don't hear them".*

Thus it seems from the empirical data that if the practicality and efficacy of a value proposition is not visible and understandable to the clients, chances are slim that clients will participate in the value co-creation process.

4.2.2.4 Transformation of Knowledge into Application

For the case companies which serve directly to the ultimate client, and for whom higher client participation is required to develop softwares, the entire software development project can be divided into two broad stages. At the *first stage*, these case companies send their consultants to the client organization to find out the problems and possible areas of improvement to develop software accordingly. Backed up with their conceptual capabilities and technical skills on different professional fields (e.g. law, accounting or architecture), those consultants identify problems to solve and processes to improve in the client organization and develop theoretical solutions to overcome those challenges.

In the *second stage*, people with technical backgrounds develop software based on the theoretical solution. It was observed that for two of the six case companies which follow this procedure, converting theoretical knowledge into applications were sometimes challenging. In other words, developing software according to theoretical solutions becomes difficult for them in some cases, which ultimately leads to problem against client participation.

As understood from empirical data, due to the different types of conceptualizations and capabilities, communication impediment can arise between consultants and software people within the service providing firm. As a result, the software people fail to develop solutions according to the message conveyed to the client organization by their professional consultants, which generate dissatisfaction to the client.

Subsequently, when the client observes a gap between solution advised by the consultants and the software being developed by the technical people, the clients are not very willing to participate in the value co-creation process due to the dissatisfaction generated. Thus in some situations, the challenge of transforming *professional knowledge based theoretical solution* into *operational business software* works as another challenge against client participation to co-create value.

4.2.3   *Third Party Challenges*

When analyzing empirical data, pattern of one *unique* challenge to co-create value emerged from repetitive data analysis which was not present in the theoretical framework or any other literature reviewed for this study. This challenge which was *neither created by the case companies nor by their clients* is labeled as *third party challenges* in this study.

During interviews, all the six case companies agreed that business clients normally depend on a number of suppliers or service providers to conduct their business. Clients' business process, rationale and output are very much dependent on the complex and integrated functionality of those suppliers, with whom they create multifaceted networks. *Third party challenges* arise from these suppliers, the problem that three case companies of this study have explicitly faced.

Third party challenges appear when to develop softwares contribution from client is *not sufficient* to co-crate value. Rather supports from client's supplier(s) are also needed to develop the software. Three case companies of this study had experiences of receiving non-cooperative behavior from the client's suppliers, which worked as obstacle against quality software development. Figure 20 below illustrates the situation.
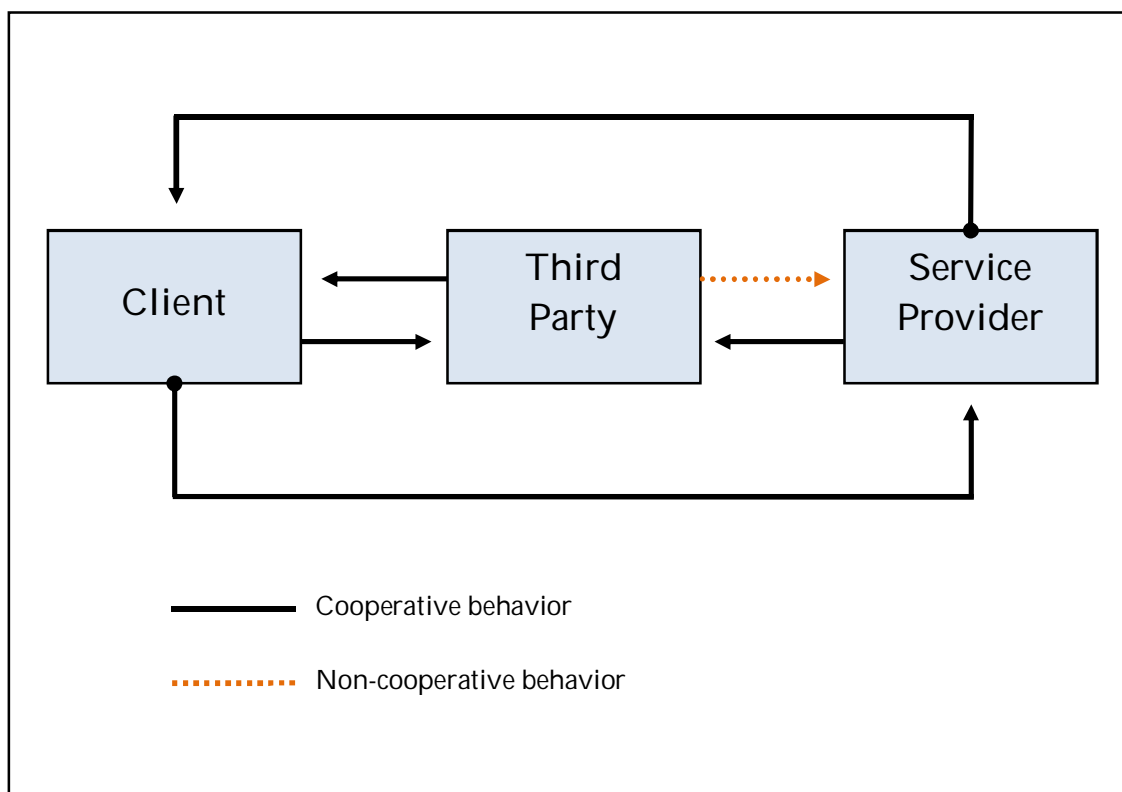
Figure 19: Shortage of cooperation from third party to co-create value.

In this figure, there are three entities – *the client*, *the service provider* (case company) and the *client's supplier (the third party)*. The *third party* is positioned between the *client* and the *case company* as their cooperation is essential to develop the software. Each arrow represents information and infrastructure access, plus cooperation between the entities. As shown in the figure, *service providers* gained sufficient accessibility and cooperation from their *clients*. Good relationship also existed between the *clients* and their *suppliers (third parties)*. However, as depicted by the dotted and orange colored line between the *service provider* and the *third party*, there have been situations where *service providers* faced problems of *non-cooperation* from *third parties*. The *third party* can shrink information, deny access to their infrastructures or refuse to cooperate. Example received from one case company regarding the situation is described below.

The case company was developing software for a network service provider (a mobile operator). The objective of developing the software was to identify the loopholes in the mobile operator's traffic management system (the combination of hardware and software which handles traffic, i.e. voice and data). According to their business process settings, the mobile operator was dependent on another supplier to provide and maintain their network infrastructure. To develop the software – to find out the loopholes in their network management process and create software to improve it – access to information and infrastructure was needed by the *service provider* which were owned by the *client's supplier (the third party)*.

However, when *the service provider (the case company)* tried to examine the network software which was the first step of the improvement project, the *client's supplier* considered it as a threat towards their businesses. The *supplier* considered that if any problem was identified by the case company, the *client* might judge the problem as a fault or negligence of the *supplier* and they might face negative business consequences. Hence to avoid the risk the *supplier* (third party) raised obstacles to access of information and infrastructure under their control, and created barrier to co-create value.

4.3   Solutions to Overcome the Challenges

In this section, based on the empirical data probable *solutions to overcome the client participation challenges* are described. As categorized in the *client participation challenges* sections, finding in this section are also presented in the same manner: *solution for the clients*, *solutions for the service providers* (the case companies), and *solutions to overcome the third party challenges*.

4.3.1   Solutions for the Clients

4.3.1.1 Involvement from client's top management

Five of the six case companies feel that, involvement from the client's top management can create positive effects on client participation. Only for the case company *Qbrick* – where client participation requirement is low for their value proposition – thinks that involvement from client's top management does not enhance the quality of the software that they develop, and hence they do not consider it as necessary. However, all the other five case companies consider top management involvement as a crucial factor to ensure client participation in the value co-creation process. If the responses from these five companies are summarized, the combined views suggest that top management's responsibilities does not end with selecting a business software developer/consultancy (PBSDS firm) and forming software development/consultancy/expert service contract with them. Rather, their assistance and support are needed throughout the software development or value co-creation process.

As the empirical data shows, involvement from the client's top management helps in several ways. First, it supports the service provider (PBSDS firm) to gain relatively *easy access* to information and infrastructure owned by the client which are necessary to develop the software (co-create the value). Second, it works as an indication about the *importance* of the software development project to the client's employees. Third, it also provides *moral boost* to the service provider and at the same time, send them a clear message that highest level of service is expected from them by the client. Lastly, and most important of all, it helps to deal with the *human factors* (motivation, willingness, fatigue, workload, capability etc.) in the client organization.

According to the opinions of the case companies, client's employees hold real life problem descriptions, are in direct contact with the client's customers, can make accurate need assessments and provide feedbacks to develop and improve the software. Their involvement is also undeniable in the implementation phase. Moreover, normally they are the people who will use the software on a day to day basis.

Client's top management can motivate employees about the project and create assurance in their mindscape against any perceived threat from software development project. In that way, the case companies feel that client's employees can be motivated to share their knowledge and experience with the service provider to co-create value.

Top management's involvement is also very important during the implementation phase of a newly developed software. Three case companies provided same type of opinion that to ensure the software is implemented and utilized in their organization,

client's management needs to undertake active roles. As one of the interviewee of this research commented:

> *"The top management in the client organization needs to implement. They need to take it to the end-users. Because that is something we (the service provider) cannot do".*

Expected role of the client's top management to ensure client participation is illustrated in the below figure.
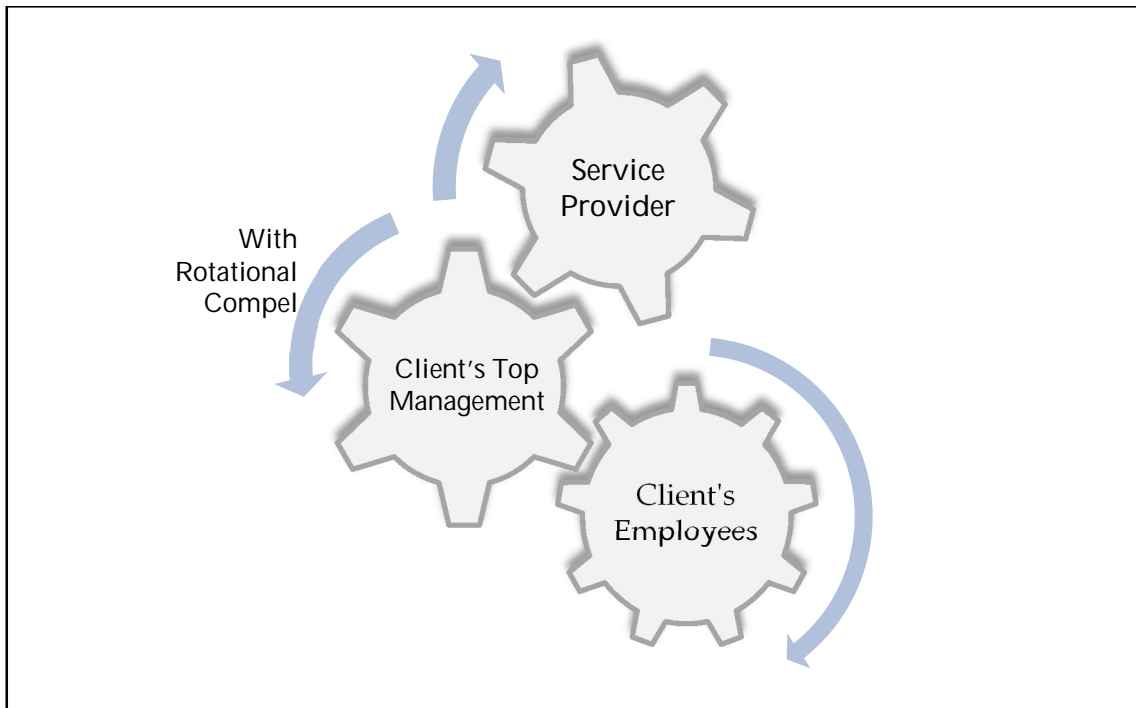
Figure 20: Involvement of client's top management to ensure client participation.

As illustrated in the figure, empirical data shows that in ideal situations, case companies expect client's top management to work as a gear with rotational force between them and the client's employees. Three case companies provided information that in projects where client's top management were involved throughout the length of the project, they received better contribution from the client's employees and the quality of the softwares they developed were better compared to the situation where client's top management were not involved.

In their seminal article, Bettencourt et al. (2002, 112) proposed '*Advocacy*' by a vital person in the client organization as an important measure to ensure client participation. They stated that:

> *"...successful projects require internal relationship advocacy by the client project lead who is responsible for acting as an internal proponent for the project, "selling" key internal constituents on the project's merits..."*

However when discussed with the case companies, four of them provided opinions that '*advocacy*' and '*selling*' might not be the most effective. '*Advocacy*' and '*selling*' the project to the employees is a '*pull technique*' (motivating employees by drawing their attention) to engage people in the value creation process. Conversely, sometimes '*push technique*' (obliging employees by approaching them) is also needed to be employed by the client, meaning that imposing mandatory requirement to the employees to participate in the value creation process. Example from a case company is provided below to illustrate the argument.

A service provider has developed a new documentation[14] software for a multinational shipping company. Big multinational shipping companies normally do business across all five continents, with offices in more than hundred countries[15]. All of them also possess their existing documentation software. Hence when a new documentation software is developed – with the objective to maintain auto-generated cargo damage claims – It needs to be implemented across all the offices around the globe.

In a situation like this it seems to be very difficult to create '*advocates*' in every offices who will '*sell*' the new software to the employees, so that they will help to develop and implement the software and intend to use it instead of their existing documentation software with which they are familiar, or even expert. Probability is low that the '*pull*' technique will assist to ensure client participation in this kind of situation. Rather, according to the case company, experience shows '*push*' technique will assist to ensure client participation – that the client's top management make it mandatory for every office to assist in developing and implementing the software and using it.

4.3.1.2 Internal Conflict Management

Internal conflict in the client organization is another challenges against client's participation in the value creation process and thus to co-create value, as those conflicts result in negative concerns and consequences. Empirical data shows that internal

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[14] Ownership documentation: Creating *bill of lading.*

[15] For more information, check the official web-sites of the largest multinational shipping companies (Ranked here by capacity): 1. Maersk Line (Denmark), 2. MSC (Switzerland), 3. CMA CGM Group (France), 4. Evergreen Line (Taiwan), 5. APL (Singapore), 6. COSCO (China), 7. Hapag-Lloyd Group (Germany), 8. CSCL (China), 9. Hanjin (Rep. of Korea) and 10. NYK (Japan). Source: UNCTAD 2010, 33.

conflicts which are harmful to client participation can be solved by using two methods: (i) *open information sharing by the service provider* and (ii) *involvement of client's top management (similar to the earlier solution).* The concepts are shown in the figure 21 below.
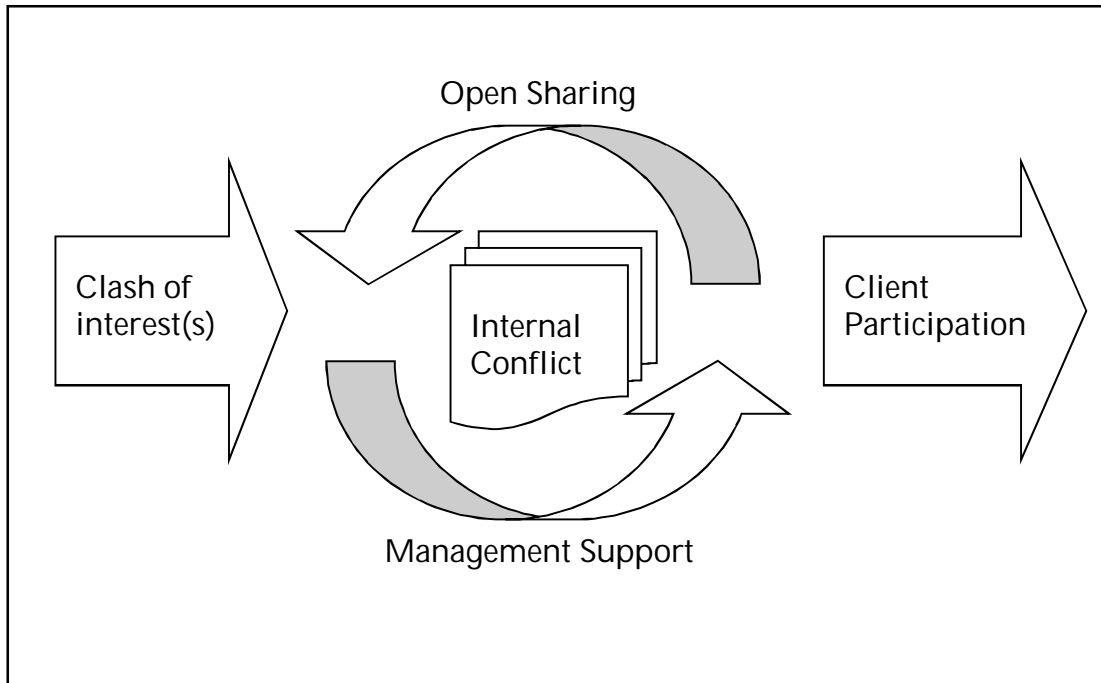
Figure 21: Conflict management process to ensure client participation.

Three of the six case companies provided data about *open information sharing by the service provider*, while three other case companies supported the concept of *involvement of client's top management*. For *open information sharing,* the service provider identifies the areas of conflict in the client organization without distorting the events. After careful identification, the service provider should communicate openly with the conflicting parties without being identified as disregarding limit of involvement in the client organization.

The *open information sharing* needs to include the technical and non-technical details of the software, its possible positive effects and how it can add value to the individual(s) or department(s) in concern. This way, misunderstanding can be eliminated and motivation can be generated among those conflicting individuals or departments to participate in the value co-creation process. This solution generated from empirical data to ensure client participation exactly reflects existing theories of value co-creation, which put extensive importance on communication and information exchange between the client and the service provider.

However, three of the case companies also suggested that sometimes the efforts laid by the service provider for conflict resolution are not enough, especially in situations

where individual interests are involved. In those circumstances the best option available for the service provider is to involve the management body of the client organization by notifying them about the issue and request for their assistance. The client's management needs to be informed about the conflict, the involved parties and the possible negative consequences that the conflict can create. Accordingly, as per the empirical data, it is time for the management to appear in the scenario and arrange the disagreeing entities to resolve the conflict and participate in the value co-creation process.

4.3.1.3 Organizational Change Management

Empirical data suggests that in majority of software development/consultancy/expert service projects which have been completed by the case companies, the objectives were to make improvements in client organizations. The improvements may take place in many forms: *productivity increase, ease of work, dependable information system, increased efficiency* and *technological advantage* etc. Improvement also means '*changes'* in the client organization.

When a tailored professional business software is deployed in a client firm, the general effect is that the existing system need to be closed, if any available. It can also mean that there will be change in technology, business processes and working procedures, the decision making system and in the longer term – the organizational culture. According to the opinions of four out of six case companies – Acentra, Cerion, Omnitele and Sofokus – these changes need to be handled effectively in order to achieve the maximum from the newly developed software. Interesting to note here is, case companies which generally work directly with the end clients and which require higher degree of client participation to develop and implement softwares provided this information, whereas the other two case companies where client participation requirements are minimum or business activities generally not include contact with the end-client did not provide any information about the issue.

Figure 22 in the next page highlights suggested change management process in the client organization. Here, it is important to note that some client organizations form temporary '*change management teams'* to manage the changes, which is considered as praised practice by the case companies.

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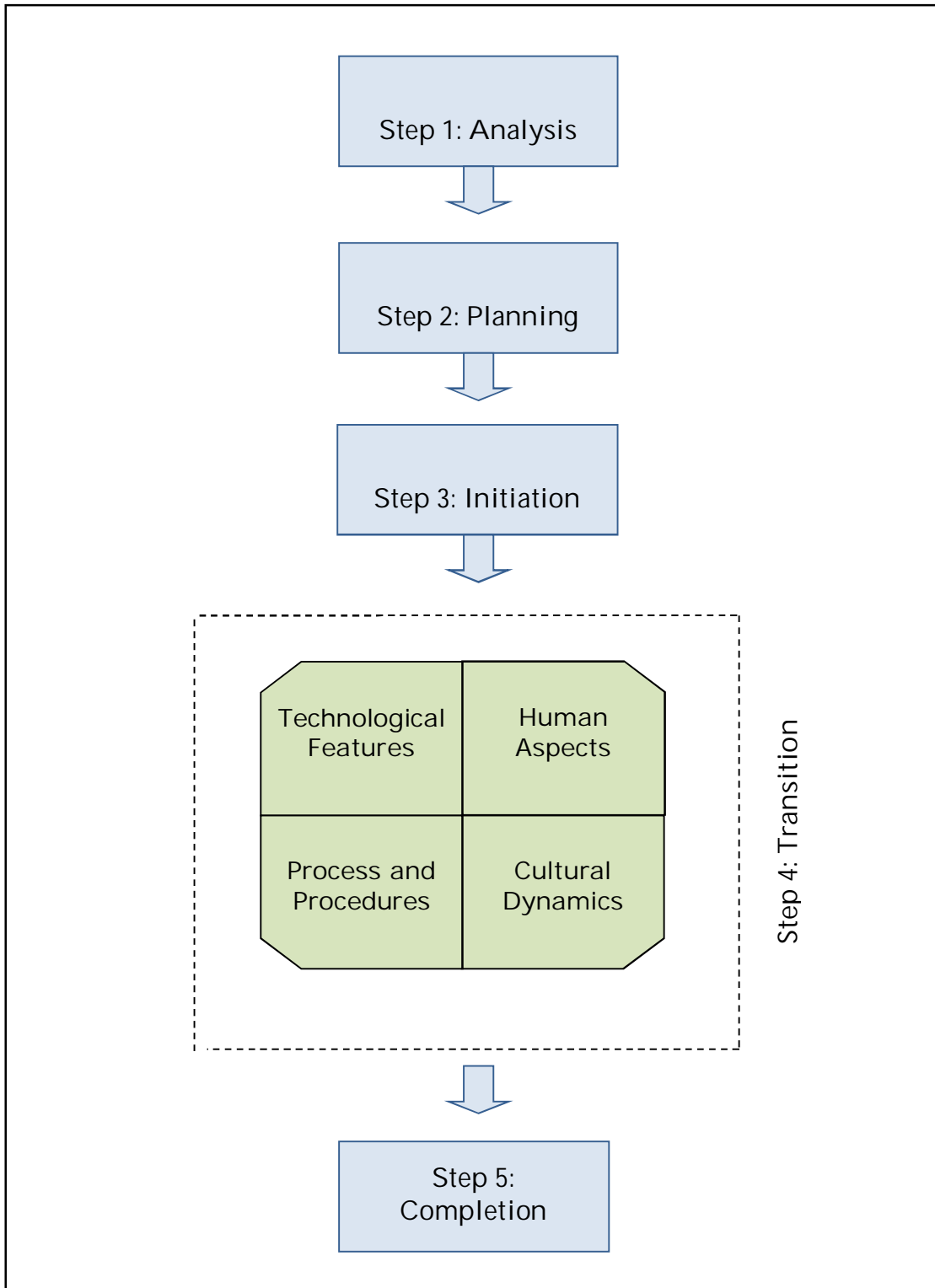Figure 22: Change management process to ensure client participation.

Attentive *change management* in the client organization should start with the first step – analysis of the scenario. Analyses are generally conducted by the client, but the service providers can also make important contribution to the process. The client should analyze the possible positive and negative outcomes, whereas based on their technical

knowledge and previous experiences the service provider can provide important information about the likely consequences of the implementation.

After careful analysis, the client needs to plan about how the changes will take place. This step may include technology alignment, changes in employee set-up, taking care of the emotional factors, planning new ways of doing work and handle any possible changes in the organizational culture. In the third step of the change management process the actual actions should be initiated, which generally happens in the implementation phase.

The most crucial phase of change management is the fourth step, where the actual transformation will take place. Transformation can be divided into four major elements: (i) *technological features,* (ii) *human aspects,* (iii) *process and procedures and* (iv) *cultural dynamics. Technological features* include moderation and upgradation of the computer hardwares, peripheral devices, inter-organizational networks and external conncectivity. Changes in *human aspects* contain handling the motivation, mentality and temperament of the employees associated with the implementation of the software. The third element – *process and procedures* – includes managing the adjustment of the process and procedural changes resulting from the project. The fourth and the final element – *cultural dynamics* – denotels to reducing the effect on the organizational cultural that the software may create or driving the culture in a progressive mode. All these four elements require effort and careful handling form the client's management or the designated change management team.

Previous experiences of the case companies show that after the formal *transformation* (step 4) is complete, it may still require some time for the client to adopt the changes. Management of the client organization or the change management team should continue to be involved in the change process until the adaptation is finally completed, as the deficiency of adaptation might cause inefficiencies and ineffectiveness. It seems from the empirical data that *proper change management can increase client participation*, as it renovates the associated aspects related to the advancement of the organization and assists the client to involvement in the value co-creation process.

4.3.1.4 *Information Sharing with the Service Provider and One Point of Contact for Them*

Theoretical framework shows that *knowledge and information* are integral parts of knowledge intensive business services. In these businesses, the client owns a signification portion of required knowledge which is essential to create the value. For this reason, information sharing between the client and the service provider is vital to

co-create value. This understanding from the theoretical framework was also supported by the case companies.

From analysis of empirical data of this study, a pattern of *knowledge and information sharing* can be detected between the case companies and their clients. The first step is to identify the need of the client. It also includes examining the current infrastructure & employee capabilities and detecting need of infrastructure development. Subsequently, in the software development phase, improvement suggestions and regular feedbacks from the client is crucial to develop the best possible software. Next in the implementation phase, regular feedbacks and status reports are necessary for smooth implementation and operationalization of the software. Flawless and obstacle-free information sharing is essential in all these phases. Any bottleneck against the free flow of knowledge and information works as hindrance against client's participation in the software development and implementation process. Hence case companies suggested that if the client can ensure information and knowledge sharing with them, it helps the client to take part in the value creation process.

Empirical data also shows that presence of *systematic information channel* between the service provider and the client increases information sharing. Because if there is no *information channel* between the case companies and their clients, the service providers need to contact with larger number of persons in the client organization for the required information. In consequence every time they need any data, it is necessary to find out the correct information holder first, approach to him or her and then only collect the data. All these requires time and resources, which the service provider might reluctant to incur as it involves costs.

Four out of six case companies have experiences that when clients establish formal information channel and assign '*single-point-of-contact*' to communicate with them, it affluences information and knowledge sharing. Otherwise, as one of the interviewee referred to the situation:

> *"It was frustrating that we had to contact with many people whenever we needed any information. Everybody was busy. It takes time to get their time, and then we found that he or she is not the correct person!"*

The '*single-point-of-contact*' works as the contact person between the client and the service provider. When any information '*owned*' by the client is needed, the service provider (PBSDS firm) can contact with the designated person, who will then collect and provide the data or point out the information holder from whom the knowledge or information can be received. However, as identified from the feedback of one case company, the drawback of this process is it adds an extra layer of communication between the service provider and the information source in the client organization, sometimes which can cause delay to the information exchange. But on the other hand,

it seems that easier access, time savings and cost savings results from this technique offsets the negatives by far in most of the cases.

This solution to ensure client participation in the case companies is parallel with the preliminary framework. As the framework shows, open communication from the client plays a crucial role for their participation in the value co-creation process. Empirical data of this study and the analysis based on the case companies support this theoretical recommendation.

4.3.2   Solutions for the Service Providers

4.3.2.1   Joint Need Assessment and Solution Formulation

Sub-chapter 4.2.1.1 (poor need assessment) shows that how excluding service provider from the need assement process creates the first challenge against client participation.

To overcome this challenge, the process of *need assessment* requires active service provider engagement. Together with the client, the case companies should examine the business processes of the client or possibilities of improvement, and determine how the solution software will be developed as shown in the figure 23 in the next page.
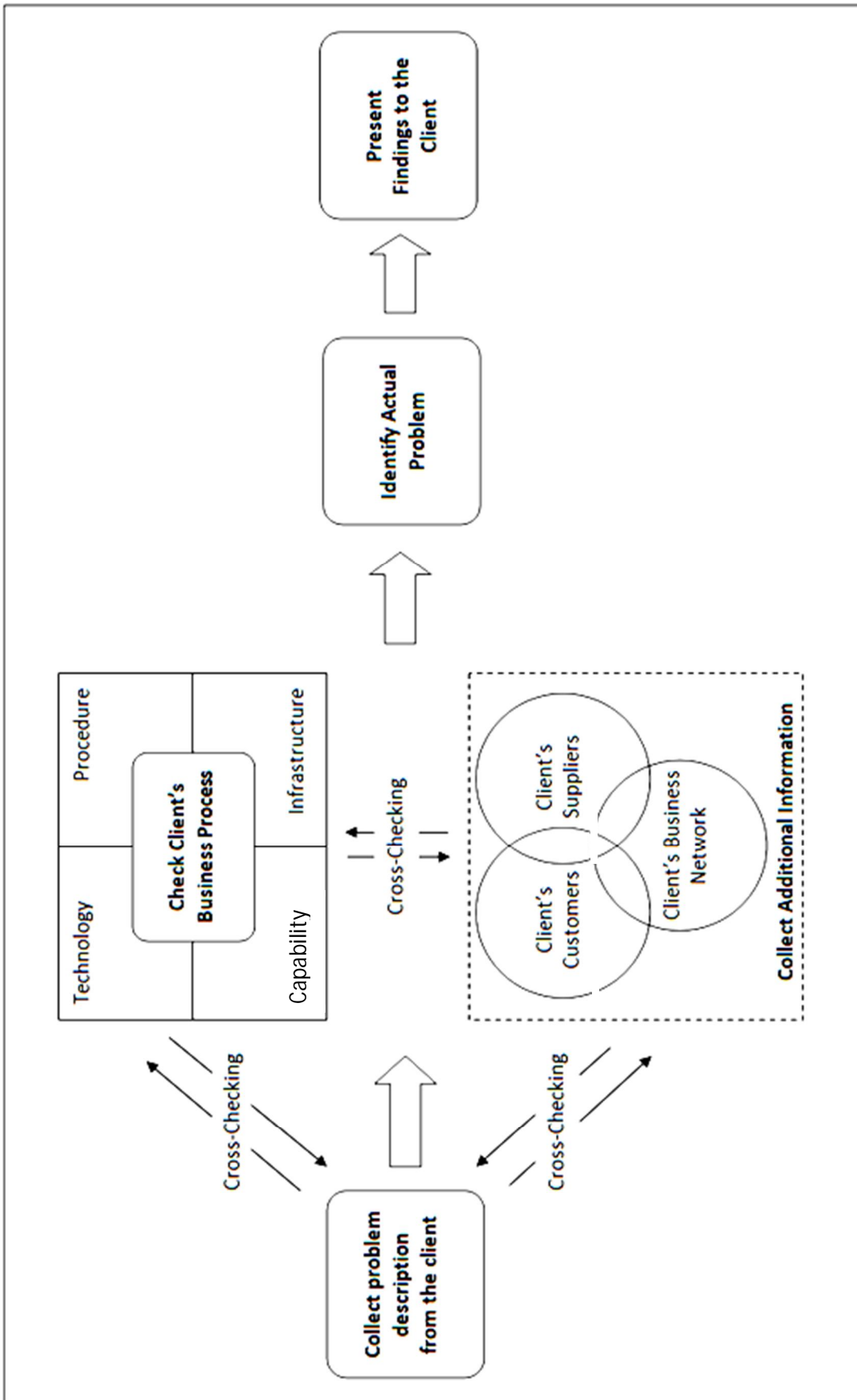
Figure 23: Suggested need assessment procedure.

Examples of beneficial *need assessment*s from the case companies show that the process start with requesting the client about their problem description. In the next step, the client is inquired about the existing challenges they are facing, the improvements they want to make or the technological advancement they want to employ. At the same time, the service provider should also accumulate additional information from the client's customers, service providers and other network entities that can provide valuable pieces of information about the situation.

Following data accumulation is complete, the service provider should cross-check each of the three sets of data (*problem description, business process* and *additional information*) against the two other sets and carefully assess the same. This process should result in finding the *actual problem* lays in the client organization that is to be solved. Then the findings should be conveyed to the client for their approval, that this is the real problem need to be solved.

After finding the root cause the service provider and the client should jointly formulate the solution and develop software accordingly. Hence, service provider's *value proposition* can be evaluated and combined against clien's *case specific capabilities* to determine the best-fitting solution. Following this procedure, the software developed will satisfy the actual need of the client. It should also assist to ensure client participation as the client will perceive the software more useful and necessary during the development and implementation phases, and will aspire to engage in the value co-creation process.

4.3.2.2 Capability Assessment of the Client

According to the case studies, incidents where initiative from the service provider facilitated client participation show *capability assessment* can help to expedite the process. For the case companies, as their clients hold a significant amount of knowledge which is necessary to develop business softwares, the service providers need to recognize the ability of the client that how much they can help in the software development process. The service provider also needs to know client's ability to use the software efficiently to utilize the maximum value from it. Knowing the clients capability helps the service provider to develop software where client can contribute in the software development process. Moreover, software developed according to client capability affluences the process of implementing and using the software. Below is a situation mentioned from a case company which is an example of the concept.

The case company was developing an advanced accounting software for a business client. Developing the software would require input from the client's accounting

department. Implementation phase also needed client's support and after implementation, clients accounting department would be the ultimate user of the software. So, if the actual ability of the client's accounting department was not known by the service provider, the newly developed software could be far from useful.

To avoid a problem like that, the case company did thorough analysis on the client's capability. The analysis included the academic and professional qualification and experiences of the accountants, the current accounting practices and softwares used, their advantaged and drawbacks as perceived by the accountants as well as the infrastructure, namely the computing hardware, servers, internal and external computer network etc. Through this analysis, the case company was able to determine the actual ability of the client and developed software accordingly. Hence the softwere was useful to fulfill the actual needs of the client. It will also abetted to achieve client participation in the value co-creation process, as the inputs required from the client to develop and use the software were within their capability, and thus they could provide those inputs generously and with confidence.

4.3.2.3 *Setting Correct Expectations with Clients*

Another valuable suggestion to ensure client participation called as '*setting correct expectations*' was acknowledged from *Acentra Oy*. To ensure client participation, interviewee from the organization suggested communicating to the employees of the client organization that what has been agreed between the service provider and the client's top management about the task distribution of the project. The solution seems to be applicable to other case companies as well.

It was found from the case studies that as a common business practice, sometimes the case companies try to be generous to their clients which is considered as a superior pertain, but those generosities can result in over expectation from the client. On the other hand, if the contract details between the case companies and their clients are well-communicated, the client's employees will understand (in positive sense) that what has been agreed between the two parties, what can be expected from the service provider and what they should contribute. Once the client understands and recognizes that what is expected from them in the project, they tend to fulfill those expectations by putting appropriate effort and contribution to the project, thus participating in the value co-creation process. Example below provided by *Sofokus Oy* seems to reflect the solution provided by *Acentra Oy*.

For the example, it is considered that a service provider is developing a web-based application for a client (a retail chain) to sell their products on-line. The service provider will develop the web-based application and will also develop additional features to

handle their online transactions. Nevertheless, it is assumed that the retailer's existing database contains the product descriptions, photos and price details of all the products the retailer wants to sell on-line.

However, after developing the web-based retailing software and connecting the same with the client's existing database, it was found that among the one thousand products the retailer wants to sale on-line, only seven hundred are updated in their current database. The missing data means that the client's customers will be able to find only seven hundred products in the retailer's web-site when they want to make on-line purchases, and the ultimate value of the web-based application developed by the service provider will be sub-optimal.

In situations like this, if the client expects that the service provider will update their database for the three hundred products that are missing, it will involve significant amount of time, resource and manpower from the service provider, resulting in high costs for them. Hence, if the expectations are set correctly between the service provider and their client about distribution of duties and responsibilities, the client will not expect or push the service provider to update their database for free. Rather they will make the necessary updates by themselves or through the assistance of the database developer. Thus the client will contribute to the project, and their participation in the value co-creation process will be ensured.

4.3.2.4   Putting Less Emphasis on Technological Issues

Case studies show that for many business clients, one noticeable practice when communicating with the service provider is to avoid technical issues. Rather they tend to focus on business issues. From the case studies it seems that service providers which also adopt the same communication approach succeed to achieve better client participation.

The case studies show that when the case companies were serving a client also engaged in technology-based business, technical terms, jargons and issues can be of no bar. However this was not the case when they have served non-technology oriented organizations like universities, public service organizations or other businesses. Rather, too much emphasis on technology hinders client's participation in the value co-creation process, especially from those clients with non-technology emphasis.

Therefore when serving a client whose primary activity is not based on technology, the case studies suggest that focus on business details and improvement scopes rather than technical issues becomes successful to receive higher contribution from the client during the value co-creation process. At least, the idea seems to be applicable for non-technology oriented clients.

The case studies also give the impression that, this method is relatively more beneficial when communication is being made between the service provider and the top management of the client organization. The top managements are not interested about the technical details of the software. Rather they are concerned about the business problem they have and how the problem can be solved. Hence solution details in business terms draw their attention better rather than the technical details to develop and implement the software. However, it seems that the solution is not universal throughout the client organization as the end-user level employees and the IT stuffs can communicate with the service provider competently over technical issues.

However, at least when communicating with the top management of a non-technology client, avoiding technical details and emphasizing on business issues can achieve more collaboration from the clients and help to generate client participation in the value co-creation process.

4.3.2.5 *Allocating Proper Importance to Client Participation*

As discussed in the service providers' challenges section, many of the case companies do not explicitly identify the *client participation issue* as of high importance. Moreover, it seems that for some case companies client participation can have the impression of *complexity* and *extra cost*. Nevertheless, when the interview transcriptions of the case studies were repeatedly analyzed, it became clearer that the conceptions are incorrect, as the interviewees themselves have identified many individual incidents where participation from the client helped them to develop better software.

The case studies show that clients' participation in the software development process yields in co-creation of better value. Clients own a vital portion of the total information and capabilities which are essential to develop softwares. Additionally, engaging clients and treating them like partners helps to form long-term relationships with them. Also the actual value of any software is realized in the way the software is utilized.

Therefore for a well-developed professional business software, it will not yield any value if it is not used suitably and appropriately by the client. Thus when the case companies provided training and education to their clients and shared knowledge and information with them, the clients have shown better performance in utilizing the software and realizing superior value from it. Theortical framework of this study also suggests that, high performing clients can be a source of competitive advantage. So, it can be assumed that the case companies should recognize the importance of the client's participation in the value co-creation process, and put efforts from their side to ensure the same.

During the case studies, *Cerion Solutions Oy* provided information about a beneficial practice to increase client participation during the implementation phase. That is, in some cases they implant one person into the client organization as a '*source of support*'. The implanted person supervises the implementation, checks everyday challenges the client's employees are facing to use the software and solve, and answer questions that the client's employees may have about the various aspects of the software. The practice not only smooths the implementation of the newly developed professional business software, but also ensures client participation as they will be more comfortable to implement and use the software.

This finding to facilitate client participation in the case studies perfectly reflects the preliminary theoretical framework of this research, which states that '*for the professional business software development service (PBSDS) firm, the first task is to acknowledge that participation from their client is important*'.

4.3.3   Solutions to Overcome Third Party Challenges

The case companies did not provided any specific or explicit solution to overcome third party challenges. However when the critical incident technique was employed, that is the respondents were asked to remember incidents and actions which helped them to overcome those challenges, implicit results were found to develop the solution. Figure 24 below illustrates those findings from the case companies.
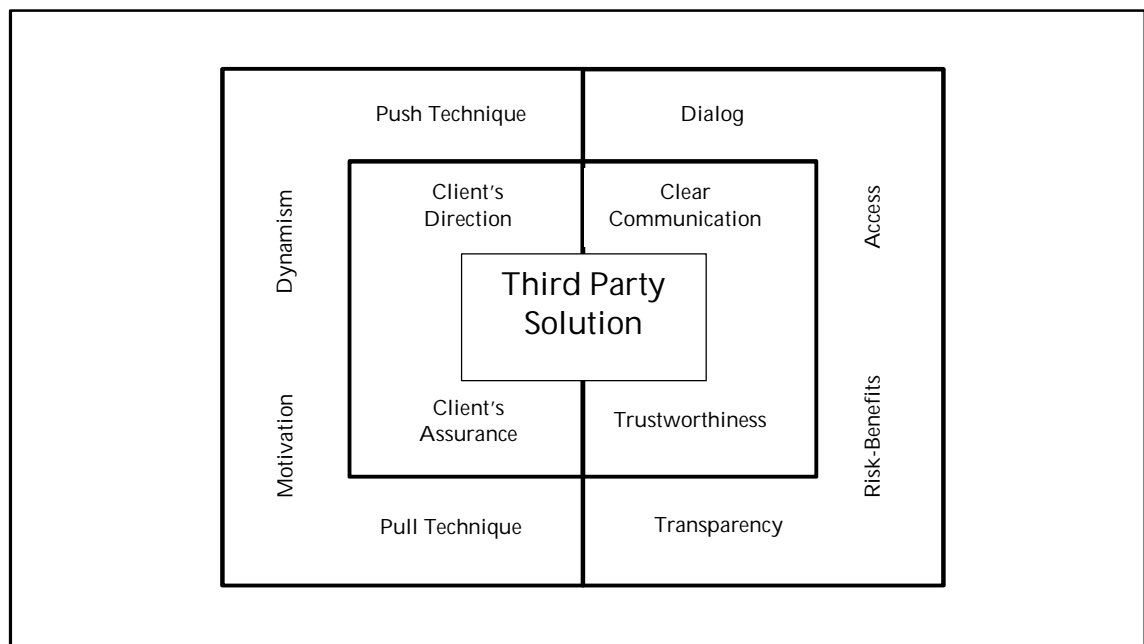
Figure 24: Solutions to third party challenges

As shown in the right hand side of the figure, it appeared from *Omnitele's* response that *clear communication* can help to facilitate collaboration between the third party and the servicd provider and assist to receive cooperation from the third party. Clear communication may include what are the problem areas that the service provider is trying to identify, how those findings will be presented to the client and how the solutions will be developed and implemented.

The issue of communication is also related with *trustworthiness* of the service provider. Two of case companies stated that proving them dependable and reliable have helped them to achieve cooperation from the third party involved in the project. However, how trustworthiness from the third party to be achieved can be of question, as it may take a long time to gain their trust which can be beyond the scope of the project.

It is interesting here to note that the *DART* model mentioned in the theoretical section (sub-chapter 2.2.4) to facilitate service provider-client interaction seems to be helpful to overcome third party challenges as well. The model states that "*to create value through co-creation system, the building blocks of interactions between the firm and consumers that facilitate co-creation are: Dialog, Access, Risk-benefits, and Transparency (DART)*". The first two elements of the model – *Dialog and Access* – can be directly connected to clear communication.

Reson behind this observation is *dialog* is the first step towarards open communication. Without engaging in *dialog* with the third party, communica can not be started. Clear communication also includes *access*, which denotes to admittance to information between the service provider and the third party upto a certain level.

Risk-benefits is the first step towards extablishing *trust* between the two parties, that to let the third party appropriately know the probable positive and negative outcomes of the project. Second is the issue of *transparency*, which is almost a self-describing term in clear communication. If the message exchanged between the service provider and the third party are not apparent, they may easily lead to creation of bottleneck against formation of trust.

Response from *Cerion Solutions* and *Sofokus* forms the left hand side of the figure, which shows that *client's direction* and *client's assurance* towards the third party could also act as solutions. Through combining data received from these two case companies, it was understood that the client can assist to solve the problem in two ways. They can either direct the third party bound to coopearate with the service provider, or encourage them to do so by assuring that they would not face any adverse consequence due to the project.

Client's direction includes being *dynamic* and *pushing* the third party by the client when they enjoy a high negotiating power with them and dictate terms and conditions. If the example provided in the t*hird party challenges* (sub-chapter 4.2.3) section remembered, in situation like that it would mean the the mobile service operator is in a

favourable condition compared to the network infrastructure provider, and can direct them to cooperate with the service provider.

However, through further discussion with *Cerion Solutions* and *Sofokus* it was revealed that *dictation* from the client cannot always helps to solve third party challenges, especially in markets where the service provider enjoys monopoly or oligopoply and hence the negotiation power of the client is low. Hence client's assurance as a technique can be proved helpful. Assurance from client includes *motivating* the third party by showing them how the project could be beneficial to all the parties involved, especially where situation permits. It also includes application of *pull technique*, exhibiting that the project is not intended to harm the interest of the third party but only to maximize the interest of the client.

4.4   Cross Case Analysis and Exmination of Findings Against Theoretical Framework

From the case studies, firstly one could recognize the importance of client participation to create optimum value in the case companies. All the six case companies have explicitly or implicitly agreed that without participation from the clients it would be hard or even impossible for them to develop high quality business softwares. However, the level of contributions required from the clients were variable from cases to cases. For example, *Cerion Solutions Oy* tries to engage their clients extensively in the value co-creation process to develop superior software. Alternatively, *Qbrick Oy* needs the lowest extent of client involvement. Therefore, based on their requirement of client participation to co-create value, the six case companies can be divided into three clusters as shown in table 6.

Table 6: Division of case companies based on client participation requirement

Cluster	Company Name	Participation Requirement
Group 1	Cerion Solutions Oy	High
	Omnitele	
Group 2	Sofokus Oy	Medium
Group 3	Acentra Oy	Low
	ATR Soft Oy	
	Qbrick Oy	

As one can see, *Cerion Solutions Oy* and *Omnitele* form the first cluster. Though value propositions and client-bases are very much different in these two case

companies, both the companies seek high degree of client participation. Perhaps the nature of their value propositions also increases their need of contribution from the client. For example, *Cerion Solutions* develops software for the following purposes: (i) strategy, business activity model and service supply, (ii) processes and organization structures, (iii) human resources and skills and (iv) information systems. To develop software to serve these purposes, compared to case companies *Qbrick* and *Sofokus*, relatively deeper understandings of the client organization and their business process are needed by *Cerion Solutions*.

Sofokus Oy is the only company in the second cluster. The company provides *commercial web and mobile applications and services*. Sofokus serves well-established businesses to start-ups, so proportion of client participation also varies accordingly. For example, when *Sofokus* serves a relatively bigger company, they can need and expect higher aggregate of involvement from the client. However, if the client is a new start-up, their competency to contribute in the software development process can be truncated, and hence Sofokus cannot expect higher client participation on those situtions.

Three companies fall under the third cluster – *Acentra*, *ATR Soft Oy* and *Qbrick Oy*. For *ATR Soft*, their basic value proposition – *CustomTools 2011* – remains same irrespective of the client they serve, though the associated features can be modified based on the situational needs. Therefore, they do not need to develop totally new software each time they are serving a client. Accordingly, requirement for client participation for this company is low, as they client opinions are mainly needed to customize the associated features of their main value proposition. Similar is the case of Qbrick, as the basic technogies of their *video streamer* are identical for all of their clients, they need clien's contributions only to make cosmetic changes, for example color or visualization of the video streaming window.

As of *Acentra*, the company is small in size in terms of sales or number of employees, and hence they work on the basis of sub-contract or attend clients where strictly formalized need requirements are served. Thus for example, if *Acentra* is working on sub-contract basis they generally do not need to communicate with the ultimate client. Rather the company for which they are working as sub-contractor becomes their clients. In those situations, as *Acentra Oy* and their client (the contractor) both are technology oriented company, the contractor can advise specific technical requirements and *Acentra* can develop softwares accordingly. Hence it can be said that client participation requirement is low for this case company. However, though client participation requirements are not of same intensity in all six case companies, one cannot ignore that contribution from the client is needed. Therefore, ensuring client participation to co-create value was of importance to all the six case companies.

From the case companies, the aspect that can easily be noticed is – client participation challenges are bi-modal, i.e. problems can arise from clients as well as the service providers. Problems from the client's side include *poor need assessment*, *excluding end user involvement in the client organization, lack of importance and communication gap, internal conflict* and *change resistance* in the client organization. Complications from the service provider's side consists of *perception regarding client participation, too advanced solution, unfeasible value proposition by the service provider* and *transformation of knowledge into application.*

Cross analysis between the *case study results* and theoretical framework provide another important reflection. When each of the challenges and solutions to ensure client participation was compared indivisually, it was interesting to notice and understand that a large portion of the findings from the case studies explicitly reflects the existing value co-creation and client participation theories and framework. However, some finding from the case studies could not be connected with existing theories, and hence those thous be considered as solitary findings from the multiple case studies. A comparision between the findings of the case studies and the existing value co-creation and client participation theories are demonstrated in figure 25 in the next page.

Client's Perspective

Problems Mentioned in Framework

| Lack of preparation |
| Miss communication |
| Poor Attitude |

Problems found in Case Studies

| Poor need assessment |
| Excluding end-users |
| Importance and communication gap |
| Internal conflict |
| Change resistance |

Solutions Mentioned in Framework

| Preparation & involvement |
| Open communication |
| Resource allocation |

Solutions found in Case Studies

| Involvement (Top mgt) |
| Improved communication |
| Conflict management |
| Change management |

Service Provider's Perspective

Problems Mentioned in Framework

| Less importance |
| Low facilitation |
| No client education |

Problems found in Case Studies

| Perception |
| Too advanced solution |
| Unfeasible value propositions |
| Applicability of knowledge |

Solutions Mentioned in Framework

| Recognition |
| Client education & training |
| Facilitation |

Solutions found in Case Studies

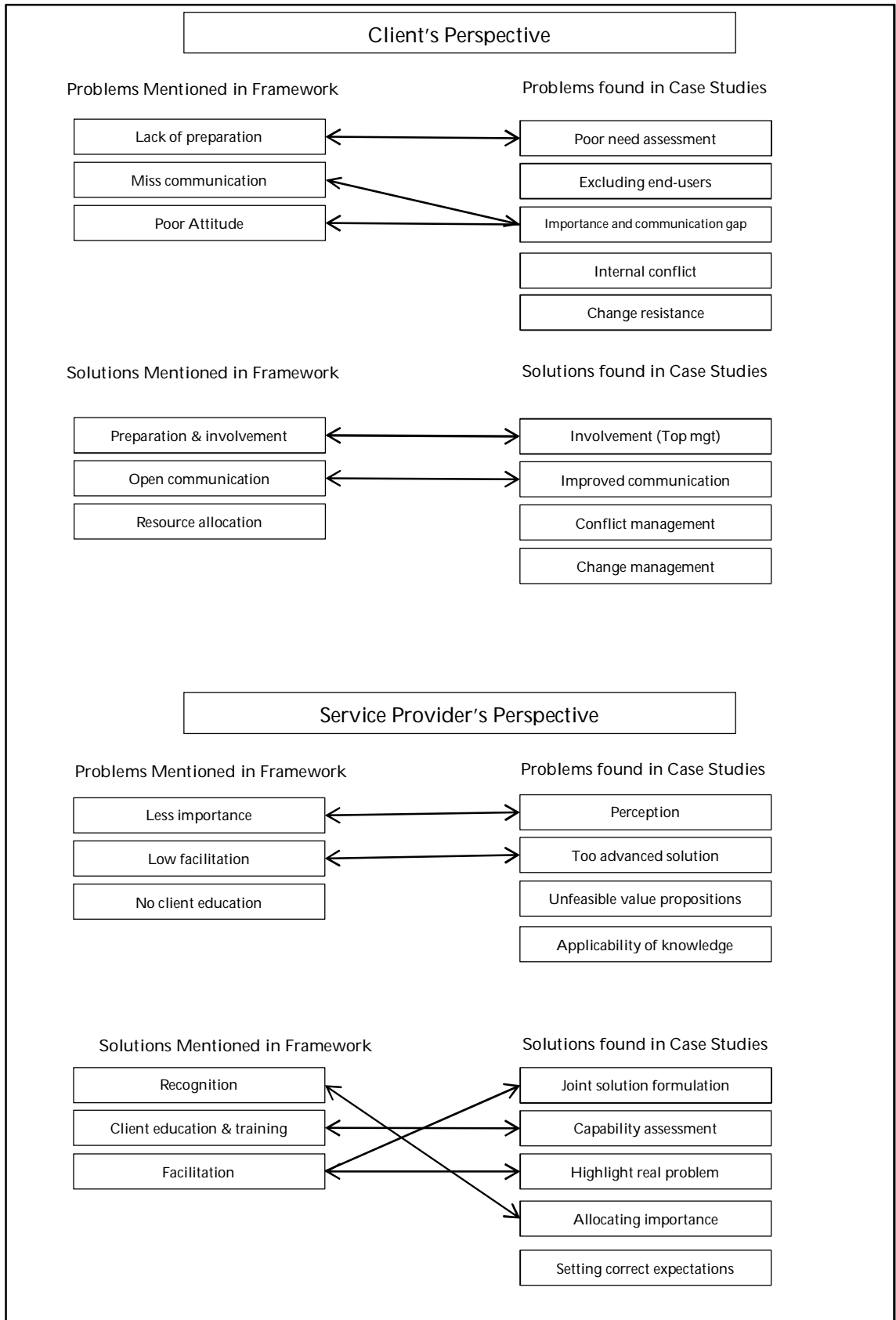| Joint solution formulation |
| Capability assessment |
| Highlight real problem |
| Allocating importance |
| Setting correct expectations |

Figure 25: Connectivity between preliminary framework and the case studies

Participation problem from the client starts with *poor need assessment*. The client tries to identify problem by themselves without involving the service provider. But as the case studies show, many times clients fail to identify the *actual* problem. And since the actual problem is not identified, the software developed accordingly does not prove useful to serve the client. As a consequence, participation from client in the overall value co-creation process becomes poor. This problem seems to be a reflection of *lack of preparation* from the initial framework, as if the client takes preparation appropriately they should involve the service provider from the very initial phase of the project.

The second problem from the client side – *excluding end user involvement* – appears when the client organization does not include their operational employees or end users from the early phase of the value co-creation process. Employees feels detached from the software development project and do not tend to engage in it. However, this problem could not be connected with the initial framework.

The third participation challenge – *lack of importance and communication gap* – results from the attitudes when the client does not put sufficient amount of emphasis on the software development project and communicate with adequate importance accordingly. This finding from the case studies unerringly supports the existing theories of value co-creation and the preliminary framework of client participation, both of which points to problems of *miss-communication* and *poor attitudes* from the client's side.

The case studies show that, sometimes *conflict of interest* can appear between the employees or departments of the client, which can result in low contribution or non-cooperation towards the project. Moreover, people in the client organization can *resist the probable changes* which may occur from implementing a new business software, further slowing the value co-creation process. Both these challenges were found from the case studies and are not attached with the initial framework.

When it comes to comparing *client's solutions* between the case studies and the framework, reflection of the theories can be identified into the realities. For example, case studies suggest that *involvement from the client's top management* can be helpful, which is connected to the *preparation and involvement* section of the framework. Similarly the case studies put high emphasis on *improved communication* from the client which is explicitly connected with the *open communication* solution of the framework. However, *conflict management* and *change managements* are solutions employed by the case companies, and similar to their opponent problems of *internal conflicts* and *change resistance*, these solutions are also sole results of the case studies.

Similar to the preliminary framework, case studies supported the statement that service providers too can create hindrance against client participation. The first challenge arises when *a service provider does not recognize the importance of client*

participation in the value co-creation process. It seems that if the client's importance is not properly recognized by the service provider, the subsequent steps of client participation also face challenges. Hence a direct connection is visible between the *perception* argument of the case studies and the *less importance* argument of the framework.

The case studies also showed problem of *too advanced solutions* which the clients did not perceive as applicable and useful and hence refrained themselves from participating in the value co-creation process. Here if the service provider put higher emphasis on client *facilitation*, they should develop solutions which could be easier for the client to employ and use. Again a direct association can be established between the theory and reality.

However, *unfeasible value proposition* and *transformation of knowledge into application* are two other challenges against client participation *from the service provider's side*, as found from the case studies. *Unfeasible value proposition* means the offering of the service provider is not considered as useful, time or cost saving or user-friendly by the client. Therefore the client is not motivated enough to participate in the software development process. Additionally, in some cases where the software being developed does not match with the theoretical solutions promised by the service provider's consultants, challenges against client participation can arise. These two challenges found in the case studies cannot be associated with the theories, and are solitary outcomes of the case studies.

In the framework, the three main solutions that service providers can apply are *(a) recognition, (b) client education & training* and *(c) facilitation*. The case study solution of *allocating proper importance* is explicitly connected with the framework solution – *recognition*. Similarly, *capability assessment of the client* can be linked with *client education & training* in the framework, as through analyzing the client's capability service provider can assess what kind of education and training are needed by the client.

Same are the issues of *highlighting real problem* and *joint solution formulation*. They are connected with the *facilitation* solution of framework, meaning *facilitation* from the service provider includes putting effort to *identify the actual problem* to be solved in the client organization. Facilitationg also includes *developing feasible solutions together* with the client in which they could contribute to co-create value and implement and use the solution efficiently in their organization. However, it seems that solution called *setting correct expectations* suggested based on the case studies is not linked with the framework and unique to this study.

As one can see from the figure, *considering the initial framework, it seems that the framework has largely been shown positive results when tested against reality in the case companies*. However, there are also some results which were not present in the framework, hence they arrived solely from the results of the case studies. On the other

hand, it is also visible that some of the suggestions of the framework could not be proved through the case studies. Hence these results are unique to these case studies. But though links could not be established with the framework, these unique results may be useful to identify challenges and implement solutions in knowledge intensive business services.

5   CONCLUSION

Theories of value co-creation places customers/clients at the center of attention of the value creation process (Ordanini & Pasini 2008, 290). From this understanding, specially in knowledge intensive business services clients play fundamental roles to co-create value, as the clients hold vital portion of knowledge which is essential to perform the service. Hence, obstacle-free client participation can be of managerial and academic importance.

This study tried to identify the principal client participation challenges in the case companies, and how those challenges could be solved. Therefore, the main research question in this study was:

- **How to ensure client participation to co-create value in knowledge intensive business services?**

To answer this question, preliminary framework based on existing value co-creation theories was constructed. Then the framework was tested through case studies against the reality. The case studies had shown that for the case companies, many of the real life situations were captured by the framework and the assosicated phenomenas could be explained through the framework. However, some elements of the framework cold not be tested or verified through the case companies. Additionally some new client participation challenges and their solutions were also documented from the case studies which were not available in the preliminary framework. Considering these aspects, the theoretical and the managerial implications of this study are presented below.

5.1   Theoretical Implications – The Revised Framework

The six case companies which participated in this study were diverse in terms of value propositions. However, as knowledge intensive business services, the *knowledge-concentration aspect* was common in all the cases. Hence, it was a worthy opportunity *to test the preliminary framework of client participation againt reality*, which was constructed with special focus on knowledge intensive business services.

The preliminary framework shows that to ensure client participation, initiatives are needed in three steps – *client participation requirements, client participation challenges, client participation solutions*. However, it seems that the first two steps – *client participation requirements* and *client participation challenges* – are complimentary, i.e. they help to identify what could be possible challenges against client participation and what is needed to facilitate the process. In the third step – *client participation solutions* – the framework proposes methods to overcome those challenges.

The preliminary framework was generalized in nature. Hence as discussed in the *Research Design* chapter, since this point the study adopts an inductive approach through developing an industry-specific framework, which has been adopted to reflect how client participation can be ensured in *professional business software development services*.

The framework is idealistic in nature, meaning it shows an superlative process of value co-creation through client participation. In actual situations, however, different components of the framework can shift and vary. Nevertheless, though variations and movements can take place, application of the basic notions can be beneficial to ensure client participation.

The value co-creation framework between the professional business software development services (PBSDS) firms and their clients is developed through the combination of three stages*: (i) initial establishment, (ii) collaborative development* and *(iii) mutual partnership*. Figure 26 in the next page demonstrates the framework.
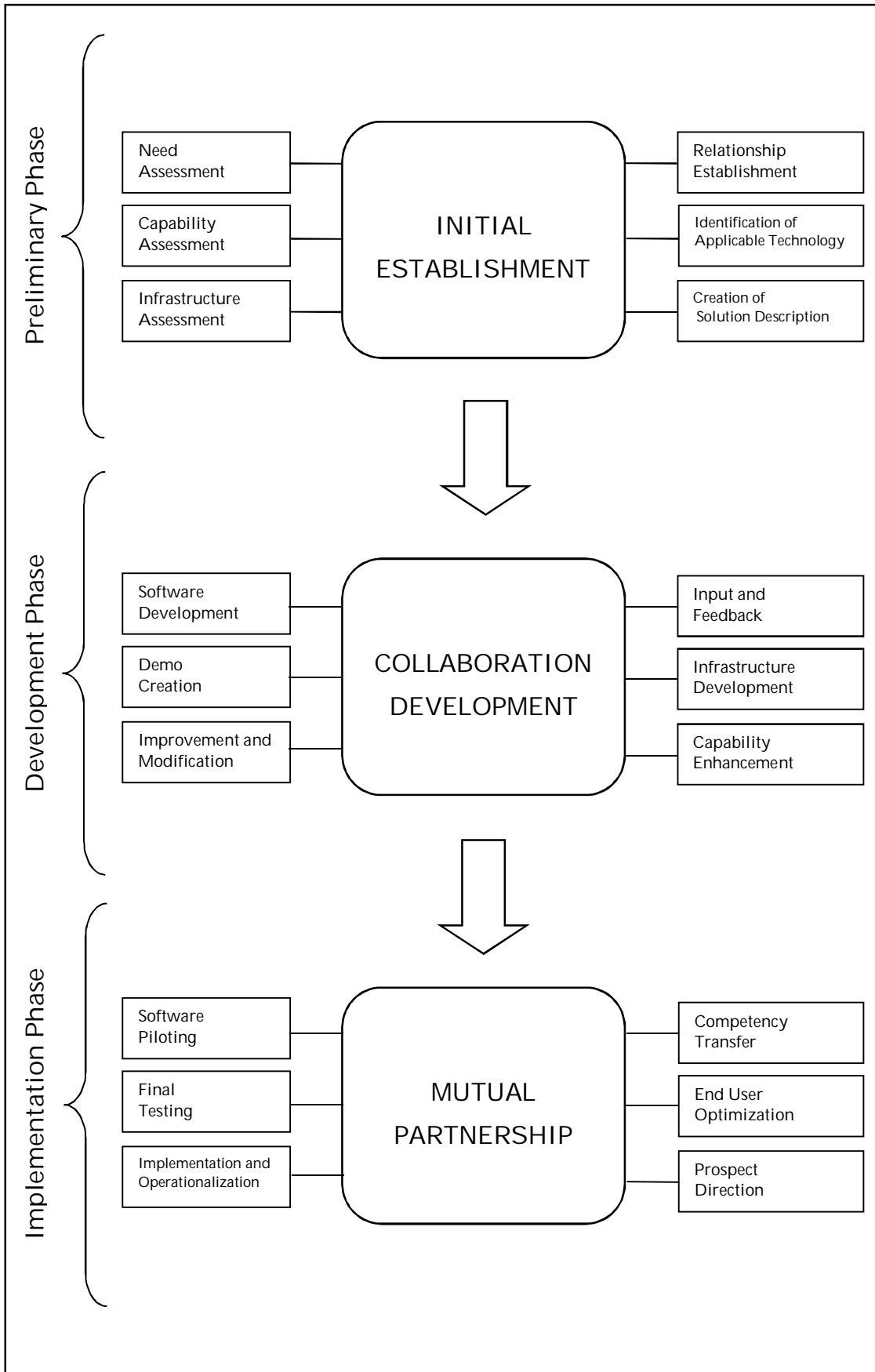
Figure 26: Generalized framework for value co-creation between professional business software development services and their clients.

The first or the initial phase of this value co-creation framework is named as '*Initial Establishment*', denoting the commencement of the project. It comprises of several important *inaugural components* of the co-creation process. The assessment tasters include three appraisals, namely *(a) need assessment* – the actual need of the client which is to be solved, *(b) capability assessment* – determining the extent of client capability and to which extent they can contribute in developing and implementing the software and *(c) infrastructure assessment* – examining the existing computing and associated infrastructure of the client. Client's active and alacritous involvement is needed in all these assessments, as otherwise the service provider can lead indecorous or incomplete assessment data which could deviate the entire project toward wrong direction.

The starting of long-term relationship between the client and the service provider should also take place in the '*initial establishment*' phase. The business-to-business market is characterized by limited number of clients and service providers. Thus '*leaky bucket*' formula to treat clients cannot be applied and establishment of long-term relationship is vital. Moreover, long-term relationship eases the '*intra-organizational tension*' factor between the service provider and the client, which is an integral part of any vital and complex project like developing and implementing tailored professional business software.

Together with the client, the service provider should also determine what specific or combination of technologies should be applied for developing the professional business software and formulate a solution description. The service providing PBSDS firm must realize and recognize from this initial phase that without client involvement the developed software will not be of highest quality and hence will not be able to generate optimum value. On the other hand, the client should understand that their involvement in the project is required to serve their own interest, and accordingly get involved in the project sincerely.

The second or the *development* phase of this value co-creation framework is labeled as *collaboration development*. It should result as a smooth flow from the *initial establishment phase*, if client participation is oriented and achieved from the beginning by both the parties. In the *collaboration development* phase, the actual software itself should be developed and a '*Demo*' (Demonstration) version needs to be prepared. Based on the *demo* version, the client will check its real-life applicability, provide feedback and present improvement suggestions. Subsequently, the PBSDS firm will make necessary improvements and modifications according to the suggestions of the client.

The second phase of this framework also suggests that, as identified in the *initial establishment* phase, if needed the computing infrastructure of the client should be improved at this stage. The PBSDS firm can assist the client for infrastructure upgradation by providing vendor details, future trend projection and past experiences. If

any need of *capability enhancement* has been identified in the *initial establishment* phase, those need should be fulfilled by providing appropriate education and training to the employees as necessary.

The PBSDS firm should also assist in these tasks, and carry-out necessary trainings and education which is considered as another vital element of the value co-creation concept, especially applicable to knowledge intensive business services. Education and training, and hence capability enhancement to utilize the software to its maximum, will not only increase the final value of the tailored professional business software, but also help the service provider to show their commitment towards the client and assist to form bond and establish long-term relationship with the them.

The final or the *implementation* phase of the framework is tagged as *mutual partnership*. In this phase, the newly developed software should be piloted and tested first, and if the tests meet the performance parameters and brings positive results the software should be implemented in the client organization. The software piloting, testing and implementation need to be done in association with the client. The client is expected to willingly participate in those activities for their own sake, as they have relatively higher probabilities to identify any flaw that the software may contain if applied to handle business processes, and thus identification and elimination of the probable flaws will only increase the final value that they will realize. Next, once the software is implemented and operationalized – that is it's being used in day to day business operations – the other crucial combined tasks should be completed.

The *mutual partnership* phase also includes other important value co-creation tasks like *competency transfer, end-user optimization* and *prospect direction. Competency transfer* includes transmission of abilities to eliminate operational errors from the tailored business software, create and maintain back-up data and operation logs, and above all, keep the software properly operational in the long run, all by the client themselves. Moreover, after the newly developed software is implemented and optimized, the ultimate-user or end-user of the software should be augmented through joint efforts of the client and their PBSDS firm. *End-user optimization* embraces providing supplementary trainings to the end-users as required, making them accustomed with the software and generating experience and confidence among them to use the software self-assuredly. Future relationship and working prospect between the two companies (service provider and client) should also be determined and believed by people from both the side, thus completing the value co-creation cycle for the tailored professional business software.

Based on the concepts formed as of the existing literatures and the analysis done over the empirical data, the framework can be helpful to get academic understanding on ensuring client's participation in the PBSDS industry and KIBS sector. At the same time, the framework can provide some managerial applicability of the '*value co-*

creation' concept in the professional business software development services (PBSDS) sector too, and may work as a set of reference for the *knowledge intensive business services* sector on a broader sense.

5.2   Managerial Implications

From the case studies, it has been understood that in the business-to-business market, value co-creation is an organization-wide concept, embracing people from the top management to the bottom level of the organizational hierarchical pyramid. The PBSDS sector is also pertinent to this all-hierarchy commitment. From the case studies, it can be stated that dedication from all the hierarchical levels is essential for the client organization to involve in the value co-creation process.

The process of appointing a PBSDS firm and taking their service is started by identifying a need in the client organization – a need to solve an existing problem or to seize an opportunity of improvement. After the needs are identified, the top management of the client organization selects and signs contracts with the PBSDS firm, where the selection and contracting procedure can vary to a great degree depending on the client organization. Once the PBSDS firm is selected and a contract of service is agreed with them, the project starts (on a simple generalized milieu), where all levels of related people should participate in the project and carry their responsibilities with motivation. Figure 27 in the next page illustrates acquaintances between management level and required engagement to successfully co-create value.
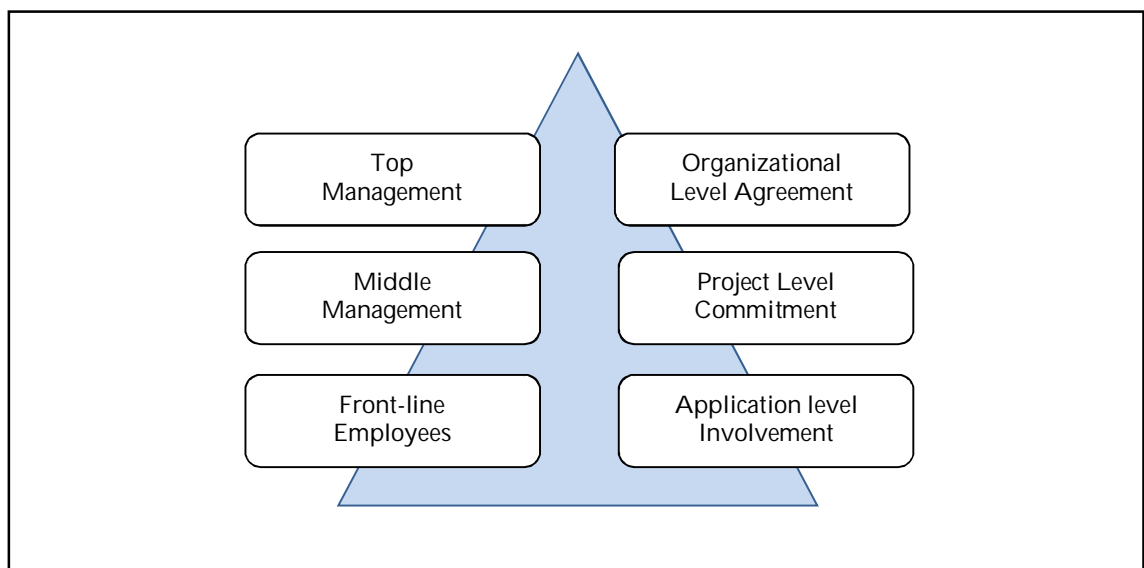

Figure 27: Participation in the value creation process from the client firms at different hierarchical level

As shown in the figure, *the top management* of the client organization should agree with their counterparts in the serving PBSDS firm about the project details and establish an *agreement*. The agreement may include the problems to be solved or the areas of improvement need to be taken care of, related terms and conditions, agreed timeframe for the software development project, future direction of the relationship with the PBSDS firm and so forth. They also need to back-up the project and show long-term commitment towards it.

The middle management plays the next vital role to engage in the value co-creation process with the service provider. Strong dedication from them is essential to make the project successful. They work as *motivator* to the end-users, function as *links* between the frontline employees and the top management, and are often selected as '*single-point-of-contact*' for the serving PBSDS firm.

Last, but not the least, the *front-line employees* in the client organization who are usually the ultimate users of the newly developed software need to be involved in the value co-creation process through the duration of the project. The end-users or the frontline employees can indicate the actual problem or conceivable areas of improvement in the organization, contribute to develop a superior software and add significance in the value co-creation process by assisting the implementation of the software and providing feedbacks. Moreover, no value can be realized if the end-users do not effectively and efficiently use the software in the long run.

In addition to the above mentioned managerial insinuations, the *revised value co-creation framework* can also be *translated* in a manererial context. The flow chart in the next page (figure 28) provides an illustrated understanding of the total value co-creation framework within the PBSDS industry context from a managerial point of view. The flow chart works as an additional tool to understand the notion. As one can see, it starts with listening to the client's demand by the service provider, shows cooperative effort to identify actual needs and capabilities, highlights the software development and implementation steps and ends with the suggestion to continue long-term positive relationship between the service provider and the client.
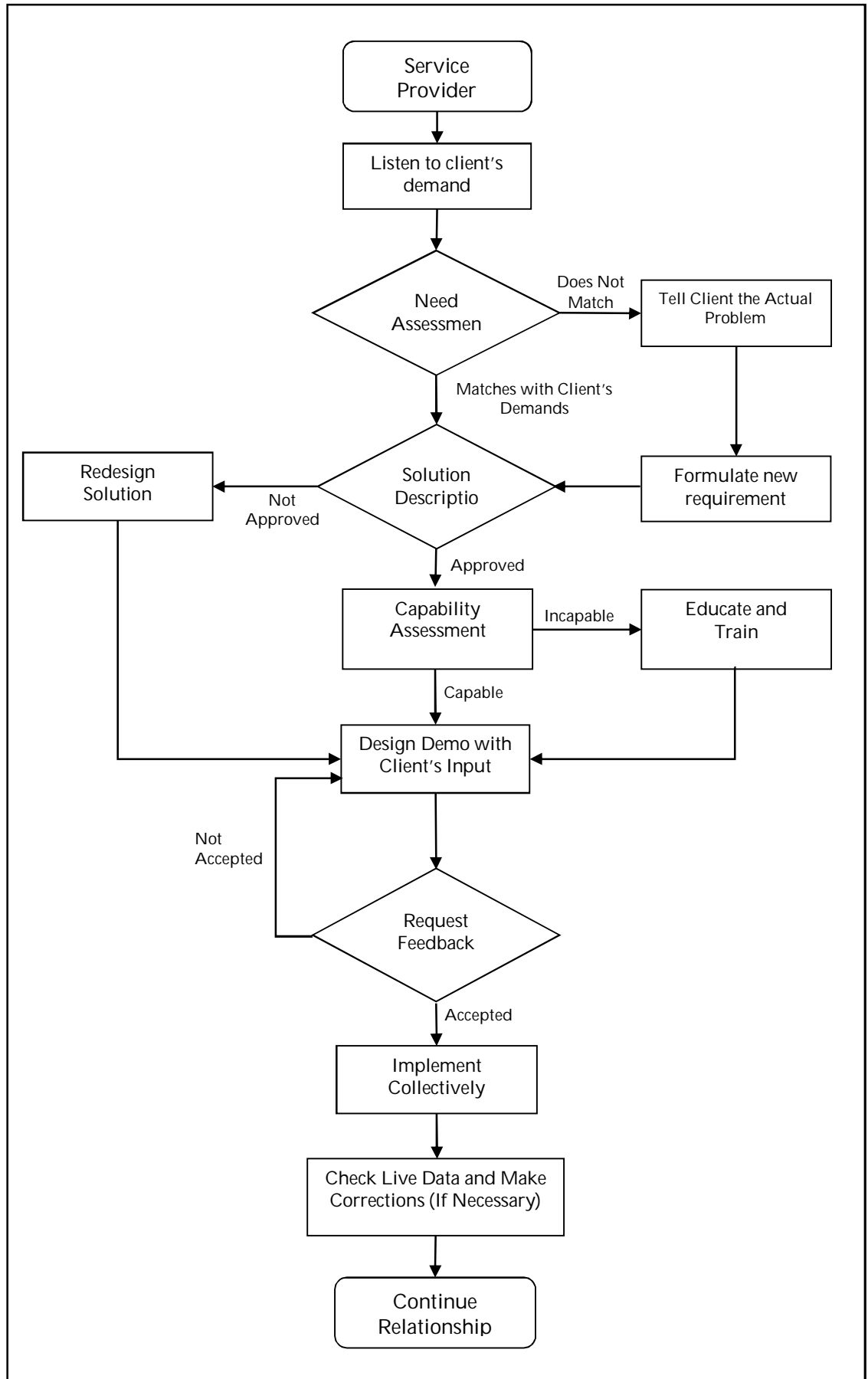
Figure 28: Value co-creation framework flowchart.

As value co-creation is considered from a process perspective, the *professional businesss software development services (PBSDS)* value co-creation process normally starts with listening to the client's demand by the service provider. After getting the preliminary information of the client's needs, the service provider analyzes client's problems or business process based on the initial information. If the requirements stated by the client and the actual need matches, the service provider moves to the next phase. Otherwise in case of mismatch between client's information and result received from need analysis, the actual need in conveyed to the client.

Once the actual need is identified, the service provider develops a solution description. If the solution is approved by the client, the service provider assesses whether client have the capability to implement or use the solution. If positive results are found, the service provider can design a *demo* (*demonstration*) *version* of the software with the knowledge and inputs of the client. However, if client does not agree with the solution description, the service provider needs to redesign it and advance the project according to the remodeled solution.

Based on the *demo version* developed, the service provider requests for feedbacks to the client. If the client is satisfied with the *demo version,* the project can advance to the next step where the service provider and the client should jointly implement the software. However, if satisfactory results cannot be achieved from the demo version, improvements are needed to make before implementation.

At the final stage of the software development (value co-creation) process, client provides live data derived from the software to the service provider and also communicates if they are facing any problem with the software. If problems are found, the service provider makes necessary corrections and the software development project completes. Nevertheless, upon successful completion of the project, the service provider aspires to continue long-term relationship with the client.

From a managerial application perspective, solicitation of the revised framework sould not be considered as applying a set of exact rigid rules for the service providers and their clients to follow with the intention to co-create value. Rather, it may be considered as a supportive guideline comprising and covering the basic *ideal* components and workflows of value co-creation within this specific industry. Thus, different elements of the framework can be shifted and combined with varying degree of applicability and appropriateness.

Value propositions of professional business software development services (PBSDS) firms are multifaceted, amorphous and highly custom-made to meet a certain client's unique needs. Hence, clients must successfully perform a variety of roles as they serve as co-creator of the knowledge-based solution. Clients' involvement to the software service delivery process is fundamental to service success, affecting equally the excellence of the service outcome and in the long run, clients' satisfaction with the

service solution provided. In this study, existing value co-creation and client participation theories are have been tested against reality which might be helpful to understand and apply the concepts with better pertain. Additionally, the modified theoretical framework and the descendent managerial implications may also assist to conceptualize and apply the solutions in a useful manner.

6 SUMMARY

Based on the marketing theories of value co-creation which states that client is always a co-creator of value, it is understood that client's contribution in the value co-creation process is essenetial to co-create optimum value. But as there might be challenges which can create obstacles against client participation, the main research question that this study tries to answer is:

- *How to ensure client participation to co-create value in knowledge intensive business services?*

The research problem has been solved through three sub-questions, which are:

- How value is co-created between professional business software development services firms and their clients?
- What are the challenges to engage the client in the value co-creation process?
- How to overcome those identified challenges to co-create value?

The value co-creation framework places the client at the center stage of the value creation construct. As a set of nine fundamental propositions, it dismisses the legacy idea that firms create the ultimate value by themselves and provide the same to their customers/clients in exchange of money or some artifacts. Rather it advocates that firms can only offer '*value propositions*' to their clients. When the *value proposition* is combined and interacted with the client's resources, knowledge, experience and perception - value is co-created. This novel framework of marketing has changed the perspectives of firms towards clients. Usually considered as just a receiver of the final value, clients' role have been changed from passive recipients to active participants to the firms, and they are even considered as source of sustainable competitive advantage for the firms who can provide unique and difficult to imitate advantage to them.

The co-creation concept of value is even more applicable to knowledge intensive business services (KIBS). The KIBS sector contains businesses like software development, natural and social science research, legal activities, accounting and management consultancy. Although wide in variety and nature of their value propositions, the knowledge intensiveness of their offerings can easily be identified.

The KIBS sector is one of the prominent sectors of the Finnish economy. Characterized by small population, best education quality and high productivity, Finland ranks among the most economically developed countries in the world identified as a '*knowledge-based economy*' and the production structure of this country is progressively more concentrated in various knowledge-intensive industries. Sectors like hardware consultancy, software consultancy, database activities, research and experimental development on natural sciences and engineering, technical testing and analysis etc. are especially important for Finland's economic growth.

However among all of them, software businesses are considered as one of the base element of this country's economy. Software companies in Finland generally provide specific and tailored software for their business clients – a perfect fit for the definition of knowledge intensive business services. These software firms which provide specific, tailored and knowledge intensive software to their business clients have been labeled as *professional business software development services* (PBSDS) in this research.

Participation from the client firm is of utmost importance in professional business software development services, especially because of the fact that clients hold a considerable portion of knowledge, information, infrastructure and experiences required to develop the software. If the client does not provide those aforementioned resources to the service provider (or does not participate in the value creation process form the theoretical perspective), the consequences may not only result in a low quality software and hence low quality value. Rather it may even be impossible for the service provider to develop the required software, thus failing to generate any value despite even offering the best possible value proposition. This understanding is not only applicable only for the PBSDS businesses, but also for most of the other businesses which falls under the KIBS category.

However, despite the identification of the importance of the client's participation in the value creation process and the ultimate value created, many KIBS firms fail to engage their clients to co-create value, which usually proves costly. As existing literatures identify, difficulties may arise from both the service provider's side and the client's side.

For this research, a qualitative research approach has been followed. Multiple case studies were completed to understand the dynamics present within compound settings and primary data were accumulated accordingly. Multipcle case studies also endorsed assessment of pertinent enslavements in the environmental context of the case connotations from a holistic viewpoint. Furthermore, the research adopts a mix of deductive and inductive reasoning, which starts with testing the existing theories, confirmation of the same to a large extent and then constructing a revised theoretical framework to accommodate the unique findings.

A preliminary framework was developed based on the existing lieterature. Operationalization of the main research question was constructed on that preliminary framework. Also when conducting interviews with the case companies the framework was kept in mind which helped to progress the interview in a methological way. Hence it can be said that along with working as the base for the operationalization of the research question, the preliminary framework has been tested against real-life business cases.

The case studies of this research show that from the client's side, problems against client participation may contain poor need assessment by the client. Comunication gap

is another major issue, along with inter-person and inter-department conflicts. They are often system or perceptional issues rather that static obstacles, and are possible to overcome with appropriate management practices, change of perspectives or alteration of behaviors by the client. Hence based on the case studies, it is suggested that client's can apply *(a) involvement from client's top management, (b) information sharing with the service provider and one point of contact for them, (c) internal conflict management* and *(d) organizational change management* techniques to eliminate participation obstacles and contribute in the value co-creation process.

Subsequently, difficulties against client participation can also arise from the service provider's surface. The case studies shows that the main problems arise form the service providers are *(a) perception regarding client participation, (b) too advanced solution, (c) unfeasible value proposition by the service provider* and *(d) transformation of knowledge into application*. These problems normally start from the service provider's failure to recognize the importance of client participation. Like the client's challenges, those of the service provider's are also not stagnant, and *(a) joint need assessment and solution formulation, (b) capability assessment of the client, (c) putting less emphasis on technological issues, (d) allocating proper importance to client participation* and *(e) setting correct expectations with clients* can eliminate those obstacles too.

In the concluding part of the thesis, an idealistic framework has been develoved which accommodates the unique findings of the study along with including the existing ones which have been confirmed through the empirical investigations. Additionally, managerial implications of the study are discussed which can be used to facilitate client participation specifically in the professional business software development services (PBSDS) context. The framework and the managerial implications may also be useful to understand value co-creation in other industries under knowledge intensive business services category.

To co-create optimum value, importance of client participation can neither be avoided, nor can be the efforts to ensure client participation. Specially in this economic era where labor intensive jobs and production functions of most of the companies are being transferred from the developed to the developing countries possessing low-cost skilled labor, *more and more focus should be put on application of contemporary marketing concepts to the cornerstones of the economy of Finland – knowledge intensive business services.*

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