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## **An Implementation-based Approach to the eSourcing Capability Model for IT-Enabled Service Providers and their Clients**

*Master of Science Thesis in Quality and Operations Management*

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## **Abstract**

With the trend of outsourcing, companies have realized the need of establishing better sourcing relationships with their clients and service providers. The eSourcing Capability Models (eSCM) is a standard of best practices for service providers and clients, which leverages their capabilities within sourcing. It aims towards establishing effective management of sourcing relationships to decrease failures during a sourcing life-cycle. This thesis has developed a unified and easier-to-implement version of the eSCM for an IT-enabled service provider and their clients. By unifying the client's and service provider's perspective, the relationship can develop from being seen as a simple buyer-seller dynamic to partners instead. The new approach identifies gaps between the client and service provider within a sourcing life-cycle, and guides them on how they can be closed to gain organizational benefits. This thesis was conducted qualitatively where results were obtained by studying literature, previous applications of the model, which was systematically combined with an on-site case study of an IT-enabled service provider. Although the model is generic and some parts can be used in other industries, the authors advise to use it in a similar context. The model can be further refined through testing.



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# **1. Introduction**

The introduction provides a brief background of the context in which this thesis resides. The background is then followed up by the purpose of this thesis in that context, with a problem definition, which leads to four research questions. It ends with the delimitations and important key terms that are recommended to read before going further.

## **1.1 Background**

Organizations have over the last few decades started focusing more on their core competencies and started to outsource their support functions. This has allowed them to become specialized in one area and has given an opportunity to strengthen their core competencies. Not only does this apply for companies that are outsourcing, but also for service providers who can specialize in their area to be able to provide a better service at a lower cost (Hyder et al. 2006). When more companies source from different service providers, the need to build and maintain a good relationship is essential to be able to reap the benefits from the outsourced service. The two factors, size and importance of what companies choose to outsource has become more common, including more critical and core business processes which is referred to as Business Process Outsourcing (BPO). BPO emphasizes the importance of partner relationships since they become rather complex. According to Namasivayam (2004), the significant market forces behind BPO are the availability of low-cost labor and better usage of best practices in order to increase automation.

Although BPO is defined to include any entire process that belongs to the company, even non-core and non-essential activities (Namasivayam 2004), the importance of the concept is that it could involve more critical activities closer to the organization, which are typically functions such as Call Centers, Human Resources or Finance and Accounting. eSourcing is another definition that has emerged from BPO and is often used when the function uses or needs technology as an enabler to be delivered. This excludes e.g. janitorial and food services (Hyder et al., 2006). eSourcing is therefore the outsourcing of services that uses IT as a key component for delivery. It can be used in many different types of services utilized by organizations, and could be critical operations such as engineering services or non-critical such as call centers.

There has been a rapid growth of eSourcing in the last decade. A study by AMR Research shows that the IT companies' interest in outsourcing was projected to grow from 20 to 50 percent between 2003 and 2006 (Gardner, 2003). Along with the development in information technology over the past decades, sourcing services has become increasingly dependent on IT. When larger technology upgrades are needed companies often find outsourcing as a cost efficient alternative. US state and local government spending on outsourcing IT was projected to be more than double over five years, reaching 23 billion dollars from 2003 to 2008 (Chabrow, 2006).

Researchers at Carnegie Mellon University developed the eSourcing Capability Model (eSCM), which is a standard of best practices that enables organizations to better manage their relationships between suppliers and buyers when sourcing services. The model covers both the service provider perspective and the client, helping them to develop capabilities towards better integration, thus increasing performance and value from sourced activities.

The company where this thesis was conducted, made anonymous, hereby named Vandelay IT Solutions (VITS), is a global IT service provider focusing on making client operations more efficient and cost-

effective, often by providing services that involve eSourcing. VITS's main areas are information technology, consulting and business process outsourcing (BPO) with a focus on offshore software R&D, i.e. the development of software is provisioned in another country, mostly India, either internal or external, and offshore outsourcing. Offshore means that services are not only transferred abroad but to another continent or a larger distance where you will have a larger impact from cultural differences, time zones, etc.

VITS have noticed an increase in relationship complexity with their clients along with the scale of what they provide as a service and want to move from having supplier-client relationships to being seen as partners instead. They are determined to improve their service provider to client relationships and consider that eSCM would enable this. Therefore this thesis is a first step towards implementing the eSCM in their sourcing life-cycle.

## **1.2 Purpose**

This thesis will investigate and develop a model, which determines how IT-enabled service providers, and their clients can use and implement eSCM as a future standard to better establish, manage and improve their relationships within sourcing to be seen as partners instead of simply clients and suppliers.

## **1.3 Problem Analysis and Research Questions**

By being able to use eSCM, VITS wishes to improve their capabilities across their sourcing life-cycle, giving their clients a better means of evaluating them as a service provider and by that, differentiate themselves from competitors. Establishing a partner relationship and reaching a higher maturity with their clients would also enable them to share the same objectives, innovate and invest together. This thesis is a first step for VITS towards being able to analyze their own and their clients' current capability level and develop an implementation plan to implement the practices of eSCM. This study will thus contribute to the research-field by bringing theory to practice, looking into the managerial implications of the framework as well as provide guidance for other practitioners within given area.

There are many issues and risks that can arise when considering eSourcing that are common amongst service providers and clients. The Economist Intelligence Unit and Accenture found the three most often considered risks or fears (Business Wire, 2003):

- The loss of valuable data and that it might fall into competitors' hands.
- That the cost of a sourcing activity might be more than what the organization expected.
- The loss of in-house knowledge.

These fears or uncertainties could also be the reason why clients and service providers tend to develop tactics to use or manipulate each other for their own benefits. According to Ford et al., (1998) a service provider could e.g. use the client's need uncertainty, i.e. the lack of information of the service they are about to source, to increase their prices making the client believe that the task is rather complex. Even if these fears have been overcome, many clients have complained that their sourcing needs are not met as expected. This causes them to either terminate or renegotiate the contract, which results in choosing other service providers instead (Gareiss, 2002). Kumar (2001) conducted an extensive literature review combined with interviews with IT enabled service providers and clients. The review concludes that these

failures arise due to a set 23 critical issues that affects the sourcing relationship. These include problems during the sourcing life-cycle, e.g. the common failures within transferring resources to and from the service provider, and also more internal issues that the organization itself need to deal with e.g. establishing an effective work environment to enable personnel to effectively perform their tasks.

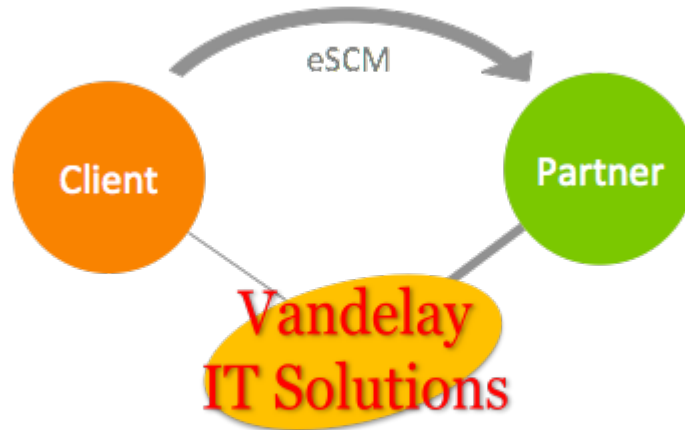


Figure 1.1 - Aim of eSCM

As mentioned, VITS faces the same issues with their clients that also brought the development of eSCM. There is a lack of cooperation with their clients, which brings inconsistency when trying to meet customer requirements during the sourcing lifecycle. The company is only seen as a supplier in their relationship when initiating contracts. Figure 1.1 shows that the aim of VITS is to try to shift their clients from looking at their relationship with VITS as staff augmentation and instead see it as a long-term partnership. In this transition eSCM will work as the foundation on which the new relationship will be built.

This brings attention to the following research questions:

*RQ1: What can be learnt from the application of eSCM in different organizations in the past?*

*RQ2: What are the underlying motives that brought the initiative to apply eSCM at VITS?*

*RQ3: How can eSCM's practices be transformed into tangible processes for both an IT-enabled service provider and a client in order to improve their relationship?*

*RQ4: What is the intent, major benefits and sacrifices of applying eSCM on service providers and clients?*

#### **1.4 Delimitations**

The study will be conducted in co-operation with VITS in France. Resources and documents are the ones that VITS are able to provide. There will be an overview over previous frameworks and models, which brought the development of eSCM, however this study will only focus on eSCM as it is provided by the creators of the framework, ITSqc's (Information Technology Services Qualification Center) website and documents (ITSqc.org, 2015). The current versions of the models that are up to date, and that will be used are eSourcing Capability Model – Service Providers (eSCM-SP) v2 and eSourcing Capability Model – Clients (eSCM-CL) v1.1. The models will not necessarily be

used as they are presented where some levels and practices could be overlooked. The models will be combined and transformed into a more operational and understandable state, however rather generic.

## 1.5 Key Terms

This section provides an explanation of the necessary key terms that are deemed important in order to fully grasp this thesis. Most of the terms are defined by ITSqc's documentations (ITSqc.org, 2015).

<b>Activities</b>	An activity is an implementation-step within a practice, see <i>Practice</i> .
<b>Capability Area</b>	A certain topic or part of which an organization can improve their competence within e.g. Change Management. A capability area consists of a set of practices, see <i>Practice</i> .
<b>Capability Level</b>	A capability level measures the maturity of how an organization fulfills the model.
<b>eSCM</b>	eSourcing Capability Model is a standard of best practices for IT-enabled service providers and their clients that aims at improving their capabilities within sourcing.
<b>eSourcing</b>	Sourcing that need or uses information technology as an enabler to deliver a service. Services are delivered through telecommunications or other electronic medias.
<b>IT-enabled service</b>	See <i>eSourcing</i>
<b>ITSqc</b>	Information Technology Services Qualification Center is a spin-off from Carnegie Mellon University, which consists of researchers, and practitioners who work with quality models and standards.
<b>Practice</b>	A practice is a component of a capability area, see <i>Capability Area</i> that the organization can implement. Together they determine the fulfillment of a capability area. One practice contains a set of activities, see <i>Activities</i> .
<b>Sourcing Life-Cycle</b>	The sourcing life-cycle is the phases that the client and service provider goes through when engaging in sourcing activities.
<b>VITS</b>	Vandelay Information Technology Solutions is the anonymous IT-enabled service provider of which this thesis conducted its case study upon.

## 2. Method

This section describes the method of how this thesis has been carried out, i.e. interviews, literature study, gathering of data and the model development. The study is qualitative since it is based mainly on interviews and literature. A method of this kind is characterized by words rather than numbers and gives an understanding of the social world by examining its participants (Bryman & Bell, 2003, Ch. 13).

### 2.1 Research Design

To address the purpose of this thesis there was a need of gaining an understanding of how an IT-enabled service provider operates as well as how the ITSqc eSCM can be used for this setting. This research thereby mainly consists of three parts in which the subject has been approached. A literature study, a case study of a company, made anonymous, here named Vandelay IT Solutions (VITS), and a modification of an existing model based on the two previous parts.

By gathering data from multiple sources a good view of the subject has been established from which conclusions can be drawn. The data collection can be divided into two areas depending on its source. The first one is internal data that comes from the company, which are interviews and meetings with key personnel regarding the area of research within the company. This gives an understanding of the company's situation and insight into the industry. The external data comes from the ITSqc eSCM standard, other literature and previous cases to provide a external view of ITSqc eSCM. By gathering data from multiple sources some of results could be viewed from different viewpoints to better understand the subject.

*Methods of data collection and data types:*

- Internal data
  - Interviews and meetings with key personnel at the company
    - Roles and responsibilities
    - Common ways of working
    - Industry insights
    - Company insights
  - Company processes and methods
    - Roles and responsibilities
    - Ways of working
    - Policies and procedures
    - Methods and tools
    - Company understanding
- External data
  - Model from the ITSqc
    - eSCM description
    - Standard comparisons
    - Practice details

- Other quality standards, such as ISO 9001 and Capability Maturity Model Integration (CMMI)
  - Approaches for quality management systems
  - Tools and frameworks
  
- Study of previous cases using the eSCM
  - eSCM insights
  - Best practice
  - Lessons learnt from other companies
  - Implementation methods
  - Uses of eSCM

Table 2.1 - Data collection method and goal per research question

Research Question	Method for data collection	Goal
<i>RQ1, What can be learnt from the application of eSCM in different organizations in the past?</i>	<ul style="list-style-type: none"> <li>● Study of previous cases using the eSCM</li> </ul>	Understand the environment the eSCM has been used in and lessons learnt from these cases.
<i>RQ2, What are the underlying motives that brought the initiative to apply eSCM at VITS?</i>	<ul style="list-style-type: none"> <li>● Interviews and meetings with key personnel at the company</li> <li>● Company processes and methods</li> </ul>	Understanding the current environment and factors that are relevant for an service provider in this eSCM context
<i>RQ3, How can eSCM's practices be transformed into tangible processes for both an IT-enabled service provider and a client in order to improve their relationship?</i>	<ul style="list-style-type: none"> <li>● Interviews and meetings with key personnel at the company</li> <li>● Literature from the ITSqc</li> <li>● Other quality standards, like ISO 9001, CMMI, etc.</li> <li>● Study of previous cases using the eSCM</li> <li>● Company processes and methods</li> </ul>	Creating a standard for service providers and clients to be able to apply eSCM in their organizations to improve their relationship
<i>RQ4, What is the intent, major benefits and sacrifices of applying eSCM on service</i>	<ul style="list-style-type: none"> <li>● Interviews and meeting with key personnel at the company</li> <li>● Study of previous cases</li> </ul>	Understand the eSCM's pros and cons in the company's context.

<i>providers and clients?</i>	using the eSCM	
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**2.1.1 Literature Study**

To identify literature that could be relevant for the thesis, multiple ways of searching for articles were used. The primary search engines used were Google Scholar, Google Search and Chalmers Library Summon. Key words that were used when looking for articles were, eSCM, eSourcing Capability Model, ITSqc, IT-service, IT-sourcing, eSourcing, sourcing relationship, sourcing models, sourcing relationship management, auditing, assessment. Articles of relevance were also identified by discussing the subject with the thesis supervisor Frida Lind. Data concerning five areas was identified, information about eSCM, previous cases of eSCM, sourcing and relationship management research, articles on other quality standards and auditing methods.

**2.1.2 Company Study**

To understand the anonymous company, here named Vandelay IT Solutions (VITS), a number of interviews were held with identified key personnel, see table 2.2. These people were identified by looking at who would come into contact with eSCM during a future implementation and also personnel who had prior experience of eSCM or other standards related, such as CMMI. Among the identified personnel, those that had the ability to provide input and considered of most value for the research were chosen. The sampling also considered that they could provide different viewpoints on the use of eSCM. However since the availability of the subjects had an impact on the sampling, the most suitable subject for the study may have been excluded due to this resulting in a loss of relevant data.

To get a broad understanding of the subject and the company both active and passive data was collected. Passive data is what is found when searching, i.e. what the researcher is aiming to find. Active data is something of value that was discovered that the researcher was not looking for (Dubois & Gadde, 2002). In the interviews that were conducted both active and passive data were gathered by using a semi-structured approach, and also unstructured interviews since by discussing the interviewee’s needs and issues some active data could be obtained. To gather more active data multiple meetings were attended where topics related to the use of eSCM were discussed. To have multiple persons in an interview or a meeting enables finding active data since the attendees develop a dynamic with each other where the interviewer becomes marginalized and can instead observe (Leidner, 1993). This was of great benefit for the thesis since new areas could be explored and a better understanding of the company and its processes was achieved. Multiple interviews were conducted with some participants where the main point of contact were the Senior Architect and Program Director A, see table 2.2.

The method of using semi-structured and unstructured interviews is common in qualitative research (Bryman & Bell, 2003, Ch. 15). This method was selected since it enables gathering data from a wide area in a short time without intruding too much in the company’s operations. It was also considered more efficient in this case when in comparison to participant observations, which is the other most commonly used method in qualitative research (Bryman & Bell, 2003, Ch. 15).

Table 2.2 - Interview subjects' roles and responsibilities

<b>Title</b>	<b>Responsibility</b>
Senior Solutions Architect	Responsible of the solutions development for clients outsourced operations.
Director / Account Manager	Responsible of major clients for financial and insurance services.
Program Director A	Responsible of large IT integrations, outsourcing and transformation projects.
Program Director B	Responsible of large IT integrations, outsourcing and transformation projects.
Executive Director Financial Services and Business Consulting France	Responsible of financial and insurance services as well as business consulting for France.
Head of Marketing France	Responsible of external communications and marketing in France.

To complement the view of the company given by interviewees, company processes were studied to see gaps between processes and reality but primarily to increase the understanding of the company and its internal vocabulary and language. This was important as a step to make the new model appeal to the personnel that will use it and make it easier to adopt since it is similar to processes and documents currently in use.

In order to get the results validated by the people that were interviewed, all parts of the developed VITS eSCM was put through at least one round of respondent feedback to give them the opportunity to validate the outcome of their testimonies. This also gave the interviewees the chance to see how the VITS eSCM would be applicable to their business and resulted in further refinement of the model.

## 2.2 Model development

The development of the VITS eSCM was an iterative process where there were many trips back and forth between data gathering, analysis, development of the model and control of the results, see figure 2.1. The thesis has been an iterative process where the model continuously has been revised based on new data. The thesis could to some extent be described as a deductive study since it looks at a case to test previous theory. However, at the same time it creates new theory based on the company case, which would instead be considered inductive (Bryman & Bell, 2003, Ch. 3 & Ch. 13). This combination has also been known as an abductive research since data collection, analysis and the framework is developed simultaneously during the study based on the findings (Dubois & Gadde, 2002). This method or framework of systematic



combining consists of three parts and has been used simultaneously to develop the fourth part that is the new eSCM, see figure 2.2. These four parts have continuously interacted and influenced each other. E.g. if something of value was discovered in other eSCM cases or in the VITS case, it gave an indication of what to pursue and incorporate from the ITSqc eSCM into the new model, VITS eSCM. Having these three sources of data leading up to the VITS eSCM has also made it possible to confirm some of the data obtained from one source with another source. By confirming data from the ITSqc eSCM, with other cases and internally at VITS the result in the VITS eSCM could be improved.

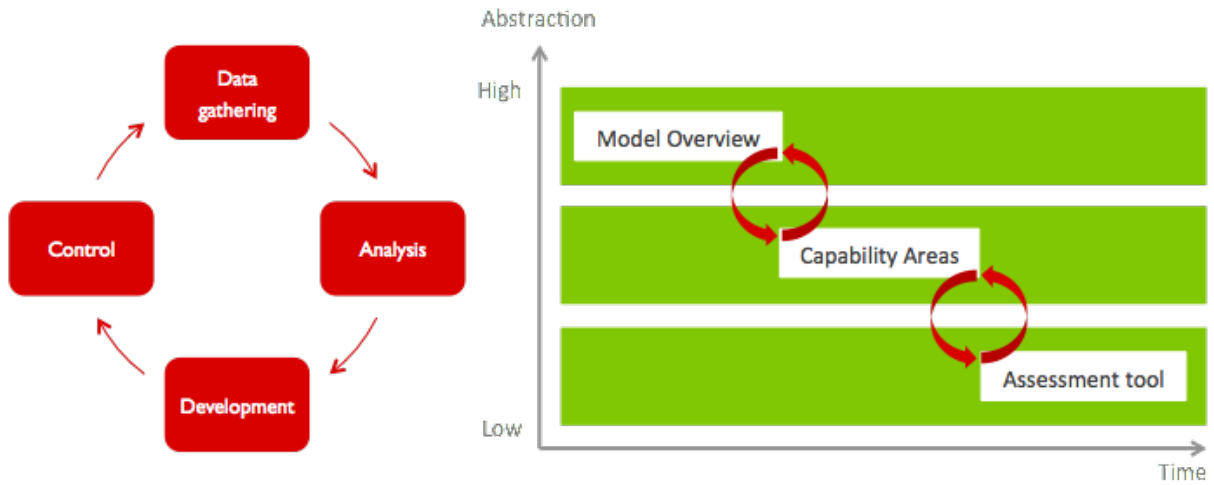


Figure 2.1 - Process for thesis

The new model has been developed on different levels of detail, see figure 2.1. The initial phase involved understanding the previous version of eSCM and the company’s reasons of wanting to apply it in their operations and client relationships. To gain this understanding a model overview was developed for both the previous and the new model. The new model has then been revised continuously during the next step, which involved developing the new capability areas. These were developed based on the previous model but adapted to VITS’s operations and client relations, and also brought down to a lower level of abstraction than previous. This was done by developing the practices in their respective capability area and for each practice assign roles and actions for all deliverables within that area. The last step with lowest level of abstraction is the assessment tool developed for VITS to be able to assess themselves and clients on the fulfillment of the different capability areas and levels in the new VITS model.

The method in this thesis builds on the idea of systematic combining which is a way of developing the theoretical framework, empirical fieldwork and case analysis continuously (Dubois & Gadde, 2002). Dubois and Gadde mention two crucial parts of systematic combining to achieve quality in the research. The first one is matching, which is to constantly move between interviewing, generating hypotheses and comparing these in an effort to create a new image of the subject from the contradicting forces that are discovered (Strauss & Corbin, 1990, Eisenhardt, 1989). The other part is direction and redirection, which is an important part when trying to achieve matching since it involves actively interpret the collected data and develop new theoretical concepts to investigate (Dubois & Gadde, 2002).

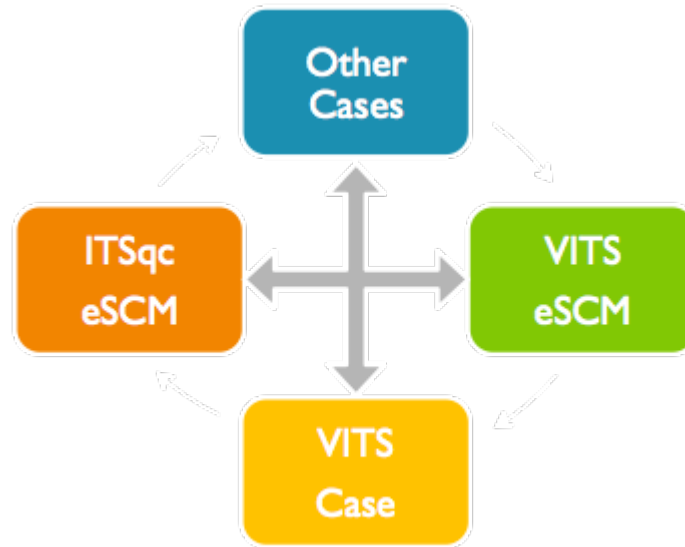


Figure 2.2 - Framework for the thesis' systematic combining

One important step was to link the theory of the four parts of the thesis' framework to together, making the new model a result of the connections between the previous model, other cases' theory and VITS's current reality, see figure 2.2. This meant being able to adapt in the research and work with the direction and doing redirections to accommodate new discoveries in theory or reality. By matching, the research went back and forth between data gathering, analysis, model development and the control to achieve a fit between theory and reality. Since the ITSqc eSCM is a general model developed to suit most companies either using or delivering IT-enabled services it was of major importance to match the general theory with the specific case in this thesis.

The issue with many case studies is that they often are quite unique to the specific context of the research. In this thesis the data from the VITS case has had a major impact on the results and this influences the dependability of the thesis. The model is developed to suit VITS and their operations. This is reflected in the results where the model could only be replicated exactly for a similar organization. It has therefore been important to ensure that theory from other cases' context are relevant for VITS to make sure that it matches.

The specific adaption for the VITS case also affects the transferability of the model since the results are mainly relevant for similar organizations. However parts of the results could be transferable to more than just similar organizations since the model was also developed for VITS to use in cooperation with a multitude of different clients that they work with. To increase the transferability of this thesis, a description of VITS situation has been given, see section 6. This will provide an understanding of other scenarios in which this model could be applied, and make it easier to judge the transferability for each specific case (Guba & Lincoln, 1985).

The dependability of the thesis is to some extent limited by the non-disclosure agreement with the company. This limits the outside view of certain topics linked to sensitive business information. To fully

understand the context to which the model has been adapted, these topics had to be investigated but could not be fully disclosed in this report. However, these areas were only investigated with the purpose to understand the company's processes and do not have a major impact on the thesis as a whole.

When looking at the confirmability in this thesis it is to a large extent affected by VITS's initiative for letting this research be conducted in their organization. The authors have tried to limit their interaction with company employees to only relevant meetings and have been working outside the daily routines. This limited the influence of company politics and opinions on the thesis and maintained the focus on the stated purpose and problem definition. Thus, no cultural aspects, being that the research was conducted in France, could impact the study.



### 3. Theoretical Background

This section provides the reader with a theoretical background and a basis in order to gain a better understanding of the area in which the research is conducted. First the industry of Business Process Outsourcing (BPO) is introduced as well as the emergence of the concept eSourcing and the trend of sourcing IT functions. The authors then explain what types of sourcing strategies that organizations uses and have used in the past. The section ends with an investigation of the relationships and dynamics that might arise between buyers and sellers of goods and services.

#### 3.1 Outsourcing of Business Processes

From traditionally outsourcing non-essential and non-core activities, companies are now outsourcing entire business processes thus the notion of Business Process Outsourcing (BPO). Two of the main reasons behind this incentive is the availability of low cost labor and the need of more automated processes through best practices (Namasivayam, 2004). The benefits of investing in outsourcing entire business processes might not be realized in the short-term, however Swadesin and Kalindi (2012 p.28) have found reports on e.g. that service providers in India have not only allowed global companies to gain competitive talents and expertise for low costs, but also enabled them not having to dismiss the jobs involved in the long-term. Namasivayam (2004, p.13) have found that business processes can be divided into four categories of activities described in the figure 3.1 below:

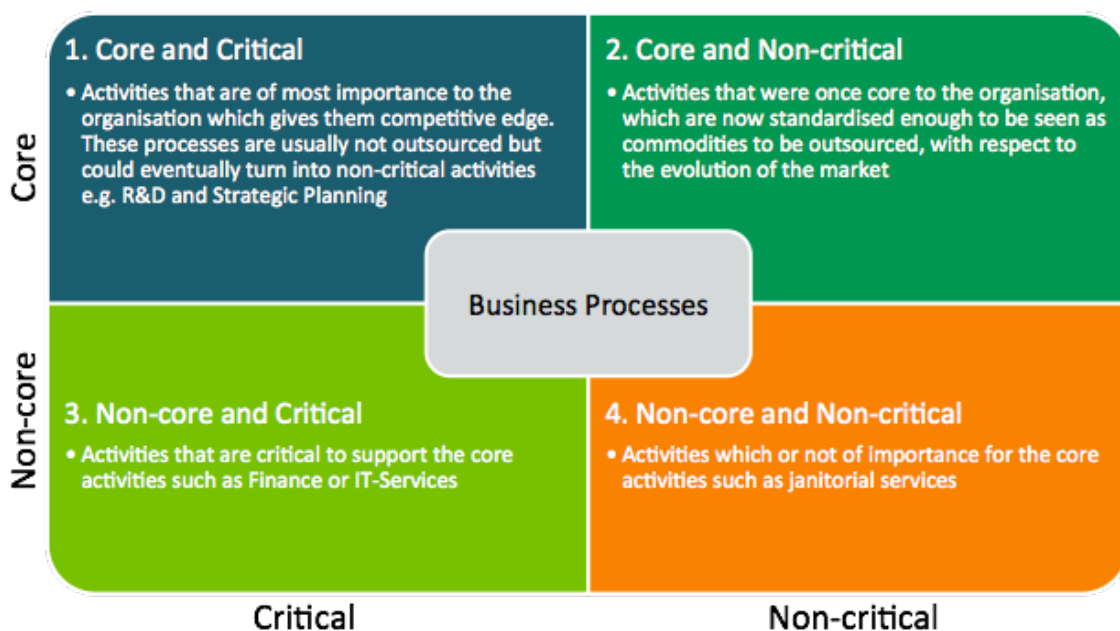


Figure 3.1 - Business Processes Defined (Namasivayam, 2004, p.13)

##### 3.1.1 eSourcing

It is in the third category, Non-core and critical, that research has gained more attention. Outsourcing of services where IT is a key enabler has grown along with the development of the Internet and telecommunications. IT services has today made a step into most of the activities that organizations source from service providers which has widened the area where IT is a key enabler to include e.g. whole functions such as HR and procurement. This wider concept of IT sourcing is commonly know as

eSourcing, which includes all services that needs or uses IT technology as an enabler when being delivered (Hefley & Loesche, 2006). Figure 3.2 shows an overview that clarifies the coverage of eSourcing. The inner circle includes traditional IT services e.g. software management and application maintenance (NASSCOM-McKinsey, 2002). The middle circle includes typical BPO activities that can be found in the third category of figure 3.1 that need or uses IT as an enabler. In the outer circle we find the activities that do not require IT as an enabler, which are those found in the fourth category of figure 3.1. IT enabled service is thus any service that is provided with the support of telecommunications or data networks (Hyder et al 2004). Both traditional IT services and IT enabled services are included in the term eSourcing.

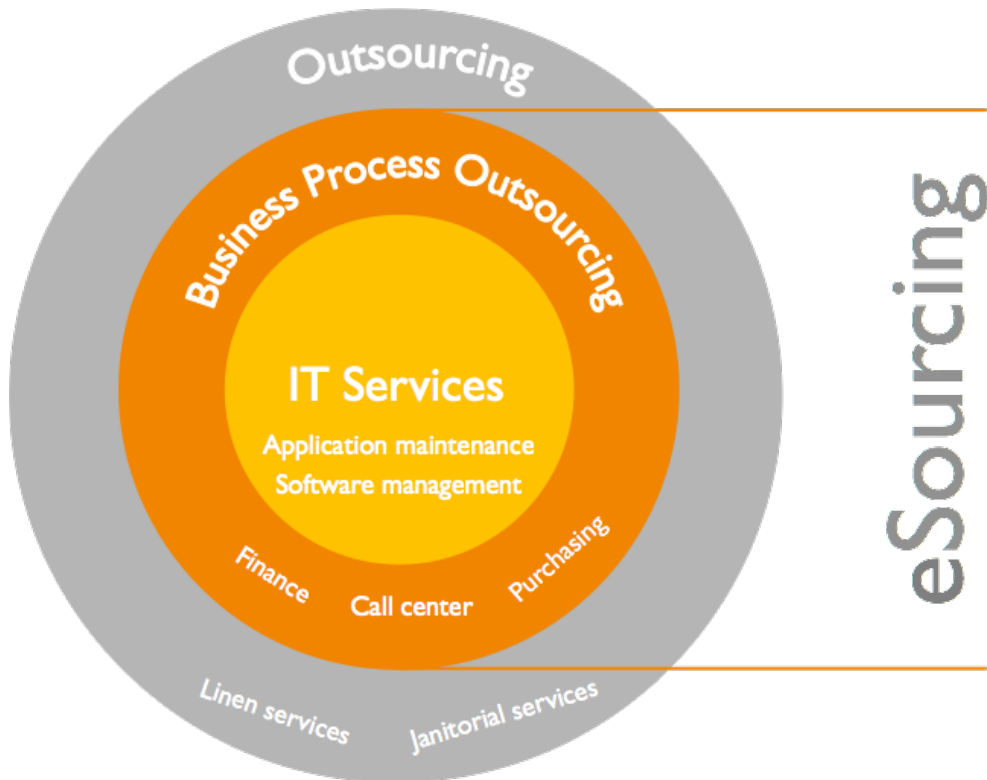


Figure 3.2 - Coverage of eSourcing

### 3.1.2 Trend of eSourcing

These IT-enabled services tends to become more complex and rigid than other services sourced because of the nature of IT systems and their way of setting the shape of processes in the way systems are created. This creates a large emphasis on managing the sourcing relationship to be able to maintain key services to support the processes and avoid disruptions in the delivery. However this phase of post-contract management is not well covered in literature and the outcome from the service seems hard to predict (Kern & Willcocks, 2002). Organizations which inhibit large sourced functions depending on IT services will increase the criticality of the ability to manage suppliers of those services and also make strategic decisions on which ones that should kept in-house or outsource.

Lee et al., (2000) examine where the trend of outsourcing larger IT-services all started where they refer to it as Information Systems Outsourcing (IS-outsourcing). They mention that the incentive of outsourcing

IS started as early as the 1960's where companies tried to avoid investments in big computers, using vendors that could offer time-sharing and data-processing services to minimize cost. In the 1970's the suppliers of these services then developed more standardized packages with additional applications that handled e.g. their databases and tools of communication. In the early 1980's, due to the rapid development of technology which increased the availability of cheaper computers, companies mostly used these services to create their own IS infrastructures which were customized according to their own purposes. The interest of outsourcing a total function of IS infrastructures however, started in the 1990's, where instead of outsourcing external IS parts offshore, companies began to sell internal parts onshore to suppliers where the employees involved were also transferred, extending the types of contracts that were established previously (Namasivayam, 2004, Lee et al., 2000).

Lee et al., (2000) also discuss how the method of sourcing these total IS functions have been developed and covered throughout research. They found that in the early stages, research mostly centered around the issues of "make-or-buy" decisions e.g. whether or not to keep a development of a technology internal or external. The types of contracts for these services were rather limited and short. Firms invested a lot of money on buying their own applications and software with the belief that the IT ownership and control would enable them to gain competitive advantage. However, in the early 1990's companies realized that emphasis should be put on how they actually use IT, and that the ownership itself is not the key (Nam, K et al, 1996). This discipline is defined as capability sourcing by Gottfredson et al., (2005) who explain that due to globalization and the development of rapid technology, competition has changed where the ownership of critical capabilities does not matter anymore, rather a firm's ability of how to use, control and make the best out of them. Further, the evolution of larger contracts gained more attention in 1989 when Kodak decided to outsource almost their entire IS functions to IBM (Loh & Venkatraman, 1992). One reason why it gained much attention was due to the responsibility that was given to the service provider since employees and facilities were also outsourced. The second area of research involved the motivation and risks behind outsourcing decisions e.g. cut costs, flexibility and access of technology. The third area of research involved the strategy or scope of how to outsource e.g. if whole functions should be outsourced, in the long or short-term and whether or not to choose single or multiple sourcing. Towards the end, research went to include the performance issues of outsourcing services with regards to user satisfaction, but most importantly the contract and relationship between the service provider and the clients.

### **3.2 Sourcing Strategies**

Organizations have always had functions such as purchasing since the carried out tasks have usually been responsible for a firm's profit. According to Zeng (2000), estimates have shown that purchased items stands for approximately 50 - 70 percent of a manufacturing company's potential value. One of the most important tasks within purchasing is sourcing or in other words, selecting suppliers. The definition of sourcing has changed since it emerged. The evolution goes all the way back to the 1950's, where sourcing was only a more functional concept whereas now it has extended to include and support a firm's strategic objectives (Monczka & Trent, 1991). According to Zenz (1994) the definition has now been developed to include more strategic aspects when choosing suppliers as well as incorporating them into the client's organization. It has gone from only considering getting the best prices or staying flexible, to improve firms' competitive advantages by e.g. long-term relationships.

According to Treleven and Schweikhart (1988), organizations have traditionally not considered combining strategies with sourcing. However firms have recognized the competitive market and the need for long-term survival, thus paving the way for the emergence of sourcing strategies to comply with. During that time, two important sourcing strategies named single and multiple sourcing emerged with other strategies that followed.

### **3.2.1 Multiple Sourcing**

One of the first sourcing strategies that was defined is called Multiple Sourcing or Dual Sourcing, which is only the case when two suppliers are involved. Multiple Sourcing is the case where two or more suppliers are involved with the buyer (Treleven and Schweikhart 1988, Zeng 2000). One of the advantages of this type of sourcing is as already mentioned, playing suppliers against each other to offer the best price when trying to satisfy the buyer's demand. Another advantage is that it provides flexibility where the buyer can simply choose another supplier for the particular service or item. Common disadvantages are shorter contract durations, decreasing overall quality as well as it being unprofitable for the suppliers.

### **3.2.2 Single Sourcing**

Earlier studies had shown that companies tend to avoid buying all their material or services from only one source if they were not forced to (Treleven & Schweikhart, 1988). With the increased competitiveness of the market, practitioners and researchers recognized that a combination of competitive and cooperative strategies would deem the best result. Managers also began to realize the benefits of establishing better relationships with fewer suppliers as opposed to having several that competed against each other for a better price. This way of working has seemed to evolve in the same era of JIT (Just-In-Time), a philosophy about eliminating waste and focus on value added activities (Zeng, 2000). Common disadvantages with this method is that buyers and suppliers can get dependent which decreases the bargaining position. It could also cause difficulties in times where either the buyer or supplier might get in trouble e.g. bankruptcy or strikes.

### **3.2.3 Network Sourcing**

This strategy is a way to complement the issues between single and multiple sourcing. Hines (1995) explain that network sourcing is a hierarchical strategy where suppliers considered to be top tier are also most skilled and given more responsibility of lower level suppliers. These top suppliers usually provide whole systems whereas the low level suppliers are responsible for individual components of the system. The idea is to establish close relationships with top tier suppliers, and at the same time let them compete for business share. This strategy could be seen as a development of Delegated Sourcing, which involves only one or two suppliers whereas Network involves two or more. It is also similar to Parallel Sourcing where suppliers are instead substituted when problems occur by other suppliers of the same component (Cousins, et al 2008). This enables buyers to force better performance where at the same time, if the suppliers keeps delivering products of high quality, instead establish long-term relationships.

### **3.2.4 Triadic Sourcing**

Triadic Sourcing further enhances the notion of establishing close relationships as well as keeping competition amongst suppliers. However managing this strategy is rather complex since it is based on somewhat contradictory goals, keeping similar suppliers of similar services, establishing long-term relationships and at the same time keeping them interdependent (Najafi et al., 2012). Dubois and



Fredriksson (2008) mention that time is a key ingredient to manage this cooperation and competition between suppliers. Managing this triad from the buyers point of view becomes rather difficult since the relationship needs to ensure (i) that suppliers are kept on their toes and offer customer favorable solutions and (ii) suppliers share technological knowledge and tailor it to the needs of the customer (Dubois & Fredriksson, 2008, p.177).

### 3.2.5 Summary of strategies

In table 3.1 one can notice that as more sourcing strategies have evolved, it gets quite difficult to separate the one from another. The main driver in early strategies was to cut costs and to maintain flexibility by shorter contracts to play suppliers against each other. These strategies have then been developed to emphasize the quality of services or products sourced, which emphasized the importance of more collaborative relationships between buyers and suppliers. At this stage and onwards, the strategies become rather complex since the relationships that needs to be established not only depends on which type of industry the companies reside and the competitive environment between the suppliers themselves, but also the size and importance of what is being sourced.

Table 3.1 - Summary of strategies (Dubois & Fredriksson, 2008 p.176, Najafi et al., 2014 p.5)

	Single	Dual	Multiple	Network	Triadic
<b>Number of Suppliers</b>	One	Two	Two or more	Two or more	Two
<b>Key Competitive Criteria</b>	Development	Cost and development	Cost	Cost and development	Cost and development
<b>Buyer-Supplier rel.</b>	Interactive Info and knowledge sharing Product and process co-development	Interactive Info and knowledge sharing Product and process adjustments	Adversarial	Interactive Info and knowledge sharing Product and process adjustments	Interactive Info and knowledge sharing Product and process adjustments
<b>Rel. between suppliers</b>		Indirect Competitive	Indirect Competitive	Direct Competitive Enforced transfer of best practice Simple	Direct Competitive Collaborative due to operational interdependencies Multifacet and/or nested
<b>Supply-Chain Scope</b>	Dyad	Dyad	Multiple dyads/ Portfolio	Supplier tier structure with separate branches	Supply network with embedded firms outside triad

### 3.3 Supplier Relationship

The emergence and trend of eSourcing, also brought the development and focus of better supplier and client relationships since it implied more responsibilities. Researchers e.g. noted that managing the contract relationship is essential to fulfill requirements and reduce unexpected results (Fitzgerald & Willcocks, 1994). Besides well-defined contract relationships, the importance of building mutual and flexible relationships based on trust was becoming important (Klepper, 1994). Gottfredson et al., (2005) mention that in order to go from vertical integration to a core focused service and gain competitive advantage, finding the right partners to take care over the critical capabilities becomes important.

Most of the research discussed earlier was conducted from the client's point of view where focus was put on achieving objectives that only benefited themselves (Rao et al., 1996). However, during the 1990's, where companies also gained more confidence in outsourcing larger functions, the trend seemed to point towards establishing partner relationships instead of just contracts between the client and the service provider, as more researchers and practitioners argued that a partnership would be key to successful outsourcing (Grover et al., 1996, McFarlan et al., 1995, Lee and Kim, 1999). The reason is that clients realized, as mentioned earlier, that the strategic advantage comes from how they actually use their IT and not if they own it. Additionally, clients started to realize that short and specified legal contracts would not enable them to meet long-term economic, technological and strategic objectives. This made service providers willing to take bigger risks and management responsibilities, increasing the extent of their services (Buck-Lew, 1992). In 1992, even if American Express had their own transaction operation processes and believed it was a critical strategic capability area, the executives noticed that it was not reliable or efficient enough. Additionally, other issuing banks were not convinced to outsource their transaction processes to American Express since they were competitors. Therefore, American Express established a long-term contract with First Data, enabling them to focus on their core capabilities within issuing, marketing and risk management while gaining scale advantages from their relationship (Gottfredson et al., 2005).

### **3.3.1 Managing Relationships**

The importance of partnership relationships is further strengthened when investigating literature about models that analyzes the relation between buyers and suppliers.

Ørseng (2014), mention that one of the most important opportunities is the potential added value that can be gained by strategic cooperation in business relations. Ørseng (2014) further explains that the success of these relationships is highly dependable on what both parties want to achieve. The objectives are not always clear and there might be hidden agendas (de Wit & Meyer, 2004). These objectives and mutual benefits need to be defined whereas the added value from the primary purpose of the business relationship should be recognized. Added value is assets that are difficult to measure e.g. knowledge, competencies, customer and supplier bases, markets and resources. These assets could have a higher value than the primary function of the relationship that was based e.g. transaction processes. De Wit and Meyer (2004) define three types of strategies of how to achieve these added values:

#### *Utilize the counterparty's resource base*

Both firms in the business relationship need to recognize the opportunity to learn or borrow from the counterparty e.g. the use of production facilities, marketing channels, knowledge and expertise, licensing agreements and joint coordination of development activities.

#### *Integrate activities*

Integrating activities means that two or more business partners streamline their value chain through collaboration e.g. by focusing on the part of the chain that has competitive edge, and bundle product or services together to optimize its delivery, improving quality and reducing cost. Another reason to integrate activities is to achieve economies of scale.

### *Strengthen position*

Through cooperation, both parties can strengthen their position in the market, achieving a stronger and common negotiation advantage.

The idea of these strategies is to use each other's competitive advantage to gain mutual benefits. However there need to be a balance of power in the business relation, otherwise, the one that has the strongest negotiating position could push its counterpart to the edge.

Ford et al. (1998) present another model, which discuss the uncertainties and abilities of buyers and sellers (figure 3.3).

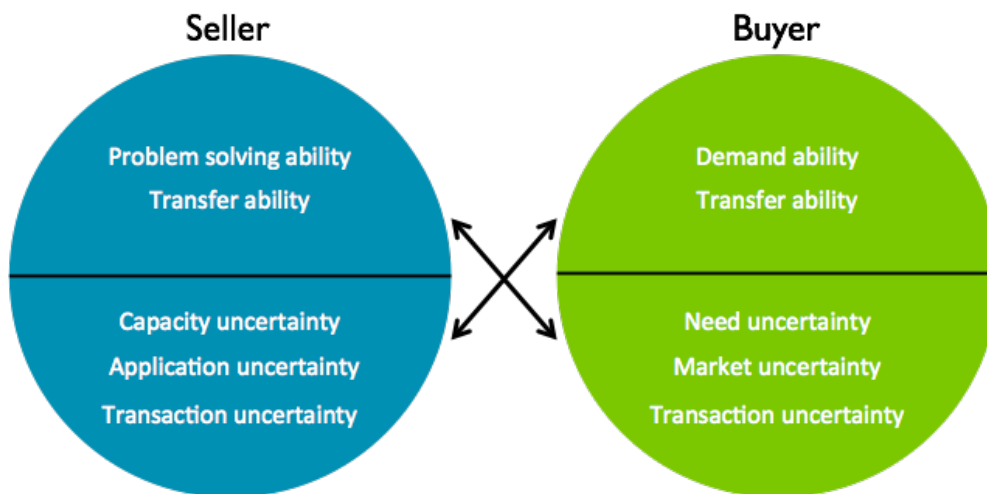


Figure 3.3, Buyer-Seller Relationship (Ford et al., 1998)

When buyers have problems and uncertainties, they rely on the seller's abilities to solve them. The seller could have the same issues and especially for the delivery since they also rely on the buyer's need and skills.

### *Buyer*

Ford et al. (1998) first discuss the interaction between the buyer's uncertainties and the seller's use of abilities. Need uncertainty is when a buyer finds it difficult to specify their requirements. This could be due to development of new and complex technology. Buyers in this category often choose sellers with a strong brand to feel safer during bigger purchases. Market uncertainty is when the buyer is uncertain about their supplier market since their requirements can be met in different ways. E.g. a buyer might face the choice of buying software, have a supplier to develop it for them or outsource their whole IT infrastructure. The complexity increases further since this the technology in this market is rapidly changing, where a chosen supplier might become outdated. This is also the reason why buyers are afraid of working with only one supplier. Transaction uncertainty is when a buyer feels that they might not get

what they specified in terms of e.g. quality, cost or time. Buyers need to interact with their suppliers and monitor the delivery.

The seller could try to manipulate these uncertainties for their own benefits e.g. increasing the buyer's need uncertainty by convincing them that their requirements are very complex, to put a higher price on their own offerings. The seller could also use their abilities to answer these needs. The problem solving ability is mostly used when a buyer has a high market or need uncertainty. The seller helps decreasing these needs by defining for their buyers, what they need to buy. The transfer ability is mostly used when buyers have past their market and need uncertainties, to answer their transaction uncertainties.

### *Seller*

According to Ford et al., (1998) the seller's uncertainties are quite similar of those the buyer possesses. Capacity uncertainty is the issue of not knowing how much the company will be able to sell the coming year. In a market where competition is high, sellers tend to establish long-term relationships with buyers to ensure orders. Application uncertainty is the issue of meeting the buyer's requirements as the way they use a service or product might change. Transaction uncertainty is when the seller have doubts of whether the buyer even need what they specified, or if they can pay for it. Sellers that face the two last uncertainties often seek to establish better relationships as well.

A buyer could also try to manipulate the seller's uncertainties e.g. give the impression that their own market is stable enough for them to put continuous orders, reducing the seller's capacity uncertainty. The buyer could also bring its own abilities to enable the seller to better meet their requirements. The buyer's demand ability ensures that the seller knows not only the quantity but also the type of demand to meet their requirements. Quantity helps reducing capacity uncertainty whereas advising and working closely with the seller, specifying the type of demand, reduces application uncertainty. The transfer ability is when the buyer showcases its reliability when it comes to information sharing, payment and skills that could make it easier for the seller to deliver a service.

Ford et al., (1998) also describe how the relationship can be changed and developed (1998). They argue that factors such as time and skills are highly important when developing relationships and use five concepts, namely Learning, Investment, Adaptation, Trust & Commitment and Distance to describe the development of a relationship.

### *Learning*

The development of a relationship is dependent on how much the both parties can learn about each other and their uncertainties i.e. what weaknesses they have and what strengths they can add to each other. The success will vary depending on companies' willingness, need and ability to learn.

### *Investment*

The development of the relationship also depends on the investment of intangible and tangible resources. Whether it is in a contract or not, the extent of investment such as knowledge, facilities, equipment or employees has an impact. It is important that both parties know what and when they need to put in resources if aiming for long-term relationships.

### *Adaptations*

The success of the relationship is also determined by the extent a company can adapt to another company. This agreement can be formal or informal, and enables the companies to rely on each other. E.g. if the buyer has problems with sales, the supplier could agree on decreasing its deliveries. These adaptations need to be looked over and outline what both parties can gain from them.

### *Trust & Commitment*

A relationship is highly dependent on the level of trust and commitment. In some cases companies say that they are committed in long-term, but are only in it for the short-term advantages. The behavior of both sides can in many cases be unpredictable, therefore making it more important to outline in what ways they need to commit. A relationship with a supplier and buyer is not far from between humans.

### *Distance*

The distance in a relationship can be seen from four aspects. The Social Distance measures how familiar the organizations are to each other in terms of line of work. The Cultural Distance is how the organizations relate to each other with regards to norms and values. Depending on the distance of these, the organizations can have different stereotypes of each other. Technological Distance determines the fit of technologies between the organizations. Time Distance is the period of negotiations of contracts, the supplier's delivery of services and the client's payment.

## **3.4 Assessing an organization's capabilities**

To assess an organization's capabilities there are multiple ways to go about to gain an understanding of the level of maturity and fulfillment of standards. There are two methods commonly used to assess an organization, a traditional audit and a self-assessment (Karapetrovic & Willborn, 2001). The traditional audit is used most frequent when wanting an objective and independent assessment that can provide indications of the fulfillment of a standard's requirements. An audit is performed by collecting audit evidence and matching it to the reference standard that is used in the particular case (Karapetrovic & Willborn, 2001). This is used for hard controls, such as in finance, since it gives an answer of whether the organization is compliant or not (Figg, 1999).

The self-assessment's focus is on identifying the organization's strengths and opportunities for improvements so that they can examine and understand the drivers for continuous improvement (Karapetrovic & Willborn, 2001). It uses more soft controls and can be more useful when assessing e.g. staffing, training and communications (Figg, 1999). The self-assessment is done by measuring the efficiency and effectiveness of activities and comparing them against best practices. Thereby the comparison is done against something that is moving, in this case the improvement of levels, whereas a traditional audit compares to a standard that is constant (Kaye & Andersson, 1999). In practice the self-assessment is done by the process owner and the staff closely related to the process and not by an auditor. The two most common ways of using the self-assessment is by having a facilitated meeting where the process is assessed or using a questionnaire to collect information (Joseph & Engle, 2005).

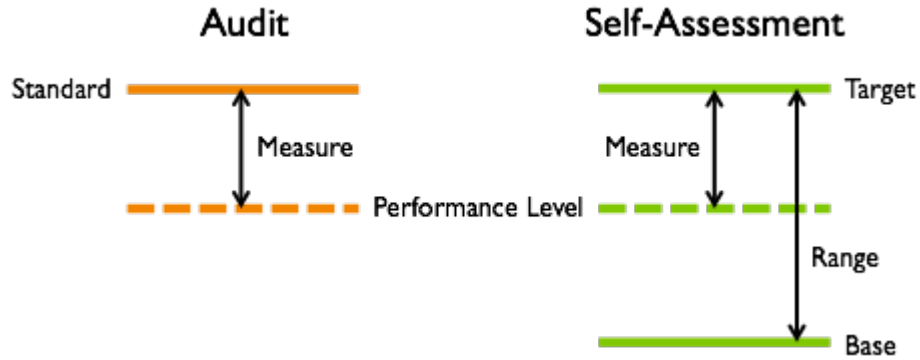


Figure 3.4 - Audit and self-assessment reference points, (Karapetrovic & Willborn, 2001, p. 368)

An audit will tell the organization if they have met certain criteria but will not give an indication of their performance on a scale i.e. the organization is either compliant with a criteria or not. A self-assessment will provide a range where the organization will get an indication of how good they are on a scale between the base, that is the performance level at the start, and the target, see figure 3.4 (Karapetrovic & Willborn, 2001). The major difference between an audit and a self-assessment lies in the independence the auditor brings. When doing a self-assessment the person is assessing its own process and is thereby not independent. But when doing an audit the auditor should always be independent of the process she/he is assessing and this brings credibility to the result (Karapetrovic & Willborn, 2001). The major benefit of using a self-assessment is that it is a time efficient way of gaining understanding of the processes in question. It also has the ability to activate an organizational performance improvement (Karapetrovic & Willborn, 2001, Figg, 1999). Since both ways have their own strengths and weaknesses when assessing, they mostly used in organizations in complementary ways to speed up parts of the assessment but still have the independent audit of crucial parts (Figg, 1999; Foh, 2000).

#### 4. Description of ITSqc eSCM

The eSCM models were developed by an association called Information Technology Services Qualification Center (ITSqc) at Carnegie Mellon University, which is also where the CMMI-model was developed. They enable client organizations and service providers to improve their capabilities towards more effective relationships and better management of these relationships with a decrease in failures during the sourcing life-cycle (Hyder et al. 2006). According to Anthony Macina, a member of the ITSqc development advisory board of eSCM, there are numerous models and practices that cover a lot of aspects within IT operations. However, eSCM is unique since it emphasizes the client-provider relationship and includes practices for both and their perspective (Hyder et al. 2006).

The eSourcing Capability Model for service providers (eSCM-SP) includes four phases, Ongoing, Initiation, Delivery and Completion. Ongoing practices cover the entire sourcing life-cycle, where the other three phases are included. In the Initiation phase, the service provider negotiates with the client to develop requirements, designs the agreed upon service and deploys that service. In the Delivery phase, the service is delivered according to the requirements established in Initiation. In the Completion phase, the service provider transitions the resources either back to the client or another service provider. These phases include capability areas, which involve a total of 84 practices according to the latest version of the eSCM-SP. According to ITSqc, the purpose of eSCM-SP is to (1) to give service providers guidance that will help them improve their capability across the sourcing life-cycle, (2) to provide clients with an objective means of evaluating the capability of service providers, and (3) to offer service providers a standard to use when differentiating themselves from competitors (Hyder et al. 2006).

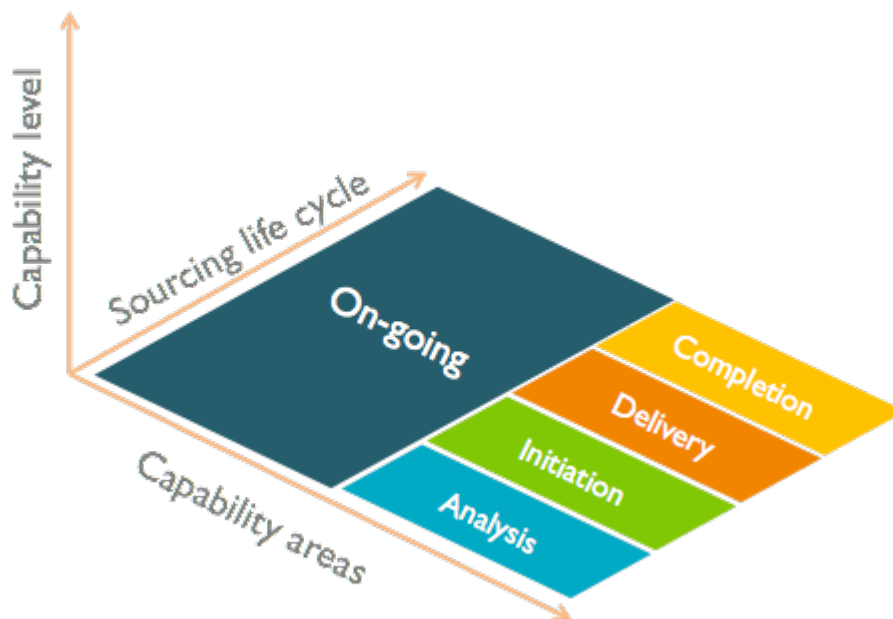


Figure 4.1 - Matrix of eSCM-CL with life cycle phases

The eSourcing Capability Model for clients (eSCM-CL), which is a “companion model” to the eSCM-SP focuses on the client’s perspective. It includes five phases, which are Analysis, Ongoing, Initiation, Delivery and Completion, see figure 4.1 (Hefley & Locsche 2006). In the Analysis phase, the client

analyses their own operations to determine which function, service or processes that could be sourced. The other phases involves the same practices but just from the client's point of view where more emphasis is put on monitoring e.g. when the service is delivered and transferred. According to ITSqc, the purpose of eSCM-CL is to (1) to give client organizations guidance that will help them improve their capability across the sourcing life-cycle, and (2) to provide client organizations with an objective means of evaluating their sourcing capability (Hefley & Locsche 2006).

#### **4.1 eSCM in relation to other models and standards**

Organizations today rarely rely on only one standard in their quality management system and different standards do not always integrate easily with others because of gaps and different aims. Companies often have limited experience and resources to be able to maintain multiple quality standards at the same time (Hickey & Siegel, 2008). Suppliers are often required by clients to be certified in accordance with multiple standards and are expected to use tools from many different models to be considered as a possible service provider for the clients. However the use of multiple standards can reduce a company's efficiency since gaps can be created between models and also the additional work associated with maintaining a standard e.g. audits can consume resources that otherwise could have been utilized in the business (Heston & Phifer, 2011).

There is a need to make sure that the models does not come in conflict with each other, makes it difficult to transition from or build upon the current standard when a new one needs to be introduced in an organization. To identify areas of interest in the intersection between different standards and models, a comparison of eSCM in relation to other important. This is a key element to understanding eSCM in an organizational context and enabling eSCM to be a functional part an organization today.

##### **4.1.1 Six Sigma and eSCM**

Both Six Sigma and eSCM has the same aim, but they are fundamentally different in the way they work. Six Sigma is a practice model to reduce variation in processes within an organization to be able to deliver a more consistent result, i.e. improve the capabilities of the organization. eSCM is also set out to improve the consistency of the results delivered, but only in the relationship between the service provider and client and is instead of a practice model, a principle based framework to improve an organization's capabilities. They are different in the level of abstraction, where eSCM is a high level framework with that are conceptual, Six Sigma is more in operational level providing concrete tools. Six Sigma tools can be a useful when implementing eSCM and trying to improve capabilities to the higher levels. When eSCM are the high level framework that works on an overall operational level the Six Sigma can be applied in the process layers of the operations (Kaul & Paulk, 2006).

Six Sigma can be applied in a wide variety of situations and organizations while eSCM aims only at service providers and clients within IT enabled services. The wider area of application for Six Sigma can be to a disadvantage when using both together since the tools might need to be adapted to the specific area where eSCM is applied (Kaul & Paulk, 2006). Both models are compatible and could work very well in combination because of their different nature complementing each other well. Six Sigma tools can be beneficial in the implementation and maintenance of the eSCM practices, especially in the ones focused on measurement.



#### 4.1.2 ISO 9001 and eSCM

ISO 9001 and eSCM are both standards aimed at improving the quality of the delivered product/service in an organization. ISO is unlike eSCM generic for most industries and organizations aiming to deliver product/service quality, where eSCM only applies to IT enabled services. Some capability areas are very well covered by the ISO 9001 e.g. the knowledge management capability area in eSCM is covered to 80% by ISO 9001 (Guha et al., 2005). eSCM has a higher sensitivity and can be seen as a diagnostic tool because of its focus on one type of service and can to a larger extent be used to measure higher levels of capabilities since of its maturity dimension (Hickey & Segel, 2008). Because of the substantial overlap of the two standards there is a possibility of integrating them into an organization and use one of them to complement the other. If an organization has to move from one standard to the other the current system do not have to be rebuilt from the foundation and the new standard can instead be built on the previous, acting as complementary instead of a complete substitute (Guha et al. 2005).

Since the market often requires service providers to have a multitude of standards implemented the overlaps and gaps are important to understand to manage standards within the organization. ISO 9001 covers eSCM-SP's practices very well in the capability areas *Knowledge Management* (knw), *Service Design & Delivery* (sdd) and *Service Delivery* (del), see figure 4.2. One can notice that sdd and del are at the core of the ISO 9001 standard and knw is not explicitly covered, but ISO 9001 still addresses this area by its focus on having a documented quality system including documents and records control, thus the high score (Guha et al. 2005). These two areas could with benefits be constructed with the other standard in mind, both as it will act as complementary and as it will smooth future transitions between the standards.

Technology management and Service delivery are only partially covered by the ISO standard and are the capabilities for the service provider that has least coverage among the service provider capability areas. In the ISO 9001 standard the infrastructure clause partially addresses the Technology management area, but not to a satisfactory level (Guha et al. 2005). ISO 9001 focuses mainly on the facilities needed to deliver the product/service requirements and eSCM looks a bit deeper into the subject and includes all the technology used in the delivery of an outsourced service (Hickey & Siegel, 2008). This could thereby be an important area that needs to be addressed when making a transition between ISO 9001 to eSCM. The other capability areas are largely covered by ISO 9001 but will require some adaptation to each other to achieve a complete coverage of the standards by an organization.

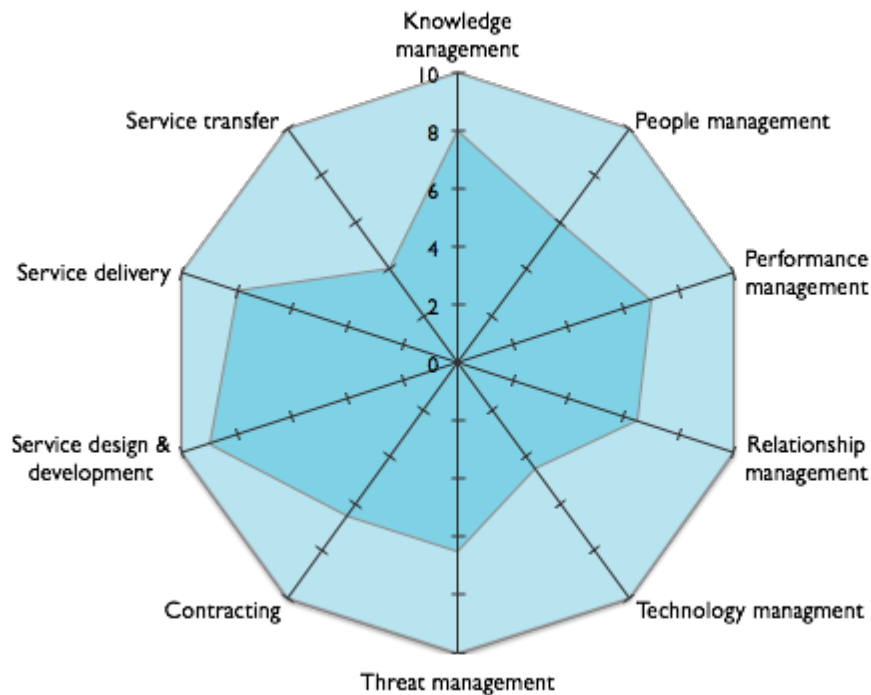


Figure 4.2 - Mapping of ISO 9001 coverage of eSCM-SP capability areas (Guha et al. 2005, p. 34)

#### 4.1.3 CMMI and eSCM

The origin of the eSCM is the CMMI (Capability Maturity Model Integration) and thereby share a lot of similarities in their structure and thinking. They both work with a five level model of assessing capabilities. However the aims of the two models are quite different and they target somewhat different audiences. CMMI is narrowly focused on one area, the development and maintaining of products and services in IT. CMMI consist of four disciplines, systems engineering, software engineering, integrated product and process development and supplier sourcing (Chrissis, 2003). The four disciplines can be used all together or separately depending on the needs of the organization. The eSCM has its own certification process, however there is no equivalent certification for CMMI (Ferguson, 2004). It is instead merely used as a tool to help the organization improve.

The models are not mutually exclusive and one can benefit from using the other as a support to the main one used in the organization. Some capability areas overlap and one model can act as supplementary to the other (Paulk et al, 2005). Some areas of the eSCM are covered fully by CMMI such as the capability area Service Design & Deployment (sdd) since it is at the core of CMMI. Other areas like Service Transfer are not covered at all by CMMI and most remaining areas are partially covered since there are many areas that intersect in two models. Another major difference is in what environments the two models are meant to be applied. CMMI focus on design and development of systems and services, which works in a product environment, the eSCM is applied to a more operational environment. This difference can lead to complications when trying to use both models in the same organization, since one model looks upon the organization as a systems developer and the other as a service provider (Paulk et al, 2005).

Overall the two models share many areas but also a few differences. The eSCM works on a more abstract level with a wider scope that includes many business areas that are not covered by the CMMI. However, the two models work together and do complement each other in many areas (Paulk et al, 2005).

#### 4.2 ITSqc eSCM in depth

In this section the ITSqc eSCM will be explained on a detailed level to understand the differences between service provider or client and their underlying structure down to the practices that makes the foundation of eSCM. This section is fully based on Hefley & Loesche (2006) and Hyder et al. (2006)



Figure 4.3 - Breakdown of the eSCM for Service Provider and Client

The structure of eSCM consists of two parts, one for the service provider and one for the client. These two parts are not mutually exclusive instead they overlap on multiple areas since the actions required in these areas are not of major difference between the service provider and the client. Within each part there are multiple capability areas covering different important aspects in a sourcing context, the service provider consists of 10 capability areas and client consists of 17, see figure 4.3. Out of these, six of the capability areas have a major overlap in between client and service provider. Every capability area has a setup of multiple practices that in turn has a set of activities that will help develop the capability. The practices are divided into different levels depending on maturity and also by their place in the sourcing life cycle.

##### 4.2.1 Sourcing life cycle

All capability areas are divided into different phases of the sourcing life-cycle. In both eSCM models there are five different phases, ongoing, analysis, initiation, delivery and completion. The ongoing phase covers all the other four phases since the capability areas in the ongoing phase are used continuously in the whole sourcing life cycle i.e. Knowledge Management where processes and work products are maintained and managed in all life cycle phases. The analysis phase is only present for the client because

it covers the part before the service provider gets involved in the process, i.e. the process of evaluating possibilities of sourcing. The initiation phase includes the preparations before the delivering the service, including parts such as negotiation, agreement and service transfer. In the delivery phase the service provider delivers the service whereas the client monitors the quality to the set requirements. The last phase, completion, concerns the transfer of resources and responsibility back to the client.

#### 4.2.2 Capability Areas

A capability area in the eSCM model is a group of related capability areas that together has a common focus and concern similar topics. In the service provider model there are a total of ten capability areas, six of which are ongoing, two in initiation and one separately in delivery and completion, see figure 4.4. Six of them are shared between service provider and client but with some differences, namely Knowledge Management, People Management, Relationship Management, Technology Management, Threat Management and Service Transfer. Service Transfer is the only capability area with practices in different phases, with two of it's practices in initiation and four in completion, this is only for the service provider part.



Figure 4.4 – Capability areas included in eSCM-SP

In the eSCM-CL there are 17 capability areas, nine that are ongoing, two in analysis, four in initiation and one in delivery and completion respectively, see figure 4.5. The ongoing client practices have three major focuses namely governance, competency & change and environment.

## Practices eSCM-CL

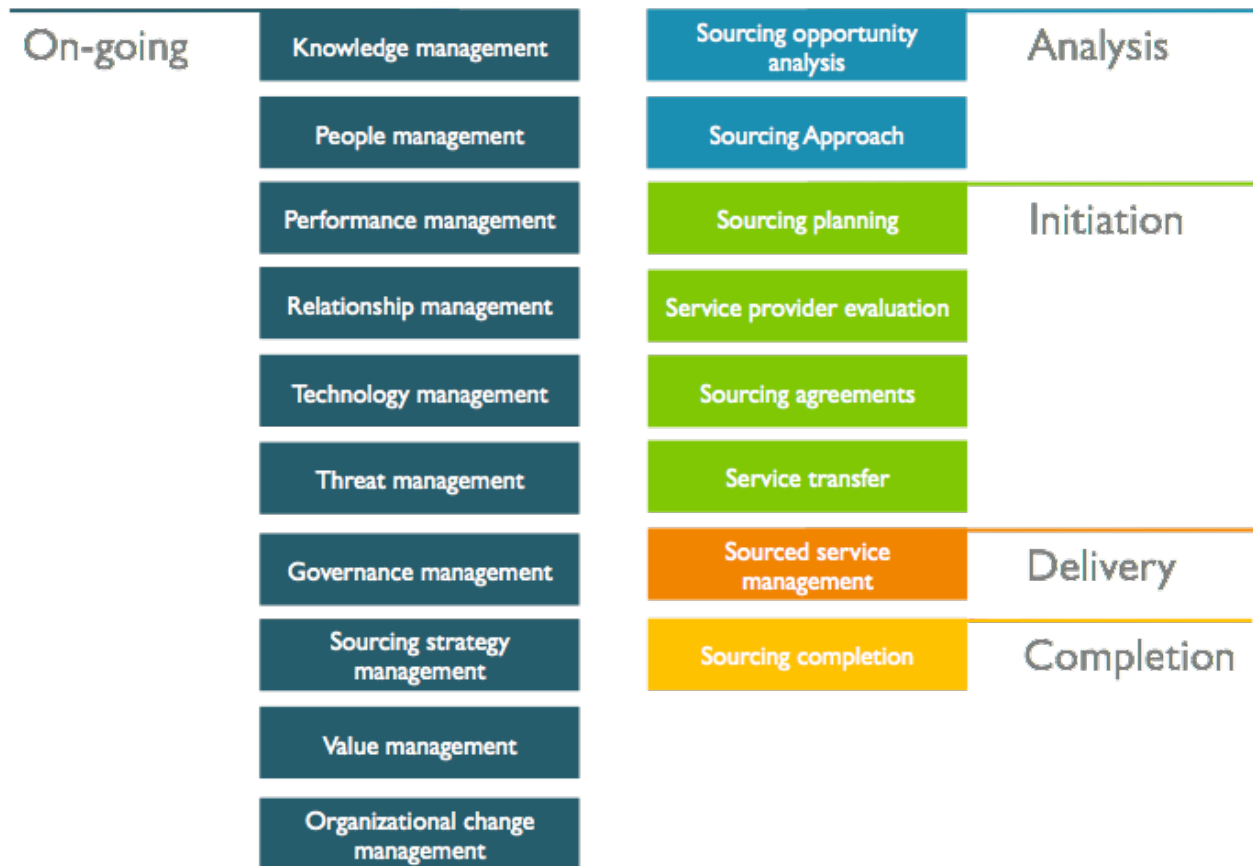


Figure 4.5 - Practices included in eSCM-CL

### 4.2.3 Capability levels

To help guide the service provider and client the eSCM includes capability levels. These levels indicate the maturity of an organization, however it is not fully a maturity model since practices of a higher level could be implemented before lower level practices. The practices all have an assigned level that matches the complexity of the activities in the respective practice. There are a total of five levels that indicate the capability maturity, see figure 4.6. The levels have different names depending on if it is aimed for the client or service provider.

The first level, Performing Sourcing/Providing Services, does not contain any practices. A level one organization have none or only some of the practices of level two in place. An organization at level one is exposed to high risk when entering a sourcing relationship because they have low or no ability to manage the relationship and the delivery. Results from organizations on this level varies a lot and the outcome are hard to predict.

When an organization reaches level two, Consistently Managing Sourcing/Consistently Meeting Requirements, it means all level two practices are in place. The level two practices gives the organization the capability to more effectively manage their sourcing, executive support are in place and suppliers are

selected and managed in accordance to the goals that are set for sourcing. However the organization are not fully capable of managing sourcing in a similar way across the entire organization.

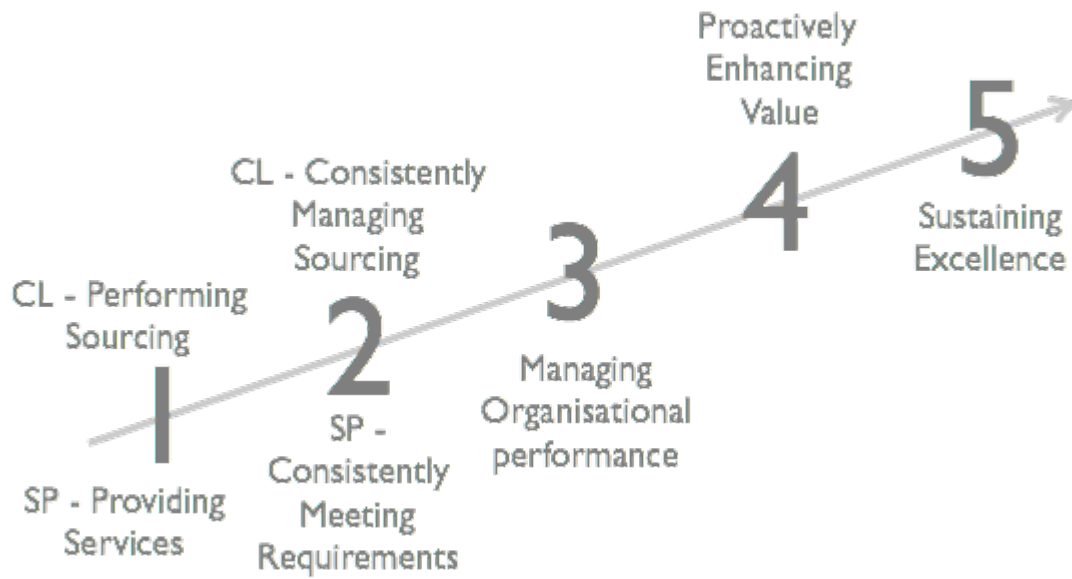


Figure 4.6 - The five different capability levels in eSCM (Hefley & Loesche, 2006, Hyder et al. 2006)

The third level, Managing Organizational Performance, is focused on being able to manage sourcing on a strategic level across the organization. At level three organizations are able to react to changes and can do this in measurable way, which enables understanding of their processes and makes the organization able to learn. They have gained an understanding of their environment, i.e. market behaviors and cultural attributes.

At level four, Proactively Enhancing Value, the organization can approach many different sourcing relationships and adapt well to the specific situation, both from previous knowledge that they can utilize as well as the ability to innovate in a new context. A level four organization has a continuous plan for improvement, which would result in an enhanced performance by the organization.

The highest level is the fifth, which does not contain any practices, instead it uses time as a measure of evaluation. Level five can be achieved by performing at level four for two or more consecutive years.

#### 4.2.4 Practices

Every capability area has a set of practices with a set of respective activities in a structured hierarchy. At the highest level, there are three types of Major Activities with the notation a),b) and c) which are required for all practices. Two of them, a) and c), are Support Activities that are common activities in all practices and ensures that the practice can be repeated whereas b) is about the actual implementation. The first Support Activity a), is about providing sponsorship and resources for the practice. The last Support Activity c) is about supporting the implementation of the practice.

Within these Major Activities there are Required Activities, which is the tasks for the implementation itself of the Major Activity. After are the Recommended Activities and Supplemental Information. Figure 4.7 describes the activity hierarchy:

■ a) Major Activity – (Support Activity)  
*Supplemental Information*

■ b) Major Activity  
*Supplemental Information*

- Required Activity
- Required Activity
- Required Activity
  - Recommended Activity a)
  - Recommended Activity b)
  - Recommended Activity ...

■ c) Major Activity – (Support Activity)  
*Supplemental Information*

Figure 4.7 - Activity Hierarchy

#### 4.2.5 Certification

The ITSqc, which is the Information Technology Services Qualification Center at the Carnegie Mellon University, is the authority that handles the certification of eSCM. To achieve a full certification from ITSqc a company has to go through a full evaluation of all practices of the eSCM. Depending on if the company is pursuing a certification for a service provider or client the eSCM-SP or eSCM-CL is used as the requirements for compliance. A company going through a certification gets a certification for the level of eSCM fulfillment in accordance with the capability levels. The levels one to four can be achieved at the first evaluation but to reach the fifth level at least two certifications has to take place which can show that the organization has had the level four for a period of at least two years. Certification can be done by either ITSqc itself or an ITSqc-Authorized organization.





## **5. Previous Applications of eSCM**

This section provides an overview of previous applications of eSCM that was found in the literature study of this thesis. The important conclusions that were drawn from the cases are then summarized in the end.

There are only a few cases that has studied the application of eSCM in an organization. This could be due to that the initial version of eSCM was published in 2001 (Hyder et al., 2006) and then only for the service provider's perspective. The part developed for the client was not released in a complete version until in 2006 (Hefley & Loesche, 2006).

One of the first well developed case studies on the application of eSCM was in the Hungarian company Memolux which is an IT enabled service provider with their main activities focusing on finance and public accountancy (Biró et al, 2003). They had previously worked mainly with ISO 9001 and the Bootstrap methodology. Memolux used eSCM as a tool to assess their efforts in their business area of payroll outsourcing where they had conducted an improvement program, but since Memolux is an SME the researchers had to tailor the practices for that type of company size. Memolux fulfilled 82 of the 93 practices they were assessed on; the company did have a mixed fulfillment of the different levels and were not fully compliant with some practices on level two, three and four. There were mainly three capability areas where Memolux had issues, Knowledge Management, People Management and Organizational Management (capability areas from an earlier version of eSCM-SP). (Biró et al, 2003)

The major issues in Knowledge and People Management had to be addressed, but the organizational issues were more a cause of the small size of the company and would become more relevant as the company grows. For People Management all responsibilities were on the executive manager. The responsibilities had to shift to organizational roles, as it would otherwise hinder the development of training, career development for employees, reward programs and the effective use of innovations in the organization. The company planned to shift this responsibility to a HR Manager within the near future. For Knowledge Management there was an issue with the processes of identifying, storing and reusing knowledge within the organization. Since much of the development of Memolux improvement program were conducted together with an external part there was an issue of how to retain the capability within Memolux. (Biró et al, 2003)

Biró et al. (2003) draws a few conclusions from the case of Memolux regarding their eSCM assessment. The eSCM was found to be well adapted to apply in knowledge-based organizations as the cooperation when reaching a high level of capability in the sourcing relationship is focusing on developing gaining value from the knowledge in the organization. This is helping knowledge-based companies much since their knowledge is their core asset.

The Knowledge Management capability was identified by the Biró et al. (2003) as one of the most important elements because it acts as an enabler for other capabilities. E.g. for Relationship Management requires the service provider to collect, store and use the knowledge about their clients' needs and requirements. It is not possible to maintain a high level of capability in other areas without having a high level of capability in Knowledge Management. Also the verification and accounting of transferred knowledge resources are critical for sustainability in it outsourcing activities to make sure knowledge is not lost in the relationship between the service provider and the client. (Biró et al, 2003)

In an article by Hickey and Siegel (2008) a provider of IT infrastructure service and solutions was studied by looking at their use of ISO 9001 and eSCM and identifying the unique value gained from these standards. When comparing the two standards much reuse between them could be identified in the company, much of the reuse was found on the lower levels of maturity in the eSCM. The conclusion of the study in the company was that eSCM had introduced demands on innovation and proactive performance programs which had not been the case for when just using ISO 9001. (Hickey & Siegel, 2008)

Hickey & Siegel (2008) suggest that a high use of global quality standards within the organization eased the transition from ISO 9001 to eSCM. As of 2013 there were 29,598 ISO 9001 certified companies in France (Iso.org, 2015), the adaptation of eSCM is much lower and there could be several reasons for this. One possible reason could be that ISO 9001 is much older and is aimed at a much broader audience since it was released in 1987 and could be adopted by any product or service company (Franceschini et al. 2006). eSCM however was not fully released for both service providers and clients until 2006 and is aimed at a much more narrow set of companies (Hefley & Loesche, 2006). Looking at the historical development of ISO 9001 the number of certificates did not start to rise in a larger extent until the mid 90's, see figure 5.1. With the large reuse of ISO 9001 making the transition into eSCM easier (Hickey & Siegel, 2008) and the widespread use of ISO 9001, and an increased interest for eSCM with the start of eSCM associations like the French AeSCM the adoption of the standard could start on a higher scale (Ae-scm.fr, 2015).

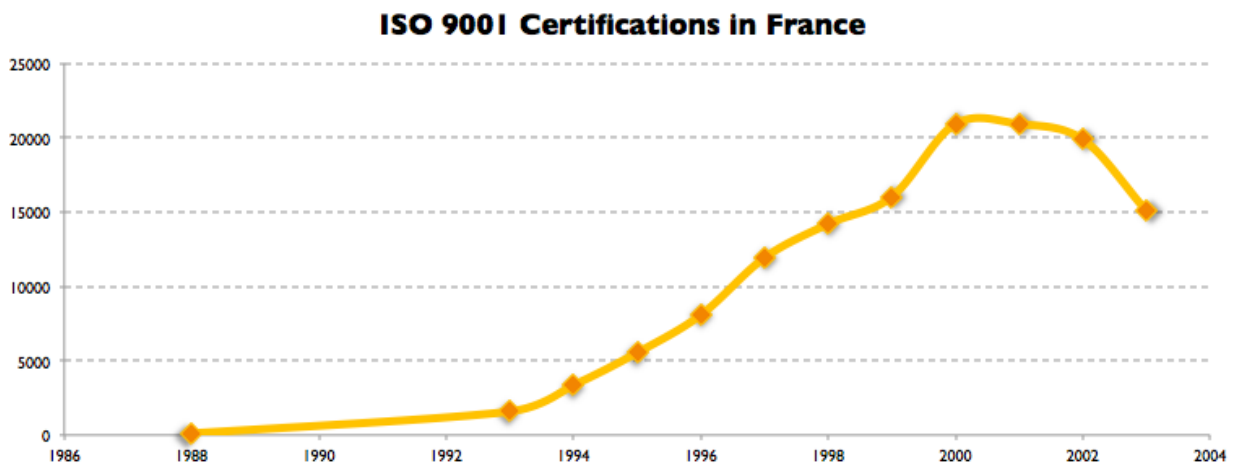


Figure 5.1 - Development of ISO 9001 Certifications in France 1988-2003, (Franceschini et al, 2006, Iso.org, 2015)

In a case study from 2013 a Chinese medium sized software-testing provider was observed and key personnel interviewed (Lu & Käkölä, 2014). They could identify the initiation phase as the most important part of the sourcing life cycle in the eSCM. The study also identified that the most expensive defects were caused by gaps in the understanding of requirements on the service between the service provider and the client. Understanding the requirements and doing the test planning are both activities that are located in the initiation phase, these activities was deemed as the most important because of their major impact on the end results. Lu and Käkölä (2014) suggest that eSCM is an effective tool for an SME helping them develop their scope further and grow in a stable way. The eSCM helps the company develop

a transparent sourcing life cycle directly to the end-client, gather and maintain knowledge in their field and create an effective communication with both internal and external stakeholder.

A larger company that has applied eSCM is LG CNS, which is a subsidiary of LG Group delivering technology service and consulting. LG CNS went through a eSCM certification and became in 2003 the first company in the world to become eSCM certified (Sinha, 2015). LG CNS had a need to manage service quality issues at their data and network management centers and establish processes for managing relationship with clients. By working together with the consultancy company of Saytam Computer Services they could in 18 months achieve a level 3 certification. LG CNS could reap several benefits from the implementation e.g. 7% increase in customer satisfaction, 24% decrease in number of network interruptions and 12% improvement of the recovery rates within thirty minutes. (Sinha, 2015)

Looking at the previous cases of eSCM that has been identified here we could summarize a few points that could be of importance in the implementation of eSCM in the future:

- eSCM might need to be modified when applied in smaller companies (Biró et al, 2003)
- eSCM is well adapted for use in knowledge-based companies (Biró et al. 2003).
- A previous adoption of ISO 9001 will ease the transition into eSCM (Hickey & Siegel, 2008)
- Knowledge Management is the most important capability area (Biró et al. 2003).
- Initiation is the most important life cycle phase (Lu & Käkölä, 2014).



## 6. VITS' Motives Behind eSCM

This section gives an overview of the underlying problems and motives that brought the initiative of using eSCM at VITS.

The intention with eSCM at VITS is to change the vision of their clients, making them understand that a long-term partnership will bring more value for both parties and realizing each other's benefits and sacrifices. They want to go from providing e.g. simple application development services, towards taking care of bigger projects, managing whole IT infrastructures so that their clients can focus on their core competencies instead. This means that they have to convince their clients that some parts of their organization is non-core or non-critical enough to be outsourced (Namasivayam 2004, p.13).

Some of their current situations is similar to the one of American Express (Gottfredson et al, 2005). According to the Program Director A the way that they are working with their customers within banking could improve. E.g. At some banks, every investment banker at a bank need their own customized applications since they work with different clients and in different ways. Every investment banker has their own developer in their office that customizes their applications on request. This is very inefficient in terms of time and cost. VITS want to convince their clients that a long-term solution where they take over their whole IT services is more beneficial. E.g. all investment bankers could use a standardized and common application where one or two developers in India could use one point of contact at the bank that gathers the requests. The contact then provides these requests to the developers who provide application updates on a timely basis. This way they would not need as many developers. However the customer is not confident or mature enough to manage such a transition or willing to fire their developers. There are risks such as dissatisfaction from the end-users, the investment bankers, since they have to adapt to a common application and communication difficulties due to outsourcing to India.

According to the Program Director B, these maturity problems also arise during the delivery of services. There have been situations where the client is simply not competent enough to take over the service. Responsibilities or training have been given, however the client has not followed up on them. There have been previous attempts of closing this gap with other maturity assessments, but they were considered to take a lot of time and resources to implement, decreasing the willingness of the clients to invest. Their previous attempt on getting certified with CMMI is an example of this.

An aim of engaging with eSCM is not to get certified, at least in the near future. Instead the intention is to translate the documents and guidelines that can be found on eSCM into something more implementation-based for their own, their clients' and partners' use. The reason is that in order to get fully certified, they would need to put a lot of resources on following the certification procedures as stated by ITSqc, which would be a waste since some of the practices might be unnecessary. Further, it is possible that they might have already implemented some of the practices at the company giving that they are ISO 9001 certified. But being ISO 9001 certified does not mean that some capability areas can be skipped where ITSqc mention that eSCM can be used as a complement instead. According to the senior architect, ISO 9001 is just a certification i.e. it all depends on how the company were able to receive the certification. Companies might have been able to showcase that they follow the procedures, however the certification might not reflect the reality. Another reason for not overlooking any capability area is that VITS wants to use the eSCM with their clients and partners as well i.e. the model has to consider that the users might not be in compliance with any certifications. Another important aspect to consider was that the new model is

meant to be used by the service provider and the client together, changing the vision of their clients as separate entities and reach a higher level of integration.

## 7. Development of the VITS eSCM

The following section describes how the ITSqc eSCM has been modified, considering the interviews and literature as input. First an abstract interpretation of the ITSqc models and their components are given and compared to an abstract presentation of the new VITS eSCM (section 7.1). The VITS eSCM is then walked through by first presenting the overall VITS eSCM. The structure of the capability areas is then described by looking further into Knowledge Management as an example (section 7.2.2). This is to show the new implementation-based view including the maturity levels and roles. The structure of the practices within a capability area is then further described by using a practice example (section 7.2.3) from Knowledge Management. The walkthrough of the VITS eSCM in this section is visualized below, see figure 7.1.

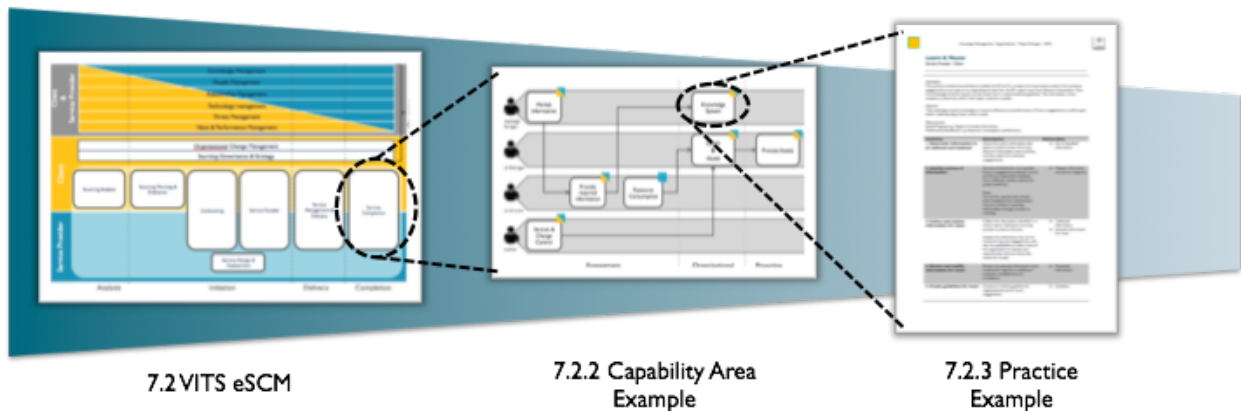


Figure 7.1 - Walkthrough of VITS eSCM

### 7.1 High-level Comparison ITSqc vs. VITS

The structure of the model is partially based on VITS's previous attempts on CMMI. Many implementation templates within the company follow a somewhat similar structure and by considering this as an input and using their own language the company will be enabled to familiarize themselves easier with something new. To begin with, an abstract figure of how the ITSqc eSCM were interpreted by the authors and VITS, see figure 7.2, is presented below. For detailed figures of the ITSqc eSCM, the authors refer to the ITSqc's own publications on the web (ITSqc.org, 2015):

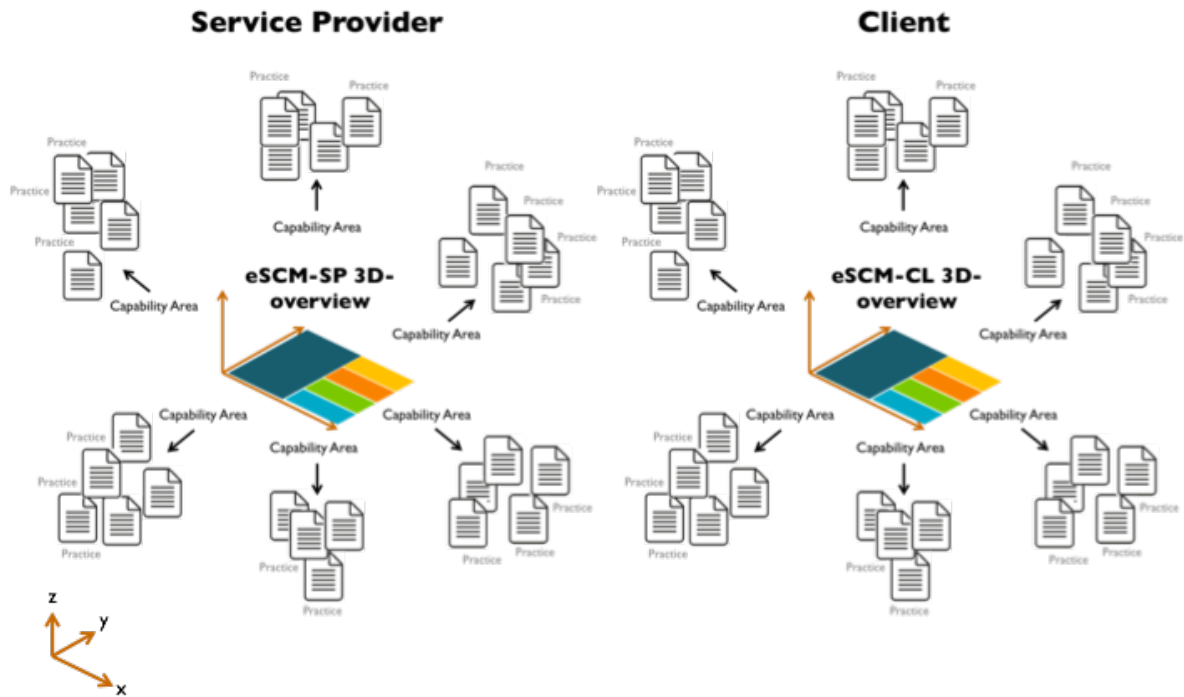


Figure 7.2 - Interpretation of ITSqc eSCM's structure

As mentioned in section 4, the model is split in two, one for the service provider and one for the client. The benefit of ITSqc eSCM is that it covers both perspectives and the models are meant to be used separately. The model begins with a rather complex high-architectural 3D view. The 2D-field, x- and y-axis, represents the capability areas and the sourcing life-cycle, whereas the z-axis pointing upwards represents the different capability levels. In the ITSqc 3D view, the reader can only see the capability areas in abbreviations e.g. Knowledge Management is called “knw”. Even if the 3D view cover how the capability areas are aligned with the different phases of the sourcing life-cycle indicated by the different colored rectangles in the figure, some boxes are hidden and at first site, makes interpretation difficult. The practices within the capability areas are only viewed as numbers; however, these numbers might not have any specific order, which makes it difficult to understand how one practice relates to another and thus the reason why the document icons in the figure are randomly clustered. In summary, the structure of the models seems to have an overload of information, making it hard to interpret how the different processes are linked or connected to each other. This is not noticed until one reads a specific practice in detail, where it might mention in the description of the practice whether it takes input or provides output from/to other practices within the same capability area, therefore leaving the reader themselves to find the links instead.



### eSCM- 2D Overview

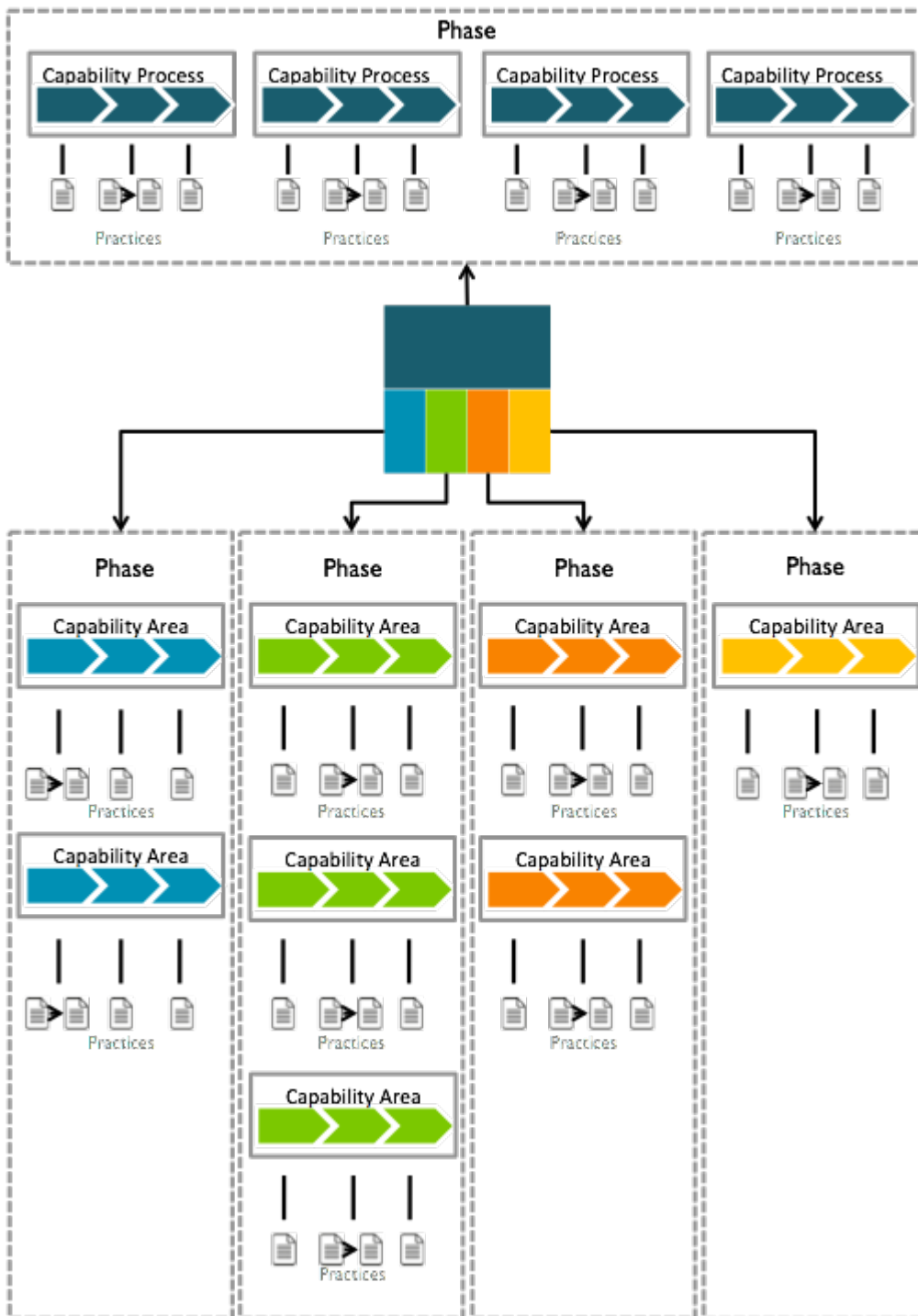


Figure 7.3 - Illustration of VITS eSCM structure

The figure 7.3 shows the new VITS eSCM on an abstract level, to indicate what has been changed. The models have been taken out of the 3D-view disposition since it felt that it tried to show too much information in one place. The two models are now merged and combined in one 2D-model. This is

because the model is, as mentioned, meant to be used by the client and service provider together. Providing a merged model will enable the client to realize that in order for the service provider to develop or improve their capabilities, the client also needs to have a set of capabilities in place, showing that they are in fact dependent on each other. Capability areas are now clearly divided between the phases of the sourcing life-cycle. Depending on which capability area the user wants to pursue, they are taken to a new level of presentation that is defined as capability practice maps. This level of presentation is added to structure the model into a more implementation-based view. This is also where the user can see how the practices have been organized after the different capability maturity levels, which was the z-axis that was taken out of the overall 3D-model.

## 7.2 VITS eSCM

This section describes the development and provides a walkthrough of the VITS eSCM. The walkthrough follows the earlier figure (figure 7.1)

### 7.2.1 Development of VITS eSCM

In the figure 7.4 below, the ITSqc eSCM is presented, however taken down on a structured and merged level in the new 2D-view.

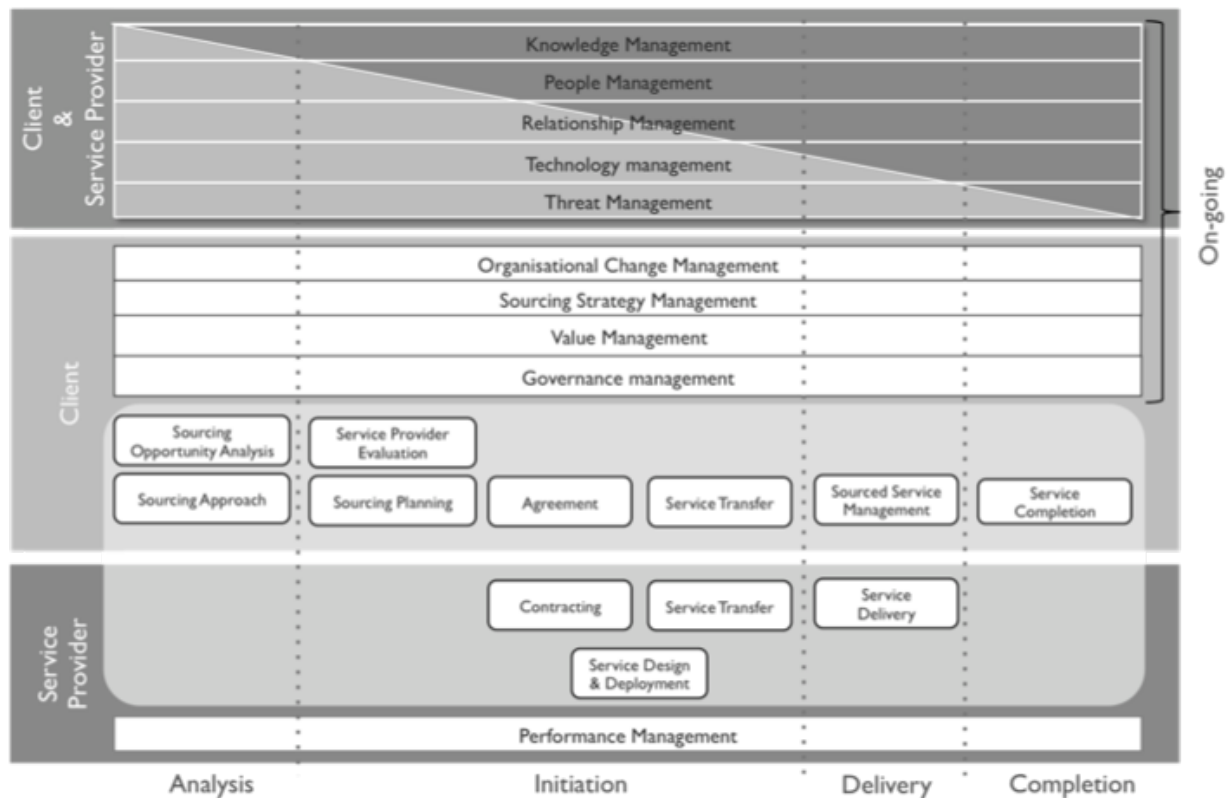


Figure 7.4 - Included Capability Areas in VITS eSCM, in progress

When merging the models and thoroughly analyzing the capability areas and their practices themselves, one could notice that they overlapped or existed for both the service provider and the client, e.g. the on-going capability areas in the top grey zone (Knowledge, People, Relationship, Technology and Threat Management). Additionally, some capability areas could exist for both the client and service provider,

however with different names. E.g. the capability area Agreement for the client has almost the exact same practices as the area Contracting for the service provider. This ambiguity could be due to the different versions of the ITSqc's separate models. The new and final model is seen below in figure 7.5 presented as the VITS eSCM where the areas that overlapped, or had different names are now merged as well. E.g. Agreement and Contracting is combined as Contracting. Other areas that were combined due to this reason were Value Management for the client and Performance Management for the service provider, which is now called Value & Performance Management.

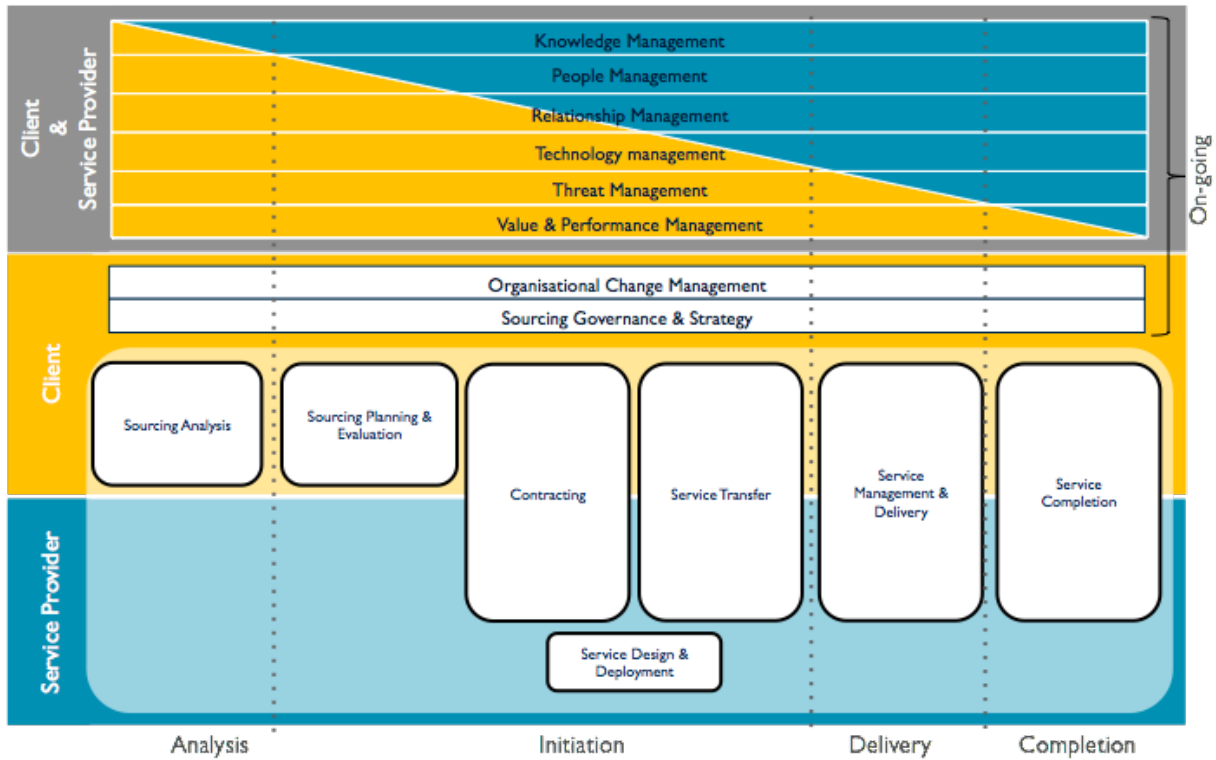


Figure 7.5 - Final VITS eSCM

Other areas could be merged and condensed since some of their practices either overlapped, giving similar outputs or because the capability area itself was considered having few or little practices. E.g. the capability areas Sourcing Opportunity Analysis and Sourcing Approach, which have four and five practices respectively are now merged into Sourcing Analysis. Further, with input from the Program Director A and B, some practices were either excluded, spread out or included in another capability area where they seemed more relevant. E.g. the practice Governance Model in the capability area Sourcing Analysis was excluded since it involved practices that were already covered in the Capability Area Governance Management. The practice Demand Identification in Sourcing Analysis was merged with Sourcing Option since its activities was either covered in other practices within the same or another capability area, or because the activities were deemed to be few enough to be combined. E.g. when looking at the Major Activities b) in Demand Identification, the first step refers to a practice in another capability area:

1. Define objectives for sourcing in potential sourcing areas:

- Refer to str03, “Potential Sourcing Areas” (Hefley & Loesche, 2006, p.186).

Some practices had the exact same activities for the client and the service providers, however in different phases of the sourcing life-cycle. E.g. the practice Market Information exists only for the client in the capability area Knowledge Management, but can be found for the service provider in the area Contracting. Since the practice itself is about gathering information, it was moved to Knowledge Management for the service provider as well.

### 7.2.2 Capability Area Walkthrough Example

From the abstract presentation of VITS’s eSCM (figure 7.3), the client and/or service provider chooses which capability area they want to pursue. The user is thus taken to a process or implementation-based view (figure 7.6). In this case, Knowledge Management is chosen since it is deemed one of the most important capabilities according to Biró et al. (2003).

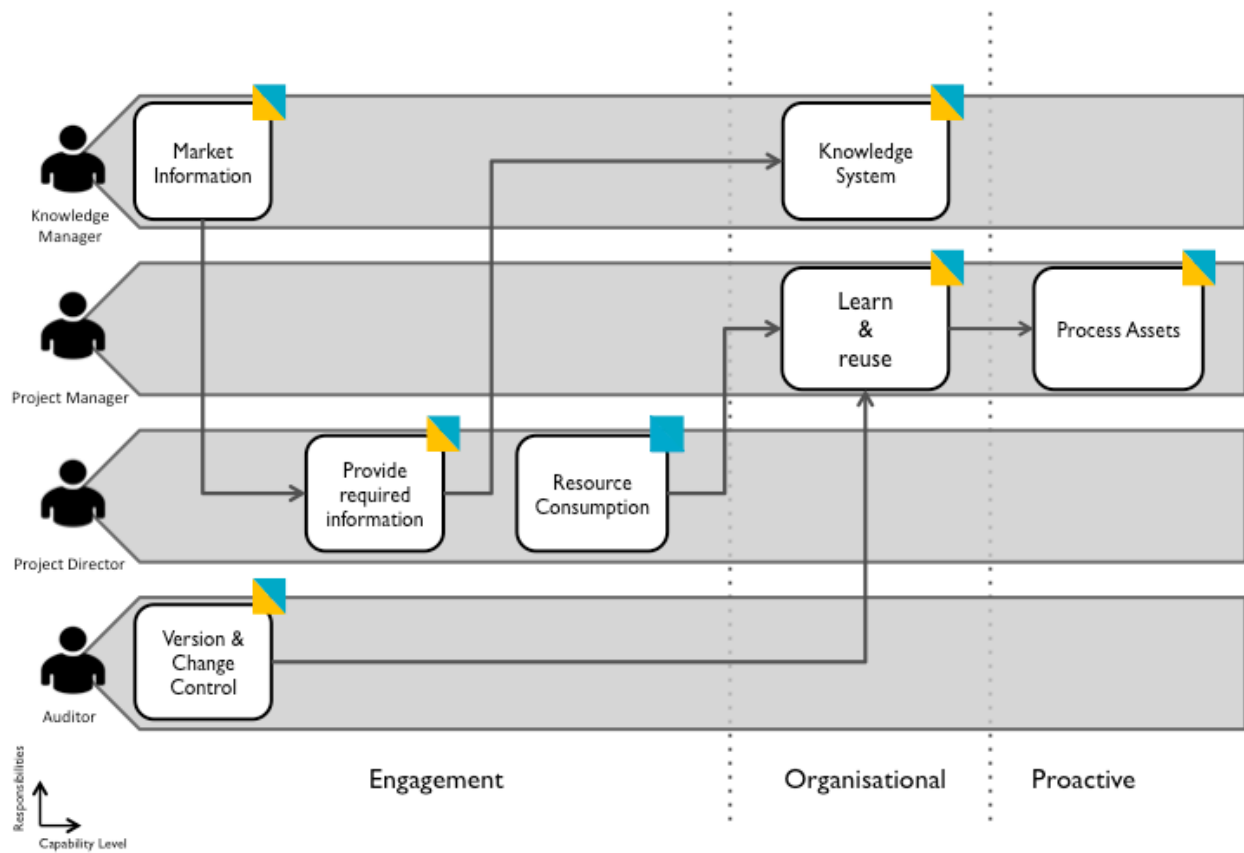


Figure 7.6 - Knowledge Management Capability Area Practice Map

This view is important since it is a presentation that VITS and most of their clients are familiar with, and what brings the eSCM to a comprehensible state. It is here that the third dimension (z-axis) is brought instead, where the service provider or client can now view if the practice is on the maturity level Engagement, Organizational or Proactive. Note that VITS’s model only has three maturity levels than the original five. The reason is that these levels were deemed unnecessary to include at this view since the first level is simply when there are no practices, whereas the last one is when all practices are in place.

The VITS levels follow a somewhat similar description as the ITSqc’s level two, three and four. However the descriptions are now simplified with changed names.

The seven practices that are included are shown as the white boxes. The arrows indicate how the practices relate to each other. E.g. when conducting the practice Knowledge System, the service provider or client should complete the previous practice Provide Required Information which can be used as input. However, this does not mean that Knowledge System cannot be conducted without its input; instead it will not gain its full potential if attempted. The practices are also put in a logical implementation order where one practice is recommended to conduct after the other, whereas some can be done simultaneously. The smaller boxes in the right corner of the practices indicate whether the practice exists for both or if the practice is solely for one or the other, where blue is the service provider and yellow is client.

Another addition to the VITS eSCM is the added roles and responsibilities, which was a step towards making the model into an implementation-based one from VITS’s part. According to the Senior Solutions Architect, having defined roles and responsibilities simplifies the implementation of the practices since the appointed staff knows which practices they need to conduct and to whom they are responsible to give input to. Some roles are new e.g. a Knowledge Manager might not exist in an organization, whether an Auditor surely does. Depending on the scale of implementation, the roles and responsibilities can be added to other already existing roles within an organization.

### 7.2.3 Practice Walkthrough Example

To illustrate the structure of the practices, Provide Required Information is chosen since this is a practice, which exists for both the service provider and the client. A practice starts with an intro consisting of a description of the practice, its objective and examples of how one could measure its fulfillment. Below is the intro for Provide Required Information figure 7.7:



*Knowledge Management - Engagement – Project Director – SP/CL*

## **Provide Required Information**

*Service Provider / Client*

---

**Description:**

This practice involves the activities to provide the right information (e.g. *Market Information*, policies, guidelines and project planning) to the right employee, as well as how it should be accessed. Information needed and access restrictions are first determined, where a compliance guideline is then created to determine how employees should access the information with regards to chosen medium and compliances.

**Objective:**

Make information accessible and available both internally and externally between the SP and CL, to increase transparency and improve work efficiency.

**Measurement:**

Performance/Satisfaction e.g. Satisfaction rating from internal and external users on information access  
Status/Progress e.g. Available information vs. required information

Figure 7.7 - Provide Required Information Practice Introduction

The difference with the ITSqc eSCM intro is that the description is now condensed and simplified. An objective of the practice has been defined and added in VITS’s eSCM, which is an interpretation of the ITSqc’s description translated into what was determined an outcome for VITS and their clients. It is also clear how the previous practice could be used as an input indicated in this case in italic namely Market Information. Note that the practice is for both the service provider and the client, where the objective is the same. Even if the practice can be conducted separately, the intention is again to change the vision that there is a common objective for both.

After the intro, the activities to conduct the practice are presented. Every activity has a description and a deliverable. Since both the service provider and client have this practice in the original ITSqc eSCM, their activities have been merged and condensed in a unified structure for the VITS model. The two Support Activities a) and c) has been removed from every practice. The reason is that they are rather managerial and on a higher level. Since they are similar for every practice in the ITSqc model, they have been summarized and included in a training kit. However, the service provider’s and client’s respective 8 b) Major Activities are now condensed into 4 activities presented below:

1. *Identify information needed by employees*
2. *Determine required access to information*
3. *Create information sharing and maintenance method*
4. *Information access compliance*

<b>2. Determine required access to information</b>	Define who needs access to which information (e.g. stakeholders or employees).  <b>Note:</b> Include relevant employees of the SP that require information from the CL and vice versa.	<input type="checkbox"/> Information vs. access mapping
--	---	---

Figure 7.8 - Activity 2: Determine required access to information

Figure 7.8 illustrates one of the activities in detail. The second column is a description of the practice. Some “Notes” have been added when an activity is deemed critical for the practice’s success and with what VITS want to achieve. E.g. to attain the needed transparency that is mentioned as objective in figure 7.7, it is important that relevant employees that need access to information from the other party is already defined at an engagement level. The third column is the deliverable that the user can check if the practice has been conducted or not.

### 7.3 A First Step Towards Implementation - An Assessment Tool

To be able to assess an organization’s fulfillment of the VITS eSCM in a simple and convenient way an assessment tool was required. The aim of the tool was to be able to assess an organization’s fulfillment of the VITS eSCM on a fairly detailed level without having to use several weeks for completing an audit of the organization. According to Program Managers and the Account Manager interviewed at VITS, their clients would not see any value in wasting resources on spending several weeks to complete an audit with only one of their suppliers.

With the requirements from VITS, an assessment tool that has benefits from both an audit and a self-assessment was required, thereby introducing the need for an assessment tool that combine the two methods.

To be able to assess an organization against a standard an audit had to be used since only the auditor will be able to determine if the organizations fulfill the steps of the VITS eSCM since it is a standard with set levels of fulfillment. To make the assessment objective and independent of the audited organization the assessment tool was thereby designed to be used by a trained auditor. This will make the assessment easy to perform to a consistent level since a trained auditor understands the standard behind the assessment tool and can better determine if a process is compliant or not.

To address the issue with the time consumption of the audit it was desirable to use some of the aspects of the self-assessment methodology to make it less resource intensive. To make this reality a method from Figg (1999) should be used, which is a workshop with process owners to assess their processes in a time efficient manor. By gathering process owners and other relevant personnel, their expertise can be used to decrease the time of conducting the assessment on the organization. Areas that need further investigation, either from findings or areas not fully covered in the workshop, go through a traditional audit with higher demands on audit evidence.

Another aspect of the assessment that was desirable by VITS was the ability to observe the development over time. The three different levels provided a way of showing the improvement over time by climbing the levels and how well they are fulfilled thereby creating a range, illustrating the improvement, see figure 7.9.

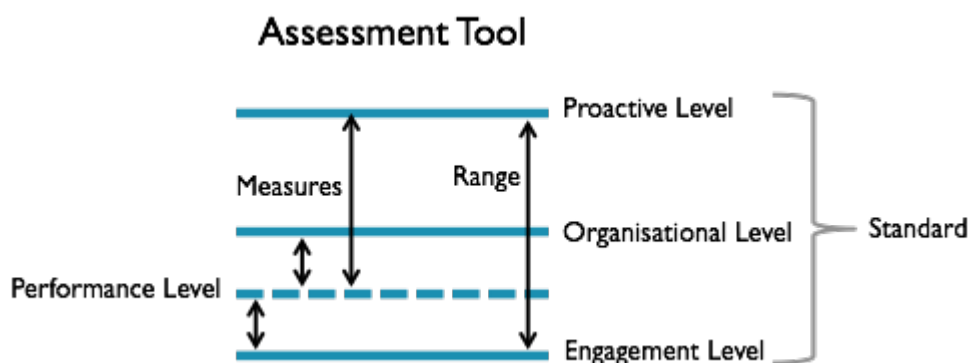


Figure 7.9 - The assessment tool's reference points

The questions were developed to cover as much of each practice as possible per question, to avoid an issue with too many questions and get a level of detail higher than required. Every practice has at least one question but some more extensive practices have up to three questions. In total there are 176 questions and since the assessment is only done at one organization at the time there is one tool for the service provider and for the client respectively. For the service provider there are 111 questions and for the client 140. The service provider's tool includes only the questions that concerns their organization and the practices they have in the VITS eSCM. The same goes for the client however some questions might

differ since a common practice needs to have a different perspective. One example of this is the practice Problems & Incidents in the capability area Service Management & Delivery. For each assessment tool there is a different set of questions.

Practice Problems & Incident questions:

Question for both:

- *Does the organization have methods of analyzing and reporting problems and incidents that occur during service delivery?*

Question only for service provider:

- *Does the organization have methods of responding to problems or incidents that occur during service delivery?*

Question only for client:

- *Does the organization cooperate with the service provider in resolving problems and incidents that occur during service delivery?*

As can be observed in the example above the questions from the practice Problems & Incidents is generic in nature and not very specific. This is to speed up the time of the assessment, but stresses the use of a trained auditor in order to conduct it correctly.

Every question can be graded as non-, partial- or full-compliance depending on the fulfillment of the criteria, see table 7.1. The different levels are rewarded 0, 0.5 and 1 point respectively but a practice can only achieve a highest score of 1. If a practice contains two questions they are each weighted by 0.5 and if there are three questions each has a weight of 0.33. All practices are weighted equally within each capability area and a score is calculated both for the total fulfillment of the capability area as well as for every capability level.



Table 7.1 - Assessment tool scoring guideline

Scoring Guideline	
Fulfillment	Description
Non	For non-fulfillment the organization does not have the processes/procedures/policies/activities in place, neither documented or in practice.
Partial	For partial fulfillment most activities are in place in the organization, but there are smaller gaps in the documentation or records presented.
Full	For full-fulfillment of the practice all of the activities must be conducted and evidence of their implementation should be available.

An assessment report is generated when the assessment is complete. It consists of three parts, an initial overview with results of all capability levels and for all capability areas, presented in graphs, see figure 7.10. The second part shows the fulfillment on a practice level in a table and the last part summarizes all questions whether non- or partial-fulfillment was achieved so that the organization can easily see where their gaps are located in more detail.

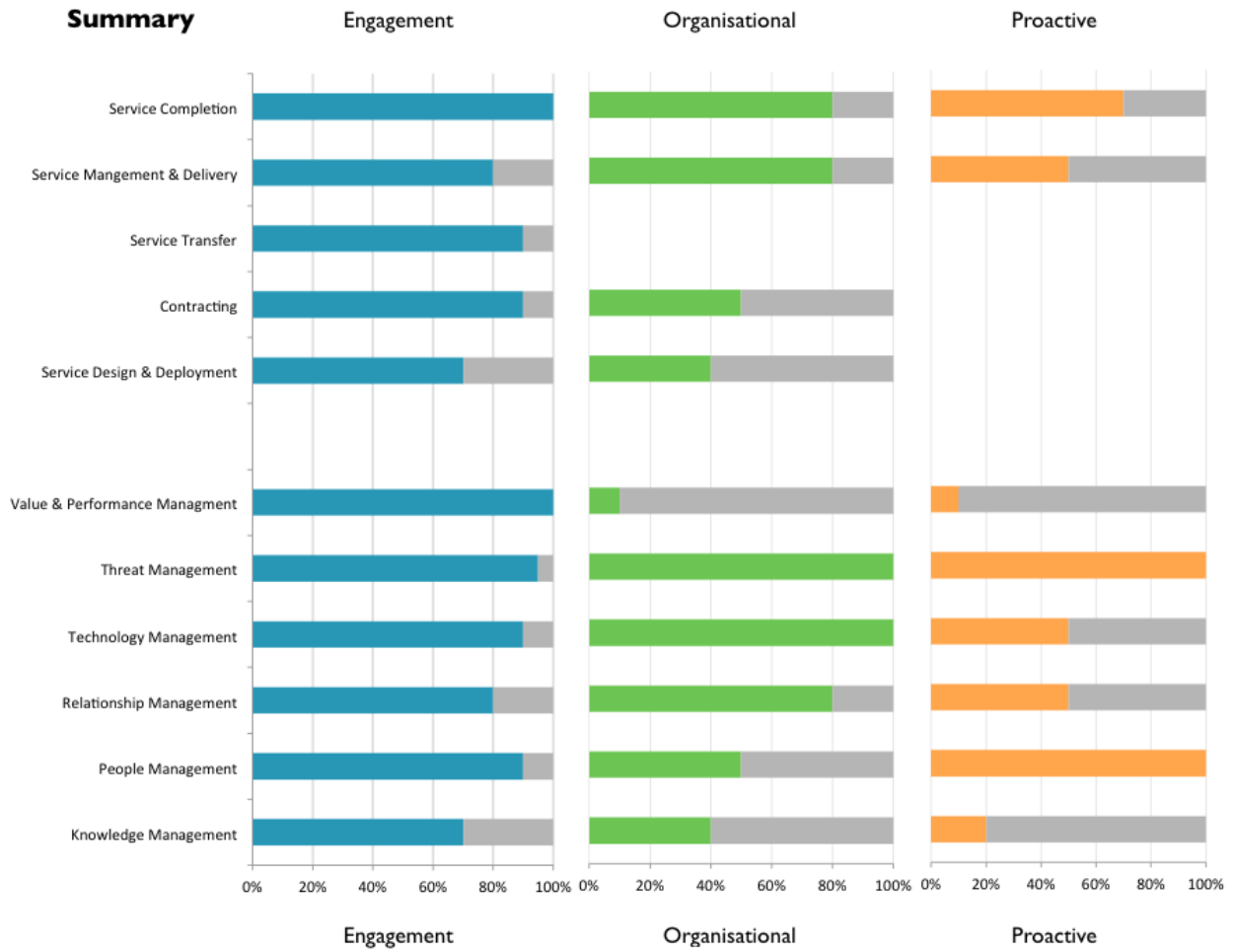


Figure 7.10, Sample of results summary in the report for a service provider

## **8. Discussion**

This section discusses the overall thesis and outlines its benefits and sacrifices of the VITS eSCM for service providers and clients. It begins by analyzing the VITS eSCM with regards to the five concepts defined by Fort et al., (1998) which affects business relationships, followed by the assessment tool and a general discussion.

### **8.1 Consequences of the VITS eSCM**

The biggest additions in general with VITS eSCM is its simplified view, its implementation-based approach, an assessment to start with and most importantly its integration between the client's and the service provider's view. Below are some direct advantages and disadvantages of VITS eSCM discussed by using the five concepts of what affects relationships namely Learning, Investment, Adaptation, Trust & Commitment and Distance (Ford et al., 1998).

#### *Learning*

The integrated view in the VITS eSCM enables both sides to realize that practices are linked and that in order to move forward with one capability area or practice, the other part has to follow in order to gain its full potential. Even if the VITS eSCM could be used separately, the views still show that if e.g. the client attempts reaching the organizational level in a capability area, there might still be practices on the engagement level that the service provider need to conduct. The intention is that it should increase both parties willingness to aid the other.

Additions such as the "Notes" in the common practices could further strengthen the business relationship. E.g. in the practice Market Information, Notes have been that the service provider and client should share market information to identify further opportunities that can be gained. According to de Wit and Meyer (2004), this could help both parties to strengthen their positions on the market, extending the normal business relationship by adding more strategic value. However there are negative aspects according to de Wit and Meyer (2004) that are difficult to evade. Sharing competitive information is a complex matter and additions such as these are rather sensitive since it depends on the balance of power. The stronger side could take advantage of the weaker one, using information for their own purposes. E.g. the seller might get tempted to use the buyer's market uncertainty and thus taking advantage of their lack of knowledge to gain better sales (Ford et al., 1998).

#### *Investment*

The factor Investment means that both parties need to know what and when to put in tangible and intangible resources in contracts or agreements to increase the performance, gaining more value and develop a long-term relationship (Ford et al., 1998). This can be linked to one of VITS's problems where they have noticed a gap of competence in engagements or when trying to hand over services to their clients. As mentioned, even if training is provided, the client does not follow up on them. Previous attempts of maturity assessments have failed since they take a lot of time and resources to implement. The benefit of the new assessment is that it takes less resource to conduct, with a strong potential of increasing the client's willingness to invest their time. Assessing both parties would show the client and service provider potential gaps between practices and maturity levels, guiding them on what to prioritize in order to gain better performance. The intention is to achieve the sense "we are sitting in the same boat" and that

both need to row to move forward. Closing these gaps can increase the buyer's transfer ability, which would enable the seller to deliver better services (Ford et al., 1998).

Another benefit is the implementation-based structure of the VITS eSCM and its capability process overview (figure 7.6). The assessment gives an indication of what to prioritize and with already defined roles; both parties can easily conduct the practices where the simple structure shows how to move to the next one.

But some common problems and fears with sourcing still remains. E.g. the VITS eSCM does not directly answer the problem of loss of valuable data and the possibility that it might fall into competitors' hands (Business Wire, 2003). Even if the VITS eSCM includes practices to ensure a smooth transition of knowledge, the fact that a client loses knowledge is still there. Further, the output of the assessment can differ in quality since the model is adapted to VITS. Some gaps can be due to that the model is not suitable for all types of companies and engagements.

### *Adaptation*

Adaptation is the extent of which the service provider and client can adapt to each other (Ford et al., 1998). The adaptations need to outline what both parties can gain from them, which is the exact purpose of the integrated view in the VITS eSCM the practices has common objectives. E.g. the practice Provide Required Information (figure 7.7) exists for both, however it has one common objective, which incorporates both parties. Thus, both parties need to rely and adapt to the other's situation in order to achieve the benefits of the practice namely "transparency and improved work efficiency".

However, it could be difficult to predict the market of the other party (Ford et al., 1998). The service provider might not be able to aid or adapt to some clients' if they have their own capacity uncertainties or market issues, making it difficult to commit to fulfill the common objectives (Ford et al., 1998).

### *Trust & Commitment*

As mentioned, the main purpose of the VITS eSCM lies within this dimension, and is about changing and improving the vision of how service providers and clients look at their business relationship. However it is also the most complex dimension since a relationship is rather unpredictable. This could be due to the different types of contracts and services that clients engage in. VITS situation with their clients is currently very similar to Multiple Sourcing, where clients try to play one supplier against the other for the best price. With regards to the underlying problems at VITS, the common disadvantages are as mentioned, shorter contract durations, decreased quality of the service and unprofitability for the service providers. However, the initial phases of the Sourcing Life-Cycle in VITS eSCM can help clients improve the way they conduct sourcing. The most probable scenario would be if they matured into Network Sourcing, since it involves long-term and interactive relationships with top-tier suppliers, but still maintains a competitive environment (Table 3.1).

### *Distance*

The VITS eSCM affects the four aspects of distance in different ways. First in Social Distance, the closer the organizations are to each other with regards of line of work the better outcome or performance when conducting the VITS eSCM. Second, the eSCM differs from other models by considering practices that

can improve the Cultural Distance as well, gaining better understanding of each other's norms and values. Third, It also helps minimize the Technological Distance since the capability area Technology Management helps improving the integration. Finally, by improving the capabilities within the area Contracting, organizations can minimize their Time Distance, gaining better efficiency during negotiations.

### **8.1.2 Assessment**

The assessment tool brings a major improvement to the use of eSCM. Being able to in a short time do an assessment of an organization and get a picture of the current state can be crucial to an organization's interest in using the VITS eSCM. From the interviews it was identified as one of the keys for a successful implementation since it enables the client to build an understanding of their capability level without investing too much resources. This will decrease the barriers for the client to venture into a relationship where VITS eSCM is used as a tool to develop their sourcing capabilities.

Since the assessment is a comparison to a defined state, which is the VITS eSCM, an audit would be the most logical choice since it uses evidence to match against a standard to control the fulfillment and gives an independent and objective view (Karapetrovic & Willborn, 2001). However doing a full audit is often a time consuming process and will require commitment from both the service provider and client. Then a self-assessment is more appropriate since it is a way of assessing much in a shorter time than an audit (Figg, 1999). A mix between the two methods was the most logical choice but this also has the effect that the benefits from the two different methods cannot fully be gained since the method for VITS eSCM is a compromise. The method, with a workshop first that preludes a smaller audit, gives the desirable speed and low resource consumption but dilutes the objectivity of the total assessment to some extent since the auditor will trust the judgment of the process owners in a larger extent than in a traditional audit. Also the speed could be dragged down if too much needs to go through the audit stage of the assessment with controlling audit evidence to confirm compliance.

A benefit of a self-assessment is the ability to measure how well the organization is improving towards a target over time (Karapetrovic & Willborn, 2001). This feature was desirable from VITS, but could not be fully achieved since target levels could constantly change due to the environment of the organization whereas the eSCM is fixed. Thereby this assessment cannot fully demonstrate the efficiency of the development. Instead the capability levels of the model were utilized as a way of creating a range for the results to be placed in to be able to demonstrate the development only against the standard itself and not against a changing environment. Therefor the assessment cannot provide indications of the development after achieving the highest level, the proactive level, where it instead acts as an assessment of any other standard and will just show full fulfillment.

The questions were developed to be on a high level to minimize the their numbers required for the full assessment thus introducing the need for a trained auditor to conduct it. This limits the assessment since training needs to be provided prior to its usage, but will instead generate a better assessment. The consistency from using a trained auditor will generate a higher quality outcome since it is less subjective to a specific organization. The results will thus become more comparable, both between organizations and over time.

## 8.2 General Discussion

When looking at what brought the development eSCM and what the concept of eSourcing includes (figure 3.2) it is clear that it suits the needs of VITS and is aimed for the same industry. The case examples in section 5 shows that the model seems to be well known by practitioners in IT service providers. Today there are no certified clients whereas there are two current certified service providers and 22 that had their certifications expired (ITSqc.org, 2015). Indeed the model is fairly new, initially published in 2001; therefore one could question how the service providers actually use the models, whether it is only to showcase their efforts and certification to their clients or only for their own use. It could also simply be that there is no interest from clients to engage.

Most research within sourcing strategies has mainly been developed from the client's point of view where the concept of eSourcing as now shifted the focus towards the service providers view as well (Rao et al., 1996). Thus, the intention and the reason why VITS want to use eSCM is rather obvious and they have recognized that need of its use since the model incorporates both perspectives (Hyder et al. 2006). However, this case shows that the issue of convincing clients the benefits of a partnership-based relationship still remains in practice (Rao et al., 1996). This barrier need to be overcome since the outcome of the VITS eSCM's success depends on both organizations' involvement in the process.

One could question if anything might have gone lost during the process of merging the eSCM-SP and the eSCM-CL or if a merger is even suitable. Since everything from both models is included, and the VITS eSCM can be used separately, there is no disadvantage of the merger itself in comparison with the previous models. Further, an adaptation of the ITSqc model has its benefits, but also some negative aspects with regards to its usage for others. However an adaptation can be considered necessary since the model itself is originally highly generic. The previous case studies show that the eSCM might need modification when applied in smaller companies (Biró et al., 2003). VITS is a global company, however the context of which the eSCM has been adapted is somewhat similar to the cases, since it has been developed through one of their country offices. But whether the adaptation is beneficial for all country offices is difficult to say. The authors have taken down the ITSqc eSCM from its highly generic view to a more practical view with input from literature and input from VITS. It is advised that companies of similar context, mainly IT- enabled service providers and clients that work with IT- enabled service providers use the VITS eSCM. However other companies could use bits and pieces of the model, outside this context. There are capability areas within the On-going, Analysis and Initial phase that organizations could use to improve their daily operations within how to handle knowledge, contracting or working with suppliers and sourcing in general. These areas can also be used as a starting point for smaller enterprises or newcomers as guidance to gain more experience when structuring their organizations.

## 9. Conclusions

The purpose of this thesis was to “...investigate and develop a model which determines how IT-enabled service providers, and their clients can use and implement eSCM as a future standard to better establish, manage and improve their relationships within sourcing to be seen as partners instead of simply clients and suppliers.” The thesis fulfills the purpose by showcasing the VITS eSCM and how it can be used to suit their current needs and objectives. VITS can be categorized as a somewhat generic IT-enabled service provider, since they provide a multitude of services in this field.

- The VITS eSCM can be used as a guideline when conducting similar initiatives in organizations delivering similar services as VITS.

By looking at previous cases where eSCM was applied or used to assess an organization, some areas was considered more important in the model, namely the Knowledge Management capability area as well as the Initiation phase (Lu & Käkölä, 2014, Biró et al. 2003).

- The Capability Area Knowledge Management and the phase Initiation are important in the model since they provide support to other areas and phases.

To VITS and most of their clients, quality management systems and standards are no news since many organizations are already compliant with one or more standards. Hickey & Siegel (2008) showed that having already implemented standards could work as an enabler of quicker adoption of eSCM than acting as a barrier. The theoretical background (section 4) also showed that the ISO 9001 is covering large parts of the ITSqc eSCM (Guha et al. 2005). This is the case with the VITS eSCM since it covers the same areas as the ITSqc model, and CMMI since it in a large extent is the foundation of which ITSqc built the eSCM upon.

- Having other quality standards implemented, like ISO 9001 and CMMI, is an advantage when implementing eSCM since it can ease the transition.

The two major differences that eSCM has gone through in the transformation from the original model to the VITS adaptation is first, the way the client and service provider is integrated in the new model, see figure 9.1. From originally been two models to becoming one aiming to create a closer relationship between the two parts. Second, how the model has been brought down from a general standard to an implementation-based view that gives concrete guideline on how to implement eSCM in the organizations. This thesis shows that a more implementation-based approach of the eSCM is desirable because of the complexity of the original model. The model is now easy to implement and the parts are aligned for immediate implementation. The VITS model has been simplified and “boiled down” from the original model to contain only the deemed necessary parts. The two original models contained multiple overlaps between practices whereas this has now been removed. VITS eSCM contains fewer steps but still covers the same topics. Areas that were closely linked are combined and overlaps merged, bringing the total number of capability areas down from the original 27 to 15. On a practice level there were

initially 179 practices, which are now 107. This is due to not only merging the two models but also their capability areas and practices.

- VITS eSCM has a larger extent of integration between the service provider and client.
- VITS eSCM has a condensed and more implementation-based approach than the original eSCM for an easier adoption.

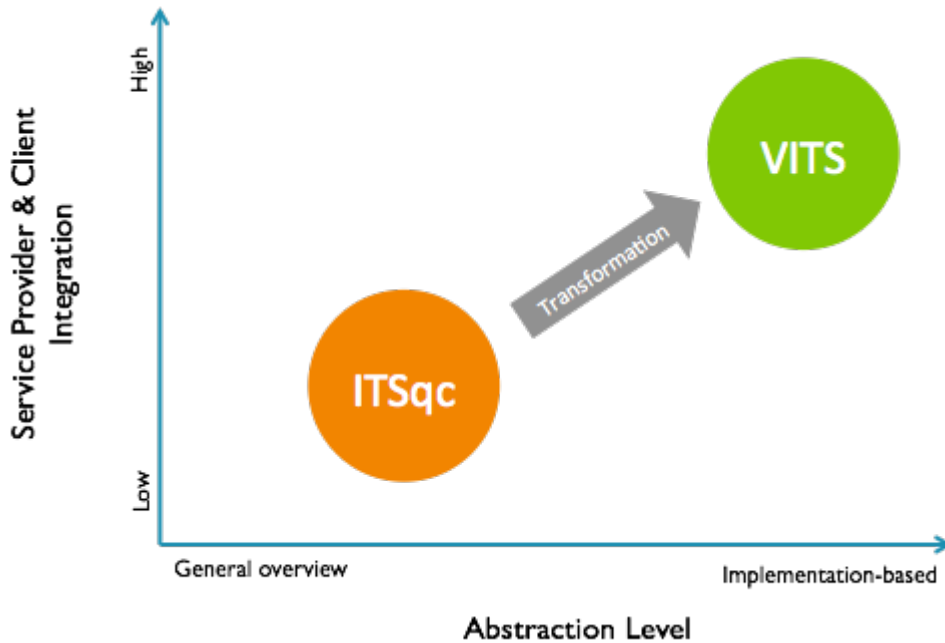


Figure 9.1 - Transformation of the ITSqc eSCM into the VITS eSCM

The practices have been arranged in a logical order based on their interactions since some of them provide input to other practices. This creates an easier way of prioritizing what and how to implement VITS eSCM. The model has also been complemented with roles and responsibilities for all practices, which aids the implementation of the model since it is clear who does what, something that was not specified in the ITSqc eSCM. To minimize the number of steps included in the model the Support Activities that was included for each practice in the ITSqc eSCM have been combined because of their similar nature. This has instead been included in the implementation toolkit as a methodology of how to go about when implementing the practices, and can now be applied to all practices. Each practice in the VITS model has been clarified with objectives to understand the use of the practice. Together with the combined view, both organizations gain a better understanding of what the other party is trying to achieve. For every objective there is also a suggestions on how to measure the success of a practice and how well it is performing.

- By aligning the objectives between the organizations in the VITS eSCM needs are better understood and misunderstandings could be decreased.



Two assessment tools have been developed to be able to measure the level of capability maturity at the service provider and the client. These tools assesses all practices and is designed to be a quick and easy to use. In order to consume fewer resources, a combination of a self-assessment and a traditional audit is used. The assessment is supposed to be used by a trained auditor so the underlying practices will be better understood when conducting the assessment. The practices are ranked on non-, partial- and full-fulfillment of the practice, the score adds up to a total score where all practices are weighted equally. The assessment tool generates an assessment report containing all required information to be used in the next step of the implementation.

- To make the model easy to implement and lower the barriers for adoption, an assessment consuming less resource than a traditional full audit was necessary.

To further develop the VITS eSCM it needs to be put into practice in a few client engagements to test the different parts of the model as well as the assessment tool. Since the model today is subjective to an interpretation of VITS's reality the potential of the model cannot fully be understood until it is put into practice. Based on a first test, the model could be refined to even further suit the needs of VITS. Also, the experience from using the model in different industries and with different services could enable further refinement by developing sub-models adapted to e.g. categorized service sector, improving the performance of how the model can be used itself. Another way the model could be improved is by providing templates for the different steps in the practices, e.g. providing a risk assessment template, which accompanies the steps where it is required. This was something that was identified during the interviews conducted, since a "white-paper block" often was a problem when employees faced new steps and did not know where to start. The templates could be a solution to bridge this problem but could not be completed within the frames of this thesis.

In total the VITS eSCM is a refined version of the ITSqc eSCM that is adapted to easily be implemented in a service provider-client relationship with least possible effort to decrease the resources required for organizations to adopt yet another quality management model.



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