

ITIL Service Design Framework and service definitions in hosting contract: an action research and gap analysis



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Tämän työn tarkoitus on tutkia SAP palvelutasomäärittelyjen evaluointia osana SAP hosting -palvelun hankintaprosessia toimintatutkimuksen metodilla. Tutkimuksen kohteena olleessa tapauksessa palvelutasomäärittelyt oli päivitettävä vastaamaan tämän päivän tasoa sekä ITIL Service Design prosessirakennetta. Palvelutasomäärittelyt olivat tarjouspyynnön liitemateriaalia.

Analyysin työkaluna toimi eroavuusanalyysi. Sitä käytettiin tarjousprosessin vaatimusten keräämisen, tarjouspyynnön laatimisen ja tarjousten analysoimisen vaiheissa. Liiketoiminnan vaatimukset huomioitiin ajantasaistamisessa. ITIL -pohjainen viitekehys lisättiin jäsentämään vaatimuksia sekä helpottamaan linkittämistä toimittajien tarjouksiin osana tarjouspyynnön laatimista. Tarjoukset verrattiin vaatimuksia vastaan sekä keskenään tarjousten analysoimisen vaiheessa.

ITIL on yleisimmin käytetty ICT palvelujen elinkaaren hallinnan malli. Analyysissa hyödynnettiin Service Strategy ja Service Design - osioita. Erityisesti version kolme prosessimalli toimi eroanalyysin viitekehysten tärkeimpänä panosmateriaalina. Materiaali muokattiin vastaamaan palvelukuvausten ja palvelutasomäärittelyjen tarpeita.

Työn puolesta työn tulos oli laatia eroavuusanalyysi. Opinnäytetyön tuloksena on analysoida prosessia jolla työ tuotettiin. Prosessin analyysin lähdemateriaaleina ovat pääosin eroavuusanalyysi ja tutkimusloki. Tuotos kuvaa prosessin vaiheet, niihin liittyneet tehtävät ja tutkijan huomiot.

Metodina käytin toimintatutkimusta. Tämän mahdollisti oma roolini palvelujen hankintaprosessin hosting - tiimin asiantuntijajäsenenä. Eroavuusanalyysi oli työn puolesta vastuullani. Tutkijan lokia ylläpidin hankintaprosessin aikana.

Työn suurin haaste oli kiire ja suurin vahvuus ohjattu prosessi. Tutkimuksen haasteita olivat tauko työn ja tutkimuksen välillä, materiaalin tiiviys joka näkyi vähyytenä ja tutkijan osamattomuus metodin hallinnassa. Tutkimuksen vahvuuksia olivat kirjoittajan osallistuminen ja sisällön hallinta.

Loppupäätöksinä ovat muun muassa ITIL viitekehysten käytön onnistuminen, eroavuusanalyysi hyvä työkalu, saman työkalun käyttö koko prosessin ajan tuki tuloksien analyysia eri prosessin vaiheissa, kirjoitetun teorian vähyyks palvelujen määrittelyn suhteen ja toimintatutkimus mielekkäinä joskin haasteellisena metodina.

Asiasanat: ITIL, Action research, SLA definition, IT service definition, Purchasing

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Abstract

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The purpose of this work is to research SAP services and service level agreements as part a of SAP services hosting contract supply, using action research as method. The case of the research consisted on updating the service level agreements and adding ITIL Service design process structure into service definitions. Service level agreement definitions were attached to requests of proposals.

The gap analysis was used as tool for analysis. It was utilized in the purchase process phases of business requirements gathering, request for proposal and proposal (analysis). Business requirements were regarded while updating the material. ITIL -based framework was added to structure the requirements and support vendor proposal mapping while setting the request for proposal. The proposals were evaluated against the requirements and compared between in proposal analysis.

ITIL is the most used model for ICT service life cycle management. The analysis utilized Service Strategy and Service Design. The process model of version three was implemented to gap analysis as main input for framework. The ITIL material was modified to support the service definitions and service level agreements.

The deliverable for the work was the gap analysis. The deliverable for the study was to analyze the process to deliver the gap analysis. Process analysis inputs were mainly the gap analysis and research log. The deliverable describes the phases, tasks included and researcher reflections.

Action research was the main research method. This was possible due my work role as an expert of hosting team in supply process. The gap analysis was one of my responsibilities in team. The research log was updated during the supply process.

The main challenge in work was the hurry and main strength the controlled process. The main challenges of the study were the time gap between the work and the study, rigor but scarce material and novice researcher when applying the method. The strengths of the study were the double role of participant and researcher and the knowhow of the content.

The conclusions of the study are the success of implementing ITIL as framework, gap analysis as successful tool - using same tool through the process supported analysis in all phases, scarcity of theory on service design and action research as interesting but challenging method.

Key words: ITIL, Action research, SLA definition, IT service definition, Purchasing

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1 Introduction

This work is a case study about a development task for the purchase process of hosting services for ICT solutions. The development task focused on ICT agreement remodelling. The aim was to notify and realize the business needs of ICT. The task was set up to get the business requirements included into new ICT agreements. The task took place as part of purchase process of ICT hosting services. Purchase processes support many aspects, which support efficient ICT operations, i.e. sourcing, services definition, KPIs and R&D.

In general, too little time is used to prepare ICT purchases. Often there is too little time spends on preparation and monitoring. Evaluation of alternatives is often insignificant and preparation do not support decision making. Targets are not set clear and they do not have connection to the strategy. In many ICT investments decision based on the investments costs and underestimates maintenance fees which often are many times higher than investment it shelf. Project management is needed at least to fulfil these holes in ICT purchasing process. Project Management inherently includes tasks that ICT purchasing process often lacks. (Karvonen, Reponen & Vehviläinen 1994, 16-30.)

This work has a deep connection into reality of operating in ICT purchases, which makes this work a real case study. The work requests main theoretical background from ITIL Service Design. The method mainly used is action research. The author took part into supply process as technical expert and therefore was partly responsible about evaluation. The findings are expected to give input to improve and create support into future ICT supply process in the target organization.

The focus is in the evaluation is concentrating into Service design, Service catalogue and Service Level Agreement (later SLA) evaluation for SAP solutions hosting. The organization in case (later target organization) utilizes SAP provided software heavily in business. Company has a dedicated roadmap for SAP utilization also for future. Templates for evaluation are based on internal work and service propositions by vendor parties as part of supply process.

This work is focusing into utilization of Information Technology Infrastructure Library (later ITIL) Service Design Framework as part of purchase process. ITIL is a best practice guidance set for IT Service Management. ITIL consists of a series of publications giving guidance on the provision of quality IT service and on the processes and facilities needed to support those. (Lloyd et al. 2006, 301.)

The research method is based on action research. Action research aims to solve current practical problems while expanding scientific knowledge. Unlike other research methods, where

the researcher seeks to study organizational phenomena but not to change them, the action researcher is concerned to create organizational change and simultaneously study the process (Baburogly & Ravn 1992, 30.)

The deliverable of this work is a proposal of version two for evaluation of service design for SAP applications hosting. Hosting supply process for SAP applications takes place around every third year and it is major process in target organization. The deliverable - gap analysis - is to support next hosting supply process. The expectation for gap analysis is a. to show where services are not listed sufficiently b. to show where service are not in right level c. to show where more detailed specification is needed. The method is based on a. real data gathered b. initial notes when working with proposals. After participating into process, field work, the deep analysis takes place. Criteria's for evaluation is based on ITIL Service Design and criteria addressed by target organization.

The case is explained in detail on following chapters. The next chapter describes the problem and deliverables. The theories are presented in chapter three. The methodology is explained in chapter four. Then, data is presented and analysed in chapters five to six and the deliverables and results together with researcher's reflections are given in chapter seven. Finally, the conclusions are presented in chapter eight.

1.1 Terms and definitions

IT or ICT are abbreviations of Information Technology or Information Communication Technology. The technology typically includes computers, telecommunications, licences, applications and other software. The information includes for example business data, voice and video. IT or ICT is used mainly to support business processes. (Lloyd et al. 2006, 300.)

ITIL version 3 was published 2007. Delta for version 2 version 3 focuses on cyclic governance model based on life cycle management. Ten separate processes of ITIL V2 have been grouped and completed to five approaches which include altogether 26 processes in V3. (Introduction to ITIL 2006. Lloyd & Rubb 2007.) This work is focusing on area of V3 Service Design, but extends to other areas when applicable.

SAP Ag is the market leader in enterprise application software, which is typically used for run main business processes of a company. It is headquartered in Walldorf, Germany, and founded in 1972. SAP stands for "Systems, Applications, and Products in Data Processing". SAP applications and services enable more than 109,000 customers worldwide to operate profitably, adapt continuously, and grow sustainably. With revenue (IFRS) of €12.4 billion for the year 2010, SAP has more than 53,000 employees and sales and development locations in more

than 75 countries worldwide. (<http://www.sap.com/corporate-en/our-company/index.epx> read 2.5.2011)

Hosting in this context refers to datacentre services (servers, infrastructure), in which a. technical platforms consisting hardware and operating systems are provided by vendor for solutions owned by target organization and b. technical platforms are operated by vendor for solutions owned by target organization. Excluded are e.g. application maintenance and support services, they are handled via separate agreements.

2 Problem description and deliverables

In services purchasing process, the need to revise the templates for quotation task became imminent, when the scope of purchased service was changed. The old templates did not support any more efficiently the needs of target organization. Also part of templates were technically out dated as in hosting contracts, the validity time of agreement is typically longer than any other area in ICT services. In the target organization, also the purchasing process was revised, but this was done in strategic level. Revision of templates for quotation task was aligned to the revision of the purchasing process.

The old purchasing process did not utilize ITIL at all. The connections to ITIL framework need to be described. Also support processes should be considered from ITIL framework processes. Tasks in these support processes, for example requirements gathering, service catalogues and service level requirements provide input for purchasing process

Main challenges were a. how to deploy ITIL framework to support the business needs and b. how to deploy the ITIL structured business needs into ICT contracts. Based on this, the problem in this study consisting one phase of the process is c. how to evaluate that requested business needs are included in vendor proposals, in ITIL structured way?

The decided method in target organization was to run the gap analysis which clarifies the deficiencies of service design and service level a. in original template for request of quotation b. in quotation material provided by 2 vendor candidate and d. versus ITIL Service design guidelines. This can be considered as an input to this work. The comparison table will be provided as data for research. Another result relevant only to this study is the note log by researcher done during the process. The log will be analysed as a. story log about initial issues arising during the development process and b. as self-reflection material for researcher, revealing the learning curve and remind the real actions that took place. This is also an input to the analysis. The deliverable of this study is an action analysis of the process, what really took place and how the researcher met the reality. The action analysis referenced in material later as gap analysis was based largely into gap analysis and research log.

3 Related theories

This study bases on three theoretical approaches. They have been collected here even the level of theory varies. This is to support reader, making possible to reach a big picture. First approach is for ICT outsourcing. Outsourcing focuses to ICT area and some relevant points to be taken into account in this case. Theory supports the creation of attachments. The service design is here as part of outsourcing, also for support of the creation of attachments. The service design is focused on implementation of service from vendor's point, but the statements are valid for the customer, too. Service design is an area still waiting for rigor research. Second approach is the supply process. It creates framework for actions taken during the process in this study. Also the deliverables of this work are utilized in purchase process. Third approach is ITIL, as framework for material - deliverables, attachments - creation.

3.1 ICT Outsourcing

The outsourcing can be defined, according to Heywood (2001, 27) stated as most complete: "the transferring of an internal business function or functions, plus any associated assets, to an external supplier or service provider who offers a defined service for a specified period of time, at an agreed but probably qualified price". It must be understood that the control of the functions in question will thus reside with the service provider. This outside organization, as a specialist in its field, will usually be in a position to add value not normally obtainable in a non-core function retained in house. In her study, Nyrhinen (2007, 17) defines IT outsourcing as "a conscious decision to contract out to an external service provider IT activities, processes and/or related services, which are necessary to the operation of the organization. Outsourcing has specified objectives, and the goal of the outsourcing transaction(s) is to achieve these objectives.

Increasing product proliferation and intense communication are exerting considerable pressure on organizations as they strive to grow and improve profits. In this context, outsourcing is commonly accepted as a strategy not only to cut costs, but also to achieve strategic objects. (Narasimhan & Narayanan 2009, 36.)

Many organizations have a portfolio of outsourcing engagements. Each of these engagements is characterized by set of objectives. These objectives dictate the practices that organizations pursue with respect to the outsourcing engagement. Thus, managing a portfolio of engagements requires understanding of supply management practices that drive outsourcing relationships. A simple and practically useful way to classify outsourcing relationships can be helpful in understanding which practices should be implemented in specific contexts. Compa-

nies outsource core and non-core activities depending on contextual factors. (Narasimhan & Narayanan 2009, 38.)

Narasimhan and Narayanan (2009, 38) compare in their study engagements based on its relational importance and strategic importance: a. relational importance can be assessed based on the level of information exchange in outsourcing engagements, level of information exchange between the buyer and the supplier, and the level of value addition to the product of service provided by the supplier and b. strategic importance can be assessed based on the potential of the outsourcing engagement to create competitive advantage to the buying company, level of risks associated with the failure of the project or service, and the degree of switching costs incurred by the buyer to change the supplier.

The specific service requirements section of the statement of work is the blueprint for the security services being provided. It defines all details of the tasks to be performed and allow bidders to determine their requirements and qualifications to respond to the request of proposal. Absence of this valuable information places bidders at a disadvantage to the extent that they do not fully understand what resources they must possess and what tasks they are expected to perform. They consequently are caused to make their own perceptions regarding things the customer is requesting and draw erroneous conclusions that may result in a flawed proposal. (Stees 1998, 42.)

The areas where the shortage of qualified IT specialists is now most acute include call centre design, ERP, internet development and data warehousing, all areas that have appeared on the scene recently. (Heywood 2001, 38.)

The ICT function is now clearly becoming increasingly important for all organizations and for a growing number of them more and more difficult to understand and use. The need to reduce costs, deliver faster cycle times and generally improve the service is going to become increasingly difficult to reconcile when considered against the needs of core activities. (Heywood 2001, 38.)

One reason why there is not an automatic rush to outsource ICT departments is that so many deals go wrong. It is variously estimated that 20-35 per cent of ICT outsourcing arrangements are cancelled or not renewed when the contract is completed. Another reason for caution is the fact that the outsourcing service providers, large and small, all find it difficult to find sufficient quality staff to meet their needs. (Heywood 2001, 38-39.)

ICT spending can be designed to meet immediate needs and allow for an array of future benefits only if ICT and business goals are clearly defined. Outsourcing once appeared as to be a

simple solution to management frustrations, and senior management teams at many companies negotiated contracts with large service providers to run their entire ICT functions. At a minimum, these providers were often able to provide ICT capabilities for a lower cost and with fewer hassles than the companies had been able to themselves. But many of these outsourcing arrangements resulted in dissatisfaction, particularly as a company's business needs changed. Service providers, with their standard offerings and detailed contracts, provided ICT capabilities that were not flexible enough to meet changing requirements, and they often seemed slow to respond to problems. Furthermore, a relationship with a supplier often required substantial investments of money and time, which entrenched that supplier in the company's strategic planning and business processes. The company then became particularly vulnerable if the supplier failed to meet its contractual obligations. But many engage in selective outsourcing. Good candidates for this are commodity services - such as telecommunications, in which there are several competing suppliers and specifications are easy to set - and services involving technologies with which the company lacks expertise. Unlike decisions to outsource the entire ICT function, selective outsourcing decisions are usually best left to the ICT unit. (Ross & Weill 2002, 3-4.)

Each outsourcing engagement has specific objectives that the buyer wants to achieve. Potential problems that can prevent a relationship from reaching its goals include a misalignment between the goals of the buyer and the supplier in the outsourcing engagement, asynchronous processes and procedure employed to execute the tasks, and conflicting management practices and philosophies. Practices to prevent failure of an engagement include benchmarking, communications, organizational readiness, measurement, contractual governance, and risk management. In addition, almost all executives in Narasimhan & Narayanan's study stressed the importance of having a well-specified contract with clearly defined service level agreement (SLA). (Narasimhan & Narayanan 2009, 39.)

SLAs are the link between the specifications laid down in the contract and the delivery of the service. In essence they provide the basis of the legal framework under which the performance of the provider is measured. (Heywood 2001, 163.)

SLAs naturally vary according to the requirements of the various parties to the outsourcing arrangement. But in each case the quality of the service delivery will depend to a large extent on these factors: a. how well both parties have isolated and set down the critical controls. Although agreement will be necessary, it will be apparent that the client must set its own agenda and not just leave it to the provider b. in an appropriate risk/reward sharing arrangement, creating a dynamic but flexible service which accepts that changes to SLA are inevitable and a fact of life, if maximum improvements are to be achieved. The ideal SLA for this purpose should concentrate on the service required rather than detailing the methods of

obtaining it c. creating and laying down easily understood service control and service performance metrics. The wise client will attempt to look for continuous performance improvements and where possible build them into the service performance metrics and d. setting up the required quality management and performance review processes. (Heywood 2001, 163.)

For each activity it will be necessary to agree both a standard of service and the critical performance indicators. It is important that the various processes are grouped into distinct service activities so that they can be dealt with separately and the performance measures can be directly applied to them. Each activity will need to be clearly defined. This will require a description of its purpose, the volumes involved and the service expectations. (Heywood 2001, 163-164.)

In early stages of engagement, the buyers and supplier emphasize failure prevention practices. These include formulating the right agreements, vetting supplier capabilities, understanding the buyer's internal processes, establishing the right benchmarks, establishing communication channels, and developing adequate measures to monitor the outsourced process. These practices constitute a first set of practices in an outsourcing relationship. Outsourcing in phases can provide a buyer the ability to adapt the practices to minimize the inter-organisational friction between the buyer and the supplier. (Narasimhan & Narayanan 2009, 41.)

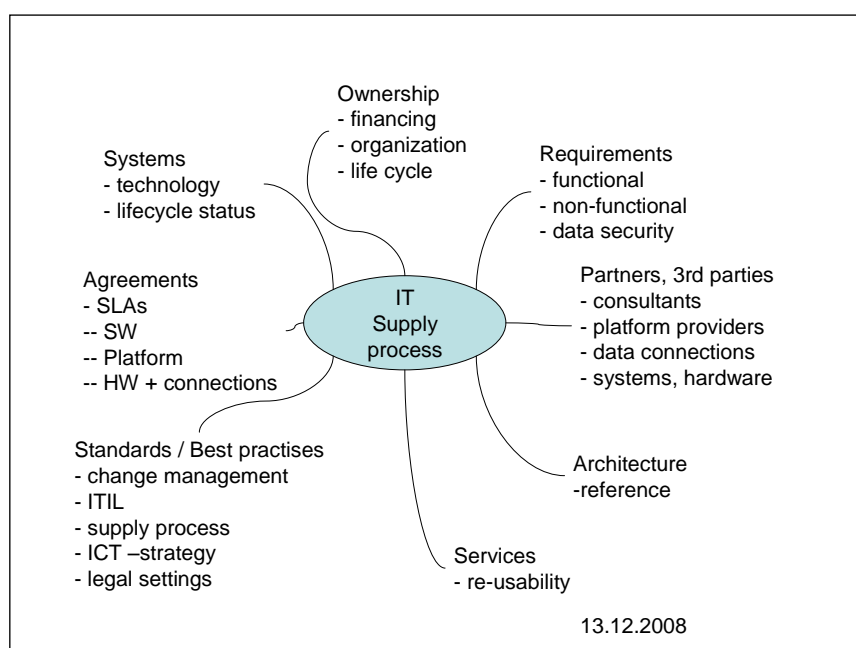
Implementing the right practices to manage the outsourcing relationships is the stepping stone to achieving the desired outcomes. Some have referred to this as outcome-based supply chain management. The outcomes of outsourcing are multifaceted. These include a. operational outcomes, such as cost reduction, quality improvement, on time performance, greater internal product variety, and control over processes. b. strategic outcomes, such as new or expanded revenue streams, gain in market share, elimination of intermediaries or creation of a new business model, faster product development times, greater product development velocity (number of products/features launched in a year) and higher customer satisfaction, c. learning outcomes such as gains in technical knowledge (product or process knowledge, new intellectual property that the firm gains from the vendor during engagement), and d. company level outcomes, such as increase in overall company profits and overall company performance. Effective prioritization of the desired outcomes can pave the way for appropriate implementation of supply management practices. (Narasimhan & Narayanan 2009, 42.)

Outsourcing excellence calls for a. deep understanding of organizational priorities, strengths, and weaknesses of both buyer and supplier, b. a clear understanding of the objectives sought in each outsourcing engagement, c. creating the right match between the engagement type

and the practise pursued to minimize inter-organizational friction, and d. a clear recognition of the evolution of relationships and the corresponding evolution of management practices. Excellence in managing outsourcing engagements involves an intuitive understanding of the nature of the engagement and implementing the right supply management practices to eliminate the friction between the buyer and the supplier. (Narasimhan & Narayanan 2009, 39-40, 42.)

In an ideal world business and IT are united rather than just aligned. Increasingly we are seeing IT as a function owned by the supply chain organization. The logic makes sense, as truly critical functions become ever more deeply ingrained in the competitive strategy of the business while genuine back office functions like payroll, telecommunications networks, and archiving lend themselves to low cost outsourcing. (O'Marah 2009, 11.)

The components listed in the following picture are essential to be considered when planning outsourcing. This list was originally set for a supply process evaluation (Helenius & Nissilä 2008a, 8). The outsourcing as a special type of supply process has to consider and include the same components.

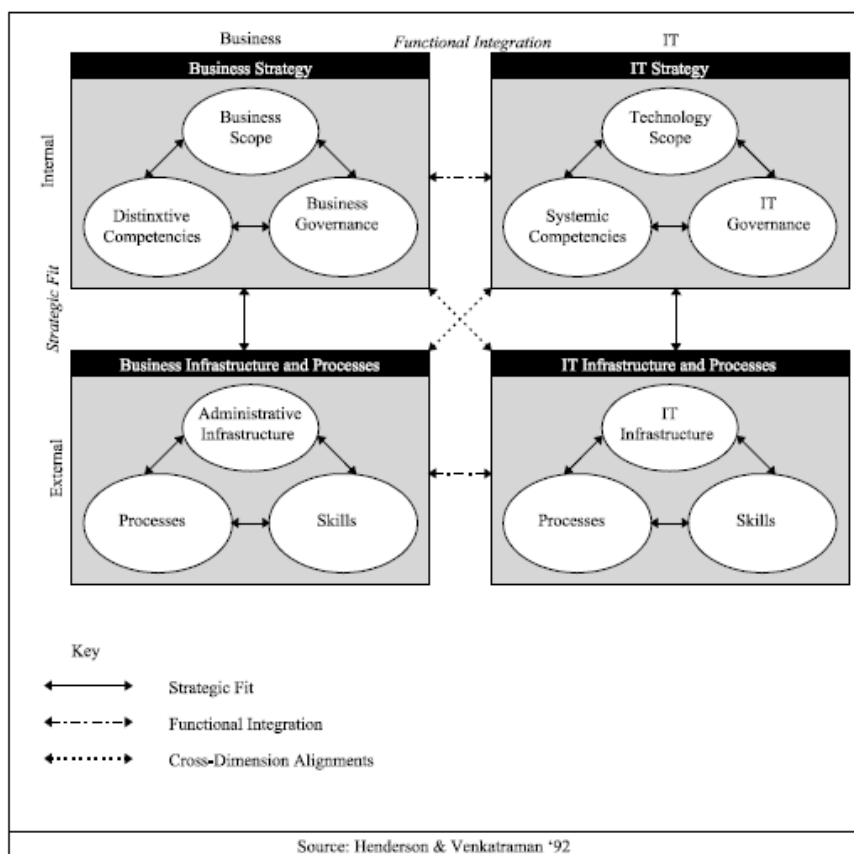


Picture 1: Fields of IT supply process relational components: (Helenius & Nissilä 2008)

3.1.1 Business and ICT

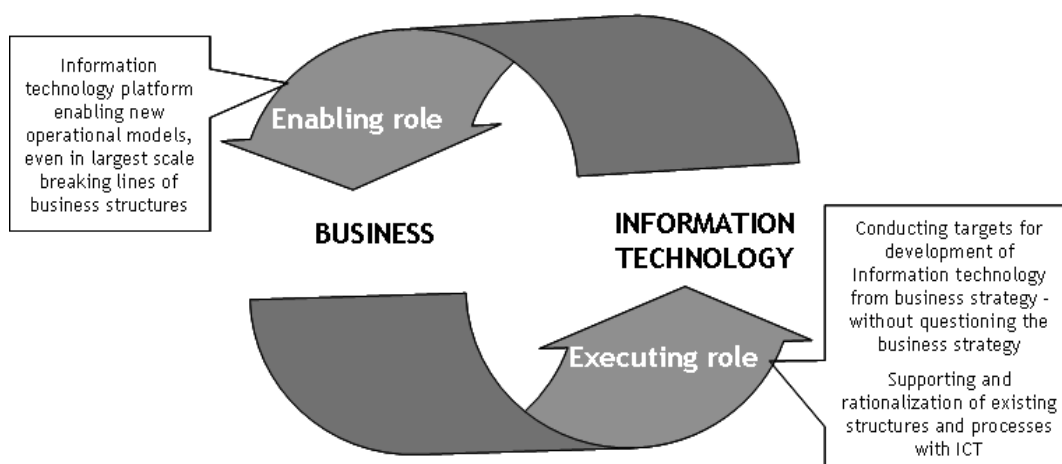
Henderson & Venkatraman introduced the connection of business and ICT domains. The following picture illustrates the essential alignments between the business and information technology strategies and between organizational and information systems infrastructures (Henderson et al. 1992, 1.)

Hevner et al refers to work of Henderson & Venkatraman when introducing the connection of business and ICT domains. The following picture illustrates the essential alignments between the business and information technology strategies and between organizational and information systems infrastructures (Henderson and Venkatraman 1993; in Hevner et al., 2004). The design of organizational and inter-organizational information systems plays a major role in enabling effective business processes to achieve these goals (Hevner et al., 2004).



Picture 2: The IT Alignment model (Henderson et al. 1992, 1.)

Hannus (2004, 276) provides a presentation of a process aligning the business and ICT goals seen through the operative roles in the following picture. The model includes both the strategic and operational domains. Information technology strategies are based on business strategies. It is essential to understand the strategic impact of information technology into the business leadership (Hannus 2004, 277).



Picture 3: Enabling and executing roles of Information Technology (Hannus 2004, 277.)

An IT system that does not work is useless. But that does not mean every system must be wrapped in gold-plated functionality. Characteristics such as reliability, responsiveness, and data accessibility come at a cost. It is up to senior managers to decide how much they are willing to spend for various features and services. The analysis of this kind can have an impact not only on onetime IT investments but also on annual operating costs, a contentious issue at many companies. In many cases, fixed costs can be significantly reduced if managers establish, during system development, lower expectations for requirements such as reliability and response time. Conversely, the analysis might reveal that the company is underestimating its risk of downtime and has not sufficiently protected itself against it. (Ross & Weill 2002, 6.)

3.1.2 Service design

The essential term in Service Design is the Service. The specified service contains variable amount of service elements in order to fulfill the specified business needs. The typical parts of service elements in ICT Service Design are Service Design Packages, Service Acceptance Criteria and Service Level Agreements. Services are collected into Business Service Catalogues - aimed to the business parties - and Technical Service Catalogues - aimed to technical parties, e.g. suppliers. The main aim of Service Design - one of ITIL's main stages - is to design IT services, together with governing IT practices, processes and policies, to realize the strategy and to facilitate the introduction of these services into the live environment ensuring quality service delivery, customer satisfaction and cost-effective service provision (Lloyd & Rubb 2007).

What was earlier produced as a product seems no more satisfy a customer, and this has meant a change - a rise of service industry? Earlier businesses saw product-related service, which customer may very well have expected but reluctantly agreed to pay for. First of all, products

have become indifferent. So the product-related services such as consulting, training customized product development, financing and leasing, servicing and money-back guarantees on products form the non-material basis which increasingly defines the product quality. Secondly, products have become more complex. Even an installation or operation of a device, similar to its maintenance and repair, can be perceived as an independent science. And thirdly, there are too many products. Product-related services are gaining importance... new and innovative services often provide the answer or an adequate path for solution using ecologically-sound use of resources. Running parallel to these numerous changes in products and customer needs, companies themselves have come under fire in the last few years to improve efficiency. Many sectors have converted service departments into profit-centres or subjected them to direct competition on the free market via out-sourcing. (Mager 2004, 7, 9-11,17.)

Service products evolve from the interaction between people and gain their form and quality through this encounter. And it is this interaction between people that often causes problems in service quality: while pre-production imposes quality standards and verifies them before the actual product purchase, service quality manifests itself at the moment of purchase - there is no way to control or improve on service quality after the fact. Service quality is hard to standardize, since it depends for the most part on the professional and interactive competences of the individual service employees. Service is working its way to the top: it is considered an autonomous product, recognized as an essential factor for business and competition - but there is the problem of form. A form flaw is a crucial flaw, especially in the service sector. The acquired non-material product cannot be returned or exchanged. Also, deficits and flaws have no objective basis, or can they be proved as easily as for a purchased object. This is why customers who are not satisfied with the form and quality of a service product simply move on to the next service provider in order to obtain the desired service performance. (Mager 2004, 23-24.)

Design of services, let us assume the design task has always focused on designing solutions to technical necessities and human needs, whether the material or non-material. It stands to reason that these solutions need not manifest themselves exclusively on the material world. Mere objects should no longer have the capacity to resolve technical necessities and human needs expect through an increasing range of interactive solutions, then design reverts to its original task of giving interactions, i.e. services, form. For services are nothing more than interactive, non-material solutions for technical necessities and human needs. Services requiring design ought to be considered like any other product. Similar to material products, design criteria for services focus on purpose, functionality, ergonomics, ecological integrity, economic feasibility and aesthetic maturity. However a crucial difference to material products cannot be overlooked: services are non-material, living products. They never reach the status of completion but are completed at the moment of purchase; they cannot be stored

and also cannot be fully standardized. They are not visible for customer before consumption. Furthermore, the customer can never possess a service product, only its direct and indirect effects can be experienced. (Mager 2004, 29, 31.)

Service is absolutely necessary to compensate for sinking profit margins in the product industry, achieve a competitive advantage, differentiate products and bind customers. Service today plays a crucial role in business. In service industry, so often hardly any systematic development of services exists, and seldom does anyone pay attention to the design of the interactive and material aspects of the point of interface with the customer. Specific service methods like GAP Analysis, contact point analysis or service map are not applied at all. Service providers still base their service offers on internal performance aspects - and not on the customer's benefit from the service. Very often the customer interface design grows out of the company's internal needs and not as a consequence of what the customers wants. Service needs to be communicated, presented and packaged. Service design considers services that need to be systematically developed and designed. The customer service benefits have to be clearly defined. The design of the service interface must be functionally and formally perfect. The presentation must make the service comprehensible to the customer in all phases of service consumption. Special design methods must be applied to the design of services. (Mager 2004, 60.)

The framework for practical design is stated by the organization in which the utilization of ITIL is standard for models and processes as wide as possible. ITIL has grown to become the most widely accepted approach to IT Service Management in the world (Lloyd & Rubb 2007). ITIL provides the best practices for systems management. The use of ITIL terms provides a terminology framework for ICT, but it is not - according our experiences - focused to business people. If it is used to business discussions, terminology needs to be trained to business party. Still, a possibility of misunderstandings is evident.

According to the ITIL, Service Level Agreements (SLA) are the documents agreed with the customers that specify the level, scope and quality of service to be provided (Lloyd & Rubb 2007). SLA defining the performance criteria a provider promises to meet while delivering a service is of growing commercial interest with a deep impact on the strategic and organizational processes. A well-defined and effective SLA correctly fulfills the expectations of all participants and defines the quality attributes and guarantees a service is required to process. It typically also sets out the remedial actions and any penalties that will take effect if performance falls below the promised service levels (Iloranta and Pajunen-Muhonen 2008).

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widely accepted approach to IT Service Management in the world (Lloyd et al. 2007, viii). ITIL provides the best practices for systems management and terminology framework for ICT people. The main aim of Service Design - one of the ITIL's main stages - is to design IT services, together with governing IT practices, processes and policies, to realize the strategy and to facilitate the introduction of these services into the live environment ensuring quality service delivery, customer satisfaction and cost effective service provision (Lloyd et al. 2007, 3).

Service Level Agreements (SLAs) for example is the document agreed with the customer and service provider. It specifies the level, scope and quality of service to be provided (Lloyd et al. 2007, 24). The service compared with any material in the supply process is considered more difficult to specify and an accurate specification is inclined to contain subjective, opinion-based dimensions and indicators. Instead of indicator definition of services is done using the SLA (Iloranta & Pajunen-Muhonen 2008, 390).

To realize relevant leverages, the business needs are assessed and evaluated within the context of organizational strategies, structure, culture, and existing business processes. They are positioned relative to existing technology infrastructure, applications, communication architectures, and development capabilities. Together these define the business need or "problem" as perceived by the researcher. Framing research activities to address business needs assures research relevance (Hevner et al. 2004).

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Customer and a service provider should talk through the service level agreement so that both parties agree on the matters and contents included. Therefore attention to the realization of follow-up and control should be considered already in the supply phase. (Iloranta et al. 2008, 396.)

3.1.3 Vendor selection strategy

There is no need for wide or complicated strategy for vendor selection; competition naturally regulates the selection of partners and the level of co-operation. When networking for competitions, it is essential to define the services and select the vendor candidates correctly. The wrong selection may cause problems in a long run. (Seppänen & Kouri 2003, 37.)

To operate and grow successfully in the long-term, service providers must have the ability to think and act in a strategic manner. The achievement of strategic goals or objectives requires the use of strategic assets. ITIL Service Strategy brings up questions of the following kind: a. which services should we offer and to whom? b. how do we differentiate ourselves from competing alternatives? c. how do we truly create value for our customers? d. how do we capture value for our stakeholders? e. how can we make a case for strategic investments? f. how can Financial Management provide visibility and control over value creation? g. how we should define service quality? h. how we chose between different paths for improving service quality? i. how do we efficiently allocate resources across a portfolio of services? and j. how do we resolve conflicting demands for shared resources? (Iqbal & Nieves 2007, 9-10.)

The question listed above should be guiding the contracts, methods of work and strategic administration of vendor network. Few questions are relevant also for co-operation between vendors. Only after this, an analysis of “vendor - service and price - customer” can take place. By analysing this combination and by creating the objectives for desired services, an adequate starting point for the strategic planning of vendor network can be reached.

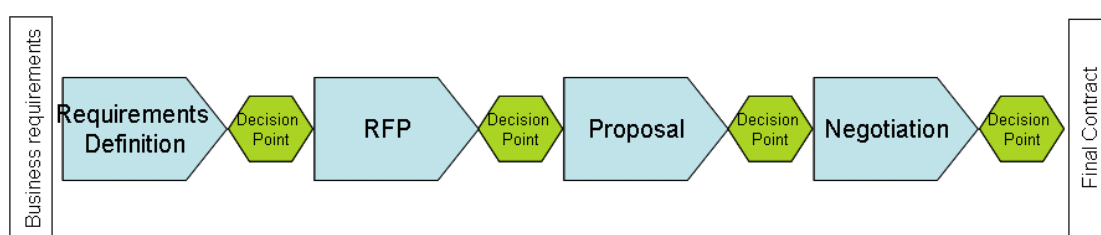
To drive value in supplier relationships, a company needs a foundation of collaborative practices. A company can focus on collaborative practices and / or relationships. In collaborative practices a set of processes and systems are enabled to coordinate and share information between two parties that are focused to gain supply, often to match demand, too. In collaborative long-term, win-win relationships are based on joint value creation for the network focused on the end-customer needs. There are several ways to improve supplier sensing strategies: a. building collaborative relationships with suppliers ensures open communication channels. Supplier troubles should be known early on, not come as surprise to a company b. setting visibility into supplier operations and financials c. training employees to recognize the signs of a supplier’s trouble and d. extending terms, cash up front, or supply chain financing are a necessity to help key suppliers through their crisis periods, especially if it is a sole-source and costly to switch. (Barrett & Rizza 2009, 8-9.)

Instead, one task for material evaluation was to modify the attachment structure to align ITIL main processes. Reason for this was to a. utilise ITIL best practices as structure b. evaluate

vendor's capability to run ITIL processes c. compare vendor candidates' ITIL processes and d. share the dictionary between vendors.

3.2 Purchase process

The common supply process for an ICT system is triggered by business needs and is closed when the supply contract is signed. The process includes four main phases: Business requirement specification including Request for Information (RFI) phase, Request for Proposal (RFP) phase, Proposal and Negotiation phases (Target organization 2007, slide 2). The decision points are located between the main phases.



Picture 4: Supply process (Target organization 2007)

First phase in purchase process is requirement definition. The purpose of Requirement definition is to collect and document business requirements in a way which enables RFI creation and to make a proposal for the decision point. The RFI target is to shortlist the supplier candidates, to whom the customer might later issue an RFP.

The RFI process is included in the Requirement Definition phase. The main activities are to collect all needed information to finalize the RFI, request answers from suppliers and analyse the received answers and to make a proposal of possible suppliers for the RFP phase. The main criteria are the business case, the solution fit and the suppliers' analysis. The main documents attached to RFI are the Requirement Specification and the Technical Architecture. The Requirement Specification identifies the functional requirements (what business functions the system must be capable of carrying out) and non-functional requirements (for example performance, usability, availability). The Technical Architecture is the overview of the technical architecture of the customers' existing datacentre and the overview of the technical architecture of the customer's data network.

At the decision point after the Requirement definition phase, the decision to whether to precede the supply process is made.

The second phase in purchase process is request for proposal. The Requirement definition phase can be informal, but the request for proposal (RFP) and next phases are very formal.

The purpose of RFP phase is to receive respectable proposals from suppliers and to make proposal for the decision point. The first thing to do is to set the group for the supply process. The main roles needed in the phase are the business owner and the lawyer. There is also a need for experts in different areas of technical, security issues and purchasing. The main activities are to create the plan for the supply process, including the schedule, tasks and responsibilities, to finalize the RFP and to define the supply criteria.

Requests for proposal and statements of work should be sent to each of the selected bidders. These documents should stipulate a firm response date and time. The user company may include a statement in the request for proposal that explains to the contractor the methods by which the client evaluates each proposal. A sample description may include the following: a. the purposes of the evaluation b. the manner in which the proposal is to be formatted, that is, management, technical, and financial sections c. the weight factors to be placed on each section d. how bidders' management and technical sections are ranked, that is, most favourable to least favourable before consideration of cost e. how the price proposals are ranked, that is, highest to lowest f. bidder's understanding of the statement of work g. bidder's response to mandatory items and implementation plans h. bidder's quality control and management leadership programs i. bidder's performance history on similar contracts and j. determination of the bidder who best suits needs of the client. (Stees 1998, 65.)

The main documents attached to RFP, with most effort needed, are the Functional Specification, Use cases, Architecture Reference, Security Requirements, Technical Requirements and Requirements related to implementation. The RFP attachments include also the description of the project model, used in the project and the contract templates. The Customer should also make the requirements concerning licensing, support and maintenance. In the RFP, the content of sections also controls how the supplier should provide the proposal. The RFP phase can be closed when proposals in given time have been received.

The third phase in purchase process is Proposal. The target of the Proposal phase is to shortlist the supplier candidates, which the customer might choose for further negotiation. The main activity is to analyse the proposals and the supplier presentations. The MS Excel or similar tool is used for proposal comparison.

The fourth phase in purchase process is Negotiation. The target for the Negotiation phase is to sign the contract. The main purpose is to negotiate a contract in an acceptable term, risks and price. To achieve those goals, the customer may organize reference meetings, arrange a Proof of concept (POC) and arrange workshops, to reach a better understanding about the proposed solution. Along with the negotiations, the business case is updated, as well as the comparison of the shortlist suppliers. At the final supply process decision point, the supplier is

chosen. The subsequent activities, after signing the contract, are to provide the written notification for suppliers, who were not chosen and implement the negotiated contract into project team and into project board.

ITIL processes have been not been implemented in target organization. They are utilized indirectly: via vendors' capabilities to run any ITIL process in supplied services. There are no plans to modify the existing development or delivery processes.

3.3 ITIL as framework

ITIL (Information Technology Infrastructure Library) is a library, where the best practices have been collected to improve organization's ability to procedure equal in quality solutions fit to customer needs (Roos 2006, 3). It has not been standardized, but it has become the most widely accepted approach to IT Service Management in the world (Lloyd et al. 2007, viii).

ITIL is owned by the Office of Government Commerce (OGC). IT Service Management Forum (ITSMF) is the responsible body for development (Introduction to ITIL 2006, vi-vii). The original version of ITIL was developed at the same time as and in alignment with BS 15000, the former UK standard for IT Service Management. BS15000 was fast tracked in 2005 to become ISO/IEC 20000, the first international standard in ITSM. OGC is committed to the maintenance of alignment between future versions of ITIL and ISO/IEC 20000. (OGC 2009.)

In 2007 new version three of ITIL was published. In the version, the perspective has moved from a process into focusing more service lifecycle thinking (IT Service Management Forum 2007, slide 10). ITIL version three includes five stages, which are Service Strategy, Service Design, Service Transition, Service Operation all belonging to Continual Service Improvement (Lloyd et al. 2007, 6). Service Strategy aligns business and IT and it ensures that every element of the Service Lifecycle is focused on customer outcomes. Service Design provides guidelines for services definitions. Service Transition provides guidance and process activities for the transition of services in the operational business environment. Service Operation introduces, explains and details delivery and control activities to achieve operational excellence on a day-to-day basis.

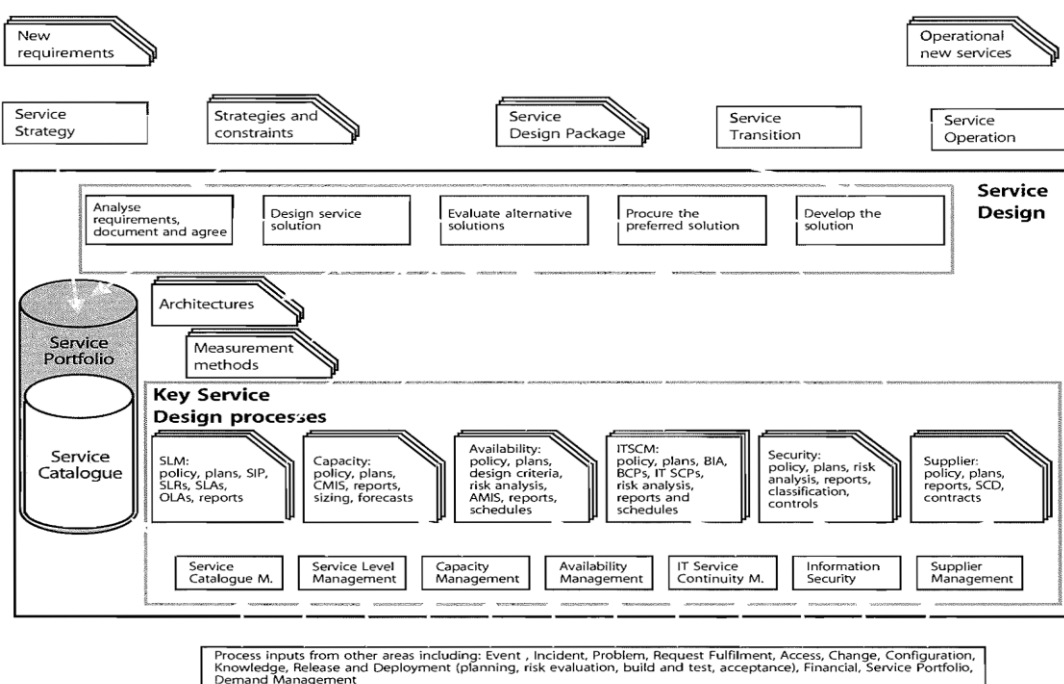
From all ITIL main processes, this study is mostly concentrating into Service design. "A service is a means of delivering value to customers by facilitating ownership of specific cost and risks" (Lloyd et al. 2007, 11). The purpose of the Service Design stage is the design of new or changed services to production. In the design, it is fundamental, that all aspects and areas

are covered and all activities and processes are integrated. Doing so, it is ensured that there will be only minimal issues arising during the subsequent stage. (Lloyd et al. 2007, 13-15.)

Service Design covers five aspects which are:

- New or changed service
- Service Management systems and tools
- Technology architecture and management systems
- The processes required
- Measurement methods and metrics (Lloyd et al. 2007, 30).

Service design includes designing of the solution and development of the solution as in Picture 4. The Service design stage starts with a set of new or changed business requirements and ends with the development of a service solution to meet the documented needs of the business (Lloyd et al. 2007, 15).

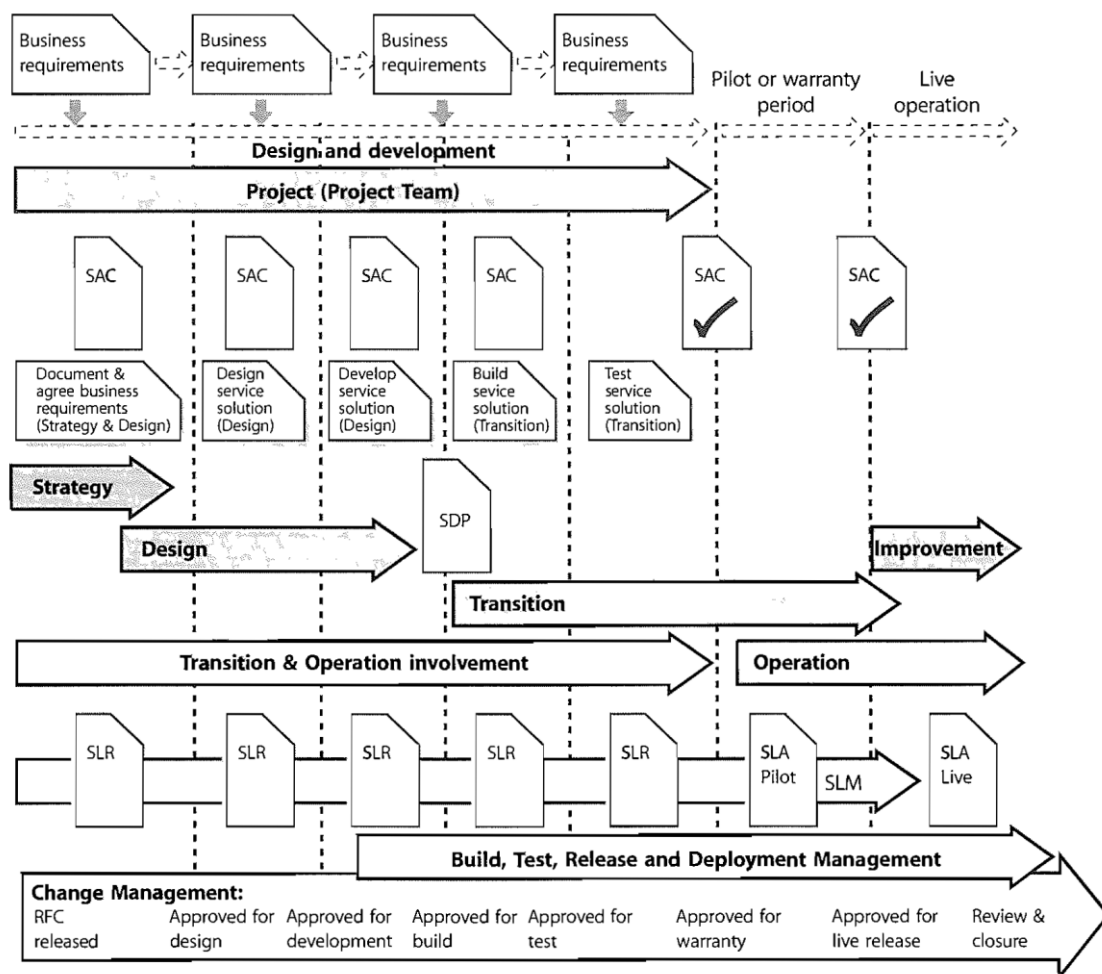


Picture 5: Service design - the big picture (Lloyd et al. 2007, 60.)

Subsequent activities, the evaluation of the alternative solutions and the procurement of the preferred solution must be completed in Service Design stage. One of the deliverables from design activities is ITT (Invitation to Tender) (Lloyd et al. 2007, 30, 46).

To enable the Service design to get the needed information, the key supporting processes should be up and running (Lloyd et al. 2007, 59). In ITIL Service Design version three the processes are Service Level Management, Capacity Management, Availability Management, IT

Service Continuity Management, Information Security Management, Supplier Management and Service Catalogue management.



Picture 6: Aligning new services to business requirements (Lloyd et al. 2007, 31.)

Service management in IT can be approached as a category of services utilized by business. They are typically IT applications and infrastructure that are packaged and offered as services by internal IT organizations or external service providers. (Lloyd et al. 2007,5.)

4 Action research as method

Scientific methods are basically techniques to reach the measured deliverables using scientific ethical approach, orderly process, methodicalness and objectivity. In this work, action research is the primary method used. Put simply, action research is “learning by doing” - a group of people identify the problem, do something to resolve it, see how successful their efforts were, and if not satisfied, try again (O’Brien 2001,3). Other supplementary method is a gap analysis while working with data.

The term “action research” was introduced by Kurt Lewin in 1946 to denote a pioneering approach toward social research which combined generation of theory with changing the social system through the researcher acting on or in the social system. The act itself is presented as the means of both changing the system and generating critical knowledge about it. (Susnam & Evered 1978, 586.)

Action research aims to solve current practical problems while expanding scientific knowledge. Unlike other research methods, where the researcher seeks to study organizational phenomena but not to change them, the action researcher is concerned to create organizational change and simultaneously study the process. Another major role of the researcher is to facilitate learning during the processes of implementation or testing of a future theory. (Baburogly & Ravn 1992, 30.)

What separates this type of research from general professional practices, consulting, or daily problem-solving is the emphasis on scientific study, which is to say the researcher studies the problem systemically and ensures the intervention is informed by theoretical considerations. Much of the researcher’s time is spent on refining the methodological tools to suit the exigencies of the situation, and on collecting, analysing, and presenting data on an on-going, cyclical basis. (O’Brien 2004, 3.)

Several attributes separate action research from other types of research. Primary is its focus on turning the people involved into researchers, too - people learn best, and more willingly apply what they have learned, when they do it themselves. It also has a social dimension - the research takes place in real-world situations, and aims to solve real problems. Finally, the initiating researcher, unlike in other disciplines, makes no attempt to remain objective, but openly acknowledges their bias to the other participants. (O’Brien 2004, 3-4)

Fifteen characteristics of action research are drastically summarized and modified by Checkland & Holwell, based originally Eden & Huxham (1996):

- (i) researcher intends to change the organization;
- (ii) there must be implications beyond the specific situation;
- (iii) reaserch seeks theory as an explicit concern;
- (iv) any tools, techniques, or models developed need to be linked to the research design;
- (v) emergent theory will emerge from both data and initial theory;
- (vi) theory building will be incremental and cyclic;
- (vii) presentation should acknowledge prescription and description;
- (viii) there will be orderliness in approach;
- (ix) exploration of data and theory building should be explainable to others;

- (x) later reporting is part of theory exploration and development;
- (xi) i-x are necessary but not sufficient for valid action research;
- (xii) it is used where other methods are not appropriate;
- (xiii) triangulation (using multiple methods) is used if possible;
- (xiv) history and context are given due weight; and
- (xv) dissemination of findings goes beyond those involved in a study.

(Checkland & Novell 1998, 19.)

4.1 Participants

When using the method, it is essential to understand and realize the roles in study, even they can be shared and vary during the process. Main categories are researcher and member of organization, but among these, anything can exist, and researcher and member can be the same person.

Interdependence between researcher and the client system is an essential feature of action research, and the direction of research process will be partly a function of the needs and competencies of the two (Susman & Evered 1978, 589). Action research is strongly oriented toward collaboration and change involving both researchers and subjects (Baskerville & Myers 2004, 330).

The action researcher brings theoretical knowledge as well as breadth knowledge and experience to the problem-solving process. The clients bring practical knowledge as well as breadth of experience to the problem-solving process. the clients bring practical knowledge and experience of the situations in which they are trying to solve problems. Neither client nor researcher has better knowledge; in a sense, they are both experts. (Susman & Evered 1978, 597.)

Upon invitation into a domain, the outside researcher's role is to implement the Action Research method in such a manner as to produce a mutually agreeable outcome for all participants, with the process being maintained by them afterwards. To accomplish this, it may necessitate the adoption of many different roles at various stages of the process, including those of a. planner leader b. catalyzer c. facilitator d. teacher e. designer f. listener g. observer h. synthesizer and i. reporter. The main role, however, is to nurture local leaders to the point where they can take responsibility for the process. This point is reached they understand the methods and are able to carry on when the initiating researcher leaves. (O'Brien 2001, 11.)

The success of action research hinges on understanding the values of the relevant actors since such values guide the selection of means and ends for solving problems and develops the commitment of the actors to a particular situation. Empathy, taking the role of the other, participant observation, etc. may be the most effective means for making the theoretical or practical knowledge the researcher possesses really useful and accepted by clients. (Susman & Evered 1978, 598-599.)

4.2 Future-oriented nature, cyclic steps and process frame

To start with “One of the most salient features of organizations is change” by Susman & Evered (1978, 596) is the ground stone and reason to exist for action research. There is a crisis in the field of organizational science. The principal symptom of this crisis is that as our research methods and techniques have become more sophisticated, they have also become increasingly less useful for solving the practical problems that members of organizations face (Susman & Evered, 1978, 582).

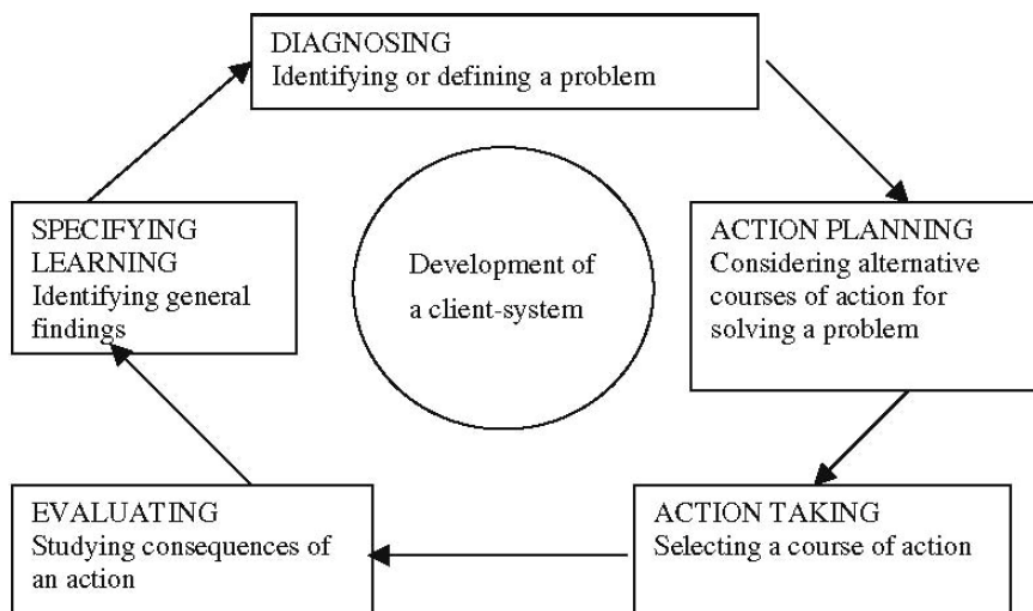
Action research is future-oriented. In dealing with the practical concerns of people, action research is oriented toward creating a more desirable future for them. (Susman & Evered 1978, 589.)

Action research is typically an iterative research process that capitalizes on learning by both researchers and subjects within the context of the subject’s social system. It is a clinical method that puts information systems researches in a helping role with practitioners. Action research became highly participatory in the 1990s, with closer collaboration and synergy between the researcher and the subject. (Baskerville & Myers 2004, 330.)

- | |
|--|
| <ol style="list-style-type: none"> 1. Enter the problem situation 2. Establish roles 3. Declare methodology, framework of ideas 4. Take part in change process 5. Rethink 2,3,4 6. Exit 7. Reflect on experience and record learning in relation to framework of ideas, methodology and area of interest/concern. 8. Rethink 2,3,4 9. Reflect 7 |
|--|

Picture 7: The process of action research (Checkland & Novell 1998, 15.)

Different from this model is Susman & Everet's model, showing development as groundstone, which has impact to all five phases: diagnosing, action planning, action taking, evaluating and specifying learning. The action research process encourages the development of the capacity of a system to facilitate, maintain, and regulate the cyclical process. (Susman & Evered, 1998, 589.)



Picture 8: The cyclical process of action research (Susman & Evered 1998, 588.)

4.3 Connection of theory and practise

In action research, theory provides a guide for what should be considered in the diagnosis of an organization as well as for generating possible courses or action to deal with the problems of the members of the organization. (Susman & Evered 1998, 590.)

Action Research is more of a holistic approach to problem-solving, rather than a single method for collecting and analyzing data. Thus, it allows for several different research tools to be used as the project is conducted. These various methods, which are generally common to the qualitative research paradigm, include a. keeping a research journal b. document collection and analysis c. participant observation recordings d. questionnaire surveys e. structured and unstructured interviews and f. case studies. (O'Brien, 2001, 9.)

Theorizing is shared between researchers and client participants because each brings their distinctive sets of knowledge into the action research process. Action researchers bring knowledge of action research and general theories, while clients bring situated, practical knowledge. (Baskerville & Myers 2004, 330.)

Action research, as a method of inquiry, is founded on the assumption that theory and practice can be closely integrated by learning from the results of interventions that are planned after a thorough diagnosis of the problem context. (Davison, Martinsons & Kock 2004, 81.)

Action research is directed toward the development of action competencies of members of organizations, and can be described as an “enabling” science. (Susman & Evered 1978, 599.)

Achieving credibility, consensus, and coherence does not make a “truth claim” as strong as that derived from replicability of results independent of time, place and researcher. Action researchers must pay careful attention to the claim of validity relevant to their research into phenomena not “homogenous through time”. The action research process accepts that “themes” have to replace the hypotheses. Research in an organization on how to introduce a particular information system, for example, may well evolve into research on what organizational changes are first needed to make it sensible even to contemplate the introduction of a particular system. But themes need to be declared, and the link between them and a putative framework of ideas, methodology has to be explicitly argued. The potential merging of roles “researcher” and “participant” in the situation has to be acknowledged; it should, ideally, be discussed, and the roles may evolve into course of action research. (Checkland & Novell 1998, 16.)

In action research, particular linked framework of ideas is used in methodology to investigate an area of interest/concern. Using the methodology may then teach us not only about area of interest/concern but also the adequacy of framework and methodology. The change to or modification of framework of ideas, methodology, and even the area of interest/concern has to be expected in action research. This susceptibility to change framework of ideas, methodology and area of interest/concern in research in which the researcher becomes involved in the flux of real-world social situation leads to a (or probably the) most important principle of action research. In keeping your intellectual bearings in a changing situation in which the adequacy of framework of ideas and methodology and the appropriateness of area of interest/concern are likely to be tested, it is essential to declare in advance the elements: framework of ideas, methodology and area of interest/concern. This is the intellectual structure which will lead into findings and research lessons being recognized as such. Without that declaration, it is difficult to see how the outcome of action research can be more than anecdotal. Many literature accounts for action research leave the reader wondering about the status of that account: How is it to be distinguished from novel writing? To avoid the trap, it is essential to define the epistemology in terms of which what will count as knowledge from the research will be expressed. (Checkland & Novell 1998, 13-14.)

Action research facilitates the development of techniques which we will call “practices” (to distinguish from positivist techniques). Practices would provide the action researcher with know-how such as how to create setting for organizational learning, how to act in unprescribed non-programmed situations, how to generate organizational self-help, how to establish action guides where none exist, how to review, revise, redefine the system of which we are part, how to formulate fruitful metaphors, constructs, and images for articulating a more desirable future. (Susman & Evered 1978, 599.)

4.4 Deliverables are unique and unrepeatable

The aim in action research is to build appropriate structures, to build the necessary system and competencies, and to modify the relationship of the system to its relevant environment. The focus is on generating the necessary communication and problem-solving procedures. The infrastructure of the systems, which the action research generates, is the key instrument for a. alleviating the immediate problematic situation, and b. generating new knowledge about systems processes. (Susman & Evered 1998, 590.)

Planned interventions usually take place in only one organization at a time and would not be interpreted within different organizations same way. However, suppose such actions could be classified into categories of actions and that the consequences of these actions were observed in 50 different organizations and shown to produce desirable consequences that a chance level. (Susman & Evered 1998, 592.)

Since any organizational situation at a particular time, with its particular participants having their own individual or shared histories, may be unique, it cannot be guaranteed that results can be made richly meaningful to people in other situations. The aim in action research should be to enact a process based on a declared-in-advance methodology (encompassing a particular framework of ideas) in such a way that the process is recoverable by anyone interested in subjecting the research to critical scrutiny. The action research has rather neglected this kind of consideration. (Checkland & Novell 1998, 17-19.)

5 Background details

This chapter describes the scene and background for the case. First, target organization is introduced, then status of agreements and vendors. Altogether, the scene has been very distributed and turns now into more centralized mode. The change of mode has begun recently.

Increasingly, executives are recognizing the significant cost savings and strategic benefits that come from centralizing IT capabilities and standardizing IT infrastructure across an target

organization. This approach leverages technology expertise across the company, permits large and cost-effective contracts with software suppliers, and facilitates global business processes. At the same time, though, standards can restrict the flexibility of individual business units, limit the company's responsiveness to differentiated customer segments, and generate strong resistance from business unit managers. (Ross & Weill, 2002, 5.)

Instead of approaching IT decision making in an ad hoc manner, companies increasingly are establishing formal IT governance structures that specify how IT decisions are made, carried out, reinforced, and even challenged. Such structures apply principles similar to those of financial governance - for example, who is authorized to commit the company to a contract or how cash flow is managed across the enterprise. (Ross & Weill, 2002, 8.)

5.1 ICT Target organization

Target organization in the study is a forest industry group present in about 30 countries, whose products and services combine responsible forest economy and innovative technology. It produces high-quality products from renewable Nordic wood. The Group has five business areas: Wood Supply, Wood Products, Pulp, Board and Paper and Tissue and Cooking Papers.

Strategic focus in support functions in group has changed in last five years, from distributed strategy into centralized strategy. The support functions in question have been e.g. ICT services, purchasing, financial controlling and human relations. In operational level, the target organization has been reset accordingly, responsibilities have been reorganized and new working processes have been built accordingly.

The target organization - a group - in study consists of several corporations, which run parallel ICT -systems. Also shared services, both resources and systems exist. Then, same systems, e.g. a dozen installations of SAP ERP (Enterprise Resource Planning), are utilized in several solutions, where configurations vary.

The target organization has started to unite functions in ICT services, where the background is in distributed units in corporations. The new centralized unit inherits and shares a scattered ways of working, e.g. vendor can have various contracts - different prices, payment terms - and various ways of working - as subcontractor, as joint partner - with distributed units. The contracts may overlap and may be outdated. The periods of contracts vary.

The ways of working differ between distributed units. The vendor costs are not compared between distributed units neither summarized in group level. No shared criteria for evaluation of deliveries exist.

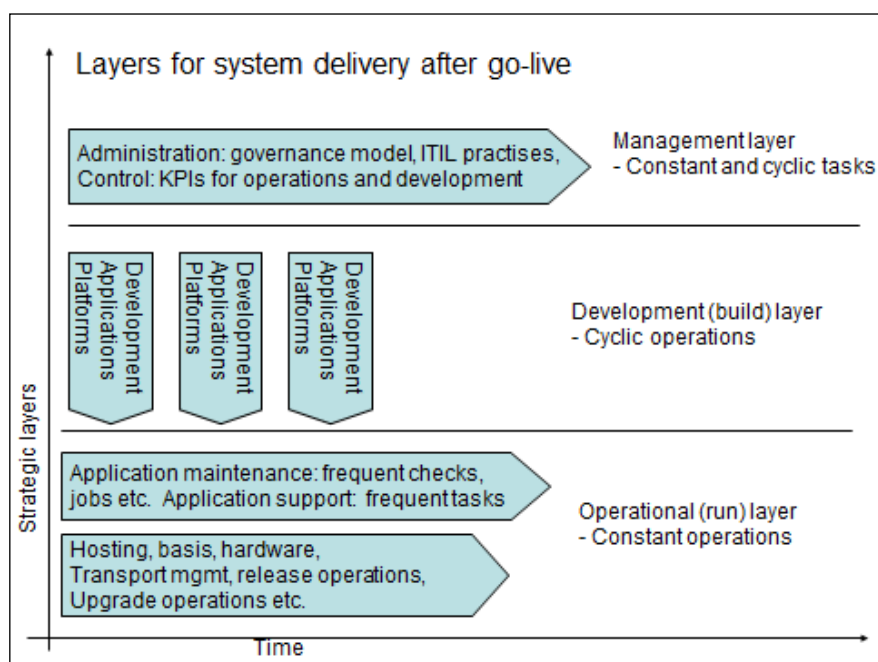
The stated reasons to create a centralized service is to a. control and steer the vendor network b. reduce the costs and cost increases c. standardize contracts and d. request for bids shared for providing same service.

5.2 ICT Agreements

The setup of an ICT agreement in the target organization is co-operational between purchasing function, ICT function and business function. The purchasing function is responsible in the contractual and legal issues, ICT function is responsible in the content issues and the business function is responsible for customer requirements and financial issues.

Typical ICT agreements can be split into three main categories according to operational layers in ICT service; manage, build and maintain. Managing layer consists administrative and control dimensions of providing services in both build and maintain layers. Build layer is responsible of realizing new development in any level. Levels can be e.g. building new solution, changing existing solution or purchasing new service. Maintain layer is responsible of running the existing service setup.

I have created the following picture to consult this model internally in target organization.



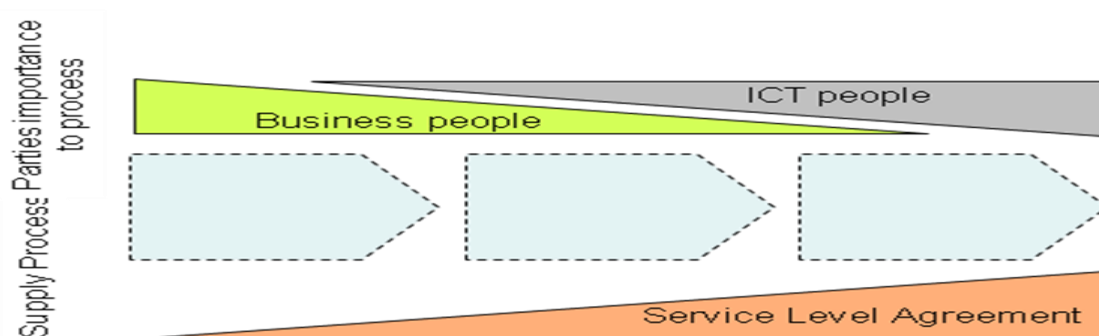
Picture 9: Layers for system delivery after go-live (Helenius 2010)

The connection between functions and layers vary. As ICT has deep relationship to all three layers, the manage layer has deep connection to purchasing function and business function, too. If the contract has been built with adequate controls, the purchasing function is needed only in case of deviations. In the target organization, business functions take more responsi-

bility on build layer. ICT carries the sole responsibility in maintain layer as support service unit for business functions. A hosting contract operates typically in the two of the three layers: managing layer including adequate controls is part of agreement structure and maintain layer includes the services maintained in the datacenter of the vendor.

The hosting services are part of technical area of services in ICT. The results rather than processes are on the interest of business people. Practically, this lays a lot of responsibility and work to ICT people. Also in my work the main responsibility was in ICT party. The upper part of following picture illustrates the parties involved in the process and also their importance in phases. Business people's involvement is high in the beginning of the process and declines when reaching the end of the process. ICT people's involvement is other way around, being low beginning of the process and gets higher when the process is coming to its end. In picture Service level Agreement is finalized iteratively throughout the phases. The finesse of this method is the traceability of process in either direction.

According to the following picture, in the task only requirements were gathered from business people. After that, the service definitions were revised and SLA definitions were revised and extended accordingly. That was then the basis for vendor negotiations and also criteria for vendor evaluation. SLA definitions, in this work, can be seen obligatory widely, as the vendor would not be approved without a decent proof to be able realize the SLA requirements. Also, the iterative process was utilized during the purchase process.



Picture 10: Framework for Service level requirements gathering (Helenius & Nissilä 2009)

Taking the change management into consideration, the bidirectional traceability of the process is essential to enable to translate the changes of business needs to the changes of SLAs and further to the changes of supplier agreements during the life cycle of systems. As the picture above presents, both ICT and business parties are needed to complete Service Level Agreement. The upper part of the figure illustrates the parties involved in the process and their importance in phases. Business people's involvement is high in the beginning of the process and declines when reaching the end of the process. ICT people's involvement is other

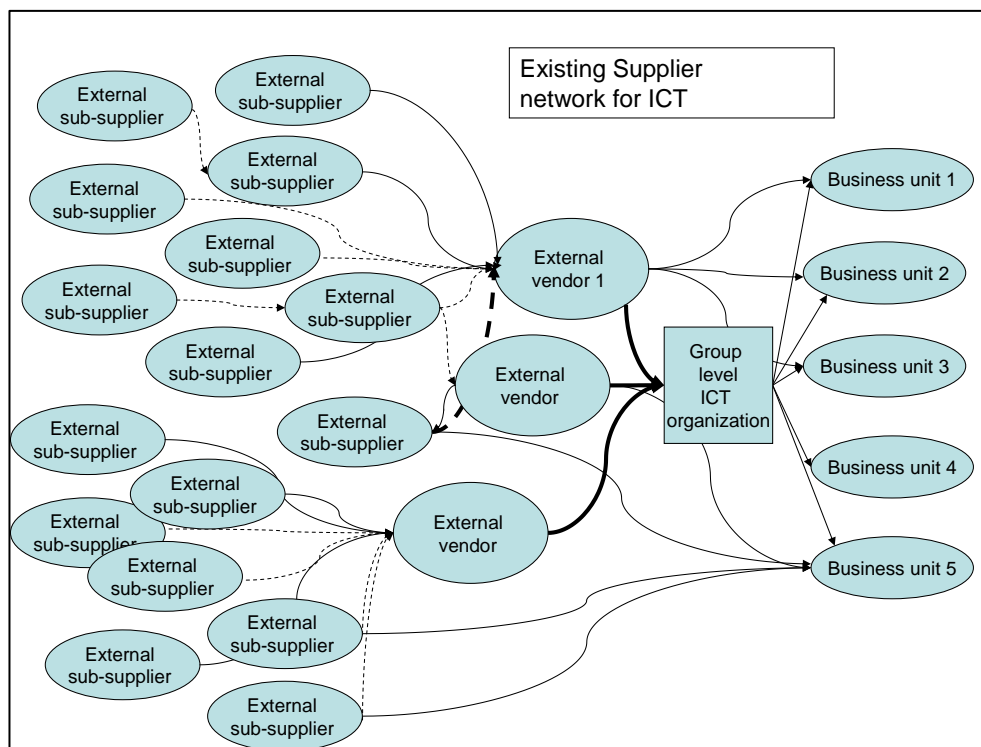
way around, at the beginning of the process beginning low and getting higher when the process is coming to its end.

In target organization, the old hosting contract was out-dated, and therefore the action to replace it was a business request. The preparation on strategic level was on-going on longer time period, but the operations in the purchasing process, including the actual processing of the task which is the case in this action research, took place in September 2009.

The contract covered the full scale of business operations to target organization and also full exclusive setup of IT development. This approach was planned to change into more distributed set of contracts. The IT service architecture of target organization needed to be recreated, with taking the new approach into account. Practically, this meant that the full scale approach was split into several groups from a. software perspective: e.g. SAP services as new own category, b. location perspective: e.g. country-based WAN (wide area network) connections, c. operation perspective: e.g. MES (mill execution systems) in mills or in group of mills, d. grouped software perspective: e.g. standard user software in PC (to reach the full user level IT support service from one vendor) and. e. technical perspective e.g. operations for virtualized servers on LINUX -environment. The outcome of this analysis was to set up six tower groups. This analysis concentrates to SAP services -tower.

5.3 Existing vendor network

The existing vendor network is presented in the following picture. The network has typically three to four layers. The possibility to guide, admin and control in network are shown in connectors. The boldest connectors are most centrally controlled compared to dashed lines, where no control exists.



Picture 11: The existing vendor network. (Helenius 2009)

From customer perspective, ICT is service or a set of services delivered by centralized service unit together with ICT vendors. Customer selects the vendor and supplies the service. If a frame contract exists - in group level or corporate level - it is utilized, if not an independent delivery contract is made. The centralized may consult the service and the contract when requested.

From group centralized perspective, the centralized ICT coordinates the services between customers and vendors, consults frame and delivery contracts and preselects vendors. Consulting in service delivery - main and details - is one of main roles. The unit also provides services in service development and service delivery for customer. The unit also supplies from vendors directly.

Vendor may deliver to customer or centralized ICT. The contract may exist for group (frame contract, delivery contract based on frame agreement) and/or for corporation (independent delivery agreement), or no contract exist. Vendor may utilize the subcontractor network and supply services from other vendor in order to set up a service.

In the existing model, the main benefits are a. flexibility in resourcing b. a trusted vendor can be shared between corporations. c. corporations can set up contract the preferred way and d. subcontractors can be utilized. The main disadvantages are a. costs, b. lack of admin and

control of contracts and deliveries, c. no control or authority on subcontractors and, d. lack of planning and guidance.

5.4 Case material

I was invited to an expert purchasing group of four members for SAP services tower: team hosting services. The responsibility of the group was to participate into a large hosting contract purchasing process, and the deliverables of the group were to a. evaluate existing and update and extend the content documentation for the purchase process phase: requirements definition, b. create needed additions for the purchase process phase: request for proposal and c. evaluate the vendor candidates' proposal and participate into selection of short list of candidates.

My personal responsibility was to a. participate as technical expert to all these and b. evaluate service descriptions and SLAs for them. My method for the task was to set up, update, revise and deliver a gap analysis collecting and comparing the data. The gap analysis has been extended iteratively during the process. The first setup took place for the requirements definition. The first data was to collect the existing service description and SLA material for SAP services in target organization, revise it according to as-is status and compare it to relevant ITIL version 3 material. The outcome of this was to update, extend and create the adequate attachments for request of proposals. The second data set to add the short listed vendor candidates' responses to the gap analysis. The outcome of this was to evaluate if the proposals were a. covering the services requested b. covering the service level requested and c. fitting to request of proposal. This outcome was then delivered to vendor candidates. The revised proposals were reanalysed, and this outcome was a. to support the criteria for vendor scoring and actual scoring of vendors and b. to support the negotiations phase. The analysis is attached.

During the evaluation, I run a separate log for actions that took place during the purchase process. The log recordings covered also thoughts, suspicions and ideas. The log is utilized in the analysis as source material. The log is attached.

6 Gap Analysis

The next chapter presents the process of the gap analysis. The analysis creation process took place in phases. The first phase was the preparation and preplanning, the second was to evaluate RFP and the third was to evaluate vendors' proposals vs. RFP. The research log was kept accordingly.

6.1 Preplanning phase

I was given a task to analysis SLA's between vendors vs request for quotation

Date	Area	Comments
31.8.	Preplanning	<p>A meeting presenting the main tasks and timetable. Teams are nominated in advance, team owners have nominated the persons to attend to the team. I have accepted to take part from my side.</p> <p>Note! The timetable is very tight.</p> <p>Suggestions: roles for analysis.</p> <ul style="list-style-type: none"> - GAP analysis between vendor (all members) - GAP analysis quotation vs. request for quotation (all members) - SLA comparison (Kati) <p>This research log has an emphasis on SLA evaluation. Only if the gap analysis has direct connection to SLAs it will be taken up.</p> <p>Documentation in English -> this research log follows the discipline, too. Two templates are provided for documentation.</p>

Table 1. Research log: Preplanning meeting 31.8.

After shuffling through the material available, my preferred method to work was to create a table to collect the data for comparison. First draft was created to analyse the internal material. Then, it was my suggestion to team to utilize ITIL as framework for a. evaluation of adequate material, b. keep the structured approach and c. utilize framework well known by vendors. It was accepted, even that the material was already provided for vendor candidates as 0.9 draft versions - practically this meant that only minor changes to request for proposal were possible. The following table was used to compare the ITIL reference framework and requested hosting services in request for proposal. Relevant to area was added to support the evaluation criteria and notes -section was added for comments.

SLA comparison	Relevant to area					SLA / SAP Hosting services	
Reference framework	scope	measure	trigger	calculation	reporting	RFP	Notes

Table 2. 1st analysis frame

As sections for reference framework, the following sub grouping was added: a. Common, b. Availability management, c. Capacity management, d. Continuity management, e. System documentation and instructions to hosting partner, f. Release management, g. Change management and h. Configuration management. This structure was partly adapted from ITIL ver-

sion two, and it was done for preceding hosting purchase process. The structure of ITIL version two is well known by vendors, and any changes to it was not prioritized in the present purchase process, therefore it was left as-is.

In the meantime, another preplanning meeting took place, to prepare ourselves for evaluation criteria. Another preliminary template for bids comparison “Competitive bidding” was presented and revise it for next version. As bids were already available, this was a second evaluation document for comparison. My role was to participate for revision.

1.9.	Preplanning	<p>A call for teams-cross meeting. The procedures and time-tables are now stated common to all.</p> <p>Some changes are available:</p> <ol style="list-style-type: none"> 1. An evaluation sheet “Competitive Bidding” with 43 statements is provided for filling: <ol style="list-style-type: none"> a. weight of statement: 1 low – 3 important b. prioritization for 15 most important: 15 most important – 1 least important. “ NOTE! When evaluating criteria please keep in mind the viewpoint of which criteria are essential for completing the project. Rank 15 most important criteria. “ c. To be returned asap. This doc is filled by biz and ICT. It is used with different weighting depending on attendant group and issue in question. 2. A comment templates “Template for comments” shall be filled for phase 1. <ol style="list-style-type: none"> a. Data to add is: number, name who raised the question, reference: page in offer. b. Each category will create their own summary sheets c. The vendor will only receive the summary results without names etc. and one master template per template (one for vendor A etc) 3. WEEK 39 target to do the final evaluation of the FINAL offers 4. Material by vendors is available in intra portal, collaboration space. Access to teams is granted today or tomorrow.
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Table 3. Research log: Preplanning meeting 31.8.

6.2 ITIL framework versus RFP evaluation

My analysis on ITIL framework vs. RFP continued quickly. It was essential to take a first look into internal requirements and materials before starting to add vendors’ material. My aim was to keep target organization strictly as leading data. The following structure collects the main points from target organization material, ITIL service design material and my own best practices material.

In the following table, there are examples from the material provided for vendor. This is structured collection from original written document. During the analysis, this version with full data was utilized to analyse the adequacy of own request for proposal. On the left, the chapter automatically and service request refer to an item belonging to the baseline price or price per service request. This information is to compare the vendor proposal and own request in pricing analysis. On the right, the last four chapters are the names of attachments for request for proposal. The information is to refer the original document.

Automatically	Service Request		SW & HW	Processes	Info sec control	AMS
		The VENDOR provides to the customer an appropriate hosting environment and production, testing, sandbox and training services for SAP Services platforms (listed in the SW and HW schedule). The following hosting services are provided independently and proactively by the VENDOR:				
		1. Service Design				
x		Capacity Management in accordance with AttachmentProcesses		x		
x		Production environment of the servers listed in the SW and HW schedule	x			
x		Development/Testing/Sandbox environment of the servers listed in the SW and HW schedule	x			
x		Availability Management in accordance with AttachmentProcesses in		x		
x		Application kernel updates		x		
x		Database support package implementations		x		
x		IT Service Continuity Management				
x		Disaster recovery routine set-up and validation in accordance with AttachmentProcesses		x		
x		Information Security Management in accordance with AttachmentInformation Security Controls:			x	
x		Customer policies implemented and followed				
		2. Service Transition				
x		Change Management				
x		Assess all changes for technical impact and sign off all changes				
x		Asset and Configuration Movement				
x		Configuration item maintenance and change documentation as part of the configuration item maintenance				
x		Release and Deployment Management				
x		Import customer development packages as part of SAP transport services				
		3. Service Operation				
x		IT Operation Management				
x		Service Operation and project management				
		Monitoring and react to System alerts and events from				
		a) SAP servers and related system software (file systems, processors, I/O and memory)				
		b) Database (tables, indexes, parameters and table space extents)				
		c) SAP application processes				
		d) Perform monitoring of SAP servers				
x		e) Print queues at SAP and associated print servers				

Picture 12: Examples of statements in Request for Proposal.

My criteria to select the tasks, was to create a collection that covers all necessary areas of hosting services. When going through, keep the focus of hosting services only. This task was done in first priority and very quickly. The structure is target organization specific and cannot be generalized. The tasks are listed under the structure mentioned in previous chapter.

Reference framework	
1.	Common
1.1.	Scope spex /includes, excludes
1.2.	Transition project relevant SLAs
1.3.	Change process installed, parties, interfaces, response times
1.4.	Incident process installed, parties, interfaces, response times
1.5.	Problem management process installed
1.6.	Service Desk procedures installed, contact point to customer
1.7.	Response times + for services ie. Servers, srs, etc stated
1.8.	Severity levels stated
1.9.	Service levels stated
1.10.	SLAs set

- | |
|---|
| <ul style="list-style-type: none"> 1.11. Escalation procedure installed / governance processes for SLA stated 2. Availability management <ul style="list-style-type: none"> 2.1. Gathering availability and recovery needs from business side.
Requirements based on this to be delivered to vendor 2.2. Environment planning based on requirements 2.3. Service availability statements and calculation rules
Service hours /levels /hours extensions
Service clock/service calendar 2.4. Technical roadmap communication 2.5. System availability control 2.6. System functionality control 2.7. Availability reporting 2.8. Maximum # of service break tolerated /time 2.9. Deviation information flow 2.10. Planning and realization of interface batches (?? and XI) 2.11. Monitoring of background jobs (A-C class) 2.12. Monitor and fix of interface errors (system level) 2.13. Management of BW loads 2.14. Management of SCM/APO background jobs 3. Capacity management <ul style="list-style-type: none"> 3.1. Capacity planning based on customer request 3.2. Capacity analysis, change proposals & timetables 3.3. Frequent capacity reporting 3.4. Archiving 4. Continuity management <ul style="list-style-type: none"> 4.1. Participation to BCP implementation 4.2. Proactive reporting 4.3. Back-up procedures /system 4.4. Realization of BCP 4.5. Pay backs 4.6. KPIs indicated and reporting agreed 5. System documentation and instructions to hosting partner <ul style="list-style-type: none"> 5.1. System documentation and instructions to hosting partner 6. Release management <ul style="list-style-type: none"> 6.1. Planning of system release roadmaps 7. Change management <ul style="list-style-type: none"> 7.1. CR planning, control and coordination 8. Configuration management <ul style="list-style-type: none"> 8.1. Management of configuration items |
|---|

Table 4. Hosting tasks in framework (Helenius 2009)

In research log is only short statement about those days. The pressure from target organization was heavy and some technical problems in data management took place. This was an additional task for normal workdays. Also a stress reaction was mentioned. Maybe for that reason, the log notes are very short. I can recall the workdays as very tiring.

2.-3.9	Preparation	Stress as full workdays (i.e. 11-12 hours) do not give any possibility to take this under work. How to download the material from workspace to computer. No clear instructions.
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Table 5. Research log: Framework period 2.-3.9.

As a deliverable, I could bring out some inadequacies in RFP material. Altogether, 59 per cent of issues in framework were adequately covered. Per subtitles, the figures are listed in the following table.

Framework issues included in request for proposal	Included in RFP	# total issues
Common	73 %	11
Availability management	50 %	14
Capacity management	25 %	4
Continuity management	83 %	6
System documentation and instructions to hosting partner	0 %	1
Release management	0 %	1
Change management	100 %	1
Configuration management	100 %	1

Table 6. Framework issues included in request for proposal.

As an example of analysis per task, task 1.2. Transition project relevant SLAs was listed as not adequately covered. The notes listed were: “No specific statements in RFP ?? (Timo)” and “SLAs for transition period are stated but maybe worth of checking the real possibility to meet the current SLA levels and how they are analysed during transition (already according std delivery period?). Or separate but clear statements about transition SLAs ?”. This was taken up in negotiations and the result was to set up a set of separate SLAs for transition. Another example of analysis per task, task 2.8. Maximum # of service break tolerated /time. The note listed was: “Not included in RFP SLA”. The specification table was added to upgraded RFP.

The result of evaluation was to bring up revisions to RFP, and this was done. I do not unfortunately have any statistics, how many revision proposals were added to final versions of attachments, but it had an impact to material. Some notes were added also research log as a statement of phase.

3.9.	Material analysis	1 st check to RFP indicated some headache. Some preliminary notes: -- SLA: no results but steps -- no ref to SAP best practices or equal -- no SLAs for all needed parts -- no request for delivery part important processes ITIL eq. -- no services required from BW or SCM indicated at all (only ERP point of view)
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Table 7. Research log: Material analysis results 3.9.

The process provided also feedback to the guideline, no changes but some issues were not needed. The main reason was, that they were covered by other parties in purchase process. The issues not used anymore were: 2.10. Planning and realization of interface batches (?? and XI), 2.11. Monitoring of background jobs (A-C class) and 2.12. Monitor and fix of interface errors (system level). The following table is the guidelines revision 2:

0.	Reference framework
1.	Common
1.1.	Scope specifications /includes, excludes
1.2.	Transition project relevant SLAs
1.3.	Change process installed, parties, interfaces, response times
1.4.	Incident process installed, parties, interfaces, response times
1.5.	Problem management process installed
1.6.	Service Desk procedures installed, contact point to customer
1.7.	Response times + for services ie. Servers, srs, etc stated
1.8.	Severity levels stated
1.9.	Service levels stated
1.10.	SLAs set
1.11.	Escalation procedure installed / governance processes for SLA stated
2.	Availability management
2.1.	Gathering availability and recovery needs from business side. Requirements based on this to be delivered to vendor
2.2.	Environment planning based on req's
2.3.	Service availability statements and calculation rules Service hours /levels /hours extensions Service clock/service calendar
2.4.	Technical roadmap communication
2.5.	System availability control
2.6.	System functionality control
2.7.	Availability reporting
2.8.	Maximum # of service break tolerated /time
2.9.	Deviation information flow
2.13.	Management of BW loads
2.14.	Management of SCM/APO background jobs
3.	Capacity management
3.1.	Capacity planning based on customer request
3.2.	Capacity analysis, change proposals & timetables
3.3.	Frequent capacity reporting
3.4.	Archiving
4.	Continuity management
4.1.	Participation to BCP implementation
4.2.	Proactive reporting
4.3.	Back-up procedures /system
4.4.	Realization of BCP
4.5.	Pay backs
4.6.	KPIs indicated and reporting agreed
5.	System documentation and instructions to hosting partner

5.1.	System documentation and instructions to hosting partner
6.	Release management
6.1.	Planning of system release roadmaps
7.	Change management
7.1.	CR planning, control and coordination
8.	Configuration management
8.1.	Management of configuration items

Table 8. Hosting tasks in framework version 2 (Helenius 2009)

6.3 RFP versus vendors' proposals evaluation

In the process, this phase started instantly by the preparation for analysis. Also a booking for work weekend, due to the work was really prioritized - even over your personal life. The amount of vendors was shortlisted to two just before the analysis started. The two candidates are referred as A and B.

4.9.	Preparation	Materials, both RFP and quotations downloaded. The preliminary check to start, so that that I can plan my own evaluation sheets. There is a 100% workload for weekend, too.
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Table 9. Research log: Preparation for vendor analysis 4.9.

The work of evaluation was done as agreed including the feedback for vendors. Even with the tight schedule, we were able to keep it. It was important, as the final negotiations should start as soon as possible.

The material provided by vendors was very distributed. The companies have their own types of processes for their sales negotiation process, and even the material request was specified in original request for quotation and request for proposal, still the final results differed a lot. Therefore, the analysis in table mode gave the possibility to look after and refer to different kinds of data. On the other hand, the interpretation of vendor material had to be done delicately so that the contents would not change and all information is gathered.

Analysis on material showed that even different type of material, issues in it were well covered. There were differences in high level evaluation. The volume of evaluation as such did not have impact to final analysis, but the information about deviations was part of the feedback to vendor candidates.

High level evaluation of vendors' proposals	Proposal	Proposal
	A	B
Issues missing	15	16
Issues implicit	9	8
Major further clarifications needed	4	7
Minor further clarifications needed	6	10

Table 10. High level evaluation of vendors' proposals.

As an example about analysis between vendors, task 2.3. Service availability statements and calculation rules; Service hours /levels /hours extensions; Service clock/service calendar there were notes for A: “Mentioned in SLA availability, no separate process connection (?) to update / cyclic procedures ??” and for B:” percentage calculated by adding Actual Uptime and Excusable Downtime, dividing the sum by the Scheduled Hours, and multiplying the result by 100. For purposes of determining whether VENDOR’s performance meets any Availability Service Level, VENDOR’s Availability performance for each month of the Frame Term will be measured based on a monthly average, calculated once monthly within ten business days following the end of the applicable calendar month. For Service Level categories that include multiple systems, the percentage for each system within the category will be calculated, and these percentages will be averaged to calculate the Availability for that Service Level category.!” Here can be seen clearly, that the comments vary very much according to the proposal. In proposal A, the calculation rules were clear, but how the planning per year takes places and the consequences from this process are added into calculation was missing. In proposal B, the rule of calculation needed rechecking and was therefore taken up from original document. In column “Comments to vendors” was a clear request: ”A, please state your calculation rule”. Altogether, all columns of analysis must be read to gather the big picture per issue. Only real missing piece was finally one calculation rule.

Another example of analysis is 2.7. Availability reporting, where the material was missing from both proposals with same comment to both: “No explicit statements” and comment to vendors was “Please add the comment how this is integrated to std processes”. Third example of analysis is 4.6. KPIs indicated and reporting agreed, it was also fully missing from both proposals. The comment to vendors was: “Any KPIs available based on standard processes ?”, but also feedback to negotiation team in Notes: “Other KPIs available (recommendation): Errors (pcs) in interfaces, deviation (pcs per quarter) in service due to capacity error, unplanned breaks (pcs and hours per quarter), surpasses (pcs and hours per quarter) in service level times, and Committed/not committed per specific system”. If this was taken into negotiation, is not known. The aim of bringing out issues for negotiations was taken care.

The research log has a note about this, and the message is rather positive. No major shortages, maybe also misunderstandings from the material.

7.9.	Evaluation	<p>1st comments for offers are done. The main feeling is “silent”, no major changes (/or additions) from vendor side. The problem is that some short standings are available in material, and even this does not cost any comments from vendors.</p> <p>Explicit incident process requirements are missing from RFP. Or anything about the process.</p>
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Table 11. Research log: Evaluation 7.9.

The material from vendors woke up also other thoughts about them, maybe for no reason. I was really tired when doing this, if the comment below sounds like conspiracy theories. These are also the final log statements. The evaluation task was finished here.

8.9.	Evaluation	<p>1st candidate vendor checked closer. It seems that there is no interest of providing any better solution (even that they might be existing) are provided to customer. That gives back an idea of refreshing the own docs as reference material. Also additions to RFP material will be provided, as already an error based on earlier error is revisited here. So evaluation of RFP materials is needed – maybe via extending the people so that more view points would be available. Any details provided in gap analysis.</p> <p>Common, I am missing a measure point for the huge list of tasks to do. Only a statement what to do exists, but no reference or method/measure point available. My mala fide instinct here is that this gives the candidates a great possibility to promise to do things without any quality measurement.</p> <p>My own feeling here is towards action research too, as this issue is so close to my heart. Really a intervention here, not only far-sight control. Also white track is getting close, so speeding up is needed, in order to provide a good insight about candidates. Thus nothing new under sun, ICT people with hurry :-)</p> <p>I am clarifying my own structure to evaluation here, too. I am gathering data not only about SLA statements, but also how an existing task should be realized in SLAs (connections to SLA). Maybe there is none, but also stated this. This is added now to gap analysis, but revision needed.</p>
9.9.	Evaluation	<p>Comparing transition time to std delivery time. I have not found any statements for SLAs during transition ie. appx 8 months from RFP. Both vendors have provided some knowledge about the efforts but no information how the transition time SLA deviates from std del SLA,if any ?</p> <p>My common feeling about vendors are that they have read the material carefully, but see no effort on adjusting their services according to customers details, but more aim to adjust the customer need to their standard process, which is mostly a good strategy for cost-efficiency. The problem could emerge, if any uncommon need is not recognized yet, and it becomes major issue (even show-stopper) in the future. That might cost extra then / the service cannot be fulfilled with a satisfying manner.</p>
10.9.	Evaluation, 1 st results	<p>The judgment day :-) Today is the dead line for the 1st cycle of vendor analy-</p>

		<p>sis. In gap analysis can be found statements and questions per area of SAP hosting:</p> <p>Transition period / Both: Please confirm how SLAs are met during transition period.</p> <p>Change process installed, parties, interfaces, response times / Vendor B: any response times/rates etc.?</p> <p>Incident process installed parties, interfaces, response times / Vendor B: any response times/rates etc.?</p> <p>Problem management process installed / Vendor B: any response times/rates etc.?</p> <p>Service Desk procedures installed, contact point to customer / Vendor B: any response times/rates etc.?</p> <p>Response times + for services ie. Servers, srs, etc stated / Vendor B: severity levels as in schedule AMS?</p> <p>Severity levels stated / Vendor B: severity levels as in schedule AMS?</p> <p>Service levels stated / Vendor B: response time and % for entries,</p> <p>Credits + Pay backs / Both: Credit calculations missing. Please state your credit calculation rules including charge base</p> <p>Governance processes for SLA stated / Both: Escalation procedure model available?</p> <p>Gathering availability and recovery needs from business side. Requirements based on this to be delivered to vendor / Vendor B: as additional service?</p> <p>Participation to BCP implementation / Vendor B: as additional service?</p> <p>Service availability statements and calculation rules / Vendor A: please state your calculation rule.</p> <p>Technical roadmap communication / Both: Please add the comment how this is integrated to std processes</p> <p>System functionality control / Both: Any KPIs available based on std processes?</p> <p>Availability reporting / Both: Please add the comment how this is integrated to std processes</p> <p>Deviation information flow / Both: Please add the procedure of deviation (i.e. incident) notices to users</p> <p>Planning and realization of interface batches (?? and XI) / Confirm relevancy Not explicit in SLAs</p> <p>Monitoring of background jobs (A-class) / Confirm relevancy Not explicit in SLAs</p> <p>Monitor and fix of interface errors (system level) / Confirm relevancy Not explicit in SLAs</p> <p>Management of BW loads / Both: Please add the APO & BI relevant services. Updated table 1, too. Not in SLAs</p> <p>Management of SCM/APO background jobs / Both: Please add the APO & BI relevant services. Updated table 1, too. Not in SLAs</p> <p>KPIs indicated and reporting agreed / Both: Any KPIs available based on std processes ?</p> <p>Today is the dead line for the 1st cycle of vendor analysis. In gap analysis can be found statements and questions per area of SAP hosting.</p>
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Table 12. Research log: Final comments on evaluation 8-10.9.

The next step was to participate by filling up the predefined criteria tables per vendor. This task is not involved in this material. The gap analysis was also used to update the purchase attachments, and the attachments has been utilised in the later purchasing processes.

7 Results

The results chapter has two approaches: a. results from target organization approach and b. results from study approach. I wanted to separate them as they serve a bit different purposes; the action research analysis is realized independent from the target organization.

The results carry of more practical value in this case. The realization of work cannot be measured directly with monetary benefits, but on the other hand these purchase processes have rather high impact to ICT cost structure in target organization. This means practically, that when less money is used for ICT delivery, more money can be used for ICT development.

7.1 Deliverables to the target organization

The high level solution was to set up an outsourcing contract for ICT hosting. The supply process was triggered to create a suitable, cost effective and controlled agreement for the service required. The high level agreement is partial outsourcing, but hosting is closer to full outsourcing by type. This is strategic decision made jointly by business and ICT.

The deliverables to the target organization were realized immediately, during the process. The deliverables are of plain and practical type, but also therefore quick to utilize, provide feedback and usable to many. The expected result of this work is the gap analysis which clarifies the deficiencies of service design and service level a. in original template for request of quotation b. in quotation material provided by 2 vendor candidate and d. versus ITIL Service design guidelines. The comparison table was provided as data for research.

The comparison table assumedly could fill some deficiencies and shortages in negotiation process. No clear feedback was given from negotiation group. The material has been reutilized and revised after this, to support the next hosting purchase process. The table is used only internally, but it is used to revise the attachment documents. Outside this study, it was utilized for many purposes, for example as comments for vendors, attachment revision and ITIL fit. It has also been upgraded twice after this case. The decision to attach ITIL into data was welcomed by other teams, as both vendors already run ITIL in their delivery processes and responses - revised proposals and other material - were also build upon ITIL. The ITIL dictionary was shared between purchasers and vendor candidates.

During the purchase process, the versions of gap analysis were provided according to the timetable, and therefore it could be utilized in all phases needed. It was delivered in different versions: a. internal version with full data to purchase groups and b. external version with only titles and comments to vendors. Both were used, and the vendor feedback was requested against the comments. The table was utilized in any similar purchase processes, which took place twice after the research. The table was therefore long range document, and we can assume it was considered worthy, even without direct feedback from purchase groups or business side.

7.2 The outcomes of the study

This study can count on many types of results. Outside the gap analysis table, also the action research approach as a learning curve for researcher, a possibility to look for the own work from a different angle, writing work, and reflection work have taken place during this task. In theory part, the outsourcing is presented as a theory, but for the business it is a method to fulfill to requirements set for ICT in business operations. My approach is to connect the outsourcing as a theory to the task presented in the gap analysis.

The specified objectives, defined services including the SLA were recognized in the theory as goals for the outsourcing. The ERP hosting belongs mostly technology scope, which is part of IT domain and strategic fit is mentioned as internal. This was recognized and therefore the task was prioritized in the supply process. The task was part of clarification of requirements for set up of defined services. One of the goals for the task was to “set own agenda” instead of taking only provider documents. The specific service requirements need also to be transparent for business parties. The owner perspective is included in both service requirements and service KPI settings.

Improvements and changes to the service were one part of the task, as the attachments were revised to up-to-date status. The future changes were not directly included. The service requirements were updated from business and thus included into revisions. The “failure prevention period” was also recognized in the task, as the separate SLA for transition period was set up and realized. Indicators for agreement were also set up partly based on the gap analysis.

The outsourcing theory was implicitly followed, but mainly utilized as method. Nevertheless, the main issues listed in theory were included in activities of realization. Also the outsourcing theory here is very practical by nature. Service design as theory is included here, as the outsourcing goals in this study are basically of immaterial type. The theory of service design hardly exists, which is surprising as it is more often the core of supply.

The communication between purchase and supplier parties is often mentioned in service design. As the deliverables are not visible, the definitions include the core supply as well. In the task, the gap analysis was to bring up the important issues for negotiations between the parties. The design of services is very important part of the documentation in supply process. The attachments were used in negotiations and service design definitions. Part of communication, were the feedback for the vendor candidates and the analysis of the feedback from vendor candidates. The method, gap analysis, was discovered in service design and utilized in the task.

7.2.1 Supply process

The high level supply process followed strictly the approach of the supply process presented, only some iteration took place in Request for proposal and Proposal phases. This was needed as the scope of supply was a. set of services and communication with several feedback and b. definition of services which were unique by nature.

In Requirements collection -phase, the old set of requirements was used, but it was revised urgently. The first phase of gap analysis provided material for this. The revised material was the official version of requirements to be verified in negotiations and realized in delivery. The major effort took place in Request of proposal and Proposal -phases. The phases were run quickly and iterative. This made updates, feedbacks and discussions possible. On the other hand, they were necessary to set up the unique requirements, to make them understood by all parties and revise, extend and fit them into ITIL and vendor delivery practices. The deliverables of the task were also support to Negotiations -phase. As internal operation, also one of the succeeding tasks for me was to study and comment all contract revisions, aiming to see the practical fit of the services designed. Gap analysis served through all phases, it was iterated in phases, but as it also carried the original requirements, the evolution was visible, and returning to original requirements was easy to realize.

The gap analysis was utilized as a tool during the process phases. The creation and setup were on my responsibility, as well as utilizing it and bringing out the results. The deliverables of the task were however delivered to other members during the phases and the feedback from the members and other parties were iterated back into tool. Even without any systematic feedback from negotiations, the results of the gap analysis were taken into account and use in negotiations and other parties. The tool itself served the goals for which it was originally created. Also the direct statements about using the tool itself were positive from members. A non-sophisticated outlook was due to the few hours available for the work, but it should not diminish the value of the contents.

Using ITIL as support was very beneficial to work. It could provide new information to update of the service descriptions and service level agreements and to the new framework. The new structure was relevant to services requirements and helped on mapping the vendor proposals. The dictionary was shared which helped the communication.

7.2.2 ITIL and service design

Use of ITIL as framework provided best practices for services evaluation. The ITIL framework is largely used in ICT industry, and therefore it provides valuable vocabulary for discussions between purchaser and supplier parties. ITIL version three includes a special topic for service design. It operates in different level than the theory set of service design, in this study. The ITIL service design has goals concerning the actual service, management of services portfolio, architecture, the processes needed to realize the services and measurement of realized services. The service design theory concentrates to a creation of a service only, which is on the other hand the core. ITIL is a library of best practices, and it is for reference and it should not be implemented as such.

In the gap analysis, the analysis frame was utilizing the key support process as main input. The key support processes used here were presented on ITIL Service design version three. The vendor candidates were operating more on version two processes, but the fit took place in discussions in Proposal -phase. The gap analysis presented the ITIL framework for the first time for SAP hosting in the target organization. At the beginning, it was seen as additional support, but the structure was entered into attachment documents during revisions.

Service design has hardly none theoretical approaches. I find this very surprising due its significance, not only in ICT but in any supply. Maybe the situation stands for the history, where more of actual products were delivered, and services supporting it, seen as additional value only. But today, the service itself is more often the core product itself.

7.2.3 Challenges and limitations

My responsibilities consisted on working as technical expert on reviewing and further developing a set of documents, which were attachments to the request of quotation. The biggest challenge has been to keep an objective approach in a subjective work. The inductive approach has been a guideline to me, but surely not fully succeeded. Therefore, the time span from actual task to writing this study has given me a period stop and restart processing again, which I see beneficial.

Another big challenge has been to find theories to fit into subject. This has been also a limitation to work quality. I have tried to collect the theories more on my understanding which theories are needed, but I cannot show nor demonstrate any established connection. This makes the theory selection a lottery, they may fit or not. The material itself has been a challenge during the study. Trying to keep the content rigor, there is a risk that material has not been fully used, and therefore the results may hit wrong or beside.

This study covers only one initial task in big picture. The before, after and parallel tasks are not included, even they could give more value to work. The researcher is only a single resource, which limits the material and mental resources. The documentation is partly modified to prevent the recognition of any party, though the contents are original. Only one target organization is included with one purchase process.

The scope of report is rather narrow. The main problem to make the analysis part larger is a. repetition of notes in material is high compared to the amount of the material, b. this study would contain lot more pages - my goal is to keep it vigorous, and c. the most important, no new information would be available. I assume this can still be a deficiency to the work.

In my opinion, the use of action research should be wider. It could give real benefit through its deliverables.

7.2.4 Evaluation of the action research

For a common level of evaluation, a comparison to Checkland & Holwell's fifteen characteristics for action research is utilized. The goal is a trial to verify the use of action research as a method in this study. The characteristics gather the requirements for both the content and the use of the method. In the following table are included the actual characteristics and the comments for utilization and results.

Fifteen characteristics of action research by Checkland & Holwell	Utilization and results
(i) researcher intends to change the organization;	Original task was a modification by nature.
(ii) there must be implications beyond the specific situation;	The deliverables were utilized in a few ways and in at least two similar processes.
(iii) reaserch seeks theory as an explicit concern;	Three different theories are involved, although the proven connection to them is missing. The study tries to present the dependency.
(iv) any tools, techniques, or models developed need to be linked to the research design;	Presented in the study and attached as full set.
(v) emergent theory will emerge from both data and initial theory;	Few points are presented in results.
(vi) theory building will be incremental and cyclic;	The phases are presented in analysis.
(vii) presentation should acknowledge prescription and description;	The task was set with strict deliverables, and the study follows the same approach.
(viii) there will be orderliness in approach;	Included in the structure of the study.
(ix) exploration of data and theory building should be explainable to others;	Presented in results.
(x) later reporting is part of theory exploration and development;	Not attached, only some hints about revision of the deliverables of the initial task.
(xi) i-x are necessary but not sufficient for valid action research;	
(xii) it is used where other methods are not appropriate;	Maybe there are other appropriate methods, but only action research can support the researcher's reflection.
(xiii) triangulation (using multiple methods) is used if possible;	Some attempt when presenting the analysis.
(xiv) history and context are given due weight; and	Presented in several parts of the study.
(xv) dissemination of findings goes beyond those involved in a study.	The study is a thesis.

Table 13. Evaluation of the study using Checkland & Holwell

The decision to use these criteria was based on the wideness of it. It lists relevant issues to be checked on many levels. When reading through the action research theory, many of these were listed but not in this extent.

Also method evaluation took place during the process. Looking for the phenomenological background of the work, I tried to follow the practical knowledge and by the nature it is interpretative. Below are my notes in research log about issue.

7.9	Thinking	<p>Habermas' Three Generic Domains of Human Interest: Work Knowledge</p> <ul style="list-style-type: none"> • Work broadly refers to the way one controls and manipulates one's environment. This is commonly known as instrumental action -- knowledge is based upon empirical investigation and governed by technical rules. The criterion of effective control of reality direct what is or is not appropriate action. The empirical-analytic sciences using hypothetical-deductive theories characterize this domain. Much of what we consider 'scientific' research domains -- e.g. Physics, Chemistry and Biology are classified by Habermas as belonging to the domain of Work. • This work is also relevant to this type of interest, as it tries to create a better coverage of materials attached to RFP's. <p>Habermas' Three Domains of Knowledge (after Tinning, 1992)</p> <table border="1" data-bbox="528 846 1469 1240"> <thead> <tr> <th>Type of Human Interest</th> <th>Kind of Knowledge</th> <th>Research Methods</th> </tr> </thead> <tbody> <tr> <td>Technical (prediction)</td> <td>Instrumental (causal explanation)</td> <td>Positivist Sciences (empirical-analytic methods)</td> </tr> <tr> <td>Practical (interpretation and understanding)</td> <td>Practical (understanding)</td> <td>Interpretive Research (hermeneutic methods)</td> </tr> <tr> <td>Emancipatory (criticism and liberation)</td> <td>Emancipation (reflection)</td> <td>Critical social sciences (critical theory methods)</td> </tr> </tbody> </table> <p>Design research ?</p>	Type of Human Interest	Kind of Knowledge	Research Methods	Technical (prediction)	Instrumental (causal explanation)	Positivist Sciences (empirical-analytic methods)	Practical (interpretation and understanding)	Practical (understanding)	Interpretive Research (hermeneutic methods)	Emancipatory (criticism and liberation)	Emancipation (reflection)	Critical social sciences (critical theory methods)
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Table 14. Research log: Thinking during vendor analysis 7.9.

The action research can be any of approaches, depending how it is utilized. For example, according to Myers (1997, 241-242) action research can be positivist, interpretive or critical. Also Cole & Davison (2007, 820) states, the hermeneutics provides a real means of engaging in transcendental interpretations (with its prospects for future applications) rather than attempting to resolve the immediate practical concerns of systems designers, to give one example (as would be the case in action research). According to Myers (1997, 241-242), qualitative research methods were developed in the social sciences to enable researchers to study social and cultural phenomena. Examples of qualitative methods are action research, case study research and ethnography.

8 Conclusions

The results - for both target organization and study - are of practical nature. The target organization utilized the results immediately, and in fact, this study has nothing deliver for

target organization and therefore no value in that sense. Still, the value of the study remains in action written down. As this is action research, the results for target organization, are probably not repeatable. But, assumed it is not needed, important result is the process of task initiated itself, which is repeatable - and has been repeated twice since. Any conclusions driven from organization point of view, would be to run this evaluation as repeatable process, as one task in one phase of purchase process. The result for study or in academic sense is to set out one real-life case from hectic business world and run action research method there.

Action research is often mentioned as unique method, when compared to positivist research strategies. The direct comparison does not make credit to action research. Instead, some guidelines can be taken into consideration, ie. rigor, self-evaluation, visibility and relevance. On the other hand, action research was born in the situation where positivist methods were not able to explain or introduce the phenomenon in question. Is action research able to give added value into research on common? Can it reclaim its promise?

This was the first time I applied action research as method. Action research is rather unique with profits and shortages. As a profit to this work is the possibility to use myself as a tool due to my position. I tried to extend the gap analysis also to a. background information, b. situational information, c. next steps in process. Also the method gave a lot of freedom to analysis of gap analysis, which can be delusional to a novice, too. I decided to make a clear division between the report of the results and research log statements. I hope this keeps the analysis on solid ground. The new method did not hinder me to utilize it as from my understanding; it was the most interesting method for this case. The other possibilities were case study research, but left it due the missing part of evaluation of my own input and operations during the phases. I was a real operative person with a stated responsibility, which I see as very valuable possibility to analyze the case as a participant and not only as investigator. According to Yin (2009, 20) the case study research is a way of investigating an empirical topic by following a set of prespecified procedures.

Keeping the interpretative approach was a challenge. A sense of empirical-analytic approach is familiar to my work. Action research has no dependency to any of Habermas' domains. Action research is very interesting method, it is hard to compare to any other method, as it operates on a different level. To a novice, it is also very challenging. Then, the hurry of the work, running the supply process as extra effort took most of my energy. I wish I could have brought more unwritten and unstated atmosphere into the reflection.

One issue not emphasized in literature is reflection. One important aspect to the role of researcher is the capability and skills to reflect and self-reflect. In action research, it is essential to reader to be able to identify the baseline of researcher. To researcher, to express "an

own voice”, is allowed, when the baseline is clear. If it is not, the objectivity of the study may shade or even become distorted.

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