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Anne-Maarit Majanoja

Selective Outsourcing in Global IT Services

Operational Level Challenges and Opportunities

TURKU CENTRE for COMPUTER SCIENCE

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Anne-Maarit Majanoja

Supervised by

Professor Ville Leppänen
Faculty of Mathematics and Natural Sciences
University of Turku
Finland

Adjunct Professor Linnéa Linko
Faculty of Medicine
University of Turku
Finland

Reviewed by

Professor Paul Lillrank
Department of Industrial Engineering and Management
Aalto University
Finland

Professor Brian Nicholson
Alliance Manchester Business School
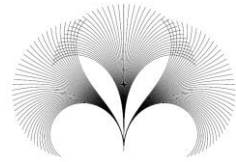University of Manchester
United Kingdom

Opponent

Professor Mikko Ruohonen
Faculty of Natural Sciences
University of Tampere
Finland

To my parents
Omistettu vanhemmilleni

Abstract

Companies need to answer and react timely and efficiently to their customers' perception in order to stay in business. Companies are finding ways to control and reduce costs. Increasingly, internal IT development and service delivery activities are outsourced to external suppliers. The most common outsourcing forms are total and selective outsourcing, which are produced in nearshore and/or offshore mode.

In this dissertation, the case units are two global units in Nokia Devices: IT unit and Delivery Quality and Corrective Action Preventive Action (DQ and CAPA) unit. This dissertation consists of five publications and five research questions. The motives for the research questions originate from the case units' real-life needs and challenges. The research approach used is qualitative. Action research was conducted during years 2009-2013. This research gives focus on the global IT service delivery, although the case company's core-competence was to produce end-consumer products. The target was to get operational level knowledge from the case units' outsourcing operation and practices in a Global Selective Outsourcing Environment (GSOE).

This dissertation addresses the opportunities and challenges of outsourcing faced by the operational level personnel. In the GSOE, the service purchasing company's personnel and the supplier's personnel jointly cooperate to produce the expected outcomes and IT services. This research found that the GSOE-based operation includes multi-level customer- and supplier-ships. In order to answer the customers' perception, the operation included quality and customer-centric practices. This research found that defining and implementing customer centricity is challenging. Unclear definitions, requirements, roles, responsibilities, and activities can negatively affect the operational level implementation. The GSOE-based operation includes also contract negotiations among the GSOE parties. Successful IT outsourcing is not built only on formal contracts. Focus is needed also on building trust, commitment, communication, and mutual cooperation and dependence.

This study found that retaining operational level progress and information visibility inside the service purchasing company made it possible to hold the ownership and avoid getting into a "supplier trap." The operational level cooperation, interaction and quality management practices affected the service purchasing company's trust and satisfaction. The trust in the case units was found to exist among people, and this trust was formed based on an individual's knowledge, capabilities, behavior, and performance. Quality management practices played a significant role in building trust that added to the credibility of the operation.

Tiivistelmä

Yritysten tulee vastata oikea-aikaisesti ja tehokkaasti asiakkaidensa näkemyksiin mahdollistaakseen liiketoimintansa jatkumisen. Yritykset myös yrittävät löytää keinoja kontrolloida ja vähentää kustannuksiaan. Kasvavassa määrin sisäisiä IT-kehitys- ja palvelutoimintoja ulkoistetaan ulkopuolisille toimittajille. Tyypillisimmät ulkoistusmuodot ovat totaalinen ja selektiivinen/valikoiva ulkoistus, joita tuotetaan lähialueilla (nearshore) ja halvemman kustannustason maissa (offshore).

Tämän väitöskirjan tutkimuksen kohteena ovat kaksi globaalia yksikköä Nokia Devices-yrityksessä: IT-yksikkö ja toimituksen laatu ja korjaavien ja ehkäisevien aktiviteettien yksikkö (Delivery Quality and Corrective Action Preventive Action). Väitöskirja koostuu viidestä artikkelista ja viidestä tutkimuskysymyksestä. Motiivit tutkimuskysymyksiin juontuvat tutkimuksen kohteena olevien tutkimusyksiköiden todellisista tarpeista ja haasteista.

Tutkimuksen lähestymistapa on laadullinen. Toimintatutkimukseen pohjautuvaa tutkimusmetodia käytettiin vuosina 2009–2013. Tutkimus keskittyy globaalien IT-palveluiden tuottamiseen, vaikka tutkimuksen kohteena olevan yrityksen ydinosaaminen oli valmistaa loppukäyttäjätuotteita. Tämän työn tarkoituksena oli saada operatiivisen tason tietämystä tutkimusyksiköiden toiminnoista ja käytännöistä globaalissa selektiivisessä ulkoistusympäristössä (Global Selective Outsourcing Environment, GSOE).

Tämä tutkimus tuo esille operatiivisen tason työntekijöiden kohtaamia mahdollisuuksia ja haasteita ulkoistustilanteessa. Ulkoistuspalveluja ostavan yrityksen työntekijät työskentelevät GSOE-ympäristössä yhdessä toimittajien kanssa tuottaen yhteistyössä odotetut tuotokset ja IT-palvelut. Tämä tutkimus osoitti, että GSOE-pohjainen toiminta sisältää monitasoisia asiakkuuksia ja toimittajuuksia. Pystyäkseen vastaamaan asiakkaiden näkemyksiin, toiminta sisälsi laatu- ja asiakaskeskeisiä käytäntöjä. Tutkimuksessa myös havaittiin, että asiakaskeskeisen toiminnan määrittely ja käyttöönotto ovat hankalia. Epäselvät määritelmät, vaatimukset, roolit, vastuut ja toimintatavat voivat vaikuttaa operatiivisen tason toteutukseen. GSOE-pohjainen toiminta sisältää myös sopimusneuvotteluja GSOE-osapuolien välillä. Onnistunut IT-ulkoistus ei pohjaudu vain muodollisiin sopimuksiin, vaan vaatii myös luottamuksen, sitoutumisen, kommunikaation, keskinäisen yhteistyön sekä riippuvuuden rakentamiseen.

Tutkimuksessa havaittiin, että operatiivisen tason kehitys- ja informaationäkyvyyden säilyminen ulkoistuspalveluita ostavan yrityksen sisällä mahdollisti omistajuuden säilymisen ja ehkäisi päätymästä "toimittajaloukkuun". Lisäksi operatiivisen tason yhteistyö, vuorovaikutus ja laadunhallinta vaikuttivat palveluita ostavan tahon luottamukseen ja tyytyväisyyteen. Tutkimusyksiköissä

luottamuksen havaittiin olevan luottamusta ihmisten välillä, joka muodostui heidän tietämyksensä, kyvykkyyksiensä, käyttäytymisensä ja suoriutumisensa perusteella. Laadunhallinta ja laatukäytännöt olivat merkittävässä roolissa rakennettaessa luottamusta uskottavaan toimintaan.

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Alkusanat

Tämä väitöskirjatyön tekemiseen liittyvä prosessi saa päätöksensä Suomen itsenäisyyden 100-vuotis juhlavuotena ja väitöspäivä 15.12.2017 osuu hyvin lähelle 6.12. olevaa Suomen itsenäisyyspäivää. Tätä Suomen itsenäisyyden juhlavuotta kunnioittaakseni halusin kirjoittaa alkusanat omalla äidinkielelläni suomeksi, vaikka väitöskirjan kieleksi on valikoitunut englanti.

Tämän väitöskirjan tekemiseen liittynyt pitkä prosessi on sisältänyt monenlaisia ajanjaksoja ja vaiheita. Yllätyksiltäkään ei ole vältytty. Tämä prosessi on opettanut ennen kaikkea pitkämielisyyttä, kärsivällisyyttä, pitkäjänteisyyttä ja periksiantamattomuutta myös tilanteissa, joihin ei ole itse pystynyt mitenkään vaikuttamaan. Väitöskirjan tekemiseen on myös liittynyt paljon onnistumisia ja saavutuksia, jotka saivat minut jatkamaan tämän prosessin loppuun asti.

Aloittaessani jatko-opintoja olin samaan aikaan töissä, mikä mahdollisti väitöskirjatutkimuksessa käytettävän tutkimusmateriaalin keräämisen varsin mielenkiintoisista IT-palveluiden ulkoistustilanteista, mutta samalla se myös hidasti jatko-opintojen etenemistä. Kaikenlaista ehti tapahtua ennen aktiivista artikkeleiden ja väitöskirjan kirjoittamisen vaihetta. Myös yliopiston sisällä

Publications

This article-based dissertation consists of the following original publications:

A1: Majanoja, A.-M., Tervala, E., Linko, L. and Leppänen, V. (2014) "The Challenge of Global Selective Outsourcing Environment: Implementing Customer-Centric IT Service Operations and ITIL Processes", *Journal of Service Science and Management*, Vol. 7, No. 6, pp. 396-410.

A2: Majanoja, A.-M., Loney, M., Wörlund, B., Linko, L. and Leppänen, V. (2014) "A Globally Integrated Supply Chain Delivery Quality Strategy: Transformation Insights at the Nokia Devices Unit", *American Journal of Industrial and Business Management*, Vol. 4, No. 8, pp. 413-431.

A3: Majanoja, A.-M., Linko, L. and Leppänen, V. (2017) "Global corrective action preventive action process and solution: insights at the Nokia Devices operation unit", *International Journal of Productivity and Quality Management*, Vol. 20, No. 1, pp. 29-47.

A4: Majanoja, A.-M., Linko, L. and Leppänen, V. (2017) "Evaluation Factors in Successful Global Selective Outsourcing Operations", *International Journal of Services Technology and Management*, Vol. 23, Nos. 5/6.

A5: Majanoja A.-M., Linko, L. and Leppänen, V. (2017) "Developing Offshore Outsourcing Practices in a Global Selective Outsourcing Environment – The IT Supplier's Viewpoint", *International Journal of Information Systems and Project Management*, Vol. 5, No. 1, pp. 27-43.

The publications included in this thesis have been reprinted with the permissions of the representative publishers.

Contents

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Abbreviations

AMER	Americas
APAC	Asia Pacific
CAPA	Corrective Action Preventive Action
CRM	Customer Relationship Management
CSA	Current State Analysis
DAP	Dead/Defective After Purchase
DOA	Dead/Defective On Arrival
DQ	Delivery Quality
EMEA	Europe, the Middle East, and Africa
ERP	Enterprise Resource Planning
GSOE	Global Selective Outsourcing Environment
ICM	Information and Capability Management
ICT	Information Communication Technology
IS	Information System
ISO	International Organisation for Standardization
IT	Information Technology
ITIL	Information Technology Infrastructure Library
ITO	Information Technology Outsourcing
ITSM	Information Technology Service Management
KPI	Key Performance Indicator
LISREL	Linear Structural Relations
LSP	Logistics Service Provider
ODM	Original Design Manufacturer
OE	Operational Excellence
OEM	Original Equipment Manufacturer
PI	Performance Indicator
POD	Proof Of Delivery
POS	Point Of Sale
R&D	Research and Development
SaaS	Software as a Service
SCM	Supply Chain Management
SLA	Service Level Agreement
TCO	Total Cost of Ownership

1. Introduction

Nowadays, global companies need to increase their competitive advantage and efficiency and reduce fixed and operating costs in order to stay in business and to be able to operate in a complex multi-stakeholder environment. In fact, it has been identified that various costs and cost reduction targets are among the main motivation factors behind companies' outsourcing decisions (e.g., Lacity et al. 2009). Companies' challenges include managing various global initiatives and stakeholders in a holistic way. Therefore, they need to decide whether to keep their operation and/or service delivery activities in an in-house mode or to fully and/or partially outsource their operation activities to external service providers. However, the mixture of different outsourcing modes, for example, total outsourcing, selective outsourcing, and offshoring, will bring their own opportunities and challenges into the global operational environment.

Using external service providers' outsourcing services can be a strategic decision to a company to increase its operation efficiency, enable focusing on core-competencies, getting access to specialized knowledge and skills, and to answer customers' and stakeholders' needs. Using outsourcing is one approach, and Information Technology Outsourcing (ITO) became a critical strategic decision during the 1990s. Good candidates for outsourcing are, for example, well-defined and described processes. But outsourcing is not a definite and straightforward solution to success. Various ITO failures became widely recognized also during the 1990s. Rebernik and Bradac (2006) identified obstacles in outsourcing cooperation, such as, misunderstanding objectives, policy and culture; disagreements between the parties; and communication and monitoring problems. The challenge is that many times an outsourced process is out of sight. Problems arise if the outsourced process is also out of mind. If the outsourced processes are not continuously managed and followed up by the service purchasing company, the planned targets and benefits of outsourcing may not be achieved as expected.

This research-based thesis studies *operational level* elements and the phenomenon of a Global Selective Outsourcing Environment (GSOE). The main GSOE parties are a *service purchasing company*, which selectively outsources its operational level activities and external *service providers* (later called as *suppliers*). These provide outsourcing and offshoring services to the service purchasing company. The GSOE parties operate together based on the jointly defined common processes and practices to deliver the expected outcomes. The operational level GSOE team members can face various cooperation-, trust-, and satisfaction-related achievements and challenges, while implementing the GSOE mode-of-operation practices. To succeed, the designed practices must cross the company boundary spanners. In this study, the focus was on the GSOE's operational level

challenges and opportunities, cooperation and management, implementation of global practices, and incorporating quality-, customer satisfaction-, and trust-related elements into operational level activities and practices. The elements of the GSOE landscape were constructed based on several operational and excellence concepts and ideologies. The GSOE's phenomenon and elements cannot be successfully established and analysed based on only one research field. In many cases, the research fields overlap, such as, operation management, strategic management, quality management, and information systems (IS).

Bigelow (2002) wrote: "*To achieve the goals of the Operational Excellence (OE) cycle, organisations and management must be committed to quality, continuous improvement, and total compliance.*" Organizations also need to establish clear requirements, communicate requirements, and assess the quality of the activities. Earlier studies (e.g., Oakland, 2014; Dzekashu and McCollum, 2014; Movahedi et al., 2016) show that in recent years, several companies have attempted to define, develop, and accelerate their operation and performance with disciplines, such as, quality and lean practices, continuous improvements, and transformational leadership. A successful global implementation of those requires fundamental changes in actions and behavior both in management and at the operational level. Various challenges are typically faced during the implementation phase when the activities and targets should be incorporated into operational level activities and information technology (IT) solutions. In addition, a majority of the development activities focuses only on companies' internal development despite the fact that many operational level activities are implemented by external service providers.

In a global, selective outsourcing-based operation, operational level personnel need to have motivation, commitment, and trust among themselves. Trust can be understood as something that people build together to increase predictability and to actively confront uncertainty and conflicts (Tuomola-Karp, 2005). A lack of trust among the parties (e.g., a service purchasing company and an IT supplier) can negatively affect the parties overall cooperation and satisfaction. In this study, trust has two dimensions: trust among people, and trust in building the credibility of an operation and outcomes (e.g., project and service deliverables). Currently, the amount of outsourcing arrangements increases, and therefore, there is a need for practical operational level knowledge for supporting and leading GSOE-based operation and practices.

Based on earlier studies, it was possible to find prior knowledge to be applied also to the GSOE-based situation. Earlier studies showed that a real-time operation among several stakeholders requires good management and leadership practices. Therefore, this research area cannot be excluded. However, it is recognized as challenging to generalize management and leadership practices across organizational settings, sectors, and cultures. Management and leadership include also power- and authority-related challenges, which can cause misrepresentation of the processes and outcomes (Ruohotie, 2000). Operational level teams'

performance should be guided by dynamic processes (Ruohotie, 2000), and the whole end-to-end supply chain needs to be designed to be responsive to quality and customers' perception. Furthermore, leaders play a critical role in implementing strategy, operational level practices, and ensuring quality across the GSOE parties, globally. A strategy typically includes goals, actions to achieve the goals, and mobilizing resources to implement the actions (Minzberg et al., 1998). Besides, strategic management is a proactive process to change and stretch the organization, its stakeholders, and the context and/or environment (Eden and Ackerman, 1998). Still, it is possible that the strategy of a company is not clear to its leaders and/or its operational level personnel and/or stakeholders. In an outsourcing situation, unclear strategy and knowledge of it can cause failures on operational level implementation and to fulfil the service purchasing company's expectations. These failures can have a significant and negative affect on cooperation-related satisfaction, trust, and quality.

The review of earlier research also brought forth that even today the research fields of quality and IT outsourcing are still more strategically than operationally driven (e.g., Chen et al. 2013; Willcocks and Cullen, 2013; Jiménez-Jiménez et al. 2015). Yet, all strategies, decisions, and targets made at the corporate and business level are eventually implemented by operational level teams, worldwide, and many times together with suppliers' personnel. The operational level teams need to find ways how to realize the strategies and targets and to deliver the expected outcomes and services. Therefore, in this research, the voice is given to the operational level teams, which include operational level managers, leaders, and specialists of the GSOE parties.

In this research, ways to support the GSOE operation are discussed in five individual publications and here, the ways are summarized. This summary identifies the operational level problems and opportunities associated with global selective outsourcing based cooperation and their effect on the service purchasing company's satisfaction. This thesis consists of three parts:

Part 1 defines the context of the research and presents the results and discussion. The first part is divided into four chapters: *Chapter 1* provides the introduction, research questions and the used research methods, and also introduces the case environment and units. *Chapter 2* reviews related literature from outsourcing and elements that affect operational level actions. *Chapter 3* discusses the original publications included in this thesis and summarises the research results. *Chapter 4* concludes the thesis by summarizing the implications of the research.

Part 2 is composed of the independent publications. This part consists of five original articles by the author.

Part 3 consists of appendices included in this thesis.

1.1. Research Motivation, Objectives, and Questions

The motive for this research arose from the case units' real-life needs and challenges in their GSOEs' operation, activities, and management. Implementing and sustaining the GSOE-based operation was not an easy procedure, and it included several successes and failures. The following GSOE cooperation related statements and perceptions were said by different members of the case units and the suppliers during the interviews and discussions, which gave a conceptual motivation and inspiration to get deeper insights into the operational level GSOE phenomenon:

- *"The service purchasing company should focus only on verifying the final outcome and not on how the outcome was finally achieved or produced."*
- *"I am having mixed feelings, they are saying that they will bring us value and quality, but the people are still the same without those skills and capabilities."*
- *"It is not enough to say: 'Yes, we are following and doing quality practices.' We need also evidence of that."*
- *"If an operational level person points out a non-conformance situation, no actions. If a more senior person complains, something happens. If senior managers complain, only then the situation will be reacted upon. But at that point it is already too late and risks have realized."*
- *"The operational strategy and focus should be checked, because we should discuss more about cooperation with things, thinking about the future, and not on politics and the debating of contracts."*
- *"There is always something, there is always a feeling of lack of trust, there are hints of non-reliable things or hidden agendas. I have more trust towards the individuals than the company they represent."*
- *"It is surprising how differently people see the situation when sitting on the different side of the table, and how the feeling and the importance of the situation differs that much."*
- *"We order work and outcomes with quality. Together, not separately. Is it so that at the moment they work and provide outcomes without quality? Sometimes it feels like that."*

In the case units, the Current State Analysis (CSA) interviews and surveys were used to analyse the GSOE-based operation and management practices. The findings were used to define and implement the needed real-life solutions and corrective actions that would improve the GSOE parties' cooperation, operational level activities, and information sharing. Therefore, it was important to analyse how the management and leadership practices were organized, and how the customers' (i.e., the service purchasing company) perception and expectations were captured and responded. Similarly, it was needed to get insights into the operational level mode-of-operation, quality, cooperation, and communication

practices. Also, the target was to analyse the formation of the service purchasing company's satisfaction and trust.

Rapid changes and improved technological capabilities in the ITO field are having serious effects on companies' IT strategies and mode-of-operation, such as, in the abilities to use offshoring services. Based on earlier studies, many of the studies have focused on strategic level elements, such as, how to select service providers and negotiate outsourcing contracts (e.g., Dekker, 2008; Feng et al. 2011) instead of operational level GSOE implementation, cooperation challenges, and success factors. It appeared that, to date, there has been little operational level research and findings from implementing common global IT service delivery teams, GSOE-based cooperation, and jointly defined and implemented practices.

This research was driven by the real-life challenges faced by the case units' operational level personnel while operating in the GSOE situation. The global case units were: the IT unit and the Delivery Quality (DQ) and Corrective Action Preventive Action (CAPA) unit. The objective was to examine the case units' IT service delivery practices and to provide new operational level selective outsourcing knowledge. Therefore, the aim was not to solve all GSOE operation-related problems or to find a solution about how to succeed. The results of this research can provide insights for operational level stakeholders to develop their GSOE practices. This knowledge also can help global stakeholders (e.g., service purchasing companies and suppliers) to better understand the elements of operational level cooperation in selective outsourcing based arrangements.

The research objective was to explore the operational level global selective outsourcing phenomenon, but the research questions have been refined along the progress of this thesis. The research questions (RQ) are presented in Table 1.1. Although the RQs have different focuses and are from different case units, the RQs are related and complement each other. The RQs approach the GSOE phenomenon from five different focus areas: RQ1 focuses on multi-level customer- and supplier-ships in the GSOE-based operation. RQ2 identifies collisions in operational level GSOE implementation. RQ3 focuses on the implications of solution ownerships from the service purchasing company's point of view. RQ4 aims to identify GSOE management- and leadership-related aspects. RQ5 focuses on operational level cooperation and quality practices, and how those affect the service purchasing company's trust and satisfaction. The RQs are answered in the publications and in this thesis, and are outlined in the summary of this thesis.

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Table 1.1 Research questions

RQ1: How multi-level customer- and supplier-ships affect the GSOE operation?
RQ2: What kinds of knowledge and implementation collisions occur in the operational level GSOE cooperation?
RQ3: How the service purchasing company's ownership of the IT services and direct operational level progress visibility affect the company's ability to adjust to changes in the GSOE-based operation?
RQ4: How unit and operational level management and leadership practices contribute to the GSOE cooperation?
RQ5: How GSOE cooperation and quality management practices affect the service purchasing company's trust and satisfaction?

1.2. Case Environment and the Case Units

The case company is Nokia Devices and Services (later called as the service purchasing company) and its global selective outsourcing arrangements. During the years 2009-2012, the service purchasing company was divided into several business units and sub-units. The information and capability management (ICM) organization included several operational level IT units. The supply chain management (SCM) organization included several sub-units, such as, operations, logistics, shipping, etc.

In this study, the primary case unit is one of the ICM organization's global sub-units (later called as the IT unit). To further elaborate upon the GSOE operation-related observations and findings, the SCM organization's global delivery quality (DQ) and corrective action preventive action (CAPA) unit is the comparison case unit. Both of the case units provided after-the-sale services to the customers (consumers and trade customers). Customer centricity targets and expectations significantly guided the case units' organizational structures and the operational level processes, activities, and satisfaction results.

The service purchasing company produced end-consumer products. The operation included various internal and external stakeholders such as, suppliers, manufacturers (including its internal organization units and interest groups), customers and competitors. Each stakeholder had a self-interest in the business with similar or differing demands and requirements. In this study, manufacturing and operations studies were not in the focus area, but the manufacturing and operations significantly affected on the case units' decisions, strategies, outcomes,

and services. These aspects also guided and limited the case units' operational level activities and interaction among the global stakeholders.

Figure 1.1 illustrates a case company's overall manufacturing-based operating environment where the case units operated. The SCM frame in Figure 1 is used as a scientific basis, which was adapted from Coyle et al. (1996) and Tseng et al. (2005). In the SCM frame, the manufacturer represents the position of the service purchasing company. In a manufacturing-based operating environment, various core and supporting business processes construct the base of operational level structures, requirements, and activities. In the case company, various organizational and business structures were organized based on core business processes and support business processes (in Figure 1.1, number 1, the core and support business process structure is adapted from Brown, 2008). As an example, the service purchasing company's operations, logistics, and sales were part of the core business, and IT development and services were part of the support business.
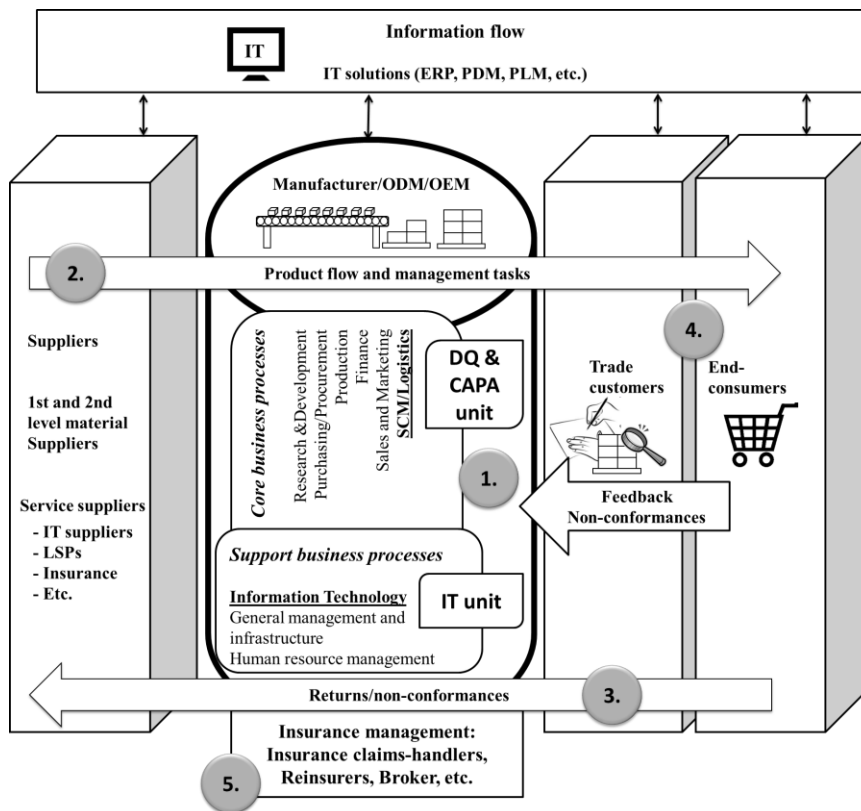
Figure 1.1 The case environment (SCM frame adapted from Coyle et al., 1996; Tseng et al., 2005, core and support business processes adapted from Brown, 2008)

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Figure 1.1 describes the product flow in a manufacturing context. In general, the main elements of the whole supply chain process include purchasing, management, production, and logistical flow to customers. The product flow (Figure 1.1, number 2) illustrates how the production process begins from material suppliers. The first level suppliers provide materials directly to the manufacturer, and the second level suppliers provide materials to the first level suppliers. In addition, in Figure 1.1 (number 2), service suppliers are included as they provide various services to the manufacturer. The production process goes via manufacturers including Original Design Manufacturers (ODM) and Original Equipment Manufacturers (OEM). The finished products are delivered to trade customers who provide the products to end-consumers. The information flow, which includes various IT solutions, links the entire supply chain from suppliers and manufacturers to trade customers and end-consumers (Figure 1.1, number 4). This broad overview can be applied to the case company's situation and directly affects the case units' operational level activities and solutions.

The return flow/reverse logistics (Figure 1.1, number 3) concerns quality aspects where the defective products are returned to their producers. In this thesis, reverse logistics and managing various trade and end-customer non-conformance situations and defective products and/or deliveries are important, because those were among the main activities of the case units' operational level activities and practices. In this thesis, the logistics-related insurance practices, claims-handling activities, and operating with insurance companies, reinsurers, and brokers (Figure 1.1, number 5) were integral parts of the DQ and CAPA unit's operational level activities.

It is recognized that the case company's factory settings affect the case units' operation and practices. As the two internal case units were part of bigger organizations, it was decided not to include, for example, the theory of the firm or elaborate the macro view further, because those would direct the focus more on the case company and its existence, behavior, structure, and relationship to the market instead of the case units' operational aspects.

Case Unit 1: The Global IT Unit

During the year 2008, the ICM organization's top management made a strategic decision to use only a few preferred suppliers to deliver the needed IT services, worldwide. The global target was to purchase a majority of the IT application and IT service development, maintenance, and support activities from these preferred IT suppliers. In addition to the preferred suppliers, a list of 'accepted suppliers' was also available for special service needs (such as, special technology requirements). All preferred suppliers offered outsourcing and offshoring services, and their main offshoring countries were India and China. Because of

this strategic decision, the case IT unit selected its preferred external IT supplier. As a consequence of the decision, the IT unit had to change its current supplier. It is emphasized that the global IT services were all the time fully owned by the IT unit.

The IT unit's personnel were globally located (e.g., Americas, Europe, and Asia) at different sites even inside the same country. A majority of the outsourced operational level activities were performed at the supplier's offshore competence centres in India and China. The supplier had also onsite personnel available, worldwide. Many times, the onsite personnel were 'messengers' between the onsite and offshore teams. In this GSOE operation setup, the offshore competence centres played a significant role. The China competence centre delivered only China-specific services. The India competence centre was the main offshore site and all other areas (AMER, EMEA, and APAC) operated with the India competence centre.

The common global service delivery teams included the IT unit's personnel and the supplier's onsite and offshore personnel. As an example, the IT unit was accountable for the IT service development roadmaps, application, and service ownership, end-customer and business unit satisfaction, and reporting to the top management. The IT unit's personnel also focused on various management aspects, such as, product, service, portfolio, project, and program management; internal process development, architecture design, requirements management, quality management, service ramp-up and ramp-down management activities, and business (and customer) relationship management. The supplier was responsible for implementing, managing, and delivering the operational level activities and outcomes, such as, IT application development and coding, end-customer IT service-desk and support activities, IT application maintenance and support, IT application testing, quality management, and other IT development and maintenance-related activities.

Both of the parties were strongly involved with the operational level activities to ensure that the needed IT services were provided to the end-customers without interruptions. Instead of implementing the IT unit's existing Information Technology Infrastructure Library (ITIL) processes, the IT unit and the supplier jointly developed and implemented a novel set of common ITIL V3 processes (the implemented set included over 30 ITIL processes). The target was to ensure that both of the parties were able to have an influence on the operational level setup and practices and to establish an optimal selective outsourcing-based mode-of-operation for both of the parties to successfully deliver the global IT services, worldwide. The IT unit and the supplier agreed about several Service Level Agreement (SLA) elements, and they defined global service delivery targets and responsibilities. The contract monitoring and performance facilitation activities were conducted on a monthly basis. It is notable that several service cost-related aspects affected the content and targets of the contracts, SLAs, cooperation, and

partnership. The IT unit defined and agreed that the service levels are based on several requirements, such as, business criticality, service availability, and expected resolution times. These were connected with the ITIL processes and performance measurements.

Case Unit 2: The Global DQ and CAPA Unit

During the year 2008, it was realized that the DQ and CAPA operation required significant changes in order to meet the new global requirements. Also, the customer perception was not clearly built into the logistics DQ practice. The existing IT system for DQ claims management limited the future development possibilities. The DQ and CAPA personnel were globally located (AMER, EMEA, and APAC) into various local sites and teams, such as, sales, operations, and logistics teams. The DQ and CAPA unit selectively outsourced its operational level activities (such as, IT development, IT services, and insurance claims management) to the external service providers. The IT supplier and the insurance supplier had personnel available in Europe. The DQ and CAPA operation did not utilize offshoring services in India or China.

The amount of global DQ and CAPA activities and trade customers were significant. A novel, globally integrated DQ claims and CAPA cases solution with a customer-centric approach was developed and implemented. In this DQ and CAPA solution, global customer-centric operation meant, for example, a structured customer-centric organization setup, operating according to customer-centric process structures, and the burden of proof was not the trade customers' responsibility.

DQ is a critical distinctive sign for company's quality perception by its trade customers. DQ and CAPA management can be considered among the companies' core processes and practices. DQ shows trade customers' perception and reported non-conformances, whereas CAPA provides a solution to the non-conformance(s). Eventually, the CAPA area became more critical and significant compared to DQ, because the CAPA practices and ideologies were pushed deep into the various global organizations that crossed the unit and organizational silos.

In this DQ approach, the scope includes trade customer 'Defective / Dead-On-Arrival' (DOA) issues and excludes all end-consumer 'Defective / Dead-After-Purchase' (DAP) issues (Figure 1.2). The DQ focus is on delivery quality before end-consumer purchase. DQ covers all aspects up to the 'point-of-sale' (POS) and excludes all aspects after the sale to the consumer. The product is part of the DQ approach as long as the product has not been sold to the end-consumer and the ownership of the product has not been transferred to the end-consumer. Therefore,

the first important DQ date is the ship date from the factory to the trade customers, and the second important DQ date is consumer purchase date. The product non-conformances are no longer part of this DQ approach when the end-consumer has purchased the product, has paid and received the receipt of paying, and the consumer has left with the product. This DOA/DAP approach is illustrated in Figure 1.2.
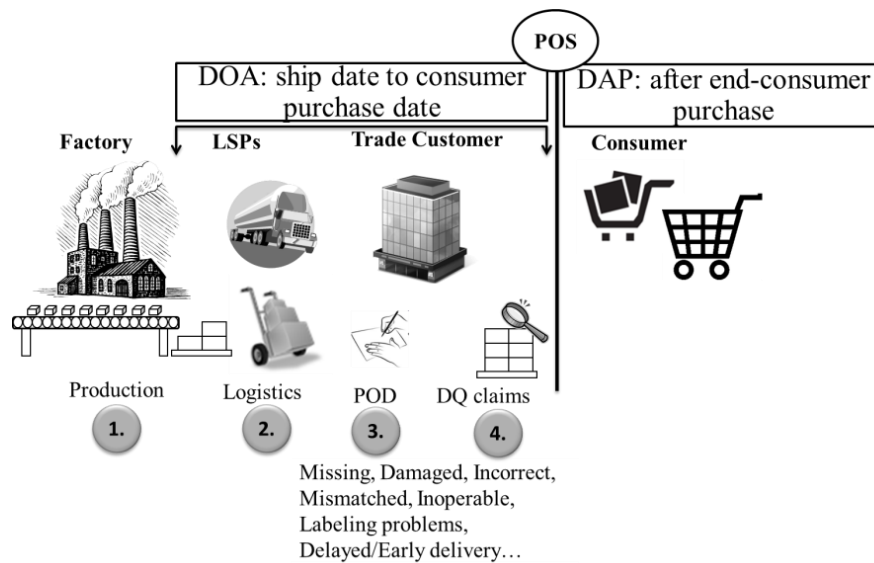
Figure 1.2 Global DQ DOA/DAP landscape and POS

In Figure 1.2, the factory produces products (Figure 1.2, number 1) that are sold to the trade customers. Logistics service providers (LSP) are responsible for transportation activities (Figure 1.2, number 2), and when the LSP delivers the product(s) to a trade customer, the trade customer signs (Figure 1.2, number 3) the delivery reception (proof-of-delivery, POD). At the time of delivery reception, all identified non-conformances are recorded into the POD (such as, identified damages). The trade customer has a certain period of time (typically defined in frame agreements) to check the delivery and report any identified non-conformances (Figure 1.2, number 4). If non-conformances are identified, the trade customer reports DQ claims to the factory. Examples of DQ claims are the following: missing, damaged, labelling problems, early and/or delayed delivery, and inoperable. It is notable that various external requirements and regulations affect DQ practices globally, and the compliance of those is mandatory (e.g., financial elements, country specific laws and regulations, the Incoterms, and insurance practices).

1.3. Research Methodology and Approach

Next, a general overview of the five main research methods and tools used in this research are introduced: 1) participant observations, 2) interviews, 3) surveys and LISREL, 4) case research, and 5) action research. Section 1.4 provides the research-specific methods and data collection of this study.

Based on Garcia and Quek (1997), the application of information systems in business is the core of IS research and the focus is on the outcome and practical or methodological issues instead of the ontological or philosophical reasoning behind a particular research approach. Garcia and Quek (1997) highlight the challenge of identifying the actual object of information systems research. In this research, the research data came from a case-specific environment. Therefore, the main target was to view the mechanisms and structures underlying the perceived events.

The philosophical position of this thesis came from critical realism that provided implications for both theoretical development and research process. The potentials of critical realism for information systems have been recognized, for example, by Dobson (2001) and Mingers (2002). The idea of critical realism is that things exist apart from our experience and knowledge of those things. Based on Easton (2010), a critical realist approach to case research includes: 1) developing a research question that identifies a research phenomenon; 2) capturing ongoing and past event data with focus on why it happened or is happening, and taking into account the problems and issues associated with interpreting the data back to the entities and actions; 3) the research process is a cycle of research and reflection and the final result is the identification of one or more mechanisms that caused the events. As Dobson (2003) stated, the critical realism is not only focusing on identifying structures. Instead, there needs to be a practical commitment and the allowance of a more practical emphasis on change possibilities.

In this thesis, the research approach classification (Figure 1.3) is adopted from Järvinen (2004). The classification taxonomy was first presented for IS, but it is useful for a wider set of IT research.

Figure 1.3 Research approaches (adapted from Järvinen, 2004)

Based on Järvinen's (2004) classification of research approaches and methods, in this research the most applicable approaches were: 1) approaches studying reality, 2) research stressing what is reality, and 3) approaches for empirical studies (highlighted in Figure 1.3). Järvinen (2004) defined that in theory-creating approaches, the aim is to develop a new model and/or theory based on the collected data by using methods, such as case study, survey, field study, grounded theory, phenomenography, contextualism, discourse analysis, and longitudinal study. To get deeper operational level phenomena knowledge, Järvinen (2004) and Galliers and Land (1987) recommended research methods, such as the field experiment, case study, survey, and action research.

In this research, five main research methods were utilized:

*1) **Participant observations***: Participant observations played an important role in this study. Based on Uldam and McCurdy (2013), participant observations can provide deeper insights and knowledge of participants' underlying assumptions, behaviors, and the context and practices, which affect their behaviors. Observations can uncover factors that are important for a thorough understanding of the research problem. Kawulich (2005) defined that the observer as a participant enabling the researcher to participate in the group activities and to collect data. The group is aware of the researcher's observation activities and is able to control the level of given information. Therefore, observation permits researchers to study people in their native environment (such as, a work team) to understand 'things' from their perspective. Participant observations as a method includes also challenges. Earlier studies (e.g., Uldman and McCurdy, 2013; Litcherman 2002) have found tensions, challenges, and ethical dilemmas between the observer and the subjects who are being studied. The positon of the observer includes also challenges, such as the researcher as an insider member of a team or the researcher as an outsider observer without affinities with the team under study (e.g. Bernard 2000; Drury and Stott 2001).

*2) **Interviews:*** According to Polkinghorne (2005) and Schultze and Avital (2011), the interview method is one of the main qualitative research methods, and the most frequently used approaches is the semi-structured interview (Crabtree and Miller, 1999; DiCicco-Bloom and Crabtree, 2006). Alvesson (2003) identified three interview perspectives: 1) neopositivist: the interviewee is able to identify and articulate all the aspects and context truthfully to the researcher, 2) romantic: a conversation with trust and equality focusing on interviewee's genuine voice, and 3) localist: a (sceptic) social situation where people think aloud.

According to Schultze and Avital (2011), during a research interview, the researcher and the interviewer exchange thoughts and views about a topic of common interest. As Kvale (2007) wrote, the target is "*to understand the world from the subject's point of view, to unfold the meaning of people's experiences, to uncover their lived world prior to scientific explanation.*" Interviews make it possible to gather a contextual in-depth insight and results on interviewees' attitudes, thoughts, and actions based on personal interactions (Fontana and Frey, 2000; Silverman, 2006; Kendall, 2008). An interview is a situation where the researcher and the interviewee can ask for clarification and explain their viewpoints, thoughts, and ideas in more detail.

Using interviews as a research method is also criticized. Alvesson (2003) argued that interviews fail to address the challenges associated with the complex social situation. The interviewees may respond in ways they deem socially desirable or expected by the group they belong (Richman et al. 1999; Alvesson, 2003; Yin, 2009). Even the researcher can lead or manipulate interviewee responses (Harris

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and Brown, 2010). Therefore, the interview data provides only a partial and incomplete viewpoint of the interviewee (Lankshear and Knobel, 2004). Bryman (2008) also pointed out that most of the qualitative studies have relatively small sample sizes, and because of that, the results can be challenging to replicate or generalize.

3) Surveys/Questionnaires: Survey research collects information from a sample of individuals through their responses to questions. The objective of surveys is to collect information and several matters that affect the quality of survey outcomes (Stavru, 2014). Data are collected, for example, based on a standardized form (Kelley et al. 2003), which can be analysed with various statistical approaches and tools (Creswell, 2003). The survey data can also be complemented with interviews, which is a typical approach in mixed method studies (Harris and Brown, 2010).

Using surveys as a research method includes also challenges. As Oppenheim (1992) wrote that faulty questionnaire design, sampling, and non-responses can cause challenges. Also, the researcher can use biased questions and wording. Respondents can be unreliable, ignorant, misunderstand the questions, or even be biased. Errors that impact results can emerge from coding, processing, statistical analysis, and making faulty interpretations (Oppenheim, 1992). Bryman (2008) wrote that surveys can also be disconnected from everyday life and the results are artificial and not accurate.

LISREL: LInear Structural RELations (LISREL) is a tool that can be used to perform and estimate analysis of covariance structures (also known as structural equation modelling). LISREL allows researcher to test the goodness of fit of models, diagnose model problems, fix or constraint model coefficients, conduct multiple-group analyses, estimate means, intercepts and slopes, and distinguish consistently between latent concepts and observed indicators (Pirilä, 2008, 84; Yli-Luoma, 1996; Yli-Luoma, 1990, 67-68; Hayduk, 1988, 12-13). The structural equation model describes the theoretical relationships among a set of latent variables. The measurement model represents the latent variables as linear combinations of the observable indicator variables.

4) Case research: According to Syrjälä et al. (1994), it is fundamental that case research is happening in a real situation instead of factitious test situation. Case research explores some real-life phenomenon of a limited number of individuals as the subject of research. Zucker (2009) identified three different 'case' terms that are loosely used in the scientific and professional literature. Based on Zucker (2009): case studies are based on professional applications, case reviews take critical reappraisal approach, and case reports provide a documented summary of a case. Stake (1995) wrote that case research depends upon the purpose, such as, providing insight into an issue, a deeper understanding of the case, and an inquiry into a particular phenomenon. In addition, case research also reports about the

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diversity of the phenomenon, dynamical aspects, interaction of the events and mutual interaction of people (Sturman, 1999; Cohen et al, 2007).

There are several challenges identified in conducting case research, for example, it is a time-consuming research approach while requiring skilled interviewers. Also drawing generalizable conclusions based on a limited set of cases is challenging (Hodkinson and Hodkinson, 2001; Voss et al, 2002). According to Yin (2009) and Hodkinson and Hodkinson, (2001), case research data comes largely from non-numerical documentation, archival records, interviews, observations, and observations. A common criticism is its dependency on a single case exploration, which makes it difficult to obtain generalizable conclusion (Tellis, 1997), and also the sample size is small (Hodkinson and Hodkinson, 2001).

5) Action research: Several researchers (e.g., West et al. 1995, Avison et al. 1999; McKay and Marshall, 2001) have encouraged IS researches to utilize action research approach. Stowell et al. (1997) and Lau (1997) have pointed out researchers need more guidance on conducting an action research. An action research approach has emerged over time from a broad range of fields (Brydon-Miller et al., 2003). In action research, practical and/or operational level development play an important role (Holland and Campbell, 2005; Somekh, 2008).

The action research approach can bring up questions like 'how things are' and 'how things should be.' Eskola and Suoranta (2008) wrote that action research is an approach where the target has an effect on the phenomena through an intervention. A researcher participate in a research group with a target to solve some problem that is common to the group. Based on Järvinen (2004), action research includes development and evaluation in the same research process. Meyer (2000), Näslund (2002), and Bryndon-Miller et al. (2003) identified that a researcher must be an active member in the change process, and the interpretation of the expert research knowledge (researcher) and local knowledge (operational experts/group members) are combined. The interpretation and design of the results and actions involve local stakeholders. Bryndon-Miller et al. (2003) wrote that action research projects test knowledge in action, and it is tested by the interested parties (e.g., the operational experts/group members).

Both action research and case research focus on particular real-life phenomena (Blichfeldt and Andersen, 2006). In fact, Cunningham (1993) wrote that action research should be built on the case research method. Blichfeldt and Andersen (2006) wrote that case research starts from a researcher's interest in a certain phenomenon, and the results are targeted at the academic community. Whereas, an action research starts from practical issues and challenges in a specific situation, and the data is tested and used to solve a practical problem instead of only using it for scientific purposes (Blichfeld and Andersen, 2006).

Action research as a research method includes also weaknesses. Action research is also been criticised for being 'consultancy in disguise' (Davison and Martinsons, 2007), and it is context-bound, not context-free. For simplification, in the consultancy approach, the client gets a quick solution, but the asymmetry between the knowledge of the parties' continues and the understanding about the nature of the problem remains unclear. In action research, the solution is not provided as quickly as the client would like, but the approach focuses on jointly identifying and removing asymmetries of knowledge among the parties to ensure joint learning.

Action researchers in IS face several problems. Baskerville and Wood-Harper (1996) identified challenges, such as impartiality, lack of discipline, confusion with consulting and its context-bound nature. Therefore, researchers use also alternative methods. To avoid the loss of scientific rigour, Baskerville and Wood-Harper (1996) identified that action researchers: 1) have a need of establishing an ethical client-system infrastructure and research environment; 2) careful data collection planning; 3) need to observe iterative phases that formulate theory, plan action, take action, and evaluate the action; 4) promote collaboration and support learning cycles; and 5) report generalizations based on theory and learning. According to Brydon-Miller et al. (2003), action research, and its results are often good in local situations, but have challenges in extending the results and findings beyond the specific local context. Mackenzie et al. (2012) identified three challenge areas: 1) action research is context-specific and fluid, which requires dynamic adaptation and revisions; 2) action research has context-centered aiming and the focus in on solving real-life situations; and 3) the diversity of participants' experience and capacities play an important role in achieving the acceptance and ownership of the process and the findings of action research. Baskerville and Wood-Harper (1996) also highlight that in action research, each situation is unique and cannot be repeated.

1.4. The Research Specific Methods and Research Materials

Research approach: Based on Järvinen's (2004) classification, the approaches for empirical studies (e.g., theory-creating approaches) are used in this research. The main research methods are the participant observations. The research was conducted in the two case units, and therefore, also the case research method and the action research method are applicable (Figure 1.4). This research originated from the case units' need to identify and develop practical operational level selective outsourcing practices in real-life situations in the case units' global operation. Therefore, the target of this research was also to solve real-life problems. This real-life problem approach corresponds with the findings of Blichfeld and Andersen (2006). To understand and get insights into the

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operational level realities of the case units, it was necessary to gain operational level knowledge and hands-on experiences by participating into the case units' operation, and the findings were deepened with interviews and surveys.
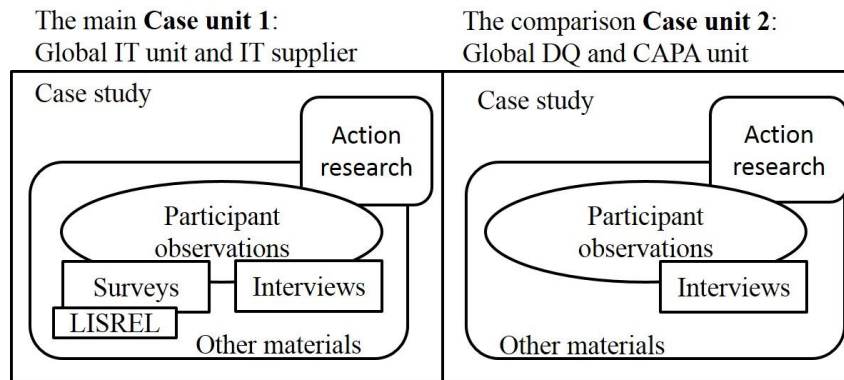
Figure 1.4 The used research methods

The action research ideology was exploited to complement the participant observations. The idea of utilizing an action research cyclical approach was to ensure parties have joint learning and knowledge building. Using the action research approach was identified as a challenge to implement as the IT supplier was used with the consultancy approach, which included quick solutions to the situation with a target to ensure customer satisfaction, although the root-cause of the problem may not be understood or solved. It was recognized that permanent changes will require in-depth joint understanding and knowledge about the situation and requirements. The illustration of the used action research cycle in Figure 1.5 was adapted from the models of Susman (1983) and Checkland (1991). From a practical point of view, the researcher was actively involved in removing asymmetries of knowledge between the service purchasing company and the IT supplier to enable joint learning. From the research perspective, a cyclical process was linked with theory and practice, which were applied in the area of application (i.e., the GSOE). During the cyclical process, frequent critical reflection activities with both of the parties were important to ensure joint knowledge building and to elaborate upon the challenges and dilemmas.
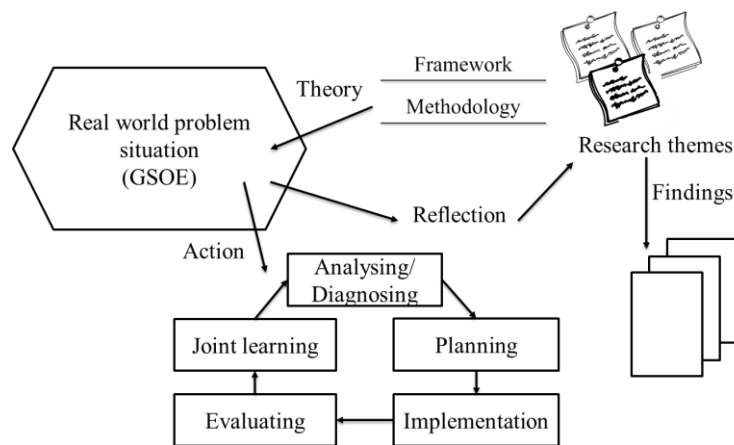
Figure 1.5 The cycle of action research applied in the GSOE (adapted from Susman, 1983 and Checkland, 1991)

Research materials and limitations: During years 2008 to 2012, the case units made significant mode-of-operation changes, and they selectively outsourced operational level activities to external suppliers. To analyse the case units' performance results and practices, the same timeframe (years 2009-2011) was used in both of the case units when a majority of the operational level activities were developed and globally implemented. In addition, several major organizational changes happened during years 2012-2013, which directly affected both of the case units and their operational level practices, personnel, and stakeholders. Due to the limitations at the case company, it was not possible to conduct the action research activities and observations in parallel.

The action research method, observations, interviews, and data collections formed the foundation for this research (Figure 1.4 and Table 1.2). The author of this thesis is the primary contributor and author for all of the articles and outcomes for all of the studies, such as, formulating the research problems, theoretical base and research questions; coordinating and collecting the research material; analysing the material; and drawing conclusions. The main target was to elaborate about the operational level phenomenon of the global IT services in the GSOE-based mode-of-operation. It is notable that the case company's core-operation was to produce consumer products, not to develop, provide, or sell global IT services. Nokia and Microsoft have many competitors, and therefore, the companies have a limited ability to make public their successes and failures, especially when it comes to their core processes. This restricts the scope and possibilities to present the case company's results and operational level activities in full detail.

Interviews: The main interview focus group was the Case unit 1 (Figure 1.4), which included the service purchasing company's IT unit (owned the IT services and tools) and the supplier's global quality team (responsible for developing the operation and practices). The comparison Case unit 2 (Figure 1.4) interviews with

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the DQ and CAPA unit included the service purchasing company's internal personnel and the supplier's IT specialists who were responsible for developing the IT solution.

Examples of the interviewees' roles:
- IT unit: team leaders, product and service managers, IT specialists responsible for architecture, databases, networks, and technical solutions, etc.
- IT supplier: account leaders, quality managers, and project managers responsible for the development activities, etc.
- DQ and CAPA internals and suppliers: business owners, IT service managers, process owners, IT developers, key users, etc.

The IT unit's members were interviewed twice during the years 2010 (included only the team leaders, product managers and service managers globally, a total of 11 participants) and 2011 (included the whole team globally, a total of 20 participants). Semi-structured interviews (Table 1.2) were used to collect and report their perceptions and satisfaction. At Nokia Devices, some of the interviewees did not want an interview recording, especially the representatives in Asia. Therefore, it was decided together with the IT unit's leaders that the interviews will not be recorded. After this decision, all the IT unit's members worldwide agreed to participate in the interview, and they freely shared their perceptions. The interview notes were written down by the interviewer during the interviews. The target was to capture the main message and idea into the notes. A list of interview themes were used, which can be found from the Appendix 3, and the same themes were asked from all of the interviewees. Interviews in Europe were conducted as face-to-face. Phone interviews were used to interview personnel working in Asia and the Americas. Because of the case company's internal situation at the end-of-year 2011, it was not possible to conduct a third round of interviews.

The IT supplier's global quality team (a total of 6 participants) in Europe was interviewed (Table 1.2). During the interviews, the interviewer wrote notes to capture the interviewees' opinions, perceptions, and lessons-learned ideas. Due to the limitations set by the IT supplier's leaders, it was not possible to interview the offshore team members.

The DQ and CAPA unit's interviews/discussions (included: the global business owners, key users in Europe and the IT managers and developers, a total of 15 participants) were conducted during the end-of-year 2011 and spring 2012 (Table 1.2). The key representatives from the DQ and CAPA operation were interviewed, including business and IT representatives. Due to the ICM leaders' decision not to record the interviews, the interviewer wrote notes during the interview sessions to capture the interviewees' opinions and perceptions.

Other materials: Various IT unit and DQ and CAPA materials, practices, and performance results were collected and analysed. Examples of the other materials were: strategy, monthly reports, metrics and performance results, IT service descriptions, global process descriptions, project and service orders, outsourcing contracts, service level agreements, etc.

Surveys: *The IT unit's* members answered twice to the survey (Appendix 2). The first survey was collected during the interviews (Table 1.2). The preceding interview themes and discussions ensured that the participants were capable of providing numeric evaluations to the survey questions. The second survey was collected by email (Table 1.2) after implementing the corrective actions. The IT unit's survey results were also analysed with LISREL.

The IT supplier's global quality team filled to the survey during the face-to-face interviews. The China and India offshore teams answered to the survey by email.

Table 1.2 Summary of the conducted interviews and surveys

Unit	Schedule	Interviews	Type	Recording	Feedback
IT unit	May/2010	F-to-F: 9 Phone:2 Total: 11	Semi-structured interview	No recording allowed – notes taken	Summary shared to IT unit/supplier
	Feb-Mar /2011	F-to-F: 10 Phone: 10 Total: 20	Semi-structured interview	No recording allowed – notes taken	Summary shared to IT unit/supplier
		20	Numeric	Collected during the second interviews	
	Dec/2011-Jan/2012	20	Numeric	Excel sheet via email	Summary shared to IT unit/supplier
IT supplier	Nov-Dec /2011	6 onsite	Semi-structured interview	No recording allowed – notes taken	Summary shared to supplier and IT unit
		6 onsite	Numeric	Collected during the interviews	
		18 offshore	Numeric	Excel sheet via email	
DQ and CAPA unit	Dec/2011-May/2012	15	Semi-structured /informal discussion approach	No recording allowed – notes taken	No formal summary – generic discussion summary
The maximum amount of time used during the semi-structured face-to-face and phone interviews was 1 hour. The DQ and CAPA discussions varied between 1-2 hours. The interview notes were anonymized and the anonymity of the interviewees was ensured in the summary reports, which were shared with all of the interview participants.					

Analysing the interview notes: From a research point of view, the summary of the interviewee's main messages (it was not allowed to record the interviews) were categorized under various themes by using colours or other highlighting methods. An example of the approach is illustrated by using **bold**, underline and *italic* (Table 1.3). The main themes were: create projects, services, contracts/resourcing, quality management, testing, risk management, communication, meeting, trust, competences, and innovation. These coded themes lead to the summary tables, which were reviewed against related research.

Table 1.3 Example of the interview notes' coding

Note	Area	Aim of the message
"There are cases when teams are **directly** contacting production *instead of* production manager."	Project activities	**Process challenges** Unclear responsibilities *Communication challenges*
"There are people but we should ***find right kind of*** people who know things in a wider scale to succeed in support activities. So we *need multi-skilled* persons."	Contracts/ Resourcing	**Resourcing challenges** Process improvements *Skill requirements*

It was important to separate the research and the operational level activities when analysing the interview notes. From the operational level point-of-view, the IT supplier had to implement the needed operational level corrections and changes. The supplier analysed the anonymized CSA feedback and defined a list of activities to develop their daily operation. The CSA results were shared to the IT unit and the IT supplier. An example of the summary feedback is given in Figure 1.6.
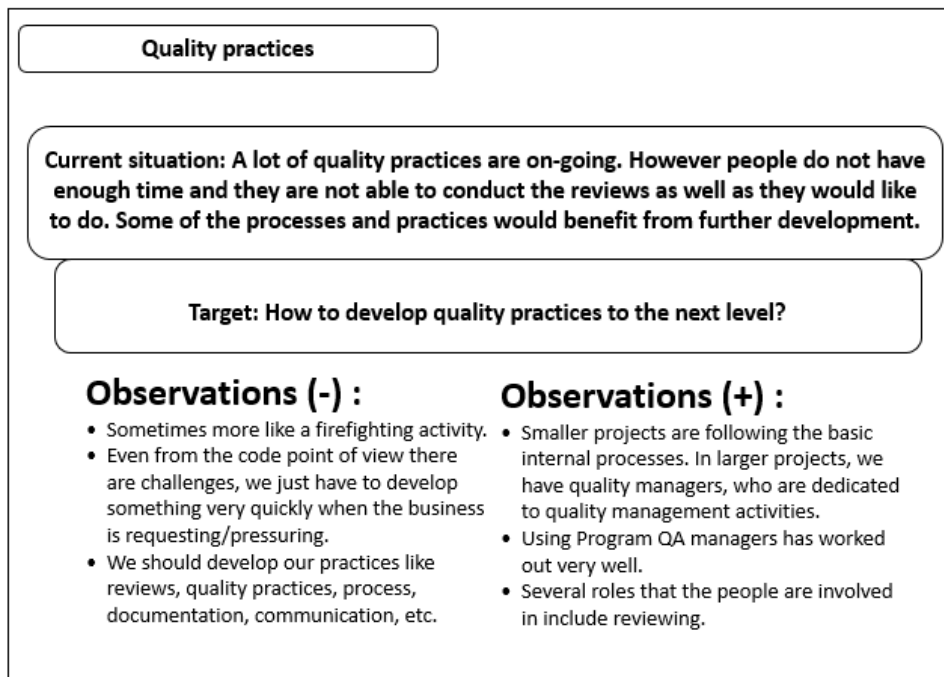
Figure 1.6 Example of a summary page

LISREL: During the interviews and discussions with the IT unit's and the IT supplier's members, several questions arose about how *cooperation*, *communication*, and *quality* affect the IT unit's *trust*. Based on participant observation, interviews, and survey results, it was possible to identify the how those affect the service purchasing company's trust. The idea was to test if the observational findings can be seen also in a numeric form by analysing the effect of cooperation, communication, and quality. Therefore, LISREL was selected as a test tool, because it provides a method to analyse relationships between the latent variables (in this case cooperation, communication and quality). It is worthwhile to notice that the survey was not developed for LISREL modelling from the beginning, and therefore, a different kind of question setup can provide a different kind of measuring model. The used LISREL tool version was LISREL 9.10 Student version, where the multilevel modelling is restricted to a maximum of 15 variables. Because of this restriction, a total of 14 variables were used to construct the LISREL model. However, this restriction did not cause inconveniences to define the test model. The variables in this model were defined to be independent without any interconnections. It is noted that a different kind of variable and question setup can further elaborate the findings.

In this research, the LISREL model was constructed based on three exogenous variables and one endogenous variable. The three exogenous variables were defined based on 12 X-variables, and the endogenous variable was based on two Y-variables (Figure 1.7). The purpose of the measurement model (Figure 1.7) is to describe how well the observed indicators serve function to measure the latent variables.
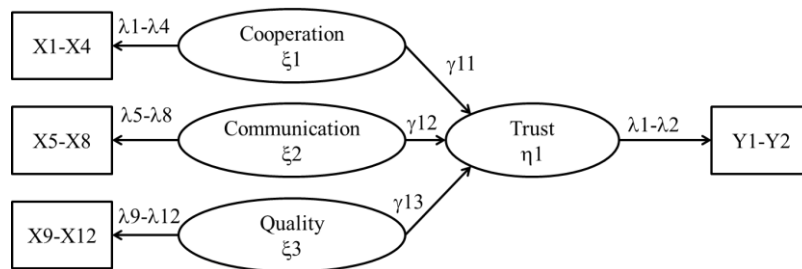
Figure 1.7 The measurement model

Because the exogenous and endogenous variables were measured based on a minimum of two variables, the reliability (error variance) was estimated by the LISREL tool itself. Researchers using X^2 –techniques to estimate error variance in modelling have observed that with a large N, the estimates are too high. They suggest that instead of using p-values for accepting or rejecting, the model acceptance should be calculated based on the calculation rule: $X^2/df<5$ (Wheaton et al. 1977, 93; Hayduk, 1987, 160-161; Yli-Luoma, 1996, 44). This calculation was the most important value when the model acceptance was analysed.

One-way arrows between latent variables indicate the causal relationships. X and Y represent the manifest observed variables for the independent and dependent latent variables. To measure the independent variable Epistemic Styles (ξ_1, ξ_2, ξ_3), the observed variables X1-X12 were chosen to measure the KSI-variables: KSI1=Cooperation, KSI2=Communication, and KSI3=Quality. Dependent latent variables are called the ETA-variable (η): ETA_1. In this study, the latent variable was: ETA1=Trust. Y-variables are the observed variables, which depend on the ETA-variable, and in this study those were: Y1=Trust and Y2=CooperationTrust. Every one-way arrow in the path diagram represents a parameter or coefficient. These parameters have different names depending on where the arrow is coming from or going. In this study, there are three arrows: 1) a path from a KSI-variable to an ETA-variable is called the GAMMA (γ) parameter, 2) a path from an ETA-variable to a Y-variable is called the LAMBDA-Y ($\lambda^{(y)}$) parameter, and 3) a path from a KSI-variable to an X-variable is called the LAMBDA-X ($\lambda^{(x)}$) parameter.

Cronbach's Alpha is a measure of internal consistency (i.e., how closely related a set of items are as a group) and provides the internal consistency measure of a test or a scale in number between 0 and 1 (Santos, 1999). Based on Nunnaly (1978), an acceptable reliability coefficient is 0.7. There are several reports about the acceptable values of alpha, ranging from 0.70 to 0.95, but lower values are sometimes used in the literature (Tavakol and Dennik, 2011; DeVellis, 2003; Bland and Altman, 1997; Nunnally and Bernstein, 1994). In this research, the variables' reliability was tested with Cronbach's Alpha resulting as high as 0.926 (Table 1.4), and it showed that the variables were suitable to be used. The result also showed that excluding some variables will not significantly improve the Cronbach's Alpha result.

Table 1.4 Cronbach's Alpha result of the variables

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.926	0.937	50

The LISREL program computes the direct, indirect, and total causal effects. Results are presented in a standardized model and LISREL test t-values. According to Jöreskog and Sörbom (1993), the t-value is the ratio between the estimate and its standard error, and if a t-value exceeds a certain level, the corresponding variables greatly influence the variable. The t-values are given for every estimated parameter. The significant t-values are presented in black colour, which is the default colour defined by the LISREL program, and insignificant t-values are presented in red. The significance level in LISREL is 5 percent, which means that the t-values smaller than 1.96 in magnitude will be insignificant and appear in red in the model.

Research analysis: The research analyses and results were constituted based on the interviews, discussions, surveys, action research, observations, and other case units' related materials. In a broader concept, the researcher was also part of the operational level groups/units. The researcher's own hands-on experience, knowledge, and participation to the operational level activities brought elements into the research analysis and outcomes. As an example, conducting the interviews, analysing the collected interview and survey materials, and interpreting the interviewees' perceptions. Although the target has been to analyse the materials as an outsider, the researcher's own voice was unavoidable during

the analysis phase, and the pragmatic interpretation of the research material was emphasized.

Participating in the various operational level activities, discussions, and having practical hands-on experiences from the case units helped to open-up the research materials and interpret the interviewees' perceptions. At the same time, it caused challenges, because it was not possible to present all of the facts and aspects behind the results as the researcher and the studied situation and topics were closely connected. It is recognized in literature that all research is subjective (Hirsjärvi et al. 2008), and action researchers are never totally free from their own values and limitations (Aaltola and Valli, 2010). Several researchers have said that truly objective knowledge does not exist, because the researcher's own understanding, hands-on knowledge, and experience affects the analysis and outcomes (Hirsjärvi et al. 2008, Tuomi and Sarajärvi 2006, Eskola and Suoranta 2008, Wohlin et al. 2012).

2. Theoretical Foundation

This chapter explores the vast knowledge associated with the elements that affect the GSOE-based operation in a manufacturing context. A multidisciplinary approach is needed to study the operational level selective outsourcing practices of the global IT service deliveries. The main themes of literature and the management and leadership, partnership and normative elements were selected and limited based on the RQs. The target is to give a scientific context to the RQs and to the case units' GSOE-based operation and activities.

Figure 2.1 illustrates the generalized landscape elements of the theoretical foundation. The elements of Figure 2.1 are presented in more detail in Sections 2.1 Outsourcing and Regulative Elements (numbers 1, 2 and 3 in Figure 2.1), and 2.2 Management and Leadership, Partnership, and Normative Elements (numbers 4, 5 and 6 in Figure 2.1). Section 2.3 provides a summary of the existing research.
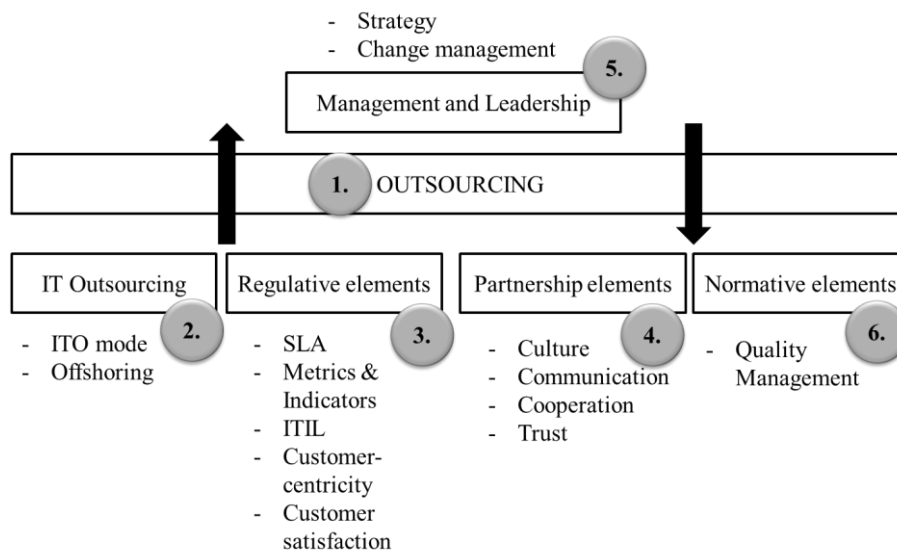
Figure 2.1 Elements of the theoretical foundation

The theoretical foundation of this thesis consists of three sections:

- Section 2.1 focuses on outsourcing, IT outsourcing, and offshoring (Section 2.1.1 IT outsourcing and offshoring, Section 2.1.2 ITO mode and success determinants). The various business fields and stakeholders in operational level activities indicate multi-level customer and supplier-ships (RQ1, RQ2). The regulative elements focus on IT service ownership ITIL practices and operational level service level agreements and metrics (RQ3) in IT services (Section 2.1.3). In addition, customer satisfaction results and customer-centric practices play also a significant role in defining operational level activities and satisfaction (RQ1). From a practical point of view, Section 2.1.4 provides a summarized insight into the service purchasing companies' and service providers' experiences based on three Articles that appeared in Finnish newspapers (RQ2, RQ3 and RQ4).

- Section 2.2 focuses on elements that form the basis for successful operational level activities. Management, leadership, and strategy (Section 2.2.1) play a key role in achieving the targets; to manage processes and change activities; and to lead people (RQ4). Partnership elements (Section 2.2.2) include common culture, cooperation, communication, and trust to achieve the needed operational level commitment (RQ5). Furthermore, normative elements consist of quality management practices (Section 2.2.3), which are essential indicators of operational level success and satisfaction (RQ5).

- Section 2.3 provides a summary of the existing research. This section focuses on summing up the current research and filling the gaps in the existing knowledge where this research can contribute.

2.1. Outsourcing, IT Outsourcing, and Regulative elements

Currently, various companies from different business fields are looking for new capabilities and solutions from global outsourcing markets (Figure 2.1, number 1). van Laarhoven et al. (2000) wrote that the outsourced activities vary. Examples of outsourcing services are professional services, such as accounting, legal, insurance, purchasing, IT development and services, and other specialized services. Manufacturing services, such as industry-specific services, and ODM and OEM type of operation. Process services, such as internal processes or parts of it, are produced by external suppliers. Operational services, such as LSPs, cleaning, facilities maintenance, machine maintenance and equipment repair are also significant outsourcing areas.

Because of this variety, service purchasing companies need to take into account that each type of the outsourcing services brings their own structures, management, and governance requirements into the operational level activities, practices, and strategies compared to internal- and/or in-house-based operating models (relevant to RQ3). A similar kind of outsourcing services, as described above, were utilised also in the case company, worldwide.

Several theories have been used to define and clarify the outsourcing phenomena (Table 2.1), and the theories are utilized in outsourcing research across many disciplines.

Table 2.1 Outsourcing theories (adapted from Lacity, 2012; Lacity and Willcocks, 2008; Perunović and Pedersen, 2007; Dibbern et al., 2004)

Discipline	Theory	Generalized focus area
Economics	- Various theories on contracting - Cost Economics Agency Theory - Transaction	The different interests among people with the same assets, and it is important to coordinate and ensure efficient governance of transactions with each other (e.g., relationship between a company and a supplier).
Strategy	- Resource Dependency Theory - Resource-Based View - Strategic Management Theories / Various theories of firm strategy - Game Theory (Action Theory)	The idea of developing and implementing strategies is to achieve a certain goal by mixing the resources and capabilities that may create competitive advantage for the company.
Sociology/ Organizational theories/ System sciences	- Social Capital Theory - Power Theories - General Systems Theory - Social/Relational Exchange Theory - Modular Systems Theory - Innovation Diffusion - Institutionalism	The focus is on interpersonal transactional relationships and social exchange among individuals, groups, and organizations and sharing resources.

Rebernik and Bradac (2006) wrote: "*The concept of outsourcing represents a results-oriented relationship with an external service provider for activities traditionally performed within the company.*" They identified two main focus areas: traditional outsourcing (e.g., reducing costs and improving efficiency and flexibility) and transformational outsourcing (e.g., focusing on innovation, long-term relationship and business improvements). Davenport (2005) defined that an

outsourcing decision depends on faith that the external service provider will do a good job with costs and cost reductions. As an example, Lacity et al. (2009) found that the cost and cost reduction targets were the main motivation factors behind the companies' outsourcing decisions. McKinsey Global Institute's (2003) report also show the companies' expectation to achieve 65-70% cost reductions with their outsourcing arrangements.

Outsourcing arrangements require commitment and courage. Lacity and Hirschheim (1993), Earl (1996), and Sabherwal (1999) identified that each organisation pursues their own goals, objectives, and targets. In addition, the companies are wary about a lack of complete control of operation and partners' possible opportunistic behavior (Sabherwal, 1999). Ang and Cummings (1997), Jap and Anderson (2003) and McIvor (2008) identified that suppliers may target standardized service deliveries to achieve greater financial benefits without high-performance levels or ensuring good quality of goods or services. Sabherwal's (1999) study showed that the lack of appropriate structures and direct contacts among service purchasing companies and suppliers caused most of the problems and relationship challenges. These findings have effects on customerships (RQ1), operational level visibility (RQ3), and management-related aspects (RQ4).

Gupta (2000) and Kakabadse and Kakabadse (2005) identified that it is not likely that one single supplier would have world-class capabilities, skills, and knowledge in all business and technology areas. This can cause challenges and dissatisfaction in operational level implementation and realizing the expectations (prior knowledge to RQ2). Han and Mithas (2013) pointed out that in addition to an outsourcing contract and suppliers' resources, the service purchasing company also needs internal employees to ensure that the service purchasing company's interests are fulfilled and the suppliers' continuous business relationship investments. Oshri et al. (2007), Gopal and Gosain (2010), and Han and Mithas (2013) pointed out that internal personnel are needed to bridge the knowledge gap among suppliers, business representatives, and end-customers.

When the service purchasing companies decide to utilize outsourcing services, they need to consider and decide various ownership-related questions and to define the needed level of operational level progress visibility (RQ3). The dilemma of 'make-or-buy' has been elaborated by, for example, Willamson (1989) into Transaction Cost Economics. All internal and external activities require transaction and all transactions are costly. There is a need to calculate the expected benefits and compare those to the transition costs. The challenge is to calculate the external costs as those that depend on how the various contracts and relations are formed, managed, maintained, and improved. The service purchasing companies need to take a holistic view, for example, at their total costs of ITO and IT ownership. The service purchasing companies can use, for example, Total Cost of Ownership (TCO) as an approach to evaluate the IT ownership elements. Gartner's IT Glossary (2013) defines a TCO as: "*a comprehensive assessment of*

information technology (IT) or other costs across enterprise boundaries over time. For IT, TCO includes hardware and software acquisition, management and support, communications, end-user expenses, and the opportunity cost of downtime, training and other productivity losses." Also software code ownership (Bird et al., 2012) and abilities to tailor the IT solutions based on the service purchasing company's requirements are issues to be considered. One approach is that companies can have a total ownership of their IT solutions and services. An opposite example is Software as a Service (SaaS) approach where a service purchasing company creates a contract to use an application (e.g., ERP, CRM), which is hosted by an external service provider instead of buying their own software license or installing the application on the company's own machines (Dubey and Wagle, 2007; Choudhary, 2007).

2.1.1. IT Outsourcing and Offshoring

The ITO phenomena (Figure 2.1, number 2) have been studied by several researchers (e.g., Lacity and Hirschheim, 1993; Fitzgerald and Willcocks, 1994; Kern and Willcocks, 2000; Lacity et al., 2009), and several ITO definitions have been developed. Table 2.2 lists some examples of ITO definitions.

Table 2.2 IT Outsourcing definitions

Lacity and Hirschheim (1993)	*"The purchase of a good or service that was previously provided internally."*
Kern and Willcocks (2002)	*"A process whereby an organisation decides to contract-out or sell the firm's IT assets, people and/or activities to a third party supplier, who in exchange provides and manages these assets and services for an agreed fee over an agreed time period."*
Goles and Chin (2005)	*"Contracting with one or more third party vendors for the provision of some or all of an organisation's IS functions, where "functions" include one or more IT activities, processes, or services to be provided over time."*
Dahlberg et al. (2006)	*"A conscious decision to delegate by contract to an external service provider IT activities, processes and/or related services necessary to the operation of the organisation. Outsourcing has specified objectives, and the goal of the outsourcing relationship is to impact their achievement positively."*

On a global scale, IT spending and ITO have turned out to be a big business area. Currently, a great number of internal IT organizations make strategic decisions to outsource internal IT activities to external IT suppliers with a target to utilize near-shoring[1] and/or offshoring[2] services. According to the Gartner's (2016) forecast, worldwide IT spending in 2016 was US$3.41 trillion. Similarly, the Gartner's (2013) forecast for the worldwide IT outsourcing was estimated to total of US$288 billion in 2013 and showed a 2.8% increase from the year 2012 results. The IT outsourcing market was forecasted to grow by 5.2% (5.5% in constant currency) in 2014, and IT spending to grow by a 5.9% compound annual growth rate from 2013 through 2018 (Gartner, 2014).

Kakabadse and Kakabadse (2005) wrote that IT outsourcing has included controversial elements because of the rapid changes in the IT field. Therefore, ITO includes also debates. The debate originated from the mega-contracts (over US$1.5 billion) that did not fulfil the IT service purchasing companies' expectations, for example, Kodak's outsourcing arrangements in 1989 (Clark, 1992; Loh and Venkatraman, 1992). Also the IT cost-saving and cost-efficiency targets have been a valid objective for the companies already since the end of the 1990s (Klein, 1999; Finlay and King, 1999). Koudsi (2001) identified that the debate continues among academics and practitioners, and the identified debate areas are: does IT provide a competitive advantage, should IT be part of core or support business processes, and should IT be retained in-house if IT provides competitive advantage to the company? Carey (1995) also identified that one of the discussion fields is the ITO mode.

The Progress of ITO Focus Areas

According to Lacity and Hirschheim (1993), IT outsourcing has been used since the 1960s. Based on Lee et al. (2003), during the 1960s the outsourcing activities focused on sharing hardware, and the 1970s focused on (software) programming. In the 1980s, the focus was on standard equipment, systems and application software, and communications. In the 1990s, the focus moved to outsourcing total solutions, such as, network and telecommunication management, distributed system integration, and application development (Lee et al. 2003). Kruse and Berry (2004) and Ho and Atkins (2009) identified that since the year 2000 onwards, the outsourcing trend has focused on business process outsourcing, offshoring and focusing on companies' core-competencies and outsourcing the

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[1] *Near-shore:* located on the same continent or in a substantially similar cultural environment

[2] O*ffshore:* located on a different continent or in a substantially different cultural environment

(Bandyopadhyay and Pathak, 2007)

non-core activities. Davis et al. (2006) wrote: "*An organisation may outsource some of its activities to service providers in other countries. In this case, the service provider hires, trains, supervises, and manages its personnel.*" Rubin (1997) and Chang and King (2005) identified that typically a contract is created between the IT service purchasing company and the IT supplier, which specifies the services, time, and quality measures. These findings correspond also with the case units' offshoring arrangements and operational level strategies, such as focusing on core-competencies, contracts, etc.

Based on the Association for Computing Machinery (ACM) report (Aspray et al., 2006), the developed nations, for example, the countries in Western Europe, the USA, Japan, and Australia typically send work to offshore countries. The ACM report (Aspray et al. 2006) identified six typical offshoring work areas in the IT field (Table 2.3) and four typical offshore country categories (Table 2.3).

Table 2.3 IT offshore work areas and country categories (based on Aspray et al., 2006)

IT offshore work areas	Categories of offshore countries
1. Programming, software testing, and software maintenance	A. Large capacity of highly educated workers and have a low wage scale (e.g., India and China).
2. IT research and development	B. Special language skills (e.g., the Philippines can serve the English and Spanish customer by being bilingual in these languages).
3. High-end jobs, such as, software architecture, product design, project management, IT consulting, and business strategy	C. Geographic proximity ('near-sourcing'), familiarity with the work language and customs, and relatively low wages compared to the country sending the work.
4. Physical product manufacturing, semiconductors, computer components	D. Special high-end skills (e.g., Israeli strength in security and anti-virus software)
5. Business process outsourcing/IT enabled services, insurance claim processing, accounting, digitization of engineering drawings, and high-end IT enabled services, such as, financial analysis and reading of X-rays	
6. Call centers and telemarketing	

When an offshore-based operation is used, the service purchasing company needs to take into account various things that affect the operational level practices (Davis et al. 2006). As an example, various hidden costs needs to be considered (e.g., meeting costs, traveling, etc.), a high turnover can cause problems (e.g., reduces quality and increases training costs), and offshore team members are far from the customer location. In addition, on-site members do not have the visibility into offshore implementation. Rottman and Lacity (2006) wrote that it is possible that service purchasing companies spend more time to manage offshore and conduct micro-management than managing on-site suppliers. These findings can indicate challenges among the outsourcing parties and affect the service purchasing company's operational level visibility (prior knowledge and effects on RQ2 and RQ3).

2.1.2. ITO Mode and Success Determinants

One of the most important decisions, which the service purchasing company has to make, is to select the appropriate ITO mode. Lacity and Willcocks (1998) and Dahlberg et al. (2006) used the following definition: "*Selective outsourcing means that the proportion of outsourced services is 20-80% of the IT budget. Total outsourcing means that the proportion of outsourced services is over 80% of the IT budget.*" Typically, total outsourcing includes long-term contracts with one single supplier (Grover et al. 1996), and the entire function and/or operational activities' execution and coordination are with the supplier. In the selective outsourcing mode, only a certain set of functions and/or activities are outsourced. However, Dahlberg (2007) identified that the selective outsourcing approach may evolve into a total outsourcing approach if several functions (e.g., IT services) are outsourced to the same external service provider.

Lacity et al. (1996) and Lacity and Willcocks (1998) wrote that selective IT outsourcing has provided better results than total IT outsourcing, and Lacity et al. (1996) found in their study that achieving the expected cost savings was often achieved with selective IT outsourcing instead of total outsourcing approaches. However, this is not always the case. Dahlberg et al. (2006) evaluated empirically the success of selective and total outsourcing in a company-wide IT infrastructure outsourcing situation. Based on their study, Dahlberg et al. (2006) were not able to identify statistically significant differences between selective and total outsourcing results. However, Dahlberg et al. (2006) noticed that the total outsourcers had more determined and striving objectives than the selective outsourcers. However, similar kind of ambitious targets were identified as with total outsourcers when the selective outsourcing level was over 50%. These findings indicate that companies can use selective or total outsourcing to achieve

a similar kind of results, but the outsourcing target affects the success of the selected ITO mode and its outcomes. Therefore, as identified by Dahlberg et al. (2006), the main attention in ITO arrangements should be on setting outsourcing objectives, clearly prioritizing the objectives, and measuring achievements repeatedly throughout the entire outsourcing transaction (relevant to RQ2 and RQ5).

The service purchasing company and the supplier may encounter various operational level challenges, and the planned targets and expectations may not be achieved and fulfilled as expected. To evaluate the success of ITO, Lacity et al. (2009) defined three determinants of IT outsourcing success (Table 2.4).

Table 2.4 Determinants of IT outsourcing success (defined by Lacity et al. 2009)

Determinant	Factors	Examples
ITO decision	Degree of Outsourcing, Top Management Commitment/ Support, and Evaluation Process	The involvement of senior managers and rigorous evaluation processes positively affected the selective outsourcing approach.
Contractual Governance	Contract Detail, Contract Type, Contract Duration, and Contract Size	Contract details, short-term contracts, and higher-dollar valued contracts positively affected success. The contracts maintain the power balance between service purchasing companies and suppliers by defining expectations and motivate good supplier performance.
Relational Governance	Trust, Norms, Communication, Sharing Information, Mutual Dependency, and Cooperation	The relational governance factors were associated with higher levels of IT outsourcing success.

In addition to the ITO success determinants in Table 2.5, Veltri et al. (2008) identified various outsourcing problems, reasons for dissatisfaction, such as, the suppliers were incompetent, unwilling or unable to perform as expected, and thus the outsourcing contracts did not correspond to the expectations. In addition, they found that the costs were higher than originally expected, the service quality was poor, and had the losing of control. These definitions and findings provide also a frame for this research to evaluate the case units' outsourcing arrangements.

2.1.3. Regulative Elements

IT Service Management (ITSM) focuses on achieving and managing a better alignment with IT service providing business needs and guaranteeing the service quality (Brenner, 2006). However, most of the studies have tended to draw attention to companies' internal ITSM, process management and practices rather than defining and managing ITSM practices and processes in a global selective outsourcing environment. Various regulative elements impact on IT services (Figure 2.1, number 3), such as ITIL processes and practices, Service Level Agreements, metrics, and indicators. As an example, ITIL was heavily used also in the case company, and the jointly defined ITIL processes guided the case units' global IT service delivery.

The ITIL framework (ITIL glossary, 2011) defines that business units are customers who give commission, and they pay for the IT. Accordingly, an IT organization is a service provider to the business units. Various ITSM cost issues play a significant role, because IT organizations are expected to find ways to positively respond to the business units' requirements and cost saving targets. The operational level IT outsourcing cost saving targets need to be realized as part of the ITSM activities. Yet, the IT organizations can face strict budgetary constraints, lack of skilled resources and competencies, system complexity, and rapid changes especially in response to the customer/business requirements and growing customer/business expectation (RQ1 and RQ2).

2.1.3.1. The Development Phases of ITIL Best Practices

To align IT services, ITIL is a globally recognized set of best practices and standards that support ITSM. ITIL defines and supports functions related to service strategy, design, transition, operation, and continuous improvements to operate more efficiently. Based on Persse (2007), ITIL was developed in the 1980s by the UK Central Computer and Telecommunications Agency (CCTA), which was later renamed as the Office of Government Commerce (OGC). The OGC was not satisfied with the level of the service received from its various IT service providers. The OGC's target was to develop an efficient and cost-effective approach for various IT resources. The OGC wanted to borrow good and working practices that were already proven in the IT industry. They used the expertise of IT professionals to develop and release a series of guidelines and practices focusing on different IT processes (Persse, 2007).

According to itSMF (2012), the initial version of ITIL consisted of 31 associated books and the first ITIL version appeared in 1989 (Persse, 2007). ITIL V2 was

released during the year 2000 with five core books, and ITIL V3 was released 2007 with eight core books. ITIL V3 included an extension of business mission management. The UK Cabinet Office released the ITIL 2011 version, which changed business relation management to be treated as its own process (Persse, 2007). Since 2013, ITIL has been owned by AXELOS Ltd (Axelos, 2014). Probably one of the most referred ITIL book is the Service Support and Service Delivery, which includes, for example, Change, Release, and Configuration Management and Incident, Problem, Capacity, and Availability Management.

Barafort et al. (2002) wrote: "*The method clearly claims that using ITIL does not signify a completely new way of thinking and acting and prefers focusing on best practice that can be used in diverse ways according to need: placing existing methods and activities in a structured context as well as having a strong relationship between the processes avoid the lack of communication and co-operation between various IT functions*." In general, ITIL defines generic objectives, activities, inputs, and outputs of many of the processes found in an IT organization (i.e., what to do). ITIL can also provide a common language and terms for globally distributed teams. However, ITIL does not provide specific and/or detailed descriptions on how the company or business-specific processes should be implemented (i.e., how to do). These findings indicate that ITIL implementation and achieving the expected benefits are not straightforward, as ITIL implementation requires both educational and practical knowledge and capable management and leadership. Therefore, these can cause challenges in operational level implementation (relevant to RQ2).

2.1.3.2. ITIL Implementation Challenges

Using ITIL framework and best-practices have become a wide-spread approach in the IT industry worldwide. However, challenges in ITIL implementation have also been identified in earlier studies. Pereira and Mira da Silva (2011) wrote that many organizations, which decide to implement ITIL, fail completely. The organizations can also substantially exceed the planned implementation schedules (Sharifi et al. 2008). The reason is that the organizations underestimate the ITIL-related risks and costs and the needed time and effort to implement ITIL (Pereira and Mira da Silva, 2011, Sharifi et al. 2008).

Cater-Steel et al. (2006), Sussex (2009), and Marrone and Kolbe (2010) have identified challenges in implementing external frameworks, such as ITIL. Making a real end-to-end processes work in a multi-supplier outsourcing environment without affecting outcomes, services, and productivity can be a challenge. Based on Sussex (2009), all stakeholders will have their own adaptation of the processes (including their own tools, procedures, reporting and data management). Therefore, the challenge can be to get the expected benefits from the implemented

frameworks (Cater-Steel et al., 2006). Carefully planned and implemented governance structures are required to ensure that all parties work together in an effective manner. It can be a challenge to make ITIL processes work properly without a proper business customer to work with, because several outsourcing contracts are agreed with the IT organization and not directly with business. A challenge can be that no one understands the frameworks, such as ITIL, and a lack of understanding hampers true business and IT alignment (Sussex, 2009, Marrone and Kolbe, 2010). Problems arise when ITIL processes are read and written without prior knowledge of ITIL or having only theoretical ITIL knowledge without hands-on knowledge of the real operational level issues and practices. These findings provide prior knowledge to operational level implementation and visibility (RQ2 and RQ3).

2.1.3.3. *Service Level Agreements, Indicators, and Customer Satisfaction*

The service purchasing company and the supplier typically make outsourcing agreements, SLAs, other mode-of-operation practicalities, and (global) service delivery targets and responsibilities. This applied also with the case units' approaches, and their SLAs played a critical role to define the global IT services' operational level activities and measurement practices. Paschke and Schnappinger-Gerull (2006) wrote that SLAs define the expected quality attributes (e.g., quality levels). Researchers have found that the aim of companies' complex contracts is an attempt to protect themselves from the supplier's potential opportunism (Kale et al., 2000). Finding a correct SLA balance can be challenging, especially if the parties have differing objectives, expectation levels, and methods to produce the needed services and outcomes. The agreed contracts and Service Agreements can include various performance measures. Based on the agreed SLA metrics, the service purchasing company can analyse the statuses of its services. SLAs are created to ensure business continuity and verify customer satisfaction by defining service targets. Table 2.5 presents examples of possible SLA metrics and calculation rules (developed based on literature, e.g., Paschke and Schnappinger-Gerull 2006; Brooks, 2006) and hands-on experience. Table 2.6 presents an example of a SLA report.

Table 2.5 Examples of Service Agreement metrics

Metric	Type	Meaning	Calculation
On Time Delivery	KPI	The ratio of tickets solved within service level.	Ticket solving % = (Tickets solved within Service Level / All Tickets solved) x 100%
First Pass Resolution	KPI	The ratio between the tickets that have been solved without re-opening the ticket.	First pass resolution = (All solved Tickets – Tickets reopened) / All solved Tickets x100%
Application Availability	KPI	The availability time of an application.	Application Availability% = Available time / (Service Time – Planned Downtime during Service Time) x 100%
Customer Satisfaction	KPI	Half-yearly scores of service satisfaction surveys.	The average grade of all answered questions and dividing by the number of answered questions in the survey.
Offshore Leverage	PI	The ration between offshore personnel of total number of supplier personnel	(Number of offshore Personnel / total number of Supplier Personnel) x 100%
Key Performance Indicator (KPI): a measure of service performance and service level targets, which can be subject to service credits and to financial penalties if service performance does not reach the defined service level targets. *Performance Indicator (PI):* a measure of service performance and service level targets that is not subject to service credits.			

Table 2.6 Example of Service Level report

Details	Service Class	Expected Target SLA	Minimum Target SLA	Actuals
On Time Delivery	Business Critical	98%	95%	100%
First Pass Resolution	Business Critical	98%	90%	100%
Application Availability	Business Critical	99.5%	98.1%	98.73%
Customer Satisfaction	Business Critical	average grade >= 4	average grade >= 3.8	N/A
Positive and Negative Feedback (Customer)	Business Critical	-	-	Positive: 21 Negative: 2

"*The customer's perception is your reality*" was said by Kate Zabriskie (in Forbes, 2014). Customers and customers' perception are an integral part of companies' operation, strategies, structures, and success. In literature, the terms customer, consumer, and end-user are used in an interchangeably way. Examples of 'Customer' definitions are: "*Someone who buys goods or services from a business*" (Merriam-Webster dictionary, 2015), "*Customer: Organisation or person that receives a product. Example: Consumer, client, end-user, retailer, beneficiary and purchaser. Note: A customer can be internal or external to the organisation*" (EN International Organisation for Standardization (ISO) 9000:2005) and "*A customer is an individual or business that buys the product or service and pays for it, and a consumer and end-user is a person who consumes or uses the product*" (Parasuraman and Grewal, 2000). The ITIL glossary (2011) and ISO 9000:2005 standard also indicate that a manufacturer and/or a service provider can have both internal customers (people and/or departments working in the same company) and external customers (an ultimate customer and/or intermediate/trade customers).

Customer satisfaction is a post-decision of a customer experience. In Table 2.7, Customer Satisfaction and Positive and Negative Feedback (Customer) are examples of SLA metrics. Customer satisfaction is a significant quality indicator. Kasper and Lemmink (1989) wrote: "*It is vital for a company to know what the*

customers want and how they perceive the company's offering. The customer's perception of the company as well as the way in which the company views the customer and perceptions are important issues in shaping corporate strategy and marketing strategy." Customer satisfaction results and customer feedback can provide insights into the customers' perception. Companies' customer data (such as, purchases, contacts, and complaints) can be used to increase customer knowledge and to improve the overall supply chain, processes, strategy (see also Section 2.2.1), and to measure customer satisfaction (effects on RQ1 and RQ5).

Customer satisfaction and evaluating quality from customers' perspective have been emphasized in research (Barret 2000; Torbica and Stroh 2001; Maloney 2002; Yasamis et al. 2002). Based on earlier research, it can be generalized that customers are satisfied if they get what they want (i.e., the outcome is fulfilling or exceeding their expectations), the product and/or service is good (or exceeding their expectations), and the products and/or services are fulfilling the agreements (such as, time, schedule, quantity, and condition). If some of the aspects are not fulfilled, the customers are unsatisfied. Therefore, customer satisfaction is also a quality goal and a measurement tool (prior knowledge to RQ5).

Customer-centric organizations place customers' needs and creating value at the centre (Sheth et al. 2000; Bolton, 2004; Johnson et al. 2010; Teece, 2010). The basic idea of the customer centricity can be summarised to provide a positive customer experience at the point-of-sale and after the sale (relevant to RQ1). Marsh et al. (2010) also found that customer centricity shifts structures, culture, and strategy of an organization (which affects customer and supplier-ships, RQ1). Interestingly, companies' customer centricity requirements can originate from various places, such as, a sales organization or IT organization's Customer Relationship Management (CRM) software. Gulati and Oldroyd (2005) pointed out that installing a better CRM system does not improve customer relationship practices or results. When IT leads companies' customer relationship management, the customers are forgotten, while the companies' focus is on installing the latest enterprise/CRM software.

Often, companies' customer-centric operation and targets are merely synonyms for caring the customer and the 'customer is always right' kind of management statements and covering all types of customer service aspects under the same statement. During the 2000s, the word customer-centric became popular by Sheth et al. (2000) and Shah et al. (2006). Despite the concept's current popularity, Lamberti (2013) identified that defining 'customer-centric' is challenging. In addition, different business philosophies and consultancy models heavily reflect the ideology of customer centricity. In fact, Gummesson (2008) and Lamberti (2013) noted that it is uncertain whether and how customer centricity truly brings added value to companies.

Shah et al. (2006), Gummesson (2008), and Lamberti (2013) found that companies are struggling to become customer-centric and to implement customer-centric

operation (relevant to RQ1). This finding is supported by the Chief Marketing Officers' (CMO, 2008) Profitability from Customer Affinity (2007-2008) study, which identified a disconnection between IT suppliers and customers. The key findings of the CMO's study (over 1000 surveys and interviews) were: 56% of the suppliers considered their services extremely customer-centric, but 88% of the customers disagreed. Similarly, 85% of the suppliers were convinced that their ability to respond to the customers need had improved, but 45% of the customers disagreed. The CMO's study indicates that the service providers failed to meet their customers' expectations, they broke commitments, and overestimated their effectiveness, and the customers felt ignored despite of the service providers' customer-centric practices.

Nowadays, some of the activities that affect the customers' satisfaction are carried out beyond the service purchasing companies' direct control. The lack of direct control and visibility can cause challenges (effects on RQ2 and RQ3). Typically, companies operation includes both internal and external customer requirements and customers' satisfaction at all levels need to be achieved. Still, in customer orientation literature, the main focus has been given to external customers, and existing research focuses less on the internal customer satisfaction (Mohr-Jackson, 1991; Davis, 1992; Lukas and Maignan, 1996; Conduit and Mavondo, 2001). Conduit and Mavondo (2001) wrote that the focus of internal suppliers' is on satisfying internal customers' requirements and demonstrating an internal customer orientation. Business units typically define requirements based on their external customers' needs. Therefore, the internal and external suppliers must first fulfil the internal customers' (e.g., the business units) satisfaction in order to fulfil the external customers' (e.g., consumers and trade customers) needs and satisfaction (prior knowledge and effects on RQ2).

2.1.4. Experiences of Using IT Service Providers' Services

Using IT suppliers' services is not an easy or a definite solution to success in achieving expectations and benefits. Table 2.7 summarizes two public sector related articles from from Turun Sanomat (2011) and Taloussanomat (2011). These articles provide examples, perceptions, and experiences reported by the service purchasing companies and the suppliers in newspapers. The articles identified challenges among the parties to define objectives and to identify the true level of the complexity of their operation and producing value. Additionally, the Helsingin Sanomat (2015) wrote a sequel to the year 2011 case by describing how one of the public sector's customers got into a 'supplier trap.' These experience-related findings can indicate challenge areas in cooperation (RQ2), affects ownership and visibility (RQ3), and management aspects (RQ4).

Article 1 brought forth the fact that in Finland, the amount of big IT-houses is limited, which can be used in big public sector IT development projects. According to Turun Sanomat (2011), the big IT suppliers in Finland were Accenture, Logica (currently CGI), Tieto, and Fujitsu. The consequence of this limitation is that the same suppliers continue to be the suppliers also in the future public sector projects. Smaller companies may not be able to provide the expected capacity (e.g., the needed amount of resources and technical skills) or give a competitive price offers compared to the big IT-houses.

Based on Article 1, the same big IT companies provided services to all of the large private sector development projects. The customers indicated that the suppliers have not learned from their failures. The customers had to pay extra error-fixing costs, which were caused by the suppliers. In the Article 1, the customers expressed that their expectations and business targets were not achieved. The customers indicated that the big IT-houses' personnel have a lack of competences to successfully implement large-scale projects. As an example, VR (VR-Group provides railway logistics services) encountered significant challenges when their new ticketing information system was in the implementation phase. Helsingin Sanomat (2015) also wrote how VR was 'trapped' by the IT service provider, because only the original IT supplier can now develop the ticketing information system in the future, because only they are able to access to the core-code of the IT system. This kind of situation may occur if the customer has not considered the effect of the selected technology and copyrights on the end-result, such as, costs, independence of the supplier, freedom to develop the IT system, etc. (relevant to RQ3).

In Article 2, the big IT houses (Fujitsu, Logica (CGI), and Tieto) turned down the SAO's criticism, which was presented in Article 1. The suppliers' representatives pointed out that the success or the failure was a shared outcome of the parties. The IT houses told that they keep their IT professionals' skills up-to-date, for example, by using active training, job rotation, diverse tasks, and mentoring. In Article 2, the suppliers expressed that customers can make the situation challenging and even prevent the success. The suppliers' representatives gave examples of the challenge areas: communication challenges unclear objectives and targets, the customers did not provide all information to the suppliers, and/or the customers expected more than was agreed in the contracts. According to Article 2, in many cases, the suppliers had to give offers based on their best guess of the situation.

Table 2.7 Using IT services - Experiences from public sector

Article 1 (public sector – service purchaser)	
Source	Turun Sanomat 25.9.2011: State audit office (SAO) questions the Finnish IT-houses' professional skills
Message	Finland's IT markets include only few to be used in large-scale public sector projects, and the IT suppliers have limited professional skills.
Challenge	The public sector's projects are centralized to few big IT suppliers. The same suppliers move from failure project to the next failure project, and still they will be the suppliers in the forthcoming public projects.
Impact	The IT software developers have caused hundreds of millions euros lost for the Finnish taxpayers. Recently, all big public sector IT solution projects have ended up into a chaos during the implementation phases (e.g., the debt recovery processing, the renewal of taxation and vehicle register solutions, and new ticketing information system).
Reason	The software developer's lack of professional skills.
Article 2 (public sector – service provider)	
Source	Taloussanomat, 25.9.2011: The IT-houses respond to the lack of professional skills criticism - the fault is also on the customers' side
Message	If the project failed, it was caused by both of the parties
Challenge	Suppliers make offers with limited information. Suppliers have to respond in detail, but not being able to ask anything, adding anything to the offer, or negotiate. A lot of things must be guessed when giving, for example, price and schedule.
Impact	Majority of the IT-projects fail because of unclear targets, achieving mutual understanding, and failures to estimate the true size of the project.
Reason	Challenges in information flow and responsibilities among the parties.

Table 2.8 summarises the 3T (2012) article, which described a private sector case. The article brings forth that the service purchasing company's cost reduction targets may not be realized as expected. Article 3 pointed out that cost calculations based on offers and country-specific costs, such as low hourly wages, can be challenging. The preliminary cost calculations may indicate significant cost savings if purchasing, for example, coding work from India. However, the expected cost savings and targets may not be realized despite of the pre-calculations. Based on the Article 3, low productivity, multiple errors, and extra costs to fix the errors pulled down the benefits of low hourly wages.

Table 2.8 Using IT services - Experiences from the private sector

Article 3 (private sector – service purchaser)	
Source	T3 magazine 14.9.2012: Indian coding is more expensive than Finnish coding (original: Salainen selvitys – Intialainen koodaus on suomalaista kalliimpaa)
Message	Cheap Indian coding work is more expensive than coding work done in Finland. The extensive amount of errors and extra work increases the total expense.
Challenge	The code done in India includes 40% more errors compared to code done in Finland. Errors were detected during the testing phases.
Impact	Indian software developers' salary is 30% of the Finnish software developers' salary. However, low productivity, multiple errors, and extra costs to fix the errors pull down the benefits of India's low hourly wages. As a consequence, the coding work ordered from India is 35% more expensive than Finnish coding.
Reason	The Finnish software developers are 4.5 times more productive compared to the Indian software developers. Indians needed 64.750 hours and Finns 14.545 hours to code similar kind of features.

In addition to these newspaper-based articles, Gonzalez et al. (2013) analysed 89 research articles, which were published in 17 prestigious journals. They found that the three most common topics were: 1) outsourcing success factors and giving advices on various topics, such as contracting, negotiations and change management; 2) risk factors and discussing how to control and prevent risks; and 3) knowledge management and vendor-client relationship. Other topics were project management, how offshoring arrangements affect work practices and employees, intercultural issues, offshore typology, geographical location, the decision-making process, and economic value. Gonzalez et al. (2013) also found that the articles mainly focused on the service purchasing companies' perspective instead of the suppliers, yet recently more studies have used both perspectives at the same time or focused on the suppliers' perspective.

2.2. Management and Leadership, Partnership, and Normative Elements

Quite many times, a typical operational level implementation approach is considered as a process. However, the typical process viewpoint comes from manufacturing, machines, and devices. Examples of that kind of process approaches are a production line, which moves from one phase to another phase based on a predefined order or a user-guide that provides step-by-step instructions to the user about how to proceed. In this kind of approach, processes are seen as a pipeline that moves step-by-step only to one defined direction. However, Engeström (2004) argued that there is not only one way or one direction to do things right. According to Engeström (2004), also manufacturing processes can be described as a 'bustle,' because a real-life operation includes also malfunctions, surprises, and changes. In reality, people are not only performing tasks according to the predefined and given order. Instead, people observe, listen, debate, look for help from others, and move off from the process pipeline to sideward directions. Therefore, focusing only on establishing operational level structures, processes, and practices is not enough to succeed. Operational level success depends on people and their actions and behavior in the middle of global complexity (prior knowledge to RQ4 and RQ5).

Morieux (2011) wrote that companies operate in the middle of global complexity. The challenge is to keep large, complex, and unwieldy global organizations and their various stakeholders and suppliers operating reliably and efficiently. At the same time, the companies also need to innovate and shape their future success. Based on the Boston Consulting Group's survey results (over 100 companies), it was identified that during the past 15 years, the amount of procedures, vertical layers, interfaces, and decision approvals have increased from 50% to 350%. Similarly, 40% of managers' time is used to write reports, and managers also spend 30-60% of their time in coordination meetings (Morieux, 2011).

Based on the Boston Consulting Group's index of complicatedness, back in the 1955, the CEOs committed to four to seven performance imperatives. Nowadays, the CEOs commit to 25 to 40 (Morieux, 2011). Two main complexity trend drivers were identified (in Trapp, 2014). First, customers have an abundance of choice, and therefore, it is hard to please them such that they are less willing to accept compromises. Second, in addition to the constantly changing needs of political and regulatory authorities, the number of stakeholders has growth, and they are more demanding.

2.2.1. Management and Leadership

Management and leadership (Figure 2.1, number 5) play a key role for achieving operational level success. Managers and leaders are needed to plan, organize, coordinate, and to resolve conflicts. Also managers and leaders are needed to inspire and motivate operational level personnel. In addition, managers and leaders also establish and set organizational values. Many of the management and leadership theories (in Table 2.10) categorize efficiency into an individual or process level, such as, elements, behavior, skills, and attitudes, which enhances leaders' efficiency in influencing people and engaging processes.

Management and leadership are parts of the same entity but still very different (Herranen and Keskinen, 2006; Viitala and Koivunen, 2011). Herranen and Keskinen (2006) divided 'management'-leading to focus on information levels, and managing materialistic resources and activities inside the organization, whereas 'leadership'-leading focuses on leading people. Figure 2.2 illustrates the difference between management and leadership based on the management and leadership theories.
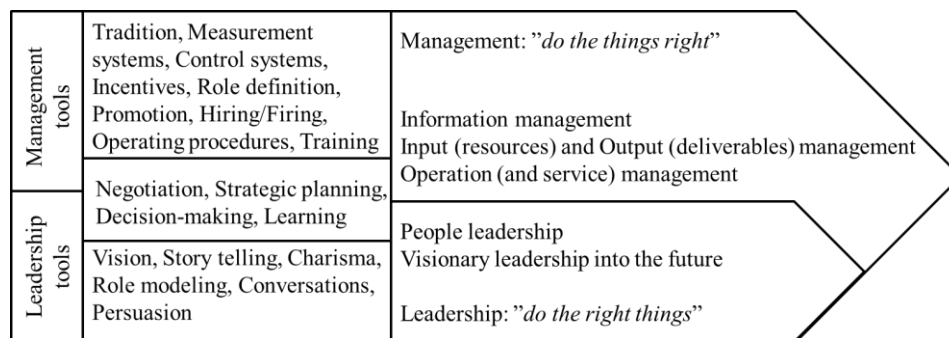

Figure 2.2 The focus areas of management and leadership

Table 2.9 lists some well-known management and leadership theories. However, less consideration is given in current management and leadership studies about how operational level management structures and leadership practices should be implemented among the parties in a global selective outsourcing and offshoring situation. The typical focus is on companies' internal- and in-house-based management and leadership aspects.

Table 2.9 Management and leadership theories

Classical Management Theory and Scientific Management
Classical theorists (e.g., Fayol, 1949 and Taylor, 1947) focused on increasing worker productivity on doing repetitive tasks, such as control, efficiency, quantification, predictability for de-skilled jobs (Taylor, 1947; Bass, 1990; Morgan, 1997, Hersey et al., 1996).
Contingency Models / Situational Leadership
The focus is on a leader's effectiveness, and the leader's ability to adapt to the specific situation at hand (Hoy and Miskel, 1987; Hencley, 1973). Therefore, depending on the situation, a person can be a follower or a leader. House (1971) defined that two main elements affect leaders' effectiveness: 1) leadership behaviors and 2) situational variables (subordinates, environmental demands, rules, and procedures).
Transactional leadership
The main focus is on ensuring the normal flow of daily business operations and maintaining the status quo (Avolio et al., 1991; Hunt, 1991; Crosby, 1996; Behling and McFillen, 1996). According to Bass (1990), transactional leaders use incentives to motivate employees to perform at their best.
Transformational leadership
The main focus is to take the team/company to the next level of performance and success. Bass (1985) pointed out that: "*transformational leaders motivate followers by appealing to strong emotions regardless of the ultimate effects on the followers and do not necessary attend to positive moral values*." Kouzes and Posner (1987) suggested that transformational leadership is not a position but a collection of practices and behaviors.

Barker (1997) wrote: '*The function of leadership is to create change while the function of management is to create stability*' and '*leadership creates new patterns of action and new belief systems*.' According to Kotter (2013), management is a set of well-known processes, daily routines and tasks, such as planning, budgeting, project resourcing activities, measuring performance and problem-solving, and to produce predictably products and services (of consistent quality, on budget, on schedule, etc.). Leadership is an influence process towards others (Heikkilä, 2002; Leithwood et al. 2008), and leadership is about vision, behavior, and getting people's commitment (Kotter, 2013). Leadership is also about interacting and being present with people, taking an organization into the future, finding and exploiting opportunities, producing useful change, and developing competences and skills (Kotter, 2013). These differences and focus areas between management and leadership have effects on operational level management practices and success (prior knowledge and relevant to RQ4).

One example of a Finnish leadership model is Nissinen's (2001, 2004) Deep Leadership model, which is also the Finnish Defence Force's model of

transformational leadership. The Deep Leadership model is also used in business environments and as a scientific basis for the 360-profile. The 360-profile is a feedback tool and a framework for (leaders') individual development (Deep Lead, 2015). Based on Nissinen (2001, 2004), the Deep Leadership model includes three elements and 10 dimensions: 1) potential (professional skills), 2) leadership behavior (building trust and confidence, inspirational motivation, intellectual stimulation, individualized consideration, controlling and correcting, and passive leadership), and 3) outcomes (satisfaction, effectiveness, and extra effort).

The Deep Leadership model has also been criticized, because it includes the 'controlling and correcting' and 'passive leadership' dimensions. Mäkinen (2005) wrote that those two non-leadership dimensions may be alternatives for the model but should not be part of it. Mäkinen (2005) also considered that satisfaction is not a direct result of a good or bad leadership.

Gallup (2015) studied (in over 2600 managers) managerial talent at supervisory roles, and the results showed that only one out of ten managers have high natural talent (i.e., the natural capacity of excellence) to become great at managing people. According to the Gallup's (2015) report, only 10% of managers display the five main talents naturally: 1) to motivate employees, 2) to assert themselves to overcome obstacles, 3) to create a culture of accountability, 4) to build trusting relationships, and 5) to make informed and unbiased decisions for the good of their team and company. These leadership potential and satisfaction findings play also a significant role in an operational level teams' success in a global selective outsourcing situation (relevant to RQ4).

Strategy

To manage global complexity, companies' decisions and actions need to fit and correspond to their strategy (Figure 2.1, number 5). The term *strategy* can be defined as: "*A plan of action designed to achieve a long-term or overall aim*" (Oxford Dictionary, 2015). Minzberg et al. (1998) identified that strategy sets direction, focuses effort, defines the organization, and provides consistency. Different kinds of expressions have been used to describe strategy formation, such as strategy planning, strategy development, strategic thinking, and strategy workshops (Grant, 2003; Hodgkinson et al. 2006; Pugh and Bourgeois, 2011).

Grant (2003) described that since the late 1990s, companies' headquarters focused on negotiating the expected performance levels. The business units, who 'owned' the business, defined the medium-term targets and content of strategic plans, and were responsible to the stakeholders (Grant, 2003). Grant (2003) also identified three main strategy change trends: 1) shortened time horizons (typically five years or less), 2) a shift from detailed planning to strategic direction (statements of mission/vision to communicate and guide strategies), and 3) an increased

emphasis on performance planning (e.g., financial targets, operating targets, strategic milestones to check the strategy status, capital expenditure limits). These descriptions corresponded also with the case units' strategy approaches.

According to Ollila and Saukkomaa (2013) strategic thinking is everyday work, but it also requires structure. They provided an example of a practice where the topics for the strategy were selected based on the strategic panel discussions to be further developed and discussed in smaller groups. They also wrote that companies should not expect strategy wisdom from investors, as investors' focus is on the next forthcoming four months. In fact, the investors' worst nightmare is to hear that a company has made a new and extreme strategic choice that will take the company away from its 'golden road' to success (Ollila and Saukkomaa, 2013). Wakhlu (in Forbes Insight, 2014) identified that top-management is forced to respond to the concerns and metrics placed by investors, although investors are more interested in financial performance than quality. The challenge is to help stakeholders to see the important connection between quality and financial performance, and the long-term organizational performance should be established based on customers' perception.

Strategy implementation is not always a straightforward process. Neilson et al. (2008) wrote that a typical approach to execute strategies is to start the execution with organizational restructuring, and within a few years, the company can end up in the same situation from where they started. Huy (2013) identified that senior executives spend time and resources to develop and promote strategies, but the actual strategy implementation is not always successful. Huy (2013) described that strategy implementation is considered as a project, where the change and the tasks are listed in a break-down structure and assigns project managers and allocates resources (such as, personnel, equipment and budget). When the project structure is established, the senior executives consider that strategy is successfully implemented at an operational level. These findings indicate that successful strategy implementation is challenging, and managers' and leaders' commitment and ensuring the engagement of people play also a critical role (RQ4).

Neilson et al. (2008) surveyed 26,000 people in 31 companies, and they identified 17 elements of a strong strategy execution. The study of Neilson et al. (2008) draws attention to the importance of information flow and communication (relevant to RQ5) in an organization to deliver, improve, and/or sustain global operation. Despite vast strategy-related knowledge, strategy development and implementation can be challenging. In the Taloussanomat (2015), there was an article about Rovio Entertainment's strategy-related challenges. According to the Taloussanomat's (2015) article, Rovio faced some challenges in managing the company culture and its rapid growth (the amount of Rovio's personnel grew within four years from 40 to over 800). According to the article, Rovio also faced challenges to establish a consistent strategy. The article in the Taloussanomat (2015) described that several strategy-related changes paralyzed the operational

level decision-making and the strategy implementation, because people did not want to make decisions, as they knew that the strategy and the decisions would be changed soon, again.

Change Management, Change Barriers and Success Factors

Today's work life emphasizes team-based working. According to Sennett (2002), the most important thing is to take others into account, and team working requires listening skills, cooperation, other 'soft-skills,' and being able to adapt to different kinds of situations. Sennett (2002) stated that mutual understanding is emphasized in teamwork and personal recognition is put aside. Sennett (2002) addressed that the type of authority, which always knows how things should be managed, is vanishing. Sennett (2002) gave an example that team leaders try to act as equal participants among their team members instead of being the leader of the team. Therefore, leaders are acting as facilitators and mediators between the teams and customers. This way, according to Sennet (2002), the leaders hold the authority, but they bypass their operational responsibility on the employees' side. This finding is important as it can indicate challenges in operational level management, roles, and responsibilities (RQ4).

Currently, constantly changing needs and circumstances are an integral part of working life. Therefore, change management activities are part of managers' and leaders' activities. The change can be, for example, organization restructuring; strategy, process, and personnel changes; unplanned changes (such as, economic downturns/financial changes and natural disasters); and remedial/corrective changes (such as, development and improvement of customer service, enhancing of satisfaction levels and improving customer perception). As an example, the case units encountered several organizational restructuring and change situations, such as strategy, process, and personnel changes. Kotter (2013) pointed out that leadership is needed to motivate and sustain the change in the organizational culture, actions, and behavior. This means that without a clear strategy and implementation of the idea, very little progress and sustainable outcomes will be made.

IBM's (2008) change implementation study (over 1500 participants) provided insights into the key change barriers and success factors (Table 2.10). Based on IBM's study, various 'soft' factors played a key role in successful implementation of change. At the same time, the 'soft' elements were more challenging to change than the traditional 'hard' elements (such as, technology). IBM's (2008) results indicate that the soft side of the operation is the one that makes or breaks the implementation of change. IBM's (2008) results also provide prior knowledge to all of the RQs.

Table 2.10 The change barriers and success factors (based on IBM, 2008)

Change barriers			Success factors		
	58%	Changing mind-sets and attitudes		92%	Top management sponsorship
	49%	Corporate culture		72%	Employee involvement
	35%	Complexity is underestimated		70%	Honest and timely communication
	33%	Shortage of resources		65%	Corporate culture that motivates and promotes change
	32%	Lack of commitment of higher management		55%	Change agents (pioneers of change)
	20%	Lack of change management 'know-how'		48%	Change supported by culture
	18%	Lack of transparency because of missing or wrong information		38%	Efficient training programs
	16%	Lack of motivation of involved employees		36%	Adjustment of performance measures
	15%	Change of process		33%	Efficient organization structure
	12%	Change of IT systems		19%	Monetary and non-monetary incentives
	8%	Technology barriers			

2.2.2. Partnership Elements: Cooperation, Communication, and Trust

One of the partnership elements (Figure 2.1, number 4) that enable successful cooperation is to create and maintain a mutual culture among the outsourcing parties. Katherine M. Hudson (a former Kodak executive) said few decades ago: "*You can't write a contract on spirit and culture*" (in Sabherwal, 1999). Her comment is still very much valid, because in contracts, it is not possible to establish and build the needed spirit and culture for success. Every company and organization is unique because of its culture. Culture is defined by Merriam-Webster dictionary (2015) as: "*1) the beliefs, customs, arts, etc., of a particular society, group, place, or time, 2) particular society that has its own beliefs, ways of life, art, etc., 3) a way of thinking, behaving, or working that exists in a place or organisation (such as a business)*." In fact, Merriam-Webster (2014) declared 'culture' as their word of the year 2014. Culture is difficult to imitate by competitors, organizational culture is the way to manage knowledge, and organizational knowledge is a competitive advantage (Davenport et al. 1998; DeLong and Fahey 2000; Alavi and Leidner 2001; Donate and Guadamillas 2010).

Adair et al. (2006) wrote that work cultures exist when a group develops and shares common schemas of the group knowledge, tasks, beliefs, values, norms, and identity (which is prior knowledge to RQ2). Robbins and Judge (2011) wrote that all of the employees know well the main culture's important values, and the sub-cultures are specific departments' and/or local offices' common understanding. Organizations with a strong culture have also high behavioral control (Robbins and Judge, 2011), and the formal company culture (such as, the written mission, values, practices, and policies) may be very different from the informal culture (what really happens). Therefore, as a prior knowledge to all of the RQs, it is important to ensure that the outsourcing parties' cultures and values complement each other, and the formal and informal cultures are in line (e.g., the activities defined in the contracts truly represents the real-live activities and needs).

When operating in a global multi-stakeholder environment, all parties' mutual effort is needed to successfully achieve the expected outcomes. It is recognized that behavioral sciences would provide viewpoints to this research, but it was decided to limit the partnership elements only to three short introductions to cooperation, communication, and trust elements based on RQ5.

Cooperation

Cooperation is about people working and acting together for their common target and/or benefit. In an outsourcing-based operation, cooperation is integral part of the target realization. According to Engeström (2004), cooperation includes *interaction*. Based on Engeström (2004), the *target* is the thing or a problem that participants are handling or working with, and in interaction, the participants are directed towards the target and others. Engeström continues that in *coordination*, all participants have their own target, and a common target does not exist, and it is not even looked for. The participants' target is to maintain the existing boundaries, and all of the participants will focus on their own viewpoint and interests (Engeström, 2004). In a *cooperation* situation, participants focus their attention on the common target by structuring and modifying the target together instead of focusing only on acting based on their limited roles (Engeström, 2004). In cooperation, the participants exchange ideas. According to Engeström (2004), the participants cross the pre-defined boundaries or scripts, but the scripts are not intentionally questioned or changed.

Rebernik and Bradac (2006) wrote that a successful outsourcing relationship requires cooperation: "*The success of outsourcing relationship depends on cooperation among participants, who must share their business information, otherwise cooperation is not possible.*" Rebernik and Bradac (2006) found that parties can 'cooperate' or 'participate.' To cooperate can be defined as*: to act in*

a way that makes something possible or likely: to produce the right conditions for something to happen" (Merriam-Webster's Dictionary, 2015). To participate can be defined as*: to be involved with others in doing something; to take part in an activity or event with others"* (Merriam-Webster's Dictionary, 2015). Based on Merriam-Webster's dictionary definition and Rebernik and Bradac (2006), these definitions indicate a different level of involvement in an event. When the parties are cooperating, they are making things happen and producing the right condition for operation. When the parties are participating, they are taking part of the activity with others, but they are not actively involved with ensuring that the operating environment is the right one for doing and/or achieving something. This is prior knowledge to RQ1 and RQ2 that the difference of 'cooperate' and 'participate' may play a significant role in operational level teams' cooperation and abilities to jointly fulfil the expected targets and expectations successfully.

Communication

Communication affects all humans' life in a way or another. Åberg (2000) categorized communication as face-to-face communication, electronic communication, and printed communication. Schneider-Borowicz (2003) identified that trust is formed based on face-to-face interaction. Nowadays, teams can be located to several sites and countries. The Internet and other modern communication technologies (e.g., emailing, teleconferencing, videoconferencing, and instant messaging) make it possible to enable collaboration among the global virtual teams (Carmel and Agarwal, 2002). Miller and Luse (2004) identified that good communication skills can be more important than technical skills (cf. the change barriers and success factors, IBM, 2008). Brownell and Reynolds (2002) and Leeman and Reynolds (2012) wrote that personal connections are essential relationship elements, and communication is needed to build trust. These findings correspond also with the case units' situation as the operational level teams were globally distributed.

Jack Welch, the former General Electric's chief executive officer, said that only two words matter for today's leaders: 'truth' and 'trust' (in Forbes, 2015). However, getting the truth and genuine information from operational level to top-management may not be that apparent. Keim (in Forbes Insight, 2014) identified that companies' top-management tend to receive filtered, big-picture materials and results that have been 'prettied up' for management, while the operational level 'dirty secrets' are excluded from the executive summary presentations. Therefore, the top-managers do not necessarily realize how badly some of the processes and quality practices are performing based on the received communication.

Trust

The literature on trust is quite extensive and trust research can be found in various fields, such as philosophy, sociology, psychology, management, marketing, and human-computer interaction (Corritore et al. 2003). Trust research typically focuses on specific and unique situations. One example of a trust model is Blomqvist's (2002) four-dimensional trust framework: 1) capability (technological, business, and meta-capabilities to cooperate), 2) goodwill (moral responsibility and positive intentions), 3) behavior (the capability and goodwill dimensions as behavioral signals of trustworthiness), and 4) self-reference (corporate and individual level trust, identity and values). This framework serves as support to the data found in RQ4 and RQ5.

As an example, trust in an Outsourced Information System Development (OISD) situation has been studied by Boon and Holmes (1991) by focusing on interpersonal relationships. Ring and Van de Ven (1994) and Hart and Saunders (1999), who focused on interorganizational relationships in an OISD situation. Sabherwal (1999) identified that developing trust in OISD projects can be challenging: "*OISD projects are often governed through structural mechanisms, including deliverables, penalty clauses, and reporting arrangements. In-house development rarely uses detailed, explicit structures, relying more on trust among participants.*" Lander et al. (2004) wrote that the challenge was to create trust among the participants in OISD projects, because the individuals who were involved in these projects typically had little or no prior experiences working with the other stakeholders, companies and/or team members, and still they had to rely on their expertise and judgment. These findings correspond also with the case units' situations, and the findings provide prior operational level implementation knowledge of the possible challenges (RQ2 and RQ5).

According to Hurley (2006), trust is the quality measure of a relationship between two people, among groups of people, or between a person and an organization. The developmental approach of trust is proposed by Lewicki and Bunker (1996), Corritore et al. (2003), and Lewicki (2006). In this approach, trust moves from the lowest level of trust to the second level of trust until reaching the highest level of trust. According to McAllister (1995), the foundation of trust changes from cognitive to affective when moving to a new level of trust. Based on earlier studies, these trust-related findings play an important role in defining and establishing trust among the outsourcing parties (RQ5).

Trust and fear are often related. Vuori and Huy (2015) wrote about the results of leadership and fear research. According to findings of Vuori and Huy, the top-managers of their research did not get a realistic picture of the existing situation. The delivered messages were prettified and overly optimistic, such as not openly shared risks and non-conformances in schedules. In addition, the personnel's

opinions were not shared openly if those differed from the managers' opinion. The fear, which existed inside the organization, was the cause of the situation (Huy and Vuori, 2014, 2015). They identified that the fear was not the 'losing a job' type of fear. It was a fear of losing a social status, for example, getting a reputation of being a difficult or a skeptical person. Vuori and Huy (2015) also identified that more focus was needed on establishing a right kind of atmosphere and communication and managing the collective emotions of various groups and divisions (Huy and Vuori, 2014; Kauppalehti, 2014). These findings are important for the data in RQ2, RQ4, and RQ5 as those can indicate cooperation and trust-related challenges in operational level cooperation and management between global stakeholders and outsourcing parties.

2.2.3. Normative Elements: Quality Management Practices

Rapid changes in utilizing outsourcing and offshoring services are having effects also on companies' operational level quality management practices (Figure 2.1, number 6). Various quality concepts, continuous improvement activities, and change management practices are used to manage companies' operation, product, and service quality. Quality concepts and practices have evolved during the past century, and their target is to continuously improve organizations' abilities to provide and deliver high-quality products and services. As an example, Total Quality Management (TQM) was the main quality management approach during the late 1980s and early 1990s before ISO 9000, Lean manufacturing, and Six Sigma frameworks (Hung et al. 2011). The TQM principles still apply in current quality management practices and frames. Figure 2.4 presents the development of some well-known quality concepts and ideologies during the past decades.

Several quality techniques and frameworks originate from manufacturing solutions, for example, the Six Sigma, Lean manufacturing, and Layered Process Audit (LPA). Six Sigma was developed by Motorola in 1986 including a set of techniques and tools for process improvement (Tennant, 2001). Lean manufacturing is a management philosophy derived mostly from the Toyota Production System (TPS) and reduction of seven wastes to improve customer value (Shah and Ward, 2007). The Layered Process Audit (LPA, 2014) originated in the US automotive industry in 2002. The LPA's main focus is on the used processes to make the product instead of the actual product (Sittsamer et al., 2007).

At the end of 1980s and at the beginning of 1990s, three quality awards were established to recognize good management practice, quality, and contribution to business. The Malcolm Baldrige National Quality Award (MBNQA, 2015), the Shingo Prize for Operational Excellence (Shingo Institute, 2014), and the European Foundation for Quality (EFQM, 2012) awards reflect the conception

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that good management practice and quality can be achieved by promoting the awareness of using best practices and techniques. These quality awards do not give exact instructions and tools about how to implement management practices, quality management practices, processes, or organization structures. Instead, they let organizations choose the most suitable approaches and tools (such as, Lean, Six Sigma, ISO 9000, Balanced Scorecards) for them to facilitate improvements. The quality models require focus both on results and behavior. Furthermore, the quality awards can be used to evaluate and assess operational level quality and the maturity of operational excellence.

Figure 2.3 illustrates that at the beginning of year 1900, only few quality practices existed. During the years 1930 to 2000, there was a peak in designing and implementing various quality management practices and techniques. Since the year 2000, designing and implementing new quality management practices have faded.

Implementing quality practices, ideologies, and end-to-end processes into a global multi-stakeholder environment can introduce challenges and resistance to change. Sampaio (in Forbes Insight, 2014) described that some companies adopt, for example, ISO 9000 standards because someone above them in the supply chain demands it. The companies put some of the procedures in place and just before their audit, they 'clean up the factory' without attaining any true value of the standard. This kind of approach indicates that the company does not have a sustained commitment to quality, and there is no true quality-centered culture in place. Producing an uninterrupted flow of value to customers requires ownership of every element in the end-to-end process across the entire supply chain to ensure that the expected outcomes are done perfectly each time.

Previous researchers have found that, for example, TQM has been considered as a fad. As a consequence, the TQM practices were not adopted and implemented properly (Beer et al., 1990; Miller and Hartwick, 2002; Beer, 2003). Claver et al. (2003) and Taylor and Wright (2003) identified that the lack of a practical knowledge for implementation of quality methods and guidelines was the main reason for implementation failures. In a similar way, the implementation of the Lean manufacturing practices has been identified as demanding. Industry Week (2007) wrote, based on the survey results (433 respondents), that only 2% of the companies fully achieved their Lean management objectives, and 24% achieved significant results. That leaves 74% of the companies failing to make good progress with Lean.

The cause of unsatisfactory results can be that the lack of senior managers' and leaders' commitment to the transformation idea at every level of the company, and therefore, they will not realign their own behavior (Beer, 2003). Beer (2003) wrote: "*managers experience a gap between rhetoric and reality, become cynical, and underinvest their time and energy in managing the transformation in their unit. As top managers come to realize that top-down programs are not working,*

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they reduce their commitment and withdraw resources (their time and money)." If senior management is not aligned, the employees will not change their behavior regardless of the new expectations, policies, practices, and the amount of provided training. These findings provide foundation for analysing the case units' operational level management approaches (RQ4), cooperation success, and quality outcomes (RQ2 and RQ5).

According to the Shingo Institute (2014), one of the largest mistakes made by companies has been the inappropriate focus on a specific tool-set as the basis for their improvement efforts. Liker and Rother (2011) wrote that the Shingo Prize committee found that many of the award-winning companies had not sustained their progress. Miller (in Liker and Rother, 2011) said: "*We were quite surprised, even disappointed that a large percentage of those organisations that had been recognized had not been able to keep up and not been able to move forward and in fact lost ground. We studied those companies and found that a very large percentage of those we had evaluated were experts at implementing tools of lean but had not deeply embedded them into their culture.*" It is important to recognise that the IT tools focus on 'how' elements, but those do not answer the question of 'why.' Knowing only the 'how' does not provide enough knowledge to proceed, and therefore people wait for more instructions, and they are powerless to act on their own (Shingo Institute, 2014). This indicates that the challenge is to incorporate (i.e., transfer, implement, execute, and sustain) the needed quality practices into the company's operational level systems and to globally sustain the practices.

Statistics Gauss 1809

Scientific management/ Taylorism 1910-1930

Control Charts Shewhart 1924

Toyota Production (Lean) System 1946

PDCA Plan-Do-Check-Act Deming 1950

Deming & Juran In Japan 1950's

Cause and Effect causal diagram Ishikawa 1968

QFD (Quality Function Deployment) Akao 1968

Total Quality Feigenbau 1969

MAIC (Measure, Analyze, Improve and Control) Harry 1982-1987

Six Sigma Motorola 1985

Statistical Methods for Quality Improvement Kume 1987

ISO9000 1987

Lean Six Sigma 2002

LPA (Layered Process audit) 2002

1910	1920	1930	1940	1950	1960	1970	1980	1990	2000

Inspections

Quality Control and Statistical Theory

Quality in Japan and USA

Total quality control vs. Company wide quality control Ishikawa

Total Quality

Total Quality Management

Quality Awards and Excellence Models

Six Sigma and Lean

The Shingo Prize for Excellence 1988

MBNQA (Malcolm Baldrige National Quality Award) 1988

EFQM (European Foundation for Quality Management) 1992

Figure 2.3 The evolvement of quality concepts and focus areas

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2.3. Summary of the Existing Research

Based on earlier research, Section 2.3 briefly summarises the prior knowledge of the RQs and highlights issues that require further studies and knowledge.

RQ1: *How multi-level customer- and supplier-ships affect the GSOE operation?*

Based on earlier studies, it was found that:

- Companies' activities and operation include several stakeholders. Earlier studies have mainly focused on external customers than internal customers. (e.g., Mohr-Jackson, 1991; Davis, 1992; Lukas and Maignan, 1996; Conduit and Mavondo, 2001)

- The outsourcing parties can create complex contracts to protect themselves. (e.g., Sabherwahl, 1999; Kale et al., 2000)

- Customer centricity is vague and heavily affected by 'consultancy' practices. Customer-centric activities include various customer service aspects. (e.g., Gummesson, 2008; Lamberti, 2013)

- The expected value and quality needs to be reviewed based on customers' perception and satisfaction and not based on the manufacturers' and/or service providers' internal perception. (e.g., Coyle, et al., 1996; Barret, 2000; Torbica and Stroh, 2001; Maloney, 2002; Yasamis et al., 2002; Tseng et al., 2005)

- Various companies have failed to implement customer-centric practices and estimate their true level of customer centricity. (e.g., Gummesson, 2008; Lamberti, 2013; CMO, 2008)

Therefore, companies' operating environment and processes include several levels of internal and external customers and suppliers. Formal governance, structures, and processes alone are not enough to ensure successful operational level implementation. Nowadays, customer centricity is seen as a basic requirement for all companies to achieve customers' satisfaction, whereas product centricity is somehow old-fashioned. It can be challenging to implement a customer-centric operation, measure the true benefits of customer centricity, and to achieve customers' satisfaction. In addition, companies own interpretation of their level of customer centricity can be overly optimistic compared to their customers' perception. However,

- Less focus is given to identify the various levels of customer- and supplier-ships at operational level in a selective IT service outsourcing situation.
- Less is known about how various internal and external customers and suppliers affect the operational level global IT service activities and agreements.
- More knowledge is needed about how the IT unit's role as mediator affects the GSOE cooperation.

RQ2: *What kinds of knowledge and implementation collisions occur in the operational level GSOE cooperation?*

- One supplier does not have world-class capabilities, skills, and knowledge in all business areas. Therefore, the service purchasing company's expectations and suppliers' outcomes, skills, and capabilities do not always correspond. (e.g., Porter, 1985, 1996; Gupta, 2000; Kakabadse and Kakabadse, 2005; Brown, 2008; Veltri et al., 2008)

- Work cultures include formal and informal cultures. Work cultures exist when a group shares common knowledge, tasks, beliefs, values, norms, and identity. (e.g., Adair et al., 2006; Robbins and Judge, 2011)

- Leaders' potential, behavior, and commitment are critical in defining and implementing the needed changes, structures, and practices (such as, quality, Lean, ITIL) successfully into the operational level. (e.g., Beer, 1990, 2003; Nissinen, 2001, 2004)

- It can be challenging to implement end-to-end processes into a multi-supplier environment, IT outsourcing contracts are owned by the IT organization instead of direct contracts with business organizations, and have a lack of theoretical and practical knowledge of implementing processes and practices (e.g., ITIL). (e.g., Industry Week, 2007; Sharifi et al., 2008; Sussex, 2009)

Therefore, outsourcing includes great potentials, benefits, and success stories but also a great amount of risks, challenges, and failures. Operational level outsourcing parties can define and implement several things among themselves (such as, mode-of-operation, processes, practices, work atmosphere, and circumstances). Some activities are guided and regulated by strict laws and regulations (e.g., the Incoterms, country-specific laws). Management and leadership, formal and practical knowledge, and a shared work culture (or lack of those) can affect the operational level implementation and success. However,

- Less is known about how the operational level IT service personnel's knowledge and core-competences contribute to the operational level implementation and fulfilling the service purchasing company's expectations.
- Knowledge of the GSOE training arrangements are lacking in current research.
- Less is known about incorporating transformation activities into the GSOE's operational level practices.
- More knowledge is needed about how the GSOE managers and leaders and expectation management practices affect the operational level implementation and satisfaction.

RQ3: *How the service purchasing company's ownership of the IT services and direct operational level progress visibility affects the company's ability to adjust to changes in the GSOE-based operation?*

- The two main IT outsourcing modes are selective and total. Other modes and degrees have also been identified, such as, total or selective single-supplier, total or selective multi-supplier, and insourcing. (e.g., Lacity et al., 1996; Chakrabarty, 2010)

- Some researchers have found that selective outsourcing enables better possibilities to achieve the targets (such as, cost reductions), whereas some have not found differences between the selective and total outsourcing modes. (e.g., Lacity et al., 1996; Dahlberg, 2006)

- Various IT ownership-related questions affect the service purchasing company's abilities to develop, tailor, and manage their IT solutions. (e.g., Bird et al., 2012; Gartner, 2013)

- Internal IT personnel are needed to bridge the knowledge gap among suppliers, business, and customers. (e.g., Gupta, 2000; Kakabadse and Kakabadse, 2005; Han and Mithas, 2013)

- The service purchasing company may focus more on managing offshore activities than their internal operation and/or onsite suppliers. (e.g., Rottman and Lacity, 2009)

Therefore, it is not possible to declare which outsourcing mode is a better solution or provide a definite success. Despite the selected outsourcing mode, the main focus should be on setting the outsourcing objectives to achieve the outsourcing targets. However,

- Less is known about the service purchasing company's operational level strategies and practices to hold global IT service ownership and visibility of the operational level progress and solutions in the GSOE-based operation.
- More knowledge is needed about the practices about how the service purchasing company and/or the onsite team generates to manage and get the offshore progress visibility in the GSOE-based operation.
- More knowledge is needed about the internal IT service personnel's role in the GSOE-based operation.

RQ4: *How unit and operational level management and leadership practices contribute to the GSOE cooperation?*

- Management focuses on daily 'process and operation management' and leadership focuses on 'leading people.' (e.g., Kotter, 1996, 2013)

- The old all-knowing-leadership style is changing to facilitator and mediator type of approaches. (e.g., Sennett, 2002)

- Managers and leaders are critical in leading change. Non-measurable soft factors (e.g., shared values, culture, and behavior) can be more important than measurable hard factors (e.g., technology, strategy, and infrastructure). (e.g., Kotter, 1996, 2013; Ruohotie, 2000; Alavi and Leidner, 2001; Nissinen, 2001, 2004; IBM, 2008)

- A strategy of a company may not be clear to all involved parties. Leaders can use a project management type of approach to implement strategies without achieving long-term changes in actions and values. (e.g., Minzberg et al., 1998; Davenport, 1998; Robbins and Judge, 2011; Huy, 2013)

- Top-management can get filtered and 'prettied up' materials and results. (e.g., Forbes Insight, 2014; Huy and Vuori, 2014)

Therefore, there is no ultimate leadership style to be used. The overall circumstances define the optimal management and leadership style. Typically, managers and leaders are appointed to their position, and they are responsible for some activities of the organization or a part thereof. Both management and leadership are needed, but one person may not have the needed capabilities, potential, and behavior to succeed in both. Managers and leaders are needed to help and guide the organization to achieve the set targets together with various stakeholders. A strategy is needed to achieve stakeholders' trust, and it defines what the organization does. Culture and values define what and how the organization thinks. Operational level implementation can fail when managers and leaders are not committed to the transformation and thereby not realign their own behavior. As a consequence, the employees do not change their actions or behavior either. However,

- The knowledge of operational level GSOE management and leadership is lacking from current studies.
- Less is known about how power-expectations and power-vacuum effects on the GSOE-based cooperation.

RQ5: *How GSOE cooperation and quality management practices affect the service purchasing company's trust and satisfaction?*

- The degree of involvement can vary from cooperate to participate.

(e.g., Rebernik and Bradac, 2006)

- Communication is an essential part of human life, and communication is needed to develop, for example, relationships and trust.

(e.g., Brownell and Reynolds, 2002; Schneider-Borowicz, 2003; Leeman and Reynolds, 2012)

- Trust can be divided into knowledge-related trust and activity-related trust. Institution-related trust can also be described as confidence.

(e.g., McAllister, 1995; Lewicki and Bunker, 1996; Corritore et al, 2003; Lewicki, 2006)

- Standards and frameworks can provide guidelines, instructions, and a common language. Standards and frameworks do not give exact instructions about how to implement the defined requirements.

(e.g., Barafort, 2002)

- Implementing quality management practices is challenging, and a lack of practical knowledge can cause failures.

(e.g., Beer et al., 1990, 2003; Miller and Hartwick, 2000; Claver et al., 2003, Taylor and Wright, 2003)

Therefore, the level of involvement affects the operational level implementation success. Operational level success depends on people and their actions, knowledge, skills, competences, and behavior. The target of quality management practices and concepts are used to continuously improve companies' abilities to provide and deliver high-quality products and services. However, companies have focused more on activities and tooling (such as, IT tools) instead of clarifying and focusing on the purpose of the operation. However,

- Current evidence about how cooperation, communication, and quality affect the service purchasing company's trust in the GSOE situation is lacking.
- More knowledge is needed about how metrics (such as, KPIs) and expectations guide the suppliers' operational level activities in the GSOE-based operation.
- More knowledge is needed about the role of quality management and standards/frameworks in the global IT service delivery activities.

3. Empirical Studies and Findings

This chapter presents briefly the original publications that compose this thesis. Sections 3.1 to 3.5 provide the research summaries of the five publications. Section 3.6 focuses on the research questions and provides the results of this study.

The relationship among the publications are presented in Figure 3.1. Publication A1 provides the motivation and basis for this study by identifying the IT unit's challenges in the GSOE-based operation and in achieving the service purchasing company's compliance levels, satisfaction, and expectations. Publications A2 and A3 examine the DQ and CAPA unit's global selective outsourcing operation and the impact of the globally integrated DQ and CAPA solution on global quality performance results. Publication A4 continues to elaborate upon the findings of Publication A1 by presenting the effect of the implemented corrective actions on the IT unit's satisfaction results. Publication A4 also analyses and compares both of the case units' GSOE operation and practices. Publication A5 examines the IT unit's GSOE operation development activities by taking the supplier's point-of-view. In addition, Publication A5 elaborates upon and provides perspectives about the operational level GSOE activities and findings identified in Publications A1 and A4.
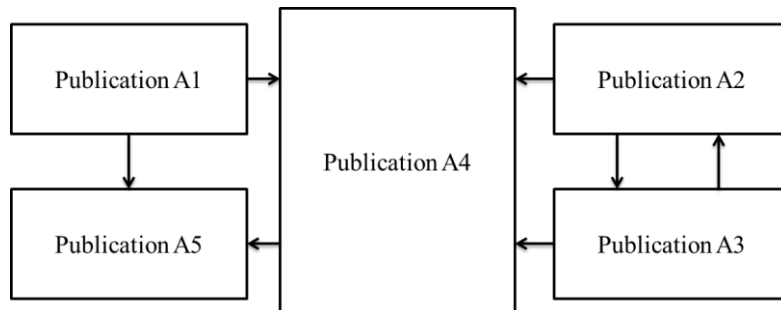
Figure 3.1 The relationship among the publications

In addition to these five publications, based on the action research activities, observations, hands-on experiences, and discussions with the case units' and the suppliers' representatives, this summary provides complementary research results and findings to present, summarize, and further elaborate upon specific research topics and questions.

3.1. Publication A1

Publication A1: *The challenge of global selective outsourcing environment: Implementing customer-centric IT service operations and ITIL processes* focuses on analysing the cooperation challenges in the GSOE-based operation and implementing novel ITIL processes, globally. The case IT unit selectively outsourced its operational level activities to the selected IT supplier. Despite the global IT services' common ITIL processes and mode-of-operation practices, the IT unit and the supplier encountered operational level challenges that negatively affected the IT unit's satisfaction. Publications A4 and A5 continue to elaborate upon this research.

Theoretical basis: The theoretical standing point for analysing the IT unit's selective outsourcing operation was formed based on IT outsourcing practices (e.g., Sousa and Voss, 2007; McIvor, 2013) and ITIL practices in ITSM (e.g., ITIL, 2007; Sharifi et al. 2008).

Developed models: Two models were developed: 1) *Process documentation phases* to illustrate the practices and elements to be considered when designing ITIL processes and 2) *The elements of integration-outsourcing environment* model to illustrate the GSOE's governance and structures between the service purchasing company and the supplier.

Research summary: The GSOE parties jointly designed and implemented a novel set of ITIL processes and global mode-of-operation practices, globally. In addition to these common processes and practices, it was identified that all of the GSOE parties had also their own internal processes and practices, which were not shared with other parties and/or companies. This research contributes to RQ3 by identifying that the implemented common processes and practices did not provide or guarantee enough end-to-end operational level visibility to the service purchasing company to cross the organizational boundaries. The service purchasing company had only partial visibility and power over the operation and activities compared to an in-house-based mode-of-operation. Related to RQ2 and RQ3, in this study, it was found that in this kind of setup, the service purchasing company was unable to independently define, change or develop the end-to-end processes and practices, costs, resourcing, training, competence development, knowledge of technologies, and reporting and measurement practices to respond their needs. The research contributes also to RQ5 by finding that the lack of end-to-end management capability decreased the service purchasing company's cooperation-related satisfaction and trust.

It was identified that both the service purchasing company and the supplier had an advanced level of knowledge to implement ITIL processes and practices into global ITSM outsourcing situations. The parties' target was to ensure and achieve standardized service levels and a mode-of-operation where the realized service

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levels would not be constituted based on individuals' success or failure. The ITIL processes provided a common language to the globally distributed service delivery teams, and the ITIL processes were also used as a reference material in the outsourcing contracts. However, it was challenging to make the ITIL processes successfully work in the global multi-stakeholder environment due to physical and/or psychological distance.

The research results showed that the parties' main focus was on implementing the exterior elements of the (co)operation (i.e., the ITIL processes). The ITIL processes gave a base to the operation and provided a common language. The research contributes to RQ3 and RQ5 by presenting that the processes alone did not guarantee the service purchasing company's satisfaction. The implemented ITIL processes did not improve the service purchasing company's core operation, provided added value, or ensured operational guidance (e.g., practical business knowledge). In addition, the novel ITIL processes did not have named process owners to ensure end-to-end ownership, development, management, and training of the processes. These findings support earlier research and findings (e.g., Sussex, 2009; Sharifi et al., 2008) that ITIL implementation is not a straightforward approach leading to definite success.

Various operational level factors affected the IT unit's satisfaction. The IT unit was dissatisfied with the realized service performance results and process compliance levels. The supplier was not able to provide stable and systematically steady service deliveries, and therefore, the realized service levels varied greatly among the IT services. It appeared that the supplier's success was mainly an individual-based success instead of steady way-of-working practices or a professional consultancy approach provided as a group. The research contributes to RQ3 by identifying that various quality management practices and quality evidence were not available in the GSOE-based operation. Therefore, the IT unit conducted 'micro-management' type of activities to ensure the needed progress and information visibility over the several global IT service activities. Challenges were also identified in end-to-end risk management, competence development, and training. The supplier was responsible for providing the operational level training to the service delivery teams. Nevertheless, the service purchasing company was not satisfied with the newcomers' theoretical and practical knowledge levels (this finding contributes to RQ2).

The operational level activities were managed and led by several management level representatives both onsite and offshore with differing targets and personal agendas (contributes to RQ4). It appeared that the GSOE's stakeholder and ownership approaches caused challenges to the supplier. The reason was that the IT unit operated as a mediator between the supplier and the business units, and the IT unit was the owner of the outsourcing contracts instead of the business units. It appeared that some of the supplier's leaders desired to change the existing outsourcing practices, and they did not understand or they did not want to

understand the nature of the GSOE agreement. Despite the ITIL's presumption of direct working with the business customer, it was found that in a global selective outsourcing-based IT service operation, the supplier does not necessarily work and contract directly with the business units. These findings support RQ1.

3.2. Publication A2

Publication A2: *A Globally Integrated Supply Chain Delivery Quality Strategy: Transformation Insights at the Nokia Devices Unit* focuses on analysing the novel globally integrated DQ and CAPA solution, and its effect on global processes, practices, management, and leadership approaches, and quality performance results. The new DQ solution combined product, logistics, and the marine cargo transit insurance areas. The implementation of the global DQ solution was a contradictory approach, worldwide. All of the global supply chain's internal and external stakeholders, including the insurance companies, were required to use the service purchasing company-owned processes and IT solutions. The DQ solution target gaining a company-wide customer-centric operation and visibility into the customers' perception, customer perceived quality of the deliveries, and DQ performance. Publication A3 continues to elaborate upon the globally integrated DQ and CAPA solution.

Theoretical basis: The theoretical starting point for analysing the change management practices was formed based on the ISO 9001:2008 eight quality management principles, Kotter's (1996) change model, and transformational leadership factors adopted from Nissinen (2001, 2004).

Developed models: The main developed models were: 1) *The operational DQ environment capability elements* to illustrate the elements, practices, and effects of the operational environment; 2) *The DQ governance and leadership model* to provide insight into the operational level leadership, governance, and situational target setting; and 3) *The evolutionary DQ change model* to illustrate the change management phases and ideologies to implement and sustain the DQ solution. In addition to these three models, also the potential DQ claims management phases were provided.

Research summary: It was found that in a global customer-centric DQ operation focusing only on the service purchasing company's own personnel and activities was not enough. The main benefits of the strategy were achieved when the processes and practices, operational level activities, and information sharing were defined and implemented worldwide across the global stakeholders (these findings contribute to RQ1). It was also identified that the global stakeholders relied upon and trusted the new DQ process and its effect. The globally implemented DQ practices enabled the same set of global

accountabilities, roles, responsibilities, targets, and expectations throughout the entire supply chain and the global and local level leadership. This research contributes to RQ2 and RQ4 by identifying that the quality and customer-centric operation required operational level cultural changes and effective management practices. Also, effective DQ network management was needed to embed the operational level practices and ideologies into the DQ members' behavior and actions.

The DQ performance result analysis showed that the global DQ solution improved the total claims management practices and the knowledge, information, and communication capabilities toward the customers. All activities were completely owned by the service purchasing company, worldwide. The new DQ solution reduced costs, losses, and the overall number of claims to manage. These findings contribute to RQ3. Linking the customers' perception information in the new DQ solution improved the global customer knowledge and enabled timely actions and solutions.

The research analysis revealed that the senior management's buy-in played a significant role to succeed. This finding contributes to RQ4 by showing that the top-management's commitment and support were needed to achieve the expected transformation and targets by promoting DQ collaboration, teamwork, and management. Also, well-grounded change management targets and efficient communication were needed to achieve the global end-to-end supply chain stakeholders' commitment and buy-in. It was found important that the global and local level leaders continuously ensured that the implemented practices and culture remained global and provided the needed corrections and training.

It was identified that retaining all DQ activities in-house was not required, but this research contributed to RQ5 by identifying that accountability, ownership, and supervision should not be outsourced to another company. Substandard end-to-end DQ management and leadership, culture, and issue-prevention will eventually be visible to the customers and supply chain members. Therefore, the service purchasing company must continuously ensure that the stated standards and quality requirements are fulfilled.

3.3. Publication A3

Publication A3: *Global Corrective Action Preventive Action Process and Solution: Insights at the Nokia Devices Operation Unit* focuses on analysing the global CAPA principles and elements, CAPA's close interconnection with DQ, and the implementation of a novel global IT solution for DQ claims and CAPA cases. The personnel's ownership of the CAPA practices in the operation unit was the key to timely implement the needed CAPA activities and to ensure efficient communication and information sharing across the global stakeholders. The global IT solution enhanced information sharing, customer knowledge, and managing DQ claims and CAPA cases, worldwide. Publication A3 continues to elaborate upon the same topic field as in the Publication A2.

Theoretical basis: The theoretical standing point was formed based on quality concepts and implementing CAPA practices (e.g., Perez, 2012; FDA, 2012, 2013), the integration of logistics and operation activities (e.g., Tseng et al., 2005; Christopher and Lee, 2004), and IT solution capabilities and organizational knowledge management (e.g., Alavi et al., 2005; Petersen and Wohlin, 2009).

Developed models: Two models were developed: 1) *CAPA process and management model* to provide insight into the CAPA governance, CAPA management, and CAPA operational phases and 2) *CAPA C5 model* brought forth the condition, perception, and cost-related effects from several stakeholders. In addition to these two models, the integrated DQ and CAPA model was provided to illustrate the close DQ and CAPA interconnection.

Research summary: The new DQ and CAPA processes and IT solution changed the operational level practices and performance and enabled a company-wide transparency and ability to report global performance metrics. The global stakeholders (e.g., insurance companies and broker) were confident with the CAPA solution and activities. This research contributes to RQ3 by identifying that the company-owned processes and IT solutions provided the same set of measures, guidance, responsibilities, activities, targets, and metrics to all stakeholders, globally. It also increased the operational level personnel's knowledge and information about the CAPA activities and enabled global collaboration and interconnection of the activities. The implemented global IT solution enabled a close integration between DQ and CAPA and made it possible to link customer claims with CAPA cases, globally. Other IT solutions (such as, ERP) did not provide IT tools with the needed features and direct access to trade customers' DQ non-conformance information and CAPA solutions.

It was found that CAPA's vital aspect was its learning perspective. CAPA made it possible to avoid reinventing problem situations and to utilize CAPA information and solutions, globally. In this research, the important CAPA success elements were: global CAPA process, knowledge and skilled personnel executing

the CAPA process activities, and clear organizational control and governance, which contribute to RQ2 and RQ4. Global DQ and CAPA implementation required that the quality and customer-centric practices and ideologies were incorporated into the operational level activities, and the activities crossed the organizational boundaries. The personnel needed to commit and be aware that they were responsible for customer satisfaction, quality results, quality activities, how to act, how to react, ownership of non-conformances, and being responsible for proving response to the customers (contributes to RQ2 and RQ5).

3.4. Publication A4

Publication A4: *Evaluation Factors in Successful Selective Outsourcing Operations* focuses on analysing the success factors of GSOE and presenting the effect of the corrective actions on the IT unit's satisfaction. This study also compares the case units' operational level practices and solutions. Both of the case units selectively outsourced operational level activities to the external service providers (e.g., IT development, IT support and maintenance, and DQ insurance claims management). Publication A4 continues to elaborate upon the challenges identified in Publication A1. Publication A5 continues to elaborate upon Publication A4.

Theoretical basis: A set of outsourcing cooperation factors were constituted to analyse the case units' GSOE approaches. Table 3.1 lists the identified success factors identified in literature by Kinnula and Juntunen (2005), Lee and Kim (2005), Bergkvist (2008), Smuts et al. (2010), and Väyrynen and Kinnula (2011).

Developed models: *Selective outsourcing cooperation factors* are presented in Table 3.1, which were used to analyse the case units' GSOE practices. The factors were derived based on literature analysis, which are described in more detailed in Publication A4. The new factors and indicators identified in this study are presented in Table 3.1 in *italic*.

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Table 3.1 Selective outsourcing cooperation factors

Category	Factors
1. Business and contracts	F1.1 Mutual business strategy fit, alignment, and understanding
	F1.2 Strategy, expectations, targets, and objectives
	F1.3 Long-term perspective
	F1.4 Performance management *and results (including offshoring)*
	F1.5 Mutual benefit, risk and reward sharing
	F1.6 Cost/Financial and contract management
2. Operational and structural	F2.1 Management practices and strategy (including relationship), *Customer structure and customer centricity*
	F2.2 Communication, information sharing, processes, solutions, *training, Solution transferability, process and IT solution integration*
	F2.3 Culture, values, norms
	F2.4 Constructive conflict resolution techniques and processes
	F2.5 Resource, knowledge, skills management, and *experience*
	F2.6 *Roles, responsibilities, ownership,* Joint (or integrated) action, effort, and/or planning
	F2.7 Quality and service management and development and *ownership*
	F2.8 Control retention and visibility
	F2.9 Support from top management
3. Cooperation and interaction	F3.1 Commitment*, intent, credibility, reputation*
	F3.2 Trust, closeness, honesty, reliability, openness, *transparency, fairness*
	F3.3 Flexibility
	F3.4 Customer understanding; Outcome satisfaction
	F3.5 Dependency

Research summary: The case units' research results and observations indicated that some of the factors and indicators (in Table 3.1) had interdependencies, and therefore, it was not possible to change or adapt the factors and/or indicators independently.

This study also contributes to RQ1 by identifying multi-level customer-ships in the case units' selective outsourcing-based operation. This research also identified that instead of hard-factors (such as, technology), a majority of the operational level challenges originated from soft-factors. The soft-factors appeared in operational level activities' implementation, quality management, leadership, and communication practices. These findings contribute to RQ2, RQ4, and RQ5 by identifying that the main satisfaction-related improvements were achieved by clarifying the common scope, strategy, processes, and the interconnection of activities with the strategy (i.e., providing 'why' knowledge to the operational level personnel).

Both of the case units focused on operational development, but the development activities were affected by various cost reduction objectives. The case units' process development and implementation focus areas differed. The IT unit focused on developing the exterior elements and standardized service deliveries by utilizing the ITIL processes, whereas the DQ and CAPA unit focused on developing the core of DQ and CAPA operations and implementing the service purchasing company specific processes and practices. These findings contribute to RQ3. In addition, it was identified that seamless information flow can be enhanced by incorporating the global processes and compliance requirements into IT solutions.

The case units' global processes did not allow the usage of using local processes and solutions. However, ensuring global process compliance was challenging, and circumvention of rules (such as, processes, practices, and IT tools) was identified in both of the case units (contributes to RQ5). The lack of a common global work culture and an understanding about the ideologies behind the operational level processes and practices made it possible to continue following the existing approaches (such as site- and/or offshore center-specific practices) instead of ensuring the compliance of global processes and practices (contributes to RQ2).

This research also identified that a person-dependent solution can impact the transferability of the solution and abilities to utilize the solution's practices in other setups (contributes to RQ2). The IT unit's solution and practices were not person dependent, but the parties' double-management approach caused confusion at the operational level, as the roles, responsibilities, ownerships, activities, and information were scattered. The DQ and CAPA solution was a person dependent solution, which decreased the solution's transferability. As a consequence, it was challenging and time consuming to train and transfer the people's operational level practical knowledge and experiences to new members (contributes to RQ2).

The research contributes to RQ3 by identifying that both of the case units wanted to retain direct operational level progress control and information visibility. The IT unit solved the lack of progress control and getting up-to-date information from the offshore sites problems by conducting micro-management type of activities (supports the findings of Rottman and Lacity, 2006). The DQ and CAPA solution was managed and owned by the service purchasing company, and therefore, the activities and information clearly stayed inside the service purchasing company. The DQ and CAPA unit was able to require that all parties use the service purchasing company-owned processes and IT solution (contributes to RQ3). In addition, the research analysis also indicated that the case units relied more on internal knowledge instead of giving the power to the suppliers.

3.5. Publication A5

Publication A5: *Developing Offshore Outsourcing Practices in a Global Selective Outsourcing Environment – The IT Supplier's Viewpoint* focuses on analysing the GSOE's development activities designed and implemented by the supplier at the operational level. Here, the examination point-of-view is on the supplier's side, and the voice is given to the supplier's operational level personnel. This study studied the sustainability of the implemented operation development activities in the GSOE situation and proposes focus areas for further iterative development. Publication A5 continues to elaborate upon the challenges identified in Publication A1 and complements the findings of Publication A4.

Theoretical basis: The theoretical starting point for analysing the GSOE development was formed based on the global outsourcing and operating in a global environment (e.g., Lacity and Willcocks, 2008; Rauffet et al. 2014; Lönnblad and Vartiainen, 2013), outsourcing arrangements and challenges (e.g., Lacity et al. 2008; Ikediashi et al. 2012; Lacity and Rottman, 2008), and outsourcing factors (ISO 9001:2008 eight quality management principles, Senge, 1990; Argyris and Schön, 1996; Nissinen, 2001, 2004).

Developed models: The main developed model is *The groups' dynamics model*, which was used to analyse the case units' interaction in globally distributed teams. This research also categorized lesson-learned findings under three categories: practice, interaction and information sharing, and behavior and mind-set.

Research summary: It was found that the operation development in a GSOE-based situation needs to be iterative (contributes to RQ3 and RQ5). Several development focus areas were identified based on the action research observations and on several discussions with the IT unit's and the supplier's representatives.

It was found that the success of the development activities was limited already at the beginning by the supplier's leaders (contributes to RQ4). The leaders focused on achieving short-term improvements and quick fixes instead of a long-term transformation in operation.

Several items were identified for iterative operation development:

Practice: The supplier's personnel should get more 'need-analysis'-related competence development (contributes to RQ2). Follow-up metrics and situational targets need to be defined and implemented (contributes to RQ5). Leadership competences need to be developed (contributes to RQ4).

Interaction and information sharing: The supplier should define and implement effective handover practices. The supplier should also implement active customer expectation management practices to ensure that they are able to fulfil the service purchasing company's satisfaction and needs (contributes to RQ1). The supplier

must focus on ensuring that the GSOE's communication triangle works efficiently (i.e., IT unit – Supplier onsite – Supplier offshore). More focus is needed on training arrangements and competences, and the trainer should have pedagogical knowledge (contributes to RQ2).

Behavior and mind-set: The leaders need to commit and focus on engaging the operational level personnel. A lot of training and mind-set changes are needed to ensure a successful mode-of-operation change from the resource-based operation to the selective outsourcing-based operation, where the supplier truly is responsible for the operational level implementation and development activities (contributes to RQ2). The supplier needs to proactively develop the operation instead of waiting for the service purchasing company to define all the activities in detail. To ensure commitment, the onsite and global teams should not micro-manage offshore centres, and the offshore centres cannot be ignored or bypassed by other teams (contributes to RQ5).

In this study, it was found that the leaders failed to engage the operational level teams, which negatively affected the consensus and the teams' ability-to-work (contributes to RQ4). It appeared that the teams' basic form of unity was 'disharmony' and 'difference of opinions.' Usually, the illusion of harmony was achieved after using a strong managerial grip and micro-management approaches. However, when the micro-management grip lessened, the operational level personnel returned back to their former way-of-working approach (contributes to RQ5). The teams' group-dynamics significantly affected the quality of operation and outcomes.

3.6. Research Results

To address the operational level elements of the GSOE operation, the following five research questions were defined and discussed in the five individual Publications A1-A5. Each publication provided new ways to a support GSOE-based operation in the form of solutions, practices, or processes that enable operational level personnel and stakeholders to understand the GSOE operation and cooperation aspects, and how information flows among the global parties. In addition, this summary provides complementary research results and findings to the publications to present, summarise, and further elaborate upon the research topics and questions. It is also notable that the results include and combine both the service purchasing company's and the suppliers' findings.

RQ1: How multi-level customer- and supplier-ships affect the GSOE operation?

In this study, it was found that multi-level customer and supplier-ships increase operational level complexity. Three elements, which include multi-level customer and supplier-ships, were identified that affect the GSOE operational level activities. These three elements were summarised as: 1) multi-level customer and supplier-ships, 2) customer centricity practices and expectations, and 3) outsourcing contract negotiations.

1) Multi-level customer- and supplier-ships. Based on the Publications A1 and A4:

1) A minimum of four actors were identified in the IT service delivery: end-customers, business units, IT units, and suppliers.

2) A minimum of three customer levels on the service purchasing company's side were identified: end-customers, business units, and the IT units (Figure 3.2, numbers 1-3).

3) The operation included both internal and external types of customers. External customers were end-customers (consumers/trade customers) who were the paying customers to the service purchasing company. Internal customers were the business units and the IT units (the IT unit was the paying customer to the suppliers).

The operation included also a minimum of three levels of supplier-ships. The external suppliers were suppliers (supplier 1) to all customers of the service purchasing company. The IT units were suppliers (supplier 2) to the business units and the end-customers, and the business units were suppliers (supplier 3) to the end-customers. Therefore, it was identified as critical to ensure effective and timely communication practices between different customer and supplier levels (Publication A5) among the several parties.
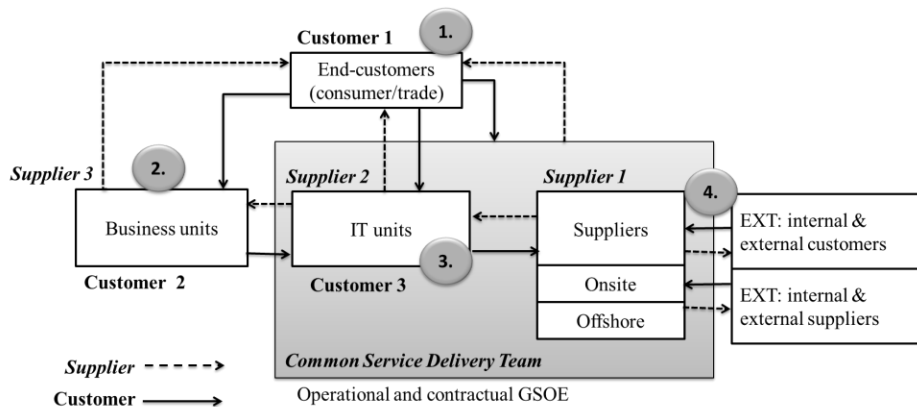
Figure 3.2 Multi-level customer and supplier operation in the GSOE

It was identified that the external suppliers (supplier 1) had internal and external customers and suppliers (Figure 3.2, number 4). The suppliers' internal and external customers directly or indirectly affected also the service purchasing company's customer-levels (Figure 3.3), operation, and outcomes. As an example, the turnover rate of human resources at the supplier's offshore sites was high, because the service specialists were transferred to work with other projects or services. The service delivery teams were in a constant change, which directly affected the service purchasing company's operation and the abilities to fulfil timely and efficiently the customer requirements. Also, the suppliers' second-level suppliers (i.e., EXT-suppliers) directly or indirectly affected the service purchasing company's customer-levels. The EXT-suppliers provided services and/or worked as part of the service purchasing company's services and projects under the GSOE outsourcing agreements, although they were contracted by the supplier 1.

It was found that in a GSOE-based operation, the customer satisfaction measurement practices should be developed jointly with the suppliers to include end-to-end satisfaction metrics. Instead of only measuring customer 1 results (e.g., positive and negative feedback in Table 2.6), the measurement should include all customer levels. The end-to-end satisfaction results must be visible also to supplier 1 to ensure common operation development.

	Customer level	Description	Information flow	Supplier level	Description
End-Customers	Customer 1	End-Customers (end-consumer/trade customer) is the main customer-level (Customer 1) who provides perceptions, needs and feedback.		Supplier 0	All supplier levels target is to fulfil Customer 1 level satisfaction.
Business units (BU)	Customer 2	BU collects Customer 1 level needs and feedback, and develops business requirements.		Supplier 3	Target is to fulfil Customer 1 level satisfaction and manage customer relationship.
IT units (IT)	Customer 3	IT own the IT solutions, evaluates and prioritizes the business requirements and defines IT requirements. Owner of the GSOE outsourcing contracts.		Supplier 2	Target is to fulfil Customer 1 and Customer 2 level satisfaction and manage business unit relationship (Customer 2).
Suppliers	Customer 0	Suppliers are impacted by all three levels customer needs, expectations and satisfaction. In addition, EXT-customers impacts on suppliers.		Supplier 1	Target is to fulfil all customer levels' satisfaction and manage especially IT unit/GSOE relationship (Customer 3).
EXT	EXT-Customer	Suppliers have internal and other external customers		EXT-supplier	Target is to fulfil Supplier 1 satisfaction

Figure 3.3 Customer- and supplier-ship interaction flow in the GSOE

The ITIL framework's presumption is that business units work directly with the producer (such as, IT organization or external suppliers). However, in this study, it was found that in the GSOE-based operation, the IT units were the main operational level customer to the suppliers and not the business units. The IT units were mediators between various global stakeholders, made the contracts, and led the IT services and solutions. The business units worked directly with the IT units (supplier 2, Figure 3.3) and indirectly with the supplier 1, for example, by clarifying the business requirements and conducting the user acceptance testing activities. It was identified that effective and participative business ownership conducted by the business units enhances the GSOE-based operation (as identified in the Publication A2).

The results of this study indicate that a multi-level customer-ship structure can confuse external suppliers (identified in the Publication A1). Therefore, the supplier can have a desire to change the service purchasing company's main customer-party. Supplier 1 (Figure 3.3) may have a faulty perception that customer 2 (Figure 3.3) leads the entire operation and makes the final decisions of the IT services and solutions. Because of this faulty impression, supplier 1 may have a desire to bypass customer 1 (Figure 3.3) and target for working and contracting directly with the customer 2 (in Publication A1).

2) Customer centricity practices and expectations. Earlier studies have found that customer centricity is nowadays a basic requirement, but the customer centricity definition and requirements can be vague (e.g., Lamberti, 2013). It was found that the case units' GSOE operations, targets, and satisfaction were affected by various customer centricity expectations. The case units' customer centricity expectations included organizational (e.g., organizational structures, sales areas, etc.) and/or subjective (e.g., individuals' expectations) elements. As a consequence, the IT services' customer centricity expectations were scattered and non-specific, and the customer-centric activities varied from marketing speeches to measurement practices and organizational structures. Also the suppliers' true level of operational level customer-centric practices varied greatly from the advertised image of customer centricity. As an example, during the service offering phase, the supplier's representatives sold an image of customer-centric operation and their ability to provide extra value to the service purchasing company. However, the service specialist did not always have the needed level of knowledge, skills, and competences to successfully implement the advertised customer centricity activities, practices, and ideologies.

Based on the participant observational findings from the case units, implementing a global customer-centric operation among the several levels of suppliers and stakeholders was challenging. This finding supports earlier customer centricity findings (e.g., Gummesson, 2008; Lamberti, 2013). Unclear customer-centric expectations, definitions, roles, responsibilities, practices, and activities decreased the operational level personnel's abilities to succeed. As an example, the common

IT service delivery teams struggled to understand the root of customer-centric operation's elements, such as targets, expectations, ideologies, and how to transfer and incorporate GSOE-based operation practices and needs into the operational level activities. In addition, the suppliers had challenges to understand how their customers perceived their level of customer centricity. As an example, the suppliers thought that they succeeded well with providing a customer-centric operation and services. However, the service purchasing company did not perceive that the supplier's operation and services were particularly customer-centric. This finding supports the CMO's (2008) findings.

It was also found that it is possible to successfully implement new and contradictory customer-centric practices into the operational level activities, globally. To succeed, it was necessary to design and incorporate the customer centricity ideology into the operational level activities, processes, tooling, and personnel's behavior. In Publication A2, it was described how the external claims-handler successfully adopted a contradictory approach to manage the customer claims based on the service purchasing company's specific customer-centric practices. The key was to focus on providing knowledge of the purpose and ideologies (i.e., why?) instead of focusing only on activities (i.e, what?) and tooling (i.e., how?). The GSOE parties' operational level leaders needed to provide practical training and knowledge about the expected customer centricity ideology and practices. If the leaders failed to provide the needed information and guidance (about actions and behaviors) or the leaders did not have the needed level of educational or practical level knowledge and experience, then there was decreased operational level implementation and customer satisfaction (Publication A5).

3) Outsourcing contract negotiations. The contract negotiations played a significant role in the GSOE operation. In this study, the IT unit's outsourcing arrangements were briefly analysed based on the determinant of IT outsourcing success (Lacity et al., 2009):

ITO decision: The IT unit's outsourcing decision and negotiations were required and supported by the top-management. The operational level negotiations happened at the IT unit level, such as the IT unit-specific outsourcing agreements and project and service orders. The service offers negotiations and evaluation phases were long. The evaluations included several activities and visits also to the offshore centres. The selected outsourcing mode was selective single-supplier outsourcing. Overall, the ITO decision was successful. This finding supports earlier findings that it is critical to give enough focus on the ITO decision and evaluation phase.

Contractual governance: The outsourcing contract negotiations and contract management were time-consuming. The frame agreements were long-term contracts (the duration was years), but the project and service orders were short-term orders (the duration was months). Although the contracts were made only

between the IT unit (customer 1, Figure 3.3) and the supplier (supplier 1, Figure 3.3), the GSOE parties also had to take into account and to fulfil the needs and requirements of all levels of the customers (Figure 3.3), such as service levels, business criticality, and availability. To fulfil end-customers' (consumer or trade customer) needs, it first required the fulfilment of other layers of customers-base and their requirements (expectation management practices identified in Publication A5). Despite of the multi-level customer and supplier structure, the GSOE parties focused mainly on defining the contract details between the IT unit and the supplier, such as the service delivery practices, ITIL processes, and metrics (e.g., SLA and KPI metrics). In this study, it was found that the contracts, SLAs, and metrics heavily guided the supplier's operational level activities. However, the parties did not elaborate upon the potential impact of EXT-suppliers on the global IT service delivery and outcomes.

This study corroborates with the findings of Kale et al., (2000), because it was observed that the GSOE parties created complex contracts to protect themselves. The main cause was the supplier's mode-of-operation where 'only those what is specifically asked and contracted will be delivered.' As an example, the supplier required that all of the expected quality activities in the IT services should be defined in detail and to be separately contracted. Due to monetary reasons, all customer expectations were not openly shared, because of the knowledge that those would directly increase the service costs. In addition, the supplier expected that the service purchasing company would document and provide all of the operational level tasks as step-by-step instructions to be followed at the offshore sites. This requirement decreased the credibility of the supplier's operation and gave a passive image of the supplier's way-of-working approach. In addition, it was impossible to list and document all activities and tasks in detail. The basic idea of the services was to operate based on continuous and iterative operation development (the supplier's development activities in Publication A5).

In this study, it was found that the service purchasing company's personnel considered that the focus on contracts and contract details became too excessive. Instead of focusing on the technicalities of the short-term contracts/orders, the service purchasing company expected that the supplier would focus more on delivering the ordered outcomes, performing as expected, ensuring the quality of the outcomes and services, and providing the expected competences and skills (training related findings in Publication A5). The technicality of the contracts and orders became too demanding to follow and maintain, and it took a great amount of time to review the contract proposals in detail. These findings support also the findings of Veltri et al. (2008) that the contracts did not live up to the expectations. In this study, it was found that the positive customer experience for customer 1 was not fully achieved. During the negotiations (i.e., at the point of sale), the customer experience was good. However, what came to the operational situation (i.e., after the sale), the supplier was not able to achieve the customer's

satisfaction. Therefore, the contractual governance was in place and managed, but there was a need for improvements.

Relational governance: The results and observations of this study indicate that trust was individual-based trust (i.e., trust between people) and operation-related norms were not defined or shared among the GSOE parties. Information sharing was limited and mutual dependency was low (the disharmony of the teams was identified in Publication A5). It was found that the level of cooperation was closer to 'participate' instead of jointly cooperating and developing the common operation. Therefore, the relational governance was not successfully achieved in this GSOE-based operation. These failures in relational governance can explain some of the cooperation challenges in the GSOE.

RQ2: What kinds of knowledge and implementation collisions occurs in the operational level GSOE cooperation?

Based on the five publications and observation findings, three main knowledge and implementation collision areas (Figure 3.4) were identified in the GSOE operation: 1) educational knowledge vs. practical knowledge, 2) transformation vs. routines, and 3) service delivery teams vs. management and leadership. It is recognised that companies' top-management and their commitment, strategies, and support have a critical role in operational level implementation, but in this study the top-management aspects are excluded.

In Figure 3.4 (triangle), the main elements of IT service operation are generalized to six levels of activities: operational level information, collecting the information, analysing the information, innovating, acting, and re-innovating.

Learning:
Educational &
Theoretical knowledge

Living:
Practical &
Tacit
knowledge

Reflections
Definitions
Language
Frameworks
Ideologies

Action
Behavior
Potential

Renovate
Act
Innovate
Analyze
Collect
Information

Routines

Service
delivery teams

Transformation

Management
and Leadership

Strategies
Targets
Processes
Practices
Specifications
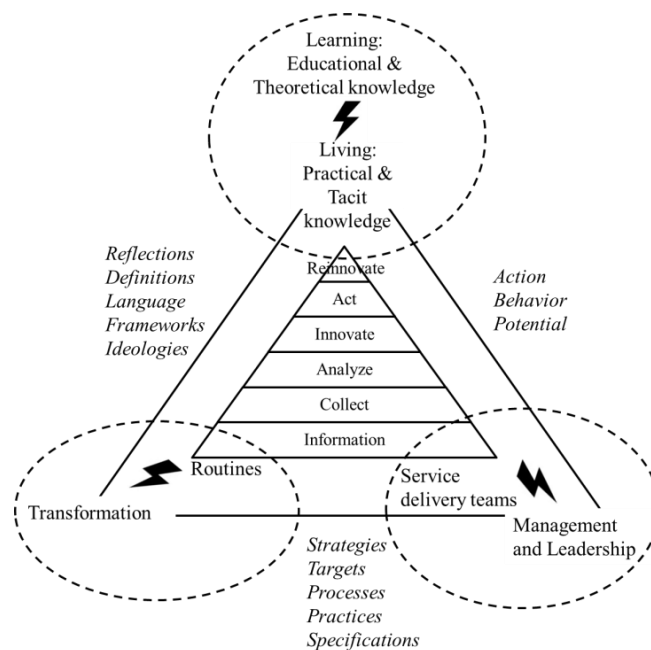
Figure 3.4 Operational level collision areas

1) *Educational knowledge vs. practical knowledge*. In this study, two main professionalism-related knowledge-levels were identified. The first knowledge-level is called as 'Learning,' which was educational and theoretical knowledge (e.g., attained from universities). The formal education provided and set the theoretical base-knowledge, ideologies, and skills of the field (e.g., IT and insurance management specific skills and competences). The second knowledge-level is called as 'Living,' which was practical and tacit knowledge attained based on hands-on/learn-by-doing experiences.

In this study, various challenges were identified when the personnel (both of the GSOE parties' service delivery specialists, managers, and leaders) operated only based on the formal knowledge without practical knowledge. As an example, challenges occurred when the employees joined the global IT service delivery teams directly from universities without previous work experience. Similarly, challenges were identified when personnel had only practical knowledge without formal education and field-specific knowledge. As an example, these employees demonstrated inadequate adaptation of mode-of-operation, processes, actions, and behavior because they did not have the needed basic knowledge and skills. Based on the observations, the lack of typical field- and operation-specific knowledge complicated the parties' communication and information sharing and caused misunderstandings.

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Another knowledge-related challenge area originated from the personnel's core-competences. Based on earlier studies, different core and supporting business processes require different kinds of skills and competences. The suppliers' personnel found it challenging to fulfil the service purchasing company's expectations to innovate and to develop the services, core-operation, and practices. As an example, the supplier focused on the IT tools, whereas the service purchasing company expected improvements over the entire IT service elements including the end-customer support. However, this kind of approach requires in-depth knowledge of the end-to-end processes and operation to identify the causes of the requirements and non-conformances (e.g., when the root-cause was process related problem instead of an IT tool related problem). Challenges were also found in adopting the correct communication style and language to operate with non-technical end-customers and business representatives (e.g., to avoid using IT jargon).

Operational level training arrangements played a key role to ensure efficient and timely operational level implementation (training and knowledge transfer items in Publication A5). Publication A1 (in Section 4.3 daily cooperation challenges) brought forth the IT unit's operational level training challenges. Veltri et al. (2008) had also found that the suppliers' skills and capabilities were not always corresponding with the service purchasing companies' expectations and contracts. In this study, two types of training approaches were used: 1) the supplier was responsible for providing the operational training, and 2) the service purchasing company was responsible for providing the operational training. Both of the approaches had positive and negative elements. Regardless of the training approach, the results of this study show that eventually the service purchasing company had to provide business- and IT service- related educational and practical knowledge to the suppliers' representatives (in Publication A1).

In the first training approach, it was defined in the contracts that the supplier will take the operational level training responsibility, because the service delivery teams were mainly resourced with the supplier's personnel. Despite the provided training, the expected and contracted educational and practical knowledge levels were not achieved as expected (in Publication A1). The service purchasing company had to assure the operational level business continuity by verifying that both of the GSOE parties' personnel correctly absorbed the needed business knowledge, ideologies, requirements, standards, and practices to produce the expected outcomes. The service purchasing company's internal personnel had to continue to train the newcomers, while they were already working as part of the service delivery teams. The cause of the challenge was that the majority of the suppliers' personnel were specialised in specific fields (such as, coding, system testing, etc.) and not familiar with end-to-end manufacturing processes and practices. Therefore, the theoretical mode-of-operation training did not provide the needed practical knowledge to the new members of the operation to succeed.

In the second training approach, the service purchasing company was responsible for providing the needed training to the operational level personnel and stakeholders (mentioned briefly in Publication A2, Section 5.1 General Action-Research Observations). The in-house training approach enabled possibilities to focus more on the purpose of the global solutions, mode-of-operations, and common work culture and ideologies (which corresponds with Adair et al., 2006). Also this approach was used to control and verify the knowledge and operation compliances. However, the challenge was that only a few people were responsible for providing the training and guidance activities, globally. When the needed guidance was not given timely, the operational level personnel solved the situation based on their best guess. As a consequence, they may have adopted a faulty way to act and solve the situations.

In this study, it was found that when the operational level training and implementation failed, both of the parties' personnel continued to operate based on their familiar routines and mode-of-operation (e.g., country, site, team, and/or offshore practices), and they ignored the expectations of implementing new mode-of-operation and common work culture. This kind of behavior negatively affected satisfaction cooperation-related satisfaction.

2) *Transformation vs. routines*. The first element is called as 'Routines,' which includes daily operational level activities and practices to deliver the outcomes. The routines included the GSOE parties' internal routines and the common GSOE operation-related routines. The second element is called: 'Transformation,' which includes change and development elements and activities. In a similar way, the transformation included both of the parties' internal transformation targets and the common GSOE operation-related transformation targets. In this study, it was found that both of the parties had their own company-specific internal practices that had to be followed (such as, corporate strategy, reporting and finance). The GSOE operation did not affect internal routines, but the parties' internal routines and transformation need directly affected the common GSOE-based operation. Therefore, the GSOE operation, internal routines, and transformation were not always in line with, for example, strategy, targets, reporting, resourcing, and quality practices.

Beer (2003) has found that the cause of unsatisfactory transformation results can originate from leaders' lack of transformation commitment (challenges in training and knowledge transfer identified in Publication A5). In this study, similar kinds of results were found. As an example, the IT unit made extensive mode-of-operation changes. One of the transformation targets was to move away from the 'external resources'-based mode-of-operation to an outsourcing based mode-of-operation. In this approach, the supplier is responsible for operational level deliveries and outcomes. Despite the transformation targets, the operational level personnel continued to operate according to the 'external resources'-based mode-of-operation routines (mentioned briefly in Publication A4, Section 4.1 The

Operational Level Findings). This can be explained by GSOE managers and leaders not fully understanding the transformation expectations, activities, responsibilities, and the effect of those on the operational level routines. Therefore, the new mode-of-operation was not efficiently incorporated and sustained into the operational level activities. In a similar way, the DQ and CAPA unit went through a massive transformation by implementing a new set of global processes, practices, and IT solution. Publication A4 found that ensuring the global compliance was challenging, and it was possible to identify a certain level of circumvention of the rules. The consequence was that the sites and operation units followed their own local practices, which were defined by the local managers and leaders.

3) *Service delivery teams vs. Management and Leadership.* The first group is called the 'Service delivery team,' which includes internal and external operational level service delivery specialists. The specialists implemented the operational level activities and produced the service outcomes (such as, IT service support and maintenance activities). The second group is called: 'Management and Leadership,' which includes the GSOE's operational level managers and leaders. The leaders and managers managed and led the IT services (e.g., product and service management, operation management, contract management, strategies, roadmaps, resourcing, etc.) without participating in the actual IT service implementation and maintenance (such as, coding). The GSOE members did not always share mutual understanding (e.g., strategy, circumstances, and impact), and the disharmony of the teams affected also their communication and interaction (identified in Publication A5). In addition, it was identified that the GSOE managers and leaders did not always share the same knowledge, commitment, targets, and viewpoints.

Based on earlier findings (e.g., Minzberg et al., 1998), a strategy sets direction and focuses efforts. This study supports earlier studies by identifying that the parties' unclear strategies and targets caused challenges during the implementation phases. Based on the observations, the operational level personnel (i.e., the service delivery specialists) did not have a clear knowledge about the priorities, and how the strategies should be implemented into the operational level routines and behavior with the limited resources. There was a perception gap among the parties' strategy, targets, and operational level practices. When the operational routines and the defined strategies were not in-line, the targets were not achieved as expected. There was a conflict between the service delivery teams and management and leadership and between the service purchasing company and the suppliers when the GSOE's roles, responsibilities, ownerships, and/or the required degree of operational level visibility were not properly defined and understood. To bridge the strategy, targets, and operational level activities, both parties had to learn the language of the other party.

Based on the observations, the operational level implementation required both management and leadership. In earlier research (e.g., Nissinen, 2001, 2004; Gallup, 2015), it was found that the leaders' potential and behavior play a key role. In this study, it was identified that all GSOE managers did not have the needed leader's capabilities and vice versa. Both of the parties' managers and leaders and their actions and behavior either positively or negatively affected operational level implementation. It was observed that the GSOE managers and leaders were even able to multiply the change resistance, operational level confusion, and disorder if it advanced their own agendas. Thereby, this study corresponds with earlier findings. Kotter (2013) stated that anchoring change requires leadership. This study complements existing research by identifying that in a GSOE situation, it is not enough that only one party manages and leads the GSOE-based operation. Both of the GSOE parties' managers and leaders need to motivate and engage common operational level personnel to cooperate according to the agreed mode-of-operation, strategy, and targets (identified in Publication A5).

Earlier studies have emphasised that customer satisfaction needs to be evaluated based on customers' perspective (e.g., Barret 2000; Torbica and Stroh 2001; Maloney 2002; Yasamis et al. 2002). This study found that expectation management activities played a critical role in verifying the operational level customer satisfaction. It was identified that the supplier's expectation management activities did not achieve all parties' satisfaction (expectation management practices identified in Publications A1, A4 and A5). Publication A1 found that fulfilling only the senior executives' expectations and satisfaction does not guarantee that also the operational level's expectations and satisfaction are fulfilled. Therefore, the lack of operational level expectation management decreased the operational level satisfaction results. Based on these observations, typically the suppliers put their main focus and effort on fulfilling the top-management's expectations. It appeared that their target was to guarantee the top-manager's satisfaction, because it could bring new business opportunities for them in the future. The operational level expectation management was not considered as significant for future business development. However, it should be noted that operational level dissatisfaction can be reported to the top-management, and thereby operational level dissatisfaction can affect senior executives' satisfaction and perception.

RQ3: How the service purchasing company's ownership of the IT services and direct operational level progress visibility affect the company's ability to adjust to changes in the GSOE-based operation?

Based on the five publications and the collected participant observational findings, the service purchasing company's direct ownership and operational progress visibility increases the service purchasing company's abilities to implement changes to its IT services and control the operation. At the same time, this approach limits the suppliers' abilities to implement changes independently. The role of the service purchasing company's internal personnel increases when they work as mediators between various stakeholders. Direct operational level progress visibility can increase the quality of the outcomes, when the service purchasing company is able to react timely and efficiently to the possible non-conformance situations. However, the GSOE parties can start to use a micro-management approach to ensure direct operational level progress visibility, which decreases cooperation and trust.

In the case units, the value of using selective outsourcing was identified to be successful in the terms of being able to ramp-up and ramp-down global services and resources (including personnel) based on ad-hoc needs. The selective outsourcing approach also enabled new ways to create and implement new ideas and strategies that advanced achieving the defined targets. Also, selective outsourcing enabled access to special skills and capabilities (such as, IT technology and insurance knowledge) and being able to respond timely and efficiently to customers' and stakeholders' needs.

In this study, the case units' retained the full ownership of their solutions inside the service purchasing company. The case units' solutions included, for example, the global processes and IT tools to produce the expected outcomes and/or services. Earlier studies have identified the effect of IT ownership (e.g., Bird et al., 2012). In this study, it was found that the case units' strategy was to avoid getting into a 'supplier trap' by holding the full ownership and copyrights of its solutions (such as, codes, processes, and IT solutions). This approach was beneficial, because the case units were not tied only to one supplier. Therefore, they were able to change to the supplier arrangements based on needs and strategies and adapt to various changes.

In Publication A1, it was presented that the full ownership of the IT unit's solutions and services made it possible to change the supplier. The IT unit was able to implement new mode-of-operation processes and practices instead of ramping-down the existing IT solutions and buying totally new IT solution from a new supplier (cf. Section 2.2.4, the example of VR's case). Sussex (2009) found challenges in implementing end-to-end processes into multi-stakeholder environments. In this research, similar kinds of results were found. However, in Publications A2 and A3, it was found that the service purchasing company owned solution made it possible to require all global multi-stakeholders across the entire

supply chain to use the global processes and IT solution and to freely develop the end-to-end solutions and practices. In addition, the DQ and CAPA unit was not limited by any external service providers' processes, schedules, features, or extra costs. Despite the global multi-stakeholder situation, the full control and ownership of the solutions made it possible to successfully implement the new global processes and practices and to control and guide all of the stakeholders' operational level activities, worldwide.

In Publications A1 and A4, it was found that the operational level end-to-end progress visibility was needed to verify the quality of the final outcomes. The operational level progress visibility was needed to retain the ownership inside the service purchasing company and to avoid getting into the 'supplier trap.' Still, the lack of operational level progress control globally (e.g., the implemented activities at the offshore sites) and not being able to affect the end-to-end decisions and practices (e.g., not being able to affect and change the counterparty's internal practices and decisions) negatively affected satisfaction (presented in Publication A1). The IT unit's approach to quickly implement the 30 ITIL processes into the GSOE operation aimed to be a solution to ensure operational level compliance and progress visibility. However, the results of this study show that this strategy did not work as desired, because the expected compliance of the ITIL processes was not achieved as quickly as anticipated. These findings support also the findings of Sharifi et al. (2008) and Sussex (2009) that implementing ITIL is not an easy and fast approach.

The service purchasing company wanted to retain progress control and get operational level information at any time (presented in Publications A1 and A2). However, a majority of the operational level activities were globally executed at various sites and countries (described in Publications A1 and A2). Therefore, ad-hoc communication and information sharing was not possible because of the geographical distance. To ensure the operational level progress control, visibility, and solution ownership, the case units used two approaches: 1) conducting micro-management activities (described in Publications A1 and A4), and 2) holding full control of the operation and solutions inside the service purchasing company (described in Publications A2 and A4).

Micro-managing, especially the offshore activities, corresponds with the findings of Rottman and Lacity (2006). An interesting finding is that the same micro-management approach and situation happened also between the suppliers' on-site team (e.g., teams working in the service purchasing company's premises) and the offshore teams (in Publication A5). Despite the fact that the supplier's on-site teams and offshore teams were working inside the same company, the supplier's on-site team had the same kind of challenges as the service purchasing company to get the needed operational level progress visibility from the offshore sites. It was observed that also the on-site teams' members started to conduct micro-management activities to ensure the progress visibility.

This research supports earlier findings (e.g., Han and Mithas, 2013; Gopal and Gosain, 2010; Oshri et al., 2007) by finding that the internal personnel were needed to ensure the development of core-operation and to provide added value to the service purchasing company's customers. The internal IT personnel's role and responsibilities increased during the GSOE-based operation, because they operated as mediators between various global parties and stakeholders (supports the findings of Han and Mithas, 2013). The internal personnel provided continuity and practical and tacit knowledge to the development activities (Publication A5). Based on the observations, the internal personnel were identified to be more proactive than the suppliers. The suppliers' approach was more reactive, and they typically reacted only when a non-conformance was escalated. The supplier also stated that they could be more proactive instead of waiting for the service purchasing company to define the activities on behalf of them (identified in Publication A5).

RQ4: How unit and operational level management and leadership practices contribute to the GSOE cooperation?

Based on the five publications and the observational findings, the GSOE managers and leaders have a direct positive or a negative effect on the success of the GSOE operation and the overall atmosphere. In a GSOE situation, both of the GSOE parties' need to focus on clarifying management and leadership roles and responsibilities and respond to the GSOE operation's power-expectations. The findings correspond with earlier operations management studies in factory settings. The factory settings affected also on the IT practices as the data in the IT systems came from the factory. It was recognized that the jointly defined processes and requirements did not prevent variability in deliveries and handovers. It was identified that the GSOE operation required active daily management activities, such as business relationship management, shared understanding, risk and problem management, communication, resource allocation, and compliance across organizational and national boundaries.

On the question of management and leadership, this study found that even if the operation and the outcome (such as, a product or a service) are good at the moment, the situation will not stay the same forever. In the course of time, actions, behavior, quality levels, needs, and requirements will change. Therefore, timely and efficient management and leadership activities are needed to lead the current operation, ensure the needed quality management activities, and to shape the operation for the future success.

The current study found that both of the GSOE parties' needed to focus more on clarifying the management and leadership roles and responsibilities when

implementing the GSOE practicalities. The managers and leaders decision accountability, first as an individual, and secondly their abilities to engage the operational level service delivery team members, played a significant role (identified in Publication A5). Based on the observations, it was found that the success of GSOE's managers and leaders depended on the individuals' potentials (e.g., the leaders' skills, competences, credibility, trustworthiness, and behavior). This finding supports the findings of Nissinen (2001; 2004) and Gallup (2015). As an example, it was possible to identify that some of the GSOE parties' managers and leaders had an overly excessive impression of their own potentials, skills, and behavior, which negatively affected the operational level implementation and cooperation, worldwide. It was found that some of the GSOE leaders tried to push parts of their responsibilities to the operational level personnel (found in Publication A5). This finding corresponds with Sennett (2002). Quite many times the leadership was 'information leadership' instead of long-term operation development. Also, the leaders had a lack of knowledge about what came to the operational level realities and daily routines.

Based on the observation findings, it was identified that both of the GSOE parties' unit and operational leaders played a critical role in establishing clear process ownerships. The managers and leaders were also needed to ensure the maturity of the common processes and activities, establish operational level governance, ensure service and operation scalability and flexibility, and conduct personnel assessment (such as, skills, costs, availability, etc.). The management and communication style needed to correspond with the local practices. As an example, implementing a European management and communication approach to India, or implementing an Indian management and communication style to China or Europe was not successful. In addition, the overall strategy implementation approach corresponded with the findings of Huy (2013). The GSOE parties' typical strategy implementation approach was a project management type of implementation. The operational level service delivery team members got a limited amount of guidance to transform the strategies into the operational level activities, and therefore, the strategy implementation phase included also challenges and deviations.

The operational level IT service management and leadership included various power-expectations (which correspond with Ruohotie, 2000). When the service purchasing company and the supplier established the GSOE-based cooperation, the power-expectations and the power-vacuum needed to be fulfilled in a creditable way by all of the GSOE parties across the global supply chain. If the managers and leaders failed, they had difficulties to obtain the power-accountability afterwards. Based on the observation findings, it was identified that both of the parties' operational level personnel showed dissatisfaction and limited motivation. They started to focus on personal agendas when the unit and/or operational leaders failed to fulfil the power-expectations and power-vacuum (challenges identified in Publication A5). The power-expectation and power-

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vacuum failures also decreased the degree of cooperation, which corresponds with the findings of Engeström (2004) and Rebernik and Bradac (2006). The operational level personnel compensated for the leadership power-failure by using their own perceptions and/or site and team specific practices (identified in the Publications A4 and A5).

RQ5: How cooperation and quality management practices affect the service purchasing company's trust and satisfaction in the GSOE?

On-target metrics do not ensure the service purchasing company's satisfaction, and implementing exterior elements (such as, ITIL) do not guarantee good quality outcomes and compliance. Even if the overall cooperation and communication were good, insufficient quality practices and outcomes decreases the service purchasing company's trust. Therefore, trust and quality are tightly interconnected. It was found that cooperation, communication, and quality management practices had affected trust. The negative impact on trust was possible to repair only by improving the quality practices. Improving only cooperation and communication elements was not enough.

Based on interviews, discussions and observations, it was identified that cooperation, communication, and quality practices had affected the service purchasing company's trust perception. This study set out with the aim of assessing the impacts of operational level cooperation, interaction, and quality elements in the formation of the service purchasing company's trust and satisfaction. LISREL was used to test the elements' connections and impact on the trust variable.

The standardized solution model and the significant relationships among the variables are presented in the standardized LISREL model (Figure 3.5). with standardized λ and γ-values. All statistically significant t-values are presented in Figure 3.6. Based on the LISREL result, all corresponding variables (cooperation, communication, and quality) were significant and positively or negatively affected the trust variable. Based on the test, the Cooperation variable (KSI1) increased trust variable more than the Communication variable (KSI2). The Quality variable (KSI3) decreased the trust variable. The LISREL results support the participant observation findings from the case IT unit. The reason was the insufficient operational level quality activities and outcomes. The operational level quality challenges diminished the IT unit's trust between people and the supplier's ability to achieve the credibility of the operation (presented in the Publications A1 and A4).
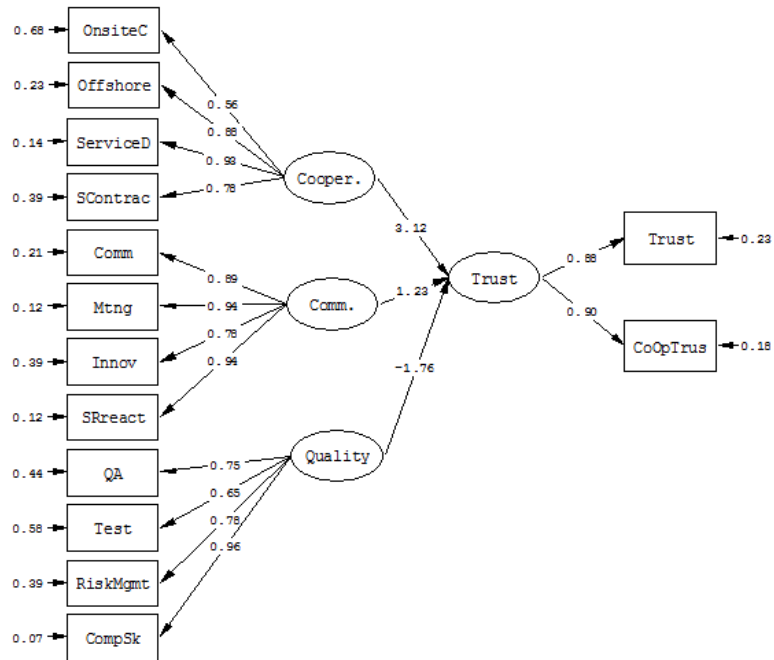
Figure 3.5 LISREL Standardized model
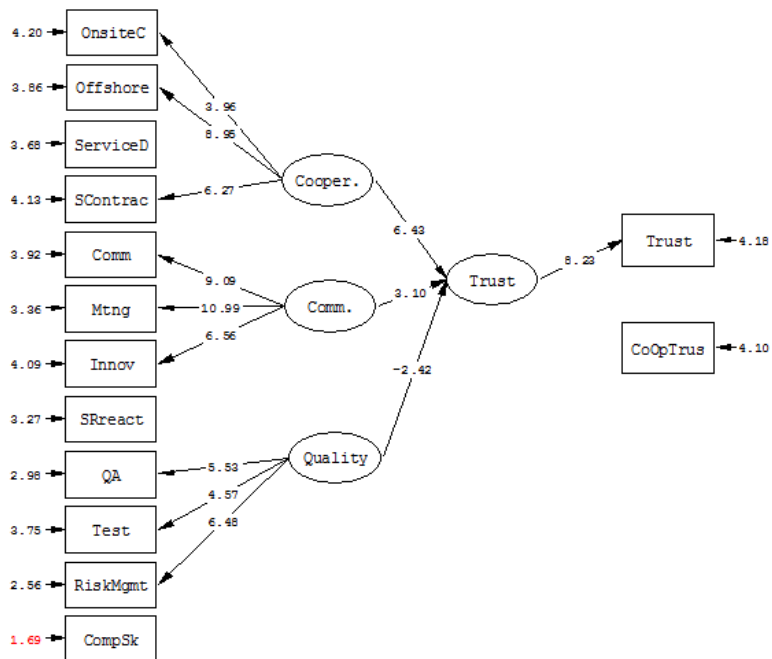
Figure 3.6 LISREL test *t*-values

In Publication A1, it was found that the operational level trust was mainly individual-based trust. This finding corresponds with earlier research (e.g., Lander et al., 2004; Hurley, 2006). The observed trust was established on the operational personnel's individual-based knowledge, capabilities, behavior, and performance. Although the overall cooperation and communication practices may have worked well enough among the GSOE parties, distrust occurred especially during the implementation phase. One cause of distrust was that the service purchasing company's inability to assess the operational level activities and the outcomes due to lack of quality evidences provided by the supplier. There was also a disharmony among the operational level teams that decreased the cooperation and interaction of the globally distributed teams (in the Publication A5).

The GSOE parties had an illusion of their level of quality and producing good quality outcomes. It was found that, in reality, both of the case units and their supplier had a main focus on rapid deliveries and not on ensuring the quality of the deliveries or operation. Both of the case units used Agile and Scrum development methods. Typically, the main focus in Agile and Scrum approaches is to provide fast deliveries, not on ensuring quality compliances and/or developing quality aspects of the operation. Therefore, this illusion of quality can be a wider problem in the IT field.

On the question of metrics, this study found that the GSOE's operational level activities were heavily guided by various metrics defined in the outsourcing contracts and agreements. Based on the observational findings, the suppliers' leaders avoided any potential sanctions, and they required that the defined metrics must be achieved. As a consequence, the performance metrics were prioritized above all other operational level activities. However, the on-target SLAs and metrics did not guarantee the service purchasing company's satisfaction or achieving operational level success (Publications A1 and A4). In fact, the service purchasing company can still be unsatisfied about what comes to the supplier's other capabilities to produce value (cf. the criticality of successful expectation management activities in RQ2). In addition, the metrics and KPIs rarely capture the operational level global realities and evidences.

It was also found that standards and frameworks do not provide by default direct structures and guidance to establish and implement a GSOE-based operation between the service purchasing company and the suppliers. In addition, the processes and practices do not give guidance about how to operate as a mediator between multi-level stakeholders. The standards and frames do not scale, which means that all projects are handled in a similar approach and with a same set of requirements. Therefore, having practical knowledge and experience from the field is important to develop the needed GSOE processes and mode-of-operation.

In Publications A1 and A2, it was discussed that having only good (quality) outcome is not enough. In Publication A2, it was identified that the 'good quality' should be defined based on customer(s) perception and not based on the

company's own perception. The operational level quality activities should not be limited only to fulfil metrics, specifications, standards, or compliance requirements. The current study found that 'quality' was also considered as a capability to produce value (e.g., value to the service purchasing company, end-customers, operation, etc.).

It was found as critical to have named process owners to ensure quality and to develop, manage, and train the GSOE processes and practices instead of merely imitating other companies or practices that are considered as legitimate in the industry field. Implementing exterior elements (such as, ITIL processes) and standardizing services does not guarantee operational level quality, visibility, satisfaction, or success (identified in the Publications A1 and A4). Based on the observations, the service purchasing company's satisfaction was achieved by developing core-operation and practices and not on the exterior elements. IT was also important to incorporate the quality practices as part of the daily routines and activities.

Earlier studies have found that implementing quality management practices is not easy, and the main causes of failures are lack of practical knowledge and realigning behavior (e.g., Beer, 2003; Claver et al., 2003; Taylor and Wright, 2003). It was found that the supplier can be responsible for operational level quality activities up to a certain limit. However, the ownership of quality management cannot be outsourced to the suppliers (identified in the Publications A1 and A2). The service purchasing company must continuously verify that the outcomes fulfil their requirements and defined compliance standards. At the end, the service purchasing company will face the possible consequence if something goes wrong and not the supplier (identified in Publication A2).

Quality management practices can provide a tool to the service purchasing company to retain the operational level control and visibility over the selectively outsourced activities and information and to review various GSOE's operation elements and quality evidences (in Publication A4). In every article, it was discussed that the entire end-to-end operation and operational excellence need to be in a good state (such as, management and leadership, structures, governance, quality management, roles and responsibilities, operational activities' execution, processes, practices, training and knowledge sharing, etc.). If something is not working well or the defined compliance levels are not achieved, eventually it will be visible to the end-customers, which decreases satisfaction and trust (identified in Publication A1). In this study, it was found that quality and quality management practices play a key role to strengthen and develop the global selective outsourcing operation. Also, good operational quality and quality management practices strengthen the credibility of the operation and the intended effects of the operation (identified in Publications A2 and A3).

4. Discussion

In this chapter, the main results and their implications, validity, and limitations of this research are discussed and summarized, and finally future research opportunities are outlined.

4.1. Contributions and Practical Implications

The Publications in this thesis, and this summary have attempted to examine the GSOE-based operation phenomenon and the perceived (quality) issues and non-conformances associated with its operational level activities. Qualitative methods were used to examine the case units' GSOE-based operation. Throughout the case studies and by examining the associated literature, it appeared that exact operational level GSOE-related research focusing on global IT service delivery and globally integrated DQ and CAPA solution fields with quality focus is limited. However, literature from different fields and research with different focuses provided information that the process of setting up GSOE practices in a global multi-stakeholder-based supply chain environment is complex and challenging to put into operation.

The operational level implementation includes various multi-level customer and supplier-ships, contract negotiation, and solution ownership-related aspects. In the GSOE-based operation, both management and leadership from both of the parties are needed, and the lack of those will decrease the success of operational level implementation and cooperation.

In this research, it was identified that operational level management is about managing processes, and leadership is about leading people, people's actions, and behavior. Therefore, the GSOE's managers and leaders (both from the service purchasing company and the suppliers) need to throw themselves into the operational level personnel's everyday reality. However, it is mostly up to the managers' and leaders' potentials, competences, and hard and soft-skills on how they are able to 'fire the operational level crowd' with passion, and how credible they are considered to be as a manager and/or a leader. In addition, leadership includes characteristics, such as potential, charisma, skills, competences, and credibility. The managers and/or leaders either have those characteristics or not.

To ensure the GSOE's operational efficiency and to guide the operational level implementation, it is important that the service purchasing company has clarity in its strategies, objectives, and goals at different organizational levels. They also need to have clarity in their core operation and what kind of value must be

achieved and produced. It is important to communicate the elements of 'what,' 'how,' and 'why' to the operational level personnel (both internal and external) as they need to implement and realize the defined strategies and targets. The operational level personnel must have the knowledge about why something needs to be changed (i.e., transformation requirements and targets), and how it will change (positively or negatively) the operational level work and routines. Therefore, it was identified as critical that the transformation leaders have both theoretical (e.g., formal education) and practical (e.g., experience based/hands-on) knowledge from the field. This knowledge is needed to understand the operational routines, ideologies, frames, and standards instead of merely trying to implement or imitate the same processes, practices, and IT solutions as other companies.

From an operational level point of view, it is critical to give enough time to realize the changes before making new changes. There are always delays in becoming aware of the needed changes and transformation requirements and implementing those into the operational level practices, culture, and values. Realizing the targets to change is a long process. It was revealed that it can be challenging to get the needed commitment across the global teams (internal and external) when the teams' global/local/unit targets overlap. Therefore, leaders are needed to prioritize the targets, and to ensure that all parties, including top-management, are committed, globally, to achieve the planned change, targets, and benefits. Otherwise, it decreases the success of operational level implementation, and its effects.

Among the global GSOE parties, common global culture, silent/tacit information, educational and practical knowledge, and training (or a lack of those) can play a critical role in influencing the operational level personnel's and leaders' assumptions, behavior, and actions. A common global culture and successful operational level implementation of those are needed to establish continuity, security, dynamics, and consistent/predictable operation. Efficient and timely training and guidance are needed to establish the expected norms, rules, and ideologies to make the GSOE cooperation and behavior predictable (e.g., operation, processes, practices, regulations).

From the operational implementation point of view, it is important to ensure that the personnel have the needed formal education, competences, skills, and knowledge to operate according to the expected ideologies, routines, roles, responsibilities, and ownerships. In addition, also practical hands-on knowledge plays a significant role in the operational level success. However, if an organization fully transfers its operational level training responsibilities to another organization or to a supplier, this action may indicate that the needed operational routines, transformation targets, and the effect on the operational level activities and practices are not clear to the organization itself. This research revealed that despite training agreements, the service purchasing company needs to be prepared

for providing both educational and practical knowledge and training to both internal and external personnel at the operational level to ensure successful mode-of-operation and good-quality outcomes.

The service purchasing company should be closely involved with operational level training activities and be actively participating in the formal training sessions together with the supplier to achieve the service purchasing company's defined targets and expected benefits. In addition, the service purchasing company must ensure the process ownership and continuous process improvements. Therefore, it was found that named process owners play a critical role in ensuring the operational level knowledge and compliances.

To improve (i.e., provide value) operation, processes, and practices, the company and its employees need to know the objectives of their operation, customer requirements, and customers' perception, and based on those, define the company and sub-organization level strategies accordingly. This research identified that efficient global quality management and operational excellence practices were tools to control and maintain progress visibility over the operational level activities. However, knowing quality practices and frameworks only in theory was not enough. As an example, the ITIL processes were only external frames that guided and provided a tool or a practice to standardize the operational level activities and the service deliveries. The operational level success and satisfaction were achieved by focusing on core-operation development. The service purchasing company's core operation and producing the expected added value needed to be incorporated into the operational level processes (including ITIL based processes), practices, and ideologies.

A successful connection and incorporation of the core operations, capabilities (such as, skills, knowledge, formal education, work culture, processes, IT solutions), and external frames (e.g., processes, models, standards, and frameworks) can provide new opportunities and capabilities to achieve cooperation-related satisfaction and trust. Although the success of the operation should not only be built based on the implementation of standards and frames, those can provide tools and techniques to identify, evaluate, and assess the operation and practices and to perform continuous improvement activities. In the GSOE-based cooperation, it was also identified that trust had two main forms: trust between people and the credibility of operation.

In a GSOE-based operation, it was found that

- It is important to ensure that the GSOE parties jointly clarify the various levels of customer-ships and supplier-ships and identify the effect of those on the GSOE operation and practices.

- The suppliers need to focus on expectation management activities. Expectation management is an important tool to regularly identify the level of operational level satisfaction and the need of CAPA activities.

- It is important to have named process owners to develop, manage, and train the GSOE processes and practices.

- Customer satisfaction measurement practices need to include end-to-end customer satisfaction metrics (both external and internal customer satisfaction results).

- It is important to focus on defining clear roles, responsibilities, ownerships, ideologies, processes, and practices among the GSOE parties.

- Focus is needed on operational level cooperation, communication, and quality practices, because those will increase or decrease trust and satisfaction. Quality practices are needed in building trust among people and establishing the credibility of the operation.

- The service purchasing company should focus on defining and implementing efficient quality management practices, because those can provide a tool to retain operational level progress visibility inside the service purchasing company.

- Quality management responsibility should not be outsourced to the supplier. Eventually, substandard quality will be visible to the end-customers, and the service purchasing company is the one who faces the consequences, such as, a negative impact on their reputation and their brand, not the supplier.

- Both of the parties need to focus on outsourcing contract negotiations and implementing the expected operating mode. Therefore, focus is needed on defining and implementing a common work culture and circumstances to enable operational level success and trust among the parties.

The main outcome of this work suggests a need to understand the operational level reality and requirements to be able to incorporate the needed transformation (such as, quality and customer centricity) into the GSOE's operational level activities and routines. This study provides new GSOE knowledge for companies to use in developing their global, selective outsourcing-based operation among their suppliers regarding how to make their cooperation and operational level practices more efficient. It is important to ensure effective and timely communication and

information to the operational level personnel. It is important to provide the correct context, 'why' knowledge, and the reason for the work instead of only focusing on 'what' and 'how' knowledge.

The theoretical implications of this thesis create new GSOE knowledge for companies who are using or planning to utilize GSOE-based operation in a global multi-stakeholder environment. The thesis identifies challenges and success factors in a GSOE-based cooperation. The implications for practice are the experiences and implemented processes and solutions from the case units that support global cooperation among various participants and stakeholders. Also an efficient communication and interaction, information and knowledge management, IT service coordination, globally integrated IT solutions enabling information sharing, and implementing global processes that address customer centricity and satisfaction practices are discussed.

4.2. Relevance and Validity of the Research

Currently, the amount of outsourcing arrangements are increasing, despite the knowledge that outsourcing is not an easy and definite way to success. The rapid changes and practices in IT outsourcing force the service purchasing companies and decision makers to be aware of trends and potentials to enhance their outsourcing practices and innovations. In addition, managing outsourcing arrangements demands that the service purchasing companies establish working guidelines and agreements, enhance collaboration between internals' and suppliers' personnel, manage the GSOE operation jointly with the supplier, and provide value to the customers. Therefore, operational level IT outsourcing knowledge is needed both in the business world and in academics.

This research is qualitative and applies inductive reasoning. The real-life operational level challenges that emerged from the case company were the inspiration for this research. The presented findings and generalized solutions originate from the real-life situations. The IT unit and the DQ and CAPA unit implemented the practices and corrective actions and made efforts to develop their operational level GSOE practices and cooperation among the global stakeholders. The problem relevance of developing and implementing operational level GSOEs-based operations, practices, and cooperation were checked against the literature, where similar gaps and/or findings were identified.

The topic of this research is current and relevant for companies, and therefore, it can be assumed that the findings and solutions discussed in this thesis address the needs and challenges of the operational level teams, and therefore, increase their external validity.

The quality of research can be determined by the reliability and validity of the results (Yin 2009; Wohlin et al. 2003; Wohlin et al. 2012). Four tests are proposed: internal validity, external validity, construct validity, and reliability.

Internal validity is the degree to which the results are directly related to the independent variable, not some other uncontrolled (or biased) variable, and the conclusions reflect what was studied (Fraenkel and Wallen, 2000). The internal validity was addressed via several operational situations and cases at the case company and its suppliers, multiple sources of evidence (such as, interviews, surveys, and other extensive amount of case units' internal materials), and using iterative approach to gradually build the final outcome. The findings were presented to the members of the case units, and evaluation of the findings, quality, efficacy, and immediate feedback was gathered from the case units. Based on the received feedback and discussions, further improvements were conducted. In addition, each individual publication was developed in cooperation with other research experts.

External validity is the degree to which results are generalizable or applicable, and the results from one setting apply to another setting, group and environment (Fraenkrial and Wallen, 2000). Several industrial experts (from the case units and the suppliers) with different types of organizations and domains provided their views during this research, and therefore, increased the generalizability of the results. As an example, all members from the case IT unit participated in the interviews and surveys, and all members from the supplier's global quality team associated with the operational level activities were interviewed. The supplier's global quality team and the offshore team members answered to the survey. However, it is acknowledged that the results are limited to the studied case units and their GSOE-based operation, and therefore, further studies in different industry fields and GSOE setups are needed to generalize the results further.

Construct validity refers to the degree to which a test measures what it claims to be measuring (Yin 2009; Wohlin et al., 2012). The case units' real-life situations played a key role in designing the research problem. The research questions were viewed from five interdependent perspectives by using five publications and also reflected against the existing literature. To ensure construct validity, various ways were used to collect the research data from the case units: action research-based hands-on experience, case research, observations, interviews, and surveys. The research analysis and conclusions were made based on the interviews and surveys. The findings were complemented with hands-on experience and observational findings. This thesis was evaluated during regular meetings with research experts and feedback was used to improve the results and outcome.

Reliability focuses on the quality of measurement, such as consistency or repeatability, and the purpose is to ensure that other researchers can repeat research and obtain similar results based on described procedures (Yin 2009; Wohlin et al., 2012). In the case study, the reliability depends on quality of instead

of quantity. The used research methods and processes are documented and described for each individual publication, but it is acknowledged that this research is unique as it has been conducted at a certain time (rather long period of time) by certain individuals. It is also recognized that collecting data in a qualitative manner (such as, using semi-structured interviews) has its limitations. As an example, during the interviews, different interviewees may potentially react differently to certain issues, people, and situations, and therefore, potentially influence the obtained results.

4.3. Limitations and Future Research

The main limitation of this study is the long time period, which started in 2008 and ended in 2017. Therefore, a lot has happened also from a knowledge-based evolvement point-of-view. The active research and observation phase in the case units happened during 2009-2013. First and foremost, this thesis relies on the data collected from only one case company and its two global case units (the IT unit and the DQ and CAPA unit) and their suppliers. Therefore, with a small sample size, caution must be applied, as the findings might not be directly transferable to other global selective outsourcing environments and business fields without context and situation-specific changes and development.

In this research, the main focus was given to operational level global IT services, developing the global processes and practices and conducting selective outsourcing practices, and cooperation activities. However, various elements, for example, from SCM and operations had a significant effect on the case units' IT services and operational level activities. Although this research does not focus on corporate level elements, it is recognized that the corporate level strategies and decisions had a direct effect on the operational level approaches and decisions. It is also notable that producing global IT services was not the case company's core-competence and focus area. This sets some limitations on the generalization of the findings and results. It is also recognized that the research focused mostly on analyzing the phenomena and operational practices instead of providing operationalization by defining variables into measurable factors. This limitations serve as foundations for future research.

It is recognized that all companies do not have the objective of obtaining benefits from extensive selective outsourcing strategies, implementing a great number of ITIL processes within a short period of time, or implementing globally integrated and contradictory company owned processes and practices. Therefore, further research from different companies and industry fields could advance the findings and identified solutions further.

The results would be interesting to evaluate when conducting a similar case study into different types of GSOE-based operations and supply chain environments in other companies and testing the transferability of the findings and models.

Another issue which may require further research is the role that outside organizations play in implementation projects. For example, IT suppliers, trade customers, suppliers, insurance company, and LSPs as they facilitate and analyse the GSOE operation, quality, and activities from their own vantage point and utilize the data to design strategies to develop their practices, quality, and performance to fulfil their own needs more effectively. The expectation management and knowledge and training arrangements should be further studied in a GSOE setup. Also behavioral sciences would provide an interesting viewpoint for future research.

5. Summary

The IT outsourcing field has expanded rapidly during the past decades and has witnessed a transformation in terms of technology that enables the utilization of offshoring services. This field also faces increased complexity and performance requirements. Therefore, operational focus on the company's product or their technology is not enough for the companies to succeed and compete against their global competitors. Companies must concentrate on their customers' perception and answer constantly changing customer needs. Companies also need to provide good quality products and services and to establish customer-centric practices across the entire supply chain. These will require investments in developing global end-to-end processes and practices and investments in implementing those to all global stakeholders, worldwide.

This research contributes to the field of operational level IT services operating in a global selective outsourcing environment (GSOE). The research analyses GSOE's characteristics, interdependencies, and success and failure factors. This research was carried out as a compilation dissertation containing five publications including five research questions. The motive for the research questions originated from the case units' real-life needs and challenges in the case units. The research case units are the global IT unit and the global DQ and CAPA unit from Nokia Devices. The research questions are discussed in the publications and in this summary. Each publication covers several large areas that would include several topics for further research. The research approach is qualitative. The action research method, interviews, surveys, and observations were used to get deeper operational level insight into the case units' GSOE-based operation, structures, and practices. The main theoretical foundation is built from supply chain management, outsourcing, management and leadership, interaction, and quality management theories and concepts.

In this thesis, an important finding was that the GSOE parties jointly clarified the various levels of customer-ships and corresponding supplier-ships, and identified the effect of those on the GSOE operation and practices. Therefore, customer satisfaction measurement practices need to include end-to-end customer satisfaction metrics including both external and internal customer satisfaction results. Both of the parties need to focus on outsourcing contract negotiations. However, even more focus is needed on defining and implementing a common work culture and circumstances to enable operational level success and trust among the GSOE parties.

It is important to focus on defining clear roles, responsibilities, ownerships, ideologies, processes and practices among the GSOE parties. Named process owners are needed to develop, manage, and train the GSOE processes and

practices to the global stakeholders. In addition, the suppliers need to focus on expectation management activities. Expectation management practices are important tools to regularly identify the level of operational level satisfaction from the customer viewpoint and the need of CAPA activities.

The service purchasing company should focus on defining and implementing timely and efficient quality management practices, because those can provide a tool to retain operational level progress visibility inside the service purchasing company. Quality practices are needed in building trust among people and in building the credibility of the operation. Quality management responsibility should not be outsourced to the supplier. In the end, substandard quality will be visible to the end-customers, and the service purchasing company is the one who faces the consequences, such as, a negative impact on their reputation and their brand and not on the supplier. Focus is also needed on operational level cooperation, communication, and quality practices, because those increase or decrease the service purchasing company's trust and satisfaction.

The power-expectations and power-vacuum in a GSOE's operation must be fulfilled in a creditable way by all of the GSOE parties across the global supply chain. However, it was identified that the managers and leaders used an 'information leadership' approach instead of focusing on long-term operation development, people, and establishing successful and motivating relational governance among the parties.

It was found that the lack of progress control, readily available information, and not being able to affect end-to-end decisions and practices can decrease the service purchasing company's GSOE cooperation satisfaction. In this study, it was found that the operational level progress and information visibility was needed to retain the ownership inside the service purchasing company and to avoid getting into a 'supplier trap.' One way to avoid getting into a 'supplier trap' is an approach where the service purchasing company holds the ownership of its solutions.

The contributions summarized in this thesis provide a better understanding of the operational level GSOE-based operation, structures, and practices. The contributions help to increase communication and coordination across the GSOE's stakeholders with an outcome of improved quality and satisfaction. Finally, by applying these results, service purchasing companies and their personnel and stakeholders can respond to operational level changes and transformation needs in an efficient manner.

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PUBLICATION A1

The Challenge of Global Selective Outsourcing Environment: Implementing Customer-Centric IT Service Operations and ITIL Processes

PUBLICATION A2

A Globally Integrated Supply Chain Delivery Quality Strategy: Transformation Insights at the Nokia Devices Unit

PUBLICATION A3

Global corrective action preventive action process and solution: insights at the Nokia Devices operation unit

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PUBLICATION A4

Evaluation Factors in Successful Global Selective Outsourcing Operations

PUBLICATION A5

Developing Offshore Outsourcing Practices in a Global Selective Outsourcing Environment – The IT Supplier's Viewpoint

APPENDICES

Appendix 1: The themes of the interviews

Themes	Discussion topics
Theme 1: General cooperation	- Working with the supplier - The success of product development - The compliance level of the product development process (how well PD processes are followed and understood) - The success of application maintenance and support (how well AMS processes are followed and understood, including ITIL) - The success of knowledge transfer between create and AMS teams (delivery preparation activities)
Contracting – PO and SO maturity	- Who creates the PO/SO proposal - The maturity level of the PO/SO - How difficult contracting is as a process and as a situation (timing, reviews, approvals, etc.) - Do deliverables match to the contracts - Are quality aspects and deliverable acceptance criteria defined in the POs/SOs - AMS contract fulfilling expectations - AMS processes and practices in line with expectations
Quality assurance	- Requirements management - Agile development approach, backlog freezing management - Scope changes during the development activities - Changes in sprints - Change management and control management and definitions - Quality management practices and documentation (quality plans created, reviews, milestone quality reviews, audits, current state analyze, processes and practices, coding guidelines, documentation & version control, communication) - Quality planning and documentation practices - Quality-related challenges - IT assurance aspects (Risk, Security, Privacy, Continuity) - Test management
Risk management	- How actively and openly suppliers report risks? - Are risks communicated clearly enough? - Are risks collected in the risk log? - How many risks have been realized and/or have escalated? - How well suppliers reacted to the realized/escalated risk situations?
Communication and meeting practices	- The level of communication among the parties - Is the communication "the right kind of communication?" - Is communication proactive? - How well meetings are managed and prepared? - Benefit of the meetings - The level of trust and confidence - The level of proactive status reporting (project/testing status, challenges, development ideas, proposing new solutions/w-o-w) - Mode of operation of the suppliers (onsite team, offshore team)

	- The level of operational level progress visibility
Resources and competences	- Ability to access to the supplier's top-end IT talents in critical areas - Knowledge of supplier's competence development plans (Would you like to know?) - The level of competence levels (onsite – offshore and technical - management) - The level of training activities - Do new personnel have enough coaching/mentoring/help available? - The level of offshore team leading, planning, support/coaching and communication to other teams
Speed, flexibility and innovation	- Are supplier processes and service offerings scalable and flexible? - Is supplier capable to ramp capacity/projects/services up and down on short notice? - Have suppliers provided innovation and process improvements?
Open comments	- What are the top 3 things that you would like to be fixed/developed (e.g., in operational level/in services)? - Any other comments/questions/feedback that you would like give to suppliers?

Appendix 2: Survey questions

Give a numeric value (1= the lowest/ most negative, 5=the highest/ most positive) to following questions related to the cooperation with the IT supplier:

Topics/Questions
How good is global cooperation in a broader point-of-view?
How well are IT Service deliveries succeeding?
How well do the deliverables fulfill the contracts?
How successful are IT service contracts and the contracting process?
How successful are quality management practices?
How successful are test management practices?
How successful are risk management practices?
How good is the IT supplier's risk reaction time?
How successful is the communication with the IT supplier?
How successful are the meetings and meeting practices with the IT supplier?
What is the level of trust towards the supplier?
How successful is the cooperation with the onsite team?
How successful is the cooperation with the offshore team?
How good are the IT supplier's operational level knowledge and skills?
How successful the IT supplier is to provide innovation?

Appendix 3: LISREL syntax

```
DA NI=14 NO=40 MA=KM
LA
*
Trust CoOpTrust OnsiteC OffshoreC ServiceDel SContracts Comm Mtng Innov SRreact QA Test
RiskMgmt CompSk
KM
*
1.000
.795 1.000
.536 .473 1.000
.817 .812 .450 1.000
.831 .896 .430 .825 1.000
.712 .734 0.263 .754 .728 1.000
.775 .833 .421 .784 .748 .633 1.000
.835 .820 .543 .833 .793 .656 .851 1.000
.635 .740 .554 .752 .717 .441 .769 .711 1.000
.856 .844 .657 .781 .767 .700 .806 .884 .712 1.000
.539 .552 .813 .523 .554 .408 .544 .630 .543 .658 1.000
.471 .489 .754 .370 .446 .370 .385 .573 .3486 .640 .877 1.000
.701 .753 .446 .629 .680 .729 .734 .699 .697 .856 .507 .513 1.000
.802 .825 .591 .864 .840 .695 .769 .866 .744 .809 .735 .619 .729 1.000
MO NY=2 NX=12 NK=3 NE=1 GA=FU,FR, BE=FU,FR
FI LX 1 2 LX 1 3 LX 2 2 LX 2 3 LX 3 2 LX 3 3 LX 4 2 LX 4 3 LX 8 2 LX 5 3 LX 6 1 LX 6 3 LX
7 1 LX 7 3 LX 8 1 LX 8 3 LX 12 3 LX 9 2 LX 10 1 LX 10 2 LX 11 1 LX 11 2 LX 12 1 LX 12 2
FR LX 2 1 LX 1 1 LX 4 1 LX 6 2 LX 7 2 LX 5 2 LX 10 3 LX 11 3 LX 9 3
FR LY 1 1
VA 1 LX 3 1 LX 8 2 LX 12 3 LY 2 1
Path Diagram
OU AL
```

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- Computer Science
Faculty of Social Sciences, Business and Economics
- Information Systems

Anne-Maarit Majanoja

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