



# Master Degree's Thesis

Log950 Logistics

## *Procurement Outsourcing*

Author: Yingru Han

Number of pages including this page: 76

Elesvågen, 18.05.2016



**Molde University College**  
Specialized University in Logistics

## Mandatory statement

Each student is responsible for complying with rules and regulations that relate to examinations and to academic work in general. The purpose of the mandatory statement is to make students aware of their responsibility and the consequences of cheating. Failure to complete the statement does not excuse students from their responsibility.

Please complete the mandatory statement by placing a mark <u>in each box</u> for statements 1-6 below.		
1.	I/we hereby declare that my/our paper/assignment is my/our own work, and that I/we have not used other sources or received other help than mentioned in the paper/assignment.	<input checked="" type="checkbox"/>
2.	I/we hereby declare that this paper <ol style="list-style-type: none"> <li>1. Has not been used in any other exam at another department/university/university college</li> <li>2. Is not referring to the work of others without acknowledgement</li> <li>3. Is not referring to my/our previous work without acknowledgement</li> <li>4. Has acknowledged all sources of literature in the text and in the list of references</li> <li>5. Is not a copy, duplicate or transcript of other work</li> </ol>	Mark each box:  1. <input checked="" type="checkbox"/>  2. <input checked="" type="checkbox"/>  3. <input checked="" type="checkbox"/>  4. <input checked="" type="checkbox"/>  5. <input checked="" type="checkbox"/>
3.	I am/we are aware that any breach of the above will be considered as cheating, and may result in annulment of the examination and exclusion from all universities and university colleges in Norway for up to one year, according to the <a href="#">Act relating to Norwegian Universities and University Colleges, section 4-7 and 4-8</a> and <a href="#">Examination regulations</a> section 14 and 15.	<input checked="" type="checkbox"/>
4.	I am/we are aware that all papers/assignments may be checked for plagiarism by a software assisted plagiarism check	<input checked="" type="checkbox"/>
5.	I am/we are aware that Molde University College will handle all cases of suspected cheating according to prevailing guidelines.	<input checked="" type="checkbox"/>
6.	I/we are aware of the University College's <a href="#">rules and regulation for using sources</a>	<input checked="" type="checkbox"/>

# Publication agreement

ECTS credits: 30

Supervisor: Steinar Kristoffersen

## Agreement on electronic publication of master thesis

Author(s) have copyright to the thesis, including the exclusive right to publish the document (The Copyright Act §2).

All theses fulfilling the requirements will be registered and published in Brage HiM, with the approval of the author(s).

Theses with a confidentiality agreement will not be published.

I/we hereby give Molde University College the right to, free of charge, make the thesis available for electronic publication:  yes  no

Is there an agreement of confidentiality?  yes  no

(A supplementary confidentiality agreement must be filled in)

- If yes: Can the thesis be online published when the period of confidentiality is expired?  yes  no

Date: 13.05.2016

# Preface

Procurement outsourcing (PO) was an un-known field for me. However, procurement or purchasing as a well-known business field, and outsourcing as a rising business strategy (such as more and more job agencies, increasing amount of third party logistics firms appear in the market) have captured my interest. Yet it has not been no an easy process to accomplish this thesis, after many day's struggle and effort, it was finally born as a child into the world.

During this long process, I got encouragement, inspirations and some pushes from my great supervisor who is responsible and have faith in me, therefore, with my gratitude, I thank very much to him, for his patience, knowledge sharing and responsible spirit.

My family members have also offered great spiritual support when I was frustrated, hence, my great thanks also goes to them.

My dear friend, Isabella Tan, has offered her experiences on thesis writing, which led to a great inspiration for me. I would therefore thank much for her help and inspirations.

At last, but not least, I also would like to thank myself, for what I have achieved on this research work and also for the persistence and never give up spirit of my own. For this master writing process, I have experienced hopeless, confusion, to hopeful, joy of searching, learning, writing and accomplishment. This taught me to try to find solutions, always, no matter how impossible the task seems like. I will also carry on this spirit into future work and daily life.

# Abstract

**Research purpose-**The purpose of this study is to identify the motivations behind the procurement outsourcing decision, find out what specific activities in a procurement cycle the firms have outsourced and what the benefits and challenges they have experienced, in the context of Norwegian society.

**Approach-** A review of various literature on procurement, outsourcing and procurement outsourcing, to identify what researches have been done before and what research need to be done in this paper. The limited literature on procurement outsourcing marks the significant contribution of this empirical research work. Two theories: Transaction Cost Economics (TCE) and Principal-Agent Theory, have been applied, in order to try to explain certain behaviors behind outsourcing, such as opportunistic behavior of suppliers, due to human nature of self-interest; bounded rationality of both customers/(principals) and the suppliers/(agents) and the problems of the incongruent goals of the outsourcer and procurement outsourcing service vendor. Hence, I also bring in the topic of risk management and discuss it briefly.

**Findings-**Findings shows that most commonly experienced benefits by outsourcing procurement functions from different Norwegian public institutes and private firms are cost savings, improved core business focus and shared knowledge, followed by other benefits. This is largely congruent with earlier research. However, the experienced challenges/risks are vastly different from each other, some organizations experienced reduced control with service vendors, others found it difficult to cooperate with their suppliers, whilst some customers stated the services they received were not sufficiently customized, and one institute experienced additional hidden cost problems after outsourcing implementation, which challenges the TCE theory to some degree. Risk management seems very necessary in such a context, and much more research and practices have to be carried out in the future for the procurement outsourcing as business solution to grow and bloom.

**Key words:** *Procurement, outsourcing, procurement outsourcing, Transaction Cost Economics (TCE), Principal-Agent Theory, benefits, challenges /risks.*

# Table of contents

- List of Tables.....9
- List of Acronyms.....10
- Chapter 1 Introduction .....11
  - 1.1 Procurement.....11
  - 1.2 Outsourcing .....12
  - 1.3 Procurement outsourcing .....13
  - 1.4 Procurement in Norway .....14
    - 1.4.1 Stricter regulations on public procurement .....15
  - 1.5 Research purpose .....15
  - 1.6 Research question .....15
- Chapter 2 Literature Review .....17
  - 2.1.1 Procurement or purchasing?.....17
  - 2.1.2 Procurement Organization Structures .....18
    - 2.1.2.1 Centralized Procurement System (CPS) .....18
    - 2.1.2.2 De-Centralized Procurement System (DCPS) .....18
    - 2.1.2.3 Hybrid buying system .....19
  - 2.1.3 The Procurement Cycle .....20
  - 2.1.4 Public vs private procurement.....23
  - 2.1.5 E-procurement.....24
    - 2.1.5.1 Online Bidding, Digital Signatures, and e-Reverse Auctions.....24
    - 2.1.5.2 Benefits and challenges by implementing e-Procurement.....25
- 2.2 Outsourcing .....26
  - 2.2.1 Definition of outsourcing .....27
  - 2.2.2 Types of outsourcing .....27
  - 2.2.3 Development of outsourcing in three generations.....28

2.2.3.1	Tactical outsourcing .....	28
2.2.3.2	Strategic outsourcing .....	28
2.2.3.3	Transformational outsourcing: .....	28
2.3	Theoretical bases of outsourcing .....	29
2.3.1	Transaction cost Economics (TCE).....	29
2.3.2	Principal-Agent Theory (Agency Theory) .....	32
2.4	Procurement outsourcing .....	34
2.4.1	Benefits of procurement outsourcing .....	34
2.4.1.1	Cost reduction .....	34
2.4.1.2	Core competence/business focus .....	34
2.4.1.3	Access higher levels of expertise and innovations .....	35
2.4.1.4	Risk sharing .....	35
2.4.1.5	Increased flexibility .....	35
2.4.2	Risks of procurement outsourcing.....	36
2.4.2.1	Increased dependency-loss of control .....	36
2.4.2.2	Internal resistance .....	36
2.4.2.3	Integration of two organizations/ company cultures.....	37
2.4.2.4	Hidden cost .....	37
2.4.2.5	Discontinuity of service delivery .....	37
2.4.2.6	Lock-in of specific asset .....	37
2.4.3	Risk management in outsourcing .....	38
2.5	Procurement outsourcing in practice .....	40
2.5.1	A successful history ---- Thames Water (England).....	40
2.5.2	A fiasco with complication-outsourcing of IT .....	40
Chapter 3	Methodology .....	43
3.1	Research design .....	43
3.2	Sampling population.....	43

3.3	Data collection.....	43
3.3.1	Primary data .....	43
3.3.2	Secondary data .....	44
3.4	Validity, Reliability and triangulation .....	44
3.4.1	Validity.....	44
3.4.2	Reliability .....	44
3.4.3	Triangulation .....	45
3.5	Pretest of the survey .....	45
3.6	Ethics .....	45
3.7	Limitations of the survey .....	46
3.8	Flaws of this survey .....	46
Chapter 4	Survey results, analysis and discussions .....	47
4.1	Response rate in the sample.....	47
4.2	Motivations behind outsourcing decisions .....	48
4.3	What procurement function were outsourced?.....	49
4.3.1	Contract negotiation .....	49
4.3.2	Insurance work .....	49
4.3.3	Selection of suppliers .....	49
4.3.3.1	Recommender systems.....	50
4.3.3.2	Recommender systems vs outsourcing? .....	51
4.4	Incremental or complete outsourcing? .....	51
4.5	Satisfaction level of PO services .....	52
4.6	Hidden cost.....	53
4.6.1	Interpretation of “procurement cost was increased” .....	53
4.7	Experienced benefits by outsourcing.....	54
4.8	Experienced challenges by outsourcing .....	54
4.8.1	Reduced control on procurement progression.....	55



4.8.2	Difficult to co-operate with outsource vendor .....	55
4.8.3	The speed of change was slower due to complex access to necessary documentation	
4.8.4	Service was not customized, and needs were not met accurately. ....	56
4.8.5	Agreements made between trade-brokers is not so visible; Service providers have been too reluctant to react on delivery schedule and need changes .....	56
Chapter 5	Summary and future research.....	59
5.1	Future work.....	61
Reference list.....		62

# List of Tables

Table 1-1	Public procurement is increasing .....	14
Table 2-1	Advantages, disadvantages of different buying systems .....	19
Table 2-2	Procurement cycle.....	20
Table 2-3	Outsourcing's three generations .....	29
Table 2-4	Overview of principal-agent theory .....	33
Table 2-5	Benefits of procurement outsourcing .....	35
Table 2-6	Challenges of procurement outsourcing .....	38
Table 4-1	Motivations behind outsourcing action.....	48
Table 4-2	Outsourced procurement function .....	49
Table 4-3	Recommender systems VS outsourcing .....	51
Table 4-4	Satisfaction level of PO services .....	52
Table 4-5	Experienced benefits by outsourcing .....	54

# List of Acronyms

CPS: Centralized Procurement System

DCPS: Decentralized procurement System

eRA: E-reverse auction

ERP: Enterprise Resource Planning

OECD: Organization for Economic Cooperation and Development

PO: Procurement outsourcing

RFI: Request for Information

RFP: Request for proposal

RFQ: Request for Quotation

ROI: Return on Investment

SLA: service Level Agreement

TCE: Transaction Cost Economics

TCT: Transaction Cost Theory

# Chapter 1 Introduction

Procurement outsourcing is a relative new business area. It has great economic potential on cost savings, and improvement of the enterprise performance on a strategic level. It is a rising business strategy.

## 1.1 Procurement

Procurement, which encompasses all activities required to get the goods/services from suppliers to buyers, has been playing an essential role to the economic performance of an enterprise, which aims at profit making. It plays also an important role on public institutions, which have political and social responsibilities as their key concerns.

Procurement has supply as its primary task, and therefore, has a key role in supply chain management.

According to van Weele (2010), procurement is referred to buying, which bases on the Total Cost of Ownership (TCO) rather than on a purchasing price. TCO concerns the cost of owning something for its lifetime.

Procurement is a long and complex process which covers a series of activities: from needs identification, specification, to supplier market research, supplier selection, to issuing request for quotation (RFQ), inspections, controls, to evaluate supplier's performance and many more. In general, these activities can be categorized into some groups, and here we apply a framework which is adapted from Brewer (2014), because its simplicity and thoroughness. In this framework, procurement cycle is divided into 5 phases: "Establish a purchasing strategy, evaluate suppliers, screen and select suppliers, procure materials, measure and manage supplier performance".

With the development of IT technology, e-procurement (procurement through internet) has been much applied. E-reverse auction (eRA) is the most popular form of it. By applying e-procurement, it saves time and transaction cost for both buyers and suppliers.

## 1.2 Outsourcing

On the need for greater efficiencies, cost reduction has forced many organizations to specialize in a limited number of key areas (McIvor, 2009). This has led the organizations to outsource activities traditionally were operated in-house.

Since 1996, outsourcing has grown dramatically (Van Weele, 2010). McIvor (2009) declares that, with time, outsourcing has moved on from peripheral oriented activities such as cleaning, catering and security, to encompass more critical business activities such as design, manufacture, human resource, and logistics.

Outsourcing can be applied in general in two forms: partial or complete outsourcing. Offshoring is also a special type of outsourcing, and it has been applied through decades. The term usually refers to outsourcing of the work to a foreign low-cost country. For example, China has been a popular destination of offshoring for European textile and electronic industry, and India is popular for IT support and call centers.

Outsourcing in general has evolved through three generations: tactical, strategic and transformational stages.

Tactical outsourcing is a problem-solving oriented strategy, it focuses on cost saving through outsourcing of operational activities such as IT systems, payroll or call center services (Kedia and Lahiri, 2007). It is a short-term action.

Strategic outsourcing is more long-term, and characterized by joint-ventures or strategic alliance (Lee et al. 2010).

Transformational outsourcing focuses on win-win long-term relationship. It stresses competitive advantage on enterprise-level and risk sharing between suppliers and buyers.

## 1.3 Procurement outsourcing

Procurement outsourcing is a broad term encompassing a wide range of strategic and tactical activities, and therefore may become difficult to study precisely (Brewer 2014).

The motivation for procurement outsourcing is often to improve performance (Brewer 2014).

There are different benefits by outsourcing the procurement function.

Favre et al. (2003) says procurement outsourcing has been shown to potentially reduce operational costs by 15–20%, and Hesketh (2008) says administrative costs could be saved by up to 75%.

In addition to cost saving on transactional level and increased process discipline (John, 2003), increased contract compliance (Favre et al. 2003) are also some of the benefits of procurement outsourcing. Some other benefits of procurement outsourcing are: freeing up certain assets to core business, external expertise sharing, and increased flexibility.

According to Amaral et al. (2006), outsourcing procurement can reduce supply-base visibility, leading to unauthorized part or supplier substitutions, overbilling, and risk of supplier opportunism.

As much as benefits, there are also many challenges waiting ahead of procurement outsourcing. Becoming too dependent on the outsourcing vendor, losing control of supplier performance, costs, and legal issues (Parry et al. 2006), internal resistance and hidden cost are some of the typical challenges.

## 1.4 Procurement in Norway

Table 1-1 Public procurement is increasing

Public purchasing, NOK million				
	2014 <sup>1</sup>	Share	Per cent	
			2013 - 2014	2010 - 2014
<b>Total public purchases (A + B)</b>	<b>461 508</b>	<b>100.0</b>	<b>5.3</b>	<b>25.6</b>
<b>A. General government</b>	<b>379 936</b>	<b>82.3</b>	<b>7.7</b>	<b>25.5</b>
Central government excluding defence affairs	185 767	40.3	10.2	31.3
Defence affairs and services	22 583	4.9	3.0	9.5
Local government	171 586	37.2	5.6	22.0
<b>B. General government enterprises</b>	<b>81 572</b>	<b>17.7</b>	<b>-4.5</b>	<b>26.0</b>
Central government excluding oil	4 873	1.1	13.2	17.6
Oil sector	71 231	15.4	-6.4	25.7
Local government enterprises	5 468	1.2	8.6	38.7

<sup>1</sup> The figures for the latest year is provisional.

Source: SSB (Statistics Central Agency-Public purchases 2014)

As Table 1-1 shows, the public procurement, which encompasses both public administration and public business operations, is increasing. From 2013-2014, it increased with 5.3%, which is 451.508 billion Norwegian kroner. This was around 14.57% of the national GDP.<sup>1</sup>

From 2010-2014, public procurement had increased 25.6%.

The great increase indicates that procurement is playing an increasingly important economic role in the national economy, hence, excellent management of it is necessary. This offers the outsourcing strategy a great economic potential.

<sup>1</sup> (The data is calculated as such:  $(451.508 \times 6,3) / 449.8 \approx 14.57$  the GDP of 2014 was 449.8 million U.S.A dollars (World-Bank, 2016), and the average currency was USD: NOK = 1:6.3(DNB, 2016))

### **1.4.1 Stricter regulations on public procurement**

The Norwegian government released an article named “*Stricter enforcement of public procurement*” in 2011. According to the article, the government had presented a proposal for stricter regulation for public procurement. One of the important intentions in the proposal was to counteract gross violation of the regulations, with special concern on violation of the requirement for open competition on public procurement (Ministry of Government Administration, Reform and Church Affairs, 2011).

Svane and Hansen (2015) stated that the legislation of public procurement, which Norway had been following- Procurement Act of 1999 (The Act) was under revision. New regulations of public procurement in EU would carry out in 2016, and it would be incorporated in Norway. The new regulations will increase access to public procurement markets for SME (Small and Medium-sized Enterprises) and other underrepresented categories of bidders (Svane and Hansen , 2015).

By stricter regulations on public procurement in Norway, the competition environment would be improved, and it may lead to a more effective public procurement practice in the country.

## **1.5 Research purpose**

The purpose of this study is to identify the motivations behind the procurement outsourcing decisions, find out what specific activities in a procurement cycle the firms have outsourced and what the benefits and challenges they have experienced. Hence, through the study of earlier research and my own analysis, I aim to suggest some solutions to reduce the challenges.

## **1.6 Research question**

What benefits and challenges have Norwegian firms who outsourced their procurement function experienced, and how they may implement strategies and processes to mitigate the risks?





## Chapter 2 Literature Review

To perceive a holistic view on the topic of “procurement outsourcing”, a literature review is needed. Because it consists vast of the study on this topic (or peripheral areas of such a topic), which offers a guideline of understanding the topic. By reviewing what has been done, it is easier to identify what should be done in the future research. The source of chosen literature in this thesis are published journal articles, books, websites and master thesis.

### 2.1.1 Procurement or purchasing?

Procurement is often interchanged with the concept of purchasing. However, there are both similarities and differences.

Van Weele (2010) defines procurement as following:

*“All activities required in order to obtain the product from the supplier to its final destination. It encompasses the purchasing function, store, traffic and transportation, incoming inspection, and quality control and assurance”* (p. 6).

From this definition, we shall understand that purchasing and procurement is not identical, purchasing is a part of procurement process.

Van Weele (2010) defines purchasing as:

*“The management of the company’s external resources in such a way that the supply of all goods, services, capabilities and knowledge which are necessary for running, maintaining and managing the company’s primary and support activities is secured at the most favorable conditions”* (p. 3).

Quayle et al. (2000) argues that purchasing is more concerned with commercial relationship establishment and management, whereas procurement is in addition concerned with the control aspects on physical material and service delivery after the contract has been signed, or the order has been placed.

These two terms are often used interchangeably, which makes it difficult to distinguish them purely by theoretical definitions. Therefore, in this research, we also ignore the difference between procurement and purchasing and see them as the same concept.

As Quayle et al. (2000) observed, in the mid- 1970s, only 21 percent of procurement managers reported that they frequently participated in their employer's corporate planning process, but it increased to 43 percent by the mid- 1980s. This leads to the idea that, procurement has evolved its role in corporate strategy and is gradually becoming more important in corporate performance.

This idea is consistent with the Reck and Long (1998). They argue that the procurement function has over time become an integral part of every firm's competitive success.

## **2.1.2 Procurement Organization Structures**

In general, there are three types of organizational structures: Centralized, decentralized, and hybrid buying system of centralized and decentralized procurement systems. The most employed ones are centralized procurement and decentralized procurement.

### **2.1.2.1 Centralized Procurement System (CPS)**

Centralized procurement process is a top-down process, where communication and coordination emanate from the top to down, while control and internal program consistency are enhanced by centralization (McCue and Pitzer, 2000).

### **2.1.2.2 De-Centralized Procurement System (DCPS)**

Cavinato (1992) argues that this organizational model consists of procurement being located at different field sites and the personnel report directly to the general manager or line-of-business manager only at these locations. It appears that firms with decentralized procurement also have decentralized logistics. In this way, it serves to minimize corporate overhead (Cavinato 1992).

Distinction between the centralized and decentralized buying system is easy to observe: Whilst there is only one purchasing organization in CPS, there are different or perhaps specialized purchasing departments in each location of the firm in DCPS.

### 2.1.2.3 Hybrid buying system

Hybrid buying system combines the advantages of both CPS and DCPS, and can be applied according to, for example, the value of items and plant location.

Each system has its own advantages and disadvantages, and they are briefly summarized as follows:

Table 2-1 Advantages, disadvantages of different buying systems

	<b>Advantages</b>	<b>Disadvantages</b>
CPS	<p>Easy to apply scales of economy.</p> <p>Lower transportation cost per unit</p> <p>Reduced / eliminated double procurement effort</p>	<p>Difficult for tailored service.</p> <p>Problematic to utilize local resources.</p> <p>Create internal hierarchy/bureaucracy.</p>
DCPS	<p>Reduction in transportation cost and lead time</p> <p>Close coordination with local production schedules</p> <p>Promotes democratic practices</p>	<p>Firms are geographically dispersed</p> <p>More expensive administrative cost, and more expensive cost on supplier relationship management.</p>

Source: Author's summary from Neupane's work (2012)

As we know, the procurement is a process, which consists of many different activities. We name such a process as a procurement cycle.

### 2.1.3 The Procurement Cycle

*“The procurement cycle is more or less a road map of the activities within a procurement function. It establishes key activities required at every stage of the procurement process while at the same time providing a benchmark for the monitoring and evaluation of the process by procurement monitors and evaluators. “Explained by Geo (2008, p.35).*

As always, there are several different opinions about what activities should be included in a procurement cycle. Some theorists made a model with eight steps, while others made a framework with five or thirteen steps. Hereby, we choose a solid one to illustrate what a procurement cycle is.

Table 2-2 Procurement cycle

Phase1: Establishing a purchasing strategy	Phase2: Supplier evaluation	Phase3: Screen and select suppliers	Phase 4: Procure materials	Phase 5: Measure and Manage Supplier Performance
•Analysis of Supply market	•Identify qualified suppliers	•Release RFP	•Monitor inventory	•Monitor supplier’s performance
•Manufacturing requirements	•Develop selection criteria	•Analyze bids & past performance	•Order materials	•Identify improvement opportunities
•Importance of materials		•Select final suppliers	•Receive materials	•Analyze supplier relationships
•Potential customer use and demand		•Negotiate and finalize contract	•Inspect materials	

Source: Adapted and revised from Brewer (2014)

### **Phase 1: Establishing a purchasing strategy**

As Table 2-2 shows, except for analysis of the supply market, the other three criteria can be grouped into one: specification of the purchase strategy. Such specification can be technical specification or purchase order specification.

Technical specification can be, for example, the diameter, type, and temperature tolerance of tires in a truck.

According to van Weele (2010), purchase order specification can be quality specification, legal specification for safety issues and logistics specification, such as quantity.

### **Phase2: Evaluate potential suppliers**

After the purchasing specification is made, looking for potential suppliers starts. A supplier market research beforehand is necessary to identify a pool of qualified suppliers. To determine which suppliers should be contacted further, certain selection criteria has to be made. Selection criteria can be, for example, price, quality and cash flow.

### **Phase 3: Screen and selecting suppliers**

Several activities are included in the process of supplier selection.

- Release RFP, Analyze bids & past performance

When contacting potential bidders, the customer often send out a RFI (Request For Information), to obtain more information about the suppliers, such as past experiences on similar projects, business areas and strategic focuses and so on.

After this process, less bidders will be contacted again for a RFQ (Request For Quotation), and in general, it is a quotation for price.

And then, even less bidders will be contacted again for an RFP (Request for Proposal). RFP is a proposal to solve the specific problem of the customer, include what approaches, which techniques and price for each approach.

After receiving the RFP, a final decision will be made on who will be the final supplier/suppliers. Contract and negotiation process will then take place.

- Contracting and negotiation

A contract is a legal document, which allows both parties to “*maximize the rewards of the relationship, while minimizing the risk*” (van Weele, 2010, p.171).

At this part, prices, terms of payment, delivery terms and penalty clauses plus warranty conditions have to be agreed on.

According to van Weele (2010), in general, a fixed price is definitely preferred due to cost control or budget management. However, in practice, business processes are dynamic and ever-changing, hence, different price politics have been applied: Fixed-price plus incentives, Cost-plus contract, cost-reimbursable contracts and agreement with price-adjustment (van Weele, 2010), to name some of them. This is a clear indication for the complexity of price issues.

Delivery terms vary from situation to situation, and much negotiations have to be conducted before a final agreement is achieved.

As van Weele(2010) stresses, “*an important clause in the contract is to agree on what legal system the contract will be subject to*”( p. 39). This is especially important when it relates to offshoring.

A SLA (Service Level Agreement) is a special type of contract. It defines risk-and-gain sharing policies, operating specifics, and entitles the rights and obligations of both parties. Key performance indicators (KPI) such as cost, quality level and services are included (van Weele, 2010) in a SLA. In general, a SLA includes also incentives for exceeding targets and penalties for sub-par performance. It should, in principle, allows for bilateral transfer of methods, processes, and knowledge, and encourage continuous process for improvement (eSourcing Wiki, 2016).

#### **Phase 4: Procure materials**

When supplier is selected, contract is negotiated in phase three, a purchase order will be followed up from the customer to the selected suppliers. In general, a purchase order contains information about the quantity, agreed price, terms of delivery and delivery date of goods. When materials are received, they have to be checked carefully to ensure the quality meets the requirement.

#### **Phase 5: Measure and manage supplier performance**

The procurement continues after goods are received. Supplier performance needs to be measured and the principal-agent relationship needs to be evaluated in order to see if some agents have behaved opportunistically and if there is possibilities for further improvement.

According to van Weele (2010), it is beneficial for buyers to record “*the supplier’s quality and delivery record, competitiveness and innovativeness*” ( p. 43), because such data contributes for vendor rating, and is useful for future buying.

These five steps is a simplified framework or guideline for what should be included in a procurement process. However, in reality, the precise activities in a procurement cycle may differ from time to time, due to law regulations, situation changes (for example, natural disaster), and the nature of demand: goods or services, public or private procurement.

### **2.1.4 Public vs private procurement**

According to Jafaar and Radzi (2012), the essential difference between public and private procurement action is that they serve different objectives: public procurement aims to serve the society while private one is to obtain maximum return on investment (ROI). In addition, public sector decision-makers are bureaucrats, and they have to follow accountability and transparency principles (Jafaar and Radzi 2012). Fumeaux et al. (2008) argues that 'public values' such as listening to public opinion, professionalism, risk-readiness and balancing of interests are also important requirements for a public procurement decision makers to follow.

In contrast, private sector clients are mainly motivated by ROI and the project is expected to serve the company's vision, mission and goals (Rameezdeen and Jayasena, 2013).



In such a case, private sectors are freer than public sections to make procurement decisions, since there are not so many regulations, law or requirements to follow (Rameezdeen and Jayasena, 2013).

With the development of EDI (Electronic Data Interchange), E-procurement as an effective working method is developing dramatically.

## **2.1.5 E-procurement**

In a simplified understanding, e-procurement is to procure goods/services on internet.

Min and Galle (2003) define e-procurement as: business-to-business purchasing practice that utilizes electronic commerce to identify potential sources of supply, to purchase goods and services, to transfer payment, and to interact with suppliers.

Wu et al. (2007) advocate that e-procurement is the use of information technologies to facilitate business-to-business (B2B) purchase transactions for materials and services.

According to de Boer et al. (2002), there are six different forms of e-procurement: e-ordering, web-based ERP (web-based Enterprise Resource Planning), e-sourcing, e-tendering, e-reverse auctioning and e-informing.

Mukhopadhyay and Kekre (2002) argues e-procurement could offer both strategic and operational benefits for both suppliers and customers.

Some characteristics of e-procurement include online bidding, digital signatures, and e-reverse auctions.

### **2.1.5.1 Online Bidding, Digital Signatures, and e-Reverse Auctions**

For online procurement, the first step is to place an order on a website. Requests for bids or proposals can then be placed on the web or emailed to contractors, and bidders can be notified immediately by email (Reddick, 2004).

Technologies such as digital signatures are becoming well established, which makes it safer to procure over the Internet (Reddick, 2004) A digital signature is an electronic means of signing

electronic documents that provides sender authentication using public-key encryption (Laudon & Laudon, 2001).

E-reverse auction (eRA) as a popular form of e-procurement, has received great attention.

According to Raffa and Esposito (2006) “A reverse auction is a buyer-initiated auction in which a buyer asks for bids from multiple sellers; the price then decreases as sellers compete for the buyer's business with the lowest bid considered the winner”(pp. 46-49). Reserve auction differs from “forward auction” (van Weele, 2010, p.6).

Forward auction or traditional auction is initiated by the supplier, while reverse auction is initiated by the buyer. In reverse auction, it is suppliers, who compete for a contract by submitting multiple bids with decreased price, while in forward auction, it is the buyers who compete for goods by submitting multiple bids with increased price.

Tassabehji et al. (2006) defined e-reverse auction as a forum wherein different suppliers compete online for contracts offered by a buyer.

Hartley et al. (2006) see e-reverse auction as an internet-enabled facility that allow suppliers to compete dynamically by submitting multiple electronic bids in real-time, and within a certain time-period.

Online auctions allow geographically diverse buyers and sellers to exchange goods, services, and information, and to determine dynamically prices that reflect the demand and supply at a certain point of time so that efficient matching of supply and demand can be realized (Chen et al, 2005).

### 2.1.5.2 Benefits and challenges by implementing e-Procurement

There are various benefits of adapting e-procurement, among them, some are savings in purchasing transaction cost, resulted from less paperwork, less mistakes and more efficient purchasing process (Croom and Jones, 2007).

An e-procurement solution will catalogue every transaction in the system, ensuring your records are kept up-to-date. Those records are of critical importance for financial forecasting, or an audit (Kolenko, 2014).

However, despite the allegedly massive benefits of applying e-procurement, the extent of adaption in OECD (Organization for Economic Cooperation and Development) countries is below expectations and progressing slowly (Pires and Stanton, 2005). This is because in addition to benefits, there are also several challenges in adapting e-procurement.

Angeles and Nath (2007) argue that system integration, standardization and immaturity of e-procurement market services are key challenges in e-procurement implementation, in private sectors.

In public sections, the challenges are different. Aman and Kasimin (2011) categorizes these challenges into *system specification and implementation management*. Challenges in system specification (Aman and Kasimin, 2011) are related to both software integration, data management, and legal, plus administration procedures as well as IT infrastructure. With respect to implementation management, the challenges are related to outsourcing contracts and IT skills.

As illustrated, a procurement cycle consists of different activities: goods/services specifications, supplier evaluation and selection, contracting and negotiation, goods inspecting, supplier performance evaluation and more. To complete such a complex process, human and physical assets, knowledges and expertise are required, and this is definitely a process of money spending everywhere. Hence, how to save cost, in order to improve corporate performance becomes an important goal of procurement activities. This is where outsourcing as a strategy for such a goal comes in.

## **2.2 Outsourcing**

Outsourcing has been an important strategy for firms to focus on their key business areas, in order to cultivate its sustainable competitive advantages and to develop better. To explain it further, firms identify their own weaknesses or weak business activities and then outsource them to a third party, who is strong in that area. In this way, through work division, resources are allocated and utilized more efficiently. An example could be that universities outsource their procurement function to a third party, and concentrate on their key competence-educational capabilities.

## 2.2.1 Definition of outsourcing

As outsourcing has been a research object in decades, there are many definitions of it.

Brown and Wilson (2005) define outsourcing as “*the act of obtaining services from an external source*” (p. 20).

Aubert et al. (2004) argues outsourcing is a typical example of a make-or-buy decision, and advocates that it can be defined as the “*significant contribution by external vendors of the physical and/or human resources associated with the entire or specific components of the IT infrastructure in the user organization*” (pp. 921-932).

Outsourcing is a strategic decision, which offers different organizations access to external capabilities or competencies so that they can compete in today’s global market (McIvor, 2008).

## 2.2.2 Types of outsourcing

Based on the extent of outsourcing, van Weele (2010) distinguished between partial/incremental outsourcing and turn-key/complete outsourcing.

- **Partial/Incremental outsourcing**

According van Weele (2010), partial outsourcing can be understood as “*only a part of an integrated function is outsourced*” (p.162), while the coordination responsibilities and power still is in the hand of outsourcer.

- **Complete/Turn-key outsourcing**

As the name indicates, complete outsourcing implies that the outsourcer just need to turn the key of a door to get what they were intended to obtain (from the subcontractor), it is thus a 100 percent or complete outsourcing.

This kind of outsourcing means the vendor takes in charge of all responsibilities and deliver a finished product, from searching for employees, materials procurement, negotiations with suppliers and more. In contrast, the outsourcer pays a package price for the completed product delivered by the supplier. This doesn’t mean the outsourcer does nothing in the process, they

have to coordinate with supplier, monitor the job progress and sometimes to take initiatives to push the suppliers in order to get the job done.

### **2.2.3 Development of outsourcing in three generations**

According to Lee et al. (2010) outsourcing has been developed through three generations: tactical, strategic and transformational outsourcing.

#### **2.2.3.1 Tactical outsourcing**

Kedia and Lahiri (2007) argue that outsourcing in this level is attempting to reduce cost, and it is short term behavior.

The key word of the tactical outsourcing is the “contract”, and the key point is to draw a precise contract and then ensure the supplier to fulfill the contract (Brown & Wilson, 2005).

#### **2.2.3.2 Strategic outsourcing**

At this time, outsourcing shifted its focus from cost saving to concentrate on core competence.

Lee et al. (2010) makes the point, that having core activities in-house and outsource non-core activities, organizations are able to get a greater focus on their core activities, which will lead to a long term relationship building with suppliers. This is consistent with Sparrow’s (2003) idea that this model depicts the partnership between the client and the vendor, where they work towards the common interests.

#### **2.2.3.3 Transformational outsourcing:**

At this level, outsourcing is about “*Partnering with another company to achieve a rapid, substantial and sustainable improvement in enterprise-level performance*” (Linder 2004p.52)

Lee et al. (2010) stresses transformational outsourcing has a great focus on risk-sharing and increased flexibility.

Kedia and Lahiri (2007) stress that partnership or considering suppliers as allies towards gaining greater competitive advantage and market share is the key idea of transformational outsourcing.

In summary, the key words for these three levels or generations of outsourcing are:

Table 2-3 Outsourcing's three generations

<b>Generations of outsourcing</b>	<b>Key ideas</b>	<b>Perspective</b>
1. Tactical outsourcing	Cost saving	Short-term
2. Strategic outsourcing	Core-competence focus	Long-term
3. Transformational outsourcing	Partnership, alliance	Long-term

Source: Author's own summary (2016), based on Lee et al. (2010), Kedia and Lahiri (2007).

## 2.3 Theoretical bases of outsourcing

Although the ultimate goals between researchers and practitioners may differ in various ways, (Dubin, 1976), a strong theoretical model has great value to both of them (Cheon et al., 1995). A theory can work as a practical guidance for practitioners' decision-makings or predictions for possible outcomes. For researchers, a theory explains the "why" behind certain phenomena. In this article, the chosen theoretical bases are "Transaction-Cost Economics (TCE) and Principal-Agent theory", because they explain well the economic issues on "buy or make" decisions and buyer-supplier relationships during the outsourcing processes.

### 2.3.1 Transaction cost Economics (TCE)

Transaction Cost Economics (TCE), is also named as Transaction Cost Theory (TCT), or Transaction Cost Analysis (TCA), and has been employed by vast researchers to illustrate the phenomena of outsourcing.

By this, we could interpret "make" as producing within the firm and "buy" as to outsource to another supplier. This is to say, TCE theory provides the theoretical background for decision on whether to produce goods / services internally or outsource it externally.

The concept of transaction cost was first introduced by Ronald Coase (1937). He saw the market (outsourcing) and firm (make) as alternative mechanisms to each other, when to conduct a transaction. However, it was Oliver Eaton Williamson who made the TCE widely known in his *Transaction Cost Economics* (Wikipedia, 2016).

When using market/ outsourcing, a transaction will occur, while to produce will the production cost to be occurred. Transaction cost is the cost needed to "run or fulfill" the trade between partners. The unit of analysis is the transactions.

TCA has two behavioral assumptions: bounded rationality and opportunism (Wang, 2002). By bounded rationality it means limited rationality and Simon (1961) explains it as transacting parties intending to be rational, but limited by the nature of human rationality.

Opportunism is defined by Williamson (1975) as “self-interest seeking with guile” (p. 9). Williamson (1985) explains guile as “*lying, stealing, cheating, and calculated efforts to mislead, distort, disguise, obfuscate or otherwise confuse*” (p.47). Carmel & Nicholson (2005), explains opportunism as the behavior, in which one transacting party takes advantage over another one.

Williamson (1985), stresses that bounded rationality will create problem of writing incomplete contracts. Because of the limited/ bounded human rationality, it is hard to write contracts which include every possible unpredictable situations, such as a dramatic fire, fall of oil price, and loss of important employee and so on.

In this theory, two costs determine whether the governance structure for a transaction is a market or hierarchy: production cost and transaction cost (Cheon et al., 1995). “*Transaction cost theory examines outsourcing from an economic perspective, trading off transaction costs and production costs* (Cheon et al., 1995)”.

Williamson (1975) says it is the attributes of the transaction decide what constitute the most effective governance mode: market (outsource), hierarchy (make) or alliance (hybrid of outsourcing and making).

Three attributes will affect the transaction cost: asset specificity, uncertainty and infrequency.

1. Asset specificity

Joshi and Stump (1999), define asset specificity as “*the non- redeployment of investment of one party in their partner*” (p.336).

McIvor (2008) explains that asset specificity is the level of customization or specification of the transaction, and it can be seen in different forms: Physical asset specificity, human asset specificity and site specificity. Physical asset specificity is the level of specification of the physical product or services. Human asset specificity is the level of special human knowledge involved in the transactions. While site asset specificity refers to the specification of the locations. (For example, location of a telecom/electricity network).

The important point to understand the concept of asset specificity is to understand how specifically the asset is used in a transaction.

## 2. Uncertainty

This factor will impact the contract and its fulfillment (Williamson, 1985).

The uncertainty may be a technological innovation (for example, touch screen technology of mobile phones), economic trends (economic crisis) or political issues.

## 3. Infrequency

This refers to the frequency of contracting or cooperation between two parties (Williamson, 1985). Increased frequency of contracting will increase the transaction costs.

Cheon et al. (1995) advocates that a linear relationship may express the decision on outsourcing:

$$\text{Outsourcing} = f(\text{transaction cost})$$

$$\text{Transaction cost} = f(\text{asset specificity, uncertainty, infrequency})$$

The interpretation of the linear relationship is that an outsourcing decision depends on the transaction cost, and how high the transaction cost will be, which in the next turn depends on three factors: asset specificity, uncertainty, infrequency.

According to McIvor (2008), transaction difficulties such as supplier opportunism and associated costs will increase when transactions are characterized by asset specificity, uncertainty and infrequency.

According to Aubert et al. (2004), if the cost using market governance is too high, then internal production is a better option. We interpret it as:

If transaction cost is higher than production cost, then “make”;

If transaction cost is lower than production cost, then “outsource”.

Although TCE alone is incomplete to decide whether activities should be in- or outsourced, it provides a useful guidance.



Principal-Agent Theory is another popular framework, which explains outsourcing behavior also very well.

### **2.3.2 Principal-Agent Theory (Agency Theory)**

Principal-Agent Theory is a subset of Agency Theory.

The basic idea behind it is that when hired by a principal, the agent should perform on the agent's best interest. However, due to the human nature of self-interest, the agent may perform on his/her own interest rather than the principal's. The principal has no capability to monitor the actions of the agent perfectly without cost (Sappington, 1991).

Such relations exist everywhere: lawyer-client, employer-employee, a job seeker- job agency and many more. Information asymmetry and opportunism are the key words in such a relation Eisenhardt (1989). In a simple and easy understanding way, principal-agent relation can be understood as a seller-buyer relation. In the context of outsourcing, the agent (seller) becomes the outsourcing service provider and the principal (buyer) becomes the outsourcing service buyer.

Information asymmetry refers to that an agent very often has more information than a principal, which leads to the asymmetry of information. However, on the other hand, this is also the reason why an agent is hired.

Opportunism is often associated with information asymmetry. When the agent has more access to information than the principal, and due to human nature of self-interest, opportunistic behaviors of agents will probably happen.

To have a better understanding of principal-agent theory, we can take a look at the summarized table of Eisenhardt (1989).

Table 2-4 Overview of principal-agent theory

Key idea	<ul style="list-style-type: none"> <li>• Principal-agent relationships should reflect efficient organization of information and risk-bearing costs</li> </ul>
Unit of analysis	<ul style="list-style-type: none"> <li>• Contract between principal and agent</li> </ul>
Human assumptions	<ul style="list-style-type: none"> <li>• Self-interest • Bounded rationality • Risk aversion</li> </ul>
Organizational assumptions	<ul style="list-style-type: none"> <li>• Partial goal conflict among participants • Efficiency as the effectiveness criterion</li> <li>Information asymmetry between principal and agent</li> </ul>
Information assumption	<ul style="list-style-type: none"> <li>• Information as a purchasable commodity</li> </ul>
Contracting problems	<ul style="list-style-type: none"> <li>• Agency (moral hazard and adverse selection)• Risk sharing</li> </ul>
Problem domain	<ul style="list-style-type: none"> <li>• Relationships in which the principal and agent have partly differing goals and risk preferences (e.g., compensation, regulation, leadership, impression management, whistle-blowing, vertical integration, transfer pricing)</li> </ul>

Source: Adapted from Eisenhardt (1989, p.59)

From Table 2-4, we are able to see the unit of analysis in principal-agent theory is the contract, and this is different from the unit of analysis of TCE-transactions. The human assumption as self-interest / opportunism and bounded rationality are same as TCE, while risk aversion is an extra assumption in this theory.

From this table, we can also see the importance of information in a principal-agent relation, since it can be seen as a purchasable commodity. AS Eisenhardt (1989) states in this table, risk preferences of a principal and an agent may differ partially, and this might lead to a contracting problem of risk sharing between them. Risk management in outsourcing (see 2.4.3, risk management in outsourcing) will be briefly discussed later.

## 2.4 Procurement outsourcing

In the definition of Hanson and Olson (2005), procurement outsourcing is the transfer of all or part of a range of sourcing-to-settlement processes. It includes sourcing, contracting and supplier management to a third party.

(Manikandan, 2016) offers a more detailed definition:

*“Procurement Outsourcing is defined as a process wherein organizations take a calculated approach of moving some of their processes around source to pay to a specialist. This involves organizations identifying the core and non-core activities with source to pay and start outsourcing non-core activities to a specialist “.*

There are many benefits to outsource the procurement function.

### 2.4.1 Benefits of procurement outsourcing

#### 2.4.1.1 Cost reduction

Favre et al. (2003) argue that across the board, procurement outsourcing can reduce costs of service and materials by up to 15 percent. They further explain that “significant savings can result from repositioning and centralizing large numbers of people and technologies, and avoiding burdensome investments in upgrades and new systems (Favre *et al.*2003)”.

#### 2.4.1.2 Core competence/business focus

Improved focus on core competence/business is one of the most important reasons why firms choose to outsource their procurement functions. Outsourcing the procurement function, allows companies to concentrate on its core competencies and value-added activities, because it is these competencies and value-added activities which leads the firm to greater success (Davis et al., 1998).

For what is core competence, there are different understandings.

Prahalad and Hamel define (1990) core competence as: "*Core competencies are the collective learning in the organization, especially how to coordinate diverse production skills and integrate multiple streams of technologies*" (pp. 6).

Hitt and Ireland (1986) define core competence as "*a central set of problem-defining and problem solving insights that enable the firm to create potentially idiosyncratic strategic growth alternatives and to enact, at least partially, its environment* " (pp. 401-416).

#### 2.4.1.3 Access higher levels of expertise and innovations

To obtain external expertise and innovations is also an important driver for outsourcing decisions. According to Leenders & Flynn (1995), in a professional procurement service provider base, it is easier to gain access to new technologies and innovation. This is especially true in mobile and fashion industries.

#### 2.4.1.4 Risk sharing

Outsourcing the procurement function allows sharing or overtaking the risk of supply interruptions, due to strikes, quality problem, political instability, or other supplier problems (Wisner & Tan, 2015).

#### 2.4.1.5 Increased flexibility

van Weele (2005) argues that, since someone is sharing the workload, and it thus can be absorbed more easily, hence, outsourcing can increase flexibility.

To get a better overview of the benefits, the following table summarized them up:

Table 2-5 Benefits of procurement outsourcing

<b>Benefits of procurement outsourcing</b>	
<b>1.</b>	Cost reduction
<b>2.</b>	Core competence/business focus
<b>3.</b>	Access higher levels of expertise and innovations
<b>4.</b>	Risk sharing
<b>5.</b>	Increased flexibility

As Aubert et al. (2002) state, almost any business is associated with risks.

## **2.4.2 Risks of procurement outsourcing**

Procurement outsourcing is a specific type of outsourcing. This implies the challenges confronted with outsourcing will all possibly happen while dealing with procurement outsourcing.

According to Davison (2004), the most common 10 risks of outsourcing are:

1. Unrealistic high expectations on cost-reduction
2. Data security
3. Process of disciplines
4. Loss of business expertise
5. Vendor failure to deliver
6. Scope creep
7. Government regulation,
8. Culture
9. Turnover of key personnel
10. Knowledge transfer

Based on a case study, Marshall et al. (2007) stated that although outsourcing employees argued collaborative relations with service suppliers were being adopted, the research revealed that was not the case, because it was evidenced that these two parties had some adversarial tendencies.

### **2.4.2.1 Increased dependency-loss of control**

Loss of control is often perceived, because the outsourcer very often find themselves having become too dependent on the service providers, especially when there is only a single supplier.

### **2.4.2.2 Internal resistance**

Procurement outsourcing implies the current purchasers are going either to lose their jobs or to be reorganized in one or another way. This will mostly create problems between employees and the organization. It will probably create the psychological burden on the employees' morale in which they may feel insecure or unappreciated by their management (Elmuti, 2003) and thus lead to internal resistance.

### 2.4.2.3 Integration of two organizations/ company cultures

External vendors' inadequate knowledge of the organizations will probably make it difficult to cooperate with the outsourcer in every detail during the procurement process (Elmuti, 2003).

### 2.4.2.4 Hidden cost

In business, hidden cost refers to the cost that was not included in the purchasing price of a goods or services, but turns out to be necessary to spend extra on these goods and services for them to work properly. Such cost include, for example, the cost for searching for outsourcing vendor, upgrading and training of an IT system.

According to Lacity and Hirschheim (1993b), in general, hidden costs are the biggest problem of outsourcing. The hidden transition costs include such as setup costs, redeployment costs, relocation costs, and parallel-running costs. The hidden management costs such as the human resources needed to manage outsourcing contract, the hidden service costs, and all costs that the client assumed were included in the contract (baseline), but which, in fact, were not.

### 2.4.2.5 Discontinuity of service delivery

To manage the continuity of services delivery can be challenging. Agents very often overpromise their capability of service delivery at the negotiation stage, and it will lead to unrealistic expectations of the principals (Perkins, 2003). To reduce the risks of loss, agents may terminate their services to their principals, who are redundant to pay the bills.

### 2.4.2.6 Lock-in of specific asset

“Lock-in” refers to a situation where a client/principal cannot get out of a relationship only if by accepting a loss or sacrificing part or all of its assets to the supplier/agent (Aubert et al., 1998). According to Klein (1978), a lock-in situation is a result of specific asset which is made by too few suppliers. When contract is signed, specific asset is settled by the limited suppliers, at contract renewal time, if no other supplier is ready to make specific investments, the client may have to continue cooperate with the current supplier. This offers the current supplier an opportunity to increase its fees, due to lack of alternatives.

To summarize up the risks, the following table is offered:

Table 2-6 Challenges of procurement outsourcing

<b>Challenges of procurement outsourcing</b>
1. Increased dependency-loss of control
2. Internal resistance
3. Integration of two organizations/ company cultures
4. Hidden cost
5. Discontinuity of service delivery
6. Lock-in of specific asset

**2.4.3 Risk management in outsourcing**

Outsourcing benefits cannot be realized only if the potential risks are minimized or eliminated, which leads to the topic of risk management. According to Zhao and Watanabe (2010), risks are shared by both outsourcer and outsourcing service vendor, and risk management is thus indispensable for both parts. In this thesis, analysis of risk management will be limited to the outsourcer part.

Zhao and Watanabe (2010) claim that risk management have been studied in various fields, finance, insurance and project management and it recently became a hot topic in outsourcing service.

Porter (1980) recommends having multiple vendors to share risks and increase the bargaining power of the outsourcer. This might reduce the lock-in problem. However, whether it is best to have one single or multiple vendors, Ngwenyama and Bryson (1999) suggest use of transaction cost theory approach to analyze the profit of outsourcer and cost of vendors.

Padovani and Young (2008) state that simply monitoring a contract is not enough to prevent risks to happen, the monitoring must be supplemented with some other activities. Kettner and Martin (1985) suggest such activities could include (1) periodically reviewing progress toward

the accomplishment of contractual terms, (2) identifying areas that require corrective action or renegotiations.

Van Weele (2010) states he observed that developing trust and partnership atmosphere was vital for outsourcing action to succeed, however, how to reach this point becomes a new issue.

After the decision on outsourcing the procurement function is made, many issues have to be managed in order to succeed in this action. John (2003) pointed out some factors:

1. The outsourcer must proactively help the procurement outsourcing service provider to understand how its business works.
2. Thorough communication between three parts: outsourcer, suppliers and internal customers must take place, both before and after the changeover.
3. A new environment for transferred staff is necessary, either in a different environment or getting the old work areas to be redecorated.

There are two solutions to mitigate the problems of “lock-in”: mutual hostage (Koss and Eaton, 1997) and dual sourcing/multiple vendors (Kern et al., 2002). Mutual hostage mean both principal and agent share investment costs and form a partnership. For instance, the principal could invest time and effort to learn more about the agent’s firm(s) and the agent may also invest in physical equipment, site relocation, human resources learning, etc.

To mitigate of hidden cost, there are two proposals: Lacity and Hirschheim (1993) propose hiring of external technical and legal expertise. Ouchi (1980) suggest clean mechanisms through socialization and shared organizational norms and values. Hiring external technical expertise is to help incompetent or immature firms to draw a proper contract regarding technical specifics and external legal expertise will avoid some renegotiations. By this, it means that, for example, a new established firm, which in general, is immature, and thus may not knowing all technical specifications of goods they are going to purchase. Therefore, an external expertise may help the firm to save much time and resource on identifying the technical specifications. Shared norms and values will in some degree reduce unnecessary communications, prevent opportunistic behavior and hence reduce some hidden cost.



## 2.5 Procurement outsourcing in practice

A survey on strategic outsourcing shows that firms are outsourcing up to 20% of transaction activities, 13% of supplier management activities, and 15% of procurement strategy activities on purchasing of MRO (Maintenance, Repair and Operations), indirect materials, and services. However, for direct material purchases, the numbers are reduced to 9%, 4%, and 4% respectively) for the same procurement activities (Monczka et al., 2005).

The German bank, Deutsche Bank has outsourced all their procurement to Accenture Inc (Bills, 2004). *“However, Deutsche Bank have chosen to retain responsibility over supplier selection and relationships, approvals, authorization and payments. It appears that they are not prepared to fully step away from this non-core activity”* (Parry, 2006, pp. 436-443).

### 2.5.1 A successful history ---- Thames Water (England)

Thames Water is UK’s largest water utility, With 12 million customers covering 5,000 square miles in and around London (Favre et al., 2003). They are responsible for clean water supply and wastewater management. Under the pressure of different regulations and cost reduction, they have chosen to outsource their procurement function (procurement of over 5000 different items) to an international procurement outsourcing service provider, and the following success belong to them: Overall operating costs was saved for \$150 million, cost reduction of 35% on service and materials, 50% reduction in inventory, customer service is significantly improved and materials availability has been raised dramatically to over 99% (Favre et al., 2003).

### 2.5.2 A fiasco with complication-outsourcing of IT

The following case is provided by van Weele (2010), in his book “Purchasing and Supply chain management”.

A major telecom player in Europe outsourced its IT-activities and call centers to an IT-provider. However, after two years, the telecom firm had to take back all the IT functions, and one of the major causes was the payment issue. Due to the dramatic reduction on the prices of both hardware and software, it seemed that, IT vendor had invested too much on such items for the telecom firm two years ago.

The IT supplier thus lowered the service level and warned the telecom firm for temporary stop or disruption of services.

Unfortunately, insource back the IT function became the final option for the telecom firm (p. 160).

Although procurement practices has been in the market for some years, very many have succeeded in this area, but there has also been many who fail to implement this strategy. Some research show that procurement outsourcing so far has been much more frequently practiced on operational level rather than on the strategic levels.



## **Chapter 3 Methodology**

### **3.1 Research design**

Research design is a master plan, which specifies the methods and procedures to collect and analyze the demanded information. It aims to ensure the information collected is appropriate to solve problems (Zikmund, 2003).

The survey of this thesis was carried out through a questionnaire, which is qualitative in its nature.

### **3.2 Sampling population**

This study covers all 103 clients of the procurement outsourcing provider-Inventura, a Norwegian company, which offers professional procurement service to both public institutions and private enterprises. After sorting out the infeasible contacts (no available contact information such as email or telephone numbers), there were in total 88 procurement responsible personals who received the questionnaire in their emails.

### **3.3 Data collection**

In general, research data is divided into two different categories: primary data and secondary data. Distinction between them is based on the origins of sources the data is collected from. (Walliman, 2001).

#### **3.3.1 Primary data**

In this thesis, primary data was collected through a semi-structured questionnaire.

A semi-structured questionnaire is a mix of unstructured and structured questionnaires. Some of the questions and answer options are determined in advance, while others were left to open answers. In this research, the structured questions were organized as multiple choices while unstructured questions were organized as open questions which offer open answers.

By such a method, will the answers of structured questions offer possibilities for researchers to collect, compare and analyze the intended questions systematically, while open answers open up new insights for researchers.

### **3.3.2 Secondary data**

Secondary data was obtained through different websites, in order to discover the services different respondents work in and their enterprise culture.

## **3.4 Validity, Reliability and triangulation**

Validity, reliability and triangulation are three important concepts of a research work.

### **3.4.1 Validity**

Validity and reliability are two factors that qualitative researchers should be concerned about while designing a study, analyzing results and judging the quality of the study, states Patton (2001). It is therefore important that the research is valid and reliable, when to draw robust and general conclusions from a study.

Validity is the degree to which the researcher is measuring what he is intended to measure. (Salmond, 2008) - "*fitness for purpose*" (Pierce, 2007, pp. 79-99).

### **3.4.2 Reliability**

"*Consistency, stability, and repeatability* (Salmond, 2008, pp. 28-30)", is the key issue when checking whether a questionnaire is reliable or not. She (Salmond, 2008) explains further that, if the instrument is reliable, consistent and stable the results will remain same, if the same questionnaire will be conducted again short after the first time. This is also called test-retest reliability.

The above concept is maybe true in a quantitative research, but in a qualitative research context, it seems hard to get the same results if the questionnaire will be carried on again. Because the respondents' knowledge and perception of the questions may change with time.

Lincoln and Guba (1985) states that: "*Since there can be no validity without reliability, a demonstration of the former [validity] is sufficient to establish the latter [reliability;]*" (p.316). This can be interpreted as reliability is a consequence of the validity in a research (Patton, 2001).

### **3.4.3 Triangulation**

According to Golafshani (2003), Triangulation is a typical strategy (test) to improve the validity and reliability of research or evaluation of findings.

Creswell & Miller (2000) states that triangulation can be understood as “*a validity procedure where researchers search for convergence among multiple and different sources of information to form themes or categories in a study*” (p.126). This implies that triangulation utilizes multiple methods of data collection or analysis.

In this thesis, I have applied multiple choice questions (closed), open-answer questions (open-ended) in the questionnaire, and multi-case studies of companies’ websites to collect the data to ensure its validity. In addition, the chosen theory of both TCE and principal-agent theory explain well on the outsourcing relation between an outsourcer and procurement outsourcing service vendor. The two theories also explain well the behavior of the outsourcer and its agent, on bounded rationality, possible opportunistic actions, and cost saving concerns, and this is consistent with answers from respondents.

Therefore, the research of this thesis is valid and thus reliable.

When the study is valid and reliable, the researcher can analyze the results, and draw conclusions accordingly with confidence.

## **3.5 Pretest of the survey**

In order to avoid misunderstandings, difficult languages, and difficulties on operating answering techniques on internet, a pretest was conducted. The questionnaire was sent to both classmates of mine and senior researchers for pretest. After some trials and editions, the questionnaire was then finally distributed.

## **3.6 Ethics**

This study has followed the “Code of Standards and Ethics for Survey Research”, which states “*survey Research Organizations be responsible for protecting from disclosure to third parties—including Clients and members of the Public—the identity of individual Respondents as well as*

*respondent identifiable information, unless the Respondent expressly requests or permits such disclosure” (Casro, 2016, p.2).*

In this thesis, the data obtained from respondents has only been visible to the researcher, and no information disclosure to third parties.

### **3.7 Limitations of the survey**

The sample size of the survey is rather small. There were only 9 responses of the survey. Thus, the analysis of the data received is also limited by its size. This implies that the analysis is not generalizable to a bigger population, for example to all companies or other industrial segments in Norway.

### **3.8 Flaws of this survey**

The questionnaire was developed before the literature review was completed, which implies that the survey was designed more on a common science than on a systematic approach. This led to the problem that when the data was collected, some of it was hard to interpret. To some degree, inconsistencies between the literature review and analysis might have originated from such discrepancies.

## **Chapter 4 Survey results, analysis and discussions**

In this section, the survey results will be presented, analysis of them will be carried on, and I will also try to discuss the two of the theories and some of the phenomenon.

### **4.1 Response rate in the sample**

In the first round, I received 7 responses out of 88 distributed questionnaires. After additional effort (calling on more respondents to commit to filling in and returning the questionnaire), two more responses were received. Therefore, in total, there were 9 responses out of 88 invitations, which gives around ten percent (10%) of response rate. This gives a rather small sample to analyze. However, perhaps not any small that we might have anticipated. This clearly points toward the usefulness and necessity of complementing eventual future research in this domain with qualitative, single or few investigations on respondents, through interviews, observations or workshops.

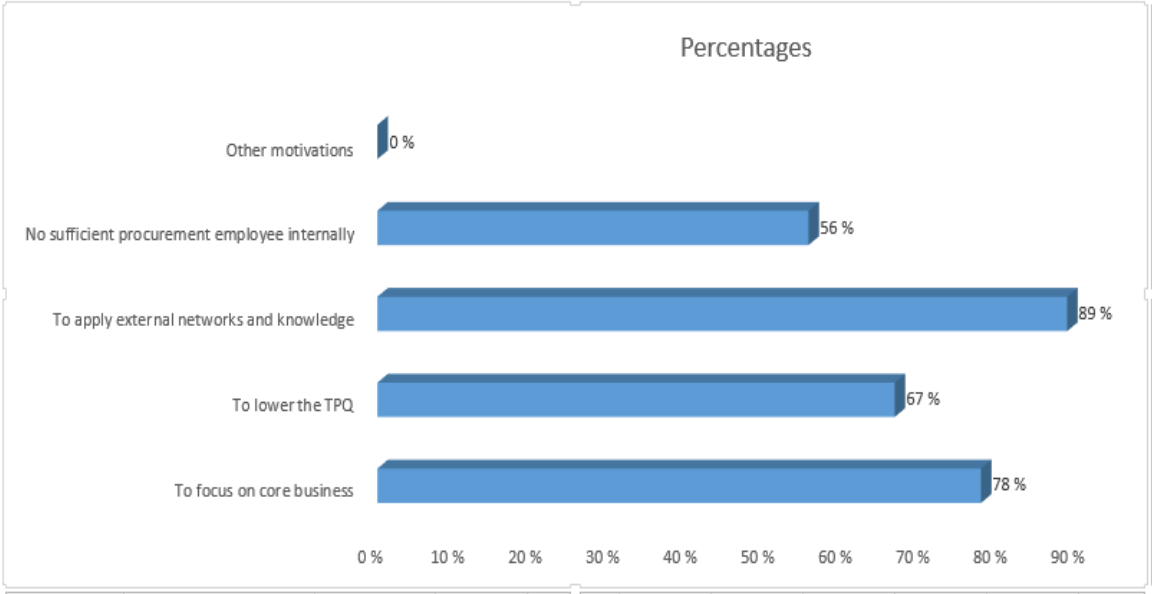
Within this sample, there were two respondents from public sectors, a university college and a small community. Seven respondents are from private enterprises, including an energy firm, an oil and gas service company, and a food company, among others, which represent a broad range of outsourcers.



## 4.2 Motivations behind outsourcing decisions

The question concerning this issue is a multiple choice question with five answering possibilities. Four of the answering choices are predefined motives while “other motivations” is an open-ended choice. The answers from different procurement representatives is displayed on the table.

Table 4-1 Motivations behind outsourcing action



- Firstly, this is a surprising result. Due to the massive stresses on core competence in different literatures of outsourcing, it was expected that the first motivation behind outsourcing decisions shall be consistent with literatures-focus on core competence. However, our result shows that to apply external (PO service vendors’ networks and knowledge) as first priority when considering outsourcing the procurement function.

Perhaps this an indication that the outsourcing of procurement practice in Norway has evolved to the third generation of outsourcing-transformational outsourcing.
- Secondly, as the ranking list indicates, to lower TPC is ranked as number three, after core business focus and applying external knowledge and networks. This is consistent with the concept that the outsourcing action has evolved from a tactical era to a strategic era, which is to say the drive behind outsourcing has changed from to lower cost to a more strategic-oriented direction.

3. Thirdly, it is identified that the two companies who didn't choose "To focus on core business" as one of their motivations to choose PO service, belongs to food and beverage industry. This might imply it is difficult to identify what is core business or core competence in such a field.

### 4.3 What procurement function were outsourced?

The outsourced procurement function in different organizations are presented below:

Table 4-2 Outsourced procurement function

What were outsourced?	Responses	Rank
Contract negotiation	6	1st
Insurance( open answer)	2	2nd
Selection of suppliers	2	2nd

#### 4.3.1 Contract negotiation

Contract negotiation seems to be the most outsourced activity. As it recalls, in supplier selection phase, contract negotiation is a key activity, and it involves price settlement, payment and delivery terms agreement, penalty clauses agreement and more. Only by price settlement, it has several different methods, such as fixed price, cost plus contract and more. All these activities needs economic, legal experts' professional knowledge, and it is hence not difficult to understand why this part of activities is mostly outsourced.

#### 4.3.2 Insurance work

Insurance work indeed also involve much expertise on economy and law, hence, it can also be categorized into contract negotiation.

#### 4.3.3 Selection of suppliers

In the literature review part, it was illustrated that contract negotiation is part of the selection of suppliers' process. However, contract negotiation and supplier selection can also be considered as two separated activities, which contract negotiation happens after the suppliers are finalized. The data collected seems to support this idea, since two identical respondents chose both "selection of suppliers" and "contract negotiation" as their outsourced activities. Outsourcing

does not have to be the only option when the companies lack internal procurement capacities. Technological innovation and advances IT infrastructures, such as a recommender systems, may also be a possibility.

#### 4.3.3.1 Recommender systems

With the development of IT technology, excessive information becomes a problem when searching for certain information. How to offer the most precise and relevant information for a user becomes an issue. This is where recommender systems comes in. It is in alignment with e-commerce, and in the context of this article, with e-procurement.

By definition, recommender systems represent an information filtering technology, which present information on items and service that are likely to be of interest to the customer (Resnick and Varian 1997).

As Bensch (2012) advocates, recommendation systems can support process steps in procurement. It supports the product- and supplier identification, and assist in this respect in decision making (Gil and Garcia 2003).

Recommender systems have in recent years much been applied to different fields, film industry, music industry and dating websites are some common examples. As some of us may have experienced, when registered on a dating website, the system will recommend some potential partners for us. By such a way, it targets better what a man/ woman is searching for, based on the profile themselves have filled in into the system. The same principle works also on a procurement process.

By applying recommender systems, it will save the buyer from endless effort on supplier research, hence, save cost.

As this class of systems might also help the customer to find the ideal suppliers, a new question arrives: which method to choose- Recommender systems or outsourcing?

### 4.3.3.2 Recommender systems vs outsourcing?

After searching on previous research on this topic at academic resources and common websites, no information turned out to be available, on the comparison of these two systems. This indicates that this thesis’s analysis of its potential might contribute to a new research field.

Table 4-3 Recommender systems VS outsourcing

	Recommender systems	Outsourcing
Cost	New IT program setup cost, training cost	Searching cost, service purchase cost, contract cost, governance cost
Risk	Less	More ( opportunistic behavior by agent, information asymmetry)

Table 4-3 is a simple framework, it surely is not enough to explain the differences between these two mechanisms, but it perhaps offer a guideline of it and may lead to some new inspirations to future researches.

## 4.4 Incremental or complete outsourcing?

When how much the firms asked outsourced their procurement function, the 7 private enterprises answered with less than 20% while the 2 public sectors, which include a community and a university college chose 41%-60% and 61%-80% as their answers.

This is an interesting result:

1. No firm outsource their procurement function 100%, which is to say, no one has applied complete outsourcing. This leads to a new research question, which is “why”?
2. It is obvious that, public sectors outsource more of their procurement functions than private enterprises. What is the reason behind this? Can they learn from each other and how? This remains for future research.

## 4.5 Satisfaction level of PO services

Satisfaction level of PO services, from the survey, is presented below.

Table 4-4 Satisfaction level of PO services

Satisfaction level	Reponses ( 9 in total)	Percentages
Satisfied	4	44%
Indifferent	4	44%
Very satisfied	1	12%

As we see, most respondents either are satisfied or feel no difference about the procurement performance before and after outsourcing. This is an indication that outsourcing is not a universal medicine, which will only bring positive outcomes. It has also its side effects, such as difficult to cooperate with suppliers, and internal resistance and hidden cost (see 2.4.2 and 4.8 about challenges on procurement outsourcing). This may have reduced the outsourcers’ satisfaction levels of PO services.

By” Indifferent”, we may understand it as: Transaction cost equals to production cost, led to indifference of outsourcing outcomes. But it is perhaps a much more complicated issue in reality.

Similar to this finding, Michael Corbett (2002, as cited in van Weele, 2010) found “*Satisfaction with service providers is strong but there are some concerns. Only 60% of executive are satisfied with their outsourcing initiatives and only 11% of the executives are very satisfied*” (p.167).

Different from this finding, Monczka et al (2005) reports that 9-31% of the buyer are not satisfied with the outsourcing results.

As concluded by van Weele(2010), although the findings on satisfaction level varies from research to research, outsourcing as business as strategy is blooming both in USA and Europe.

The data from Table 4-4 indicates that the current purchasing service providers haven’t been able to deliver prominent services to their customers, and the development of outsourcing purchasing activity still has a long way to go.

## 4.6 Hidden cost

When asked about the potential reduction of procurement cost, 7 respondents answered with 1-20%, 1 respondent (the university college) with 21-41%, while 1 respondent has answered with “procurement cost was increased”. This is a hint that there is much space for improvement on the performance of outsourcing procurement functions, since the general satisfaction level is not high.

### 4.6.1 Interpretation of “procurement cost was increased”

Transaction cost economics (TCE) advocates that when Production cost is higher than Transaction cost, the service should be outsourced. However, our finding shows the opposite outcome: transaction cost is higher than production cost, after implementing outsourcing method.

Does this violates the principles of TCE then? Maybe.

By ”maybe”, it means the theory doesn’t distinguish the TCO and the transaction cost of the service. Because TCO encompasses both transaction cost and hidden (extra) cost, hence TCO is higher than transaction cost.

As explained earlier, TCO (total cost of ownership) refers to the cost of lifetime of the purchased goods/services. By lifetime, it includes the cost of searching for it, training cost on it, maintenance of it, upgrading of it and more. These hidden/extra costs are invisible at the time of purchasing it and not calculated in the purchasing cost of it.

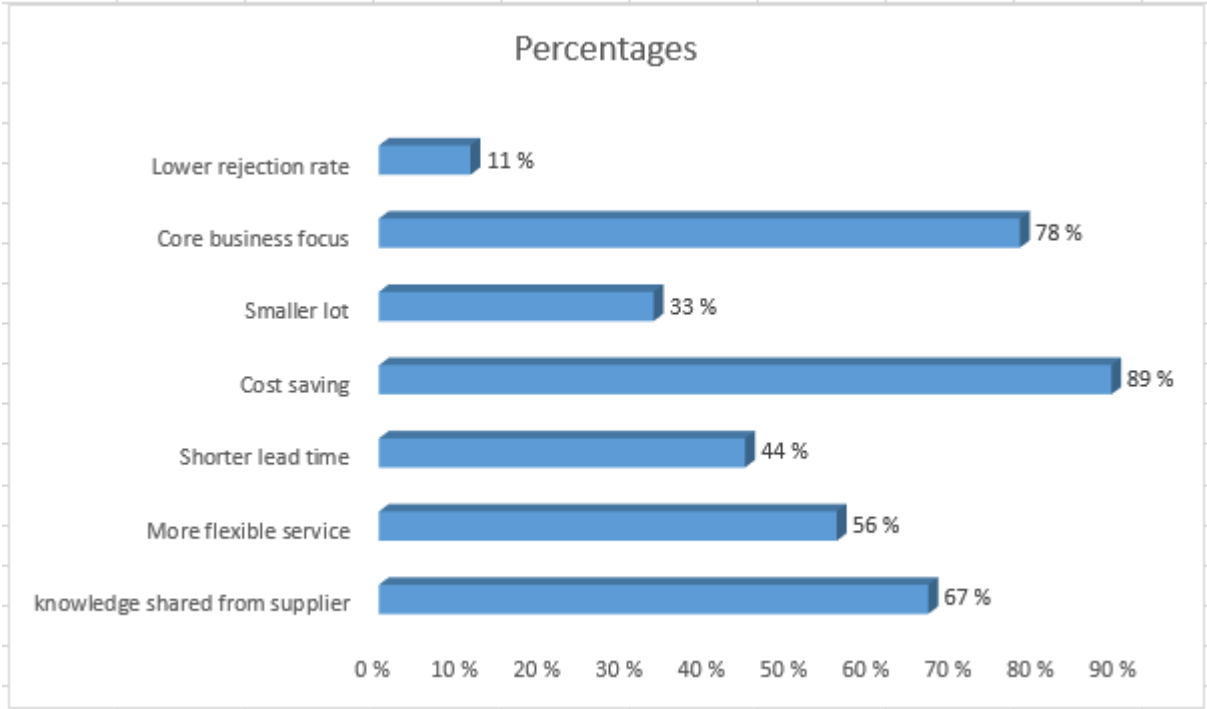
“Procurement cost was increased, after outsourcing procurement functions” was experienced by the university college respondent. This is perhaps because the hidden cost have occurred on selecting the outsourcing vendor (pre-outsourcing activities).

Hidden costs are maybe inevitable, thus, research usually aims not to eliminate it, but instead to offer the buyers of outsourcing services an idea of what might bring them extra cost, and thus contribute to a more reliable budget and expectation of the outcomes.

## 4.7 Experienced benefits by outsourcing

Data obtained from the multiple-choice questions about what respondents have experienced after outsourcing of their procurement activities, are summarized in the following table:

Table 4-5 Experienced benefits by outsourcing



As we can see, the most experienced benefits by outsourcing are cost savings, core business focus and knowledge sharing from suppliers respectively. Shorter lead time, smaller lots and lower rejection rates were less frequently experienced outsourcing benefits.

This is to say that the operational activities are experienced less beneficial than tactical management and strategic enterprise levels.

## 4.8 Experienced challenges by outsourcing

For predefined answers, such as “too dependent on outsource vendor”, “reduced control on procurement progression” and “difficult to cooperate with outsource vendor”, it was 2 respondents, who experienced each of these challenges, respectively.

These problems are experienced rather evenly, and not in a high rate.

### **4.8.1 Reduced control on procurement progression**

As illustrated earlier, the type of outsourcing implemented by the researched companies is partial or incremental outsourcing. Moreover, as described in section 2.2.2, partial outsourcing can be understood as *only a part of an integrated function is outsourced* (van Weele, 2010p.162), while the coordination responsibilities and power still is in the hand of outsourcer. It seems the reality is inconsistent with this definition. By partially outsourcing some function, some of the responsibilities and coordination power will inevitably be transferred to the vendor, since otherwise, the outsourcer and its agent would have to work on the process under constant supervision. Therefore, reduced control on procurement progression is a natural risk associated with the outsourcing strategy.

The question next is how to maintain the reduced control to an acceptable level. This remains also for future research. However, one improvement can be made is to redefine what is partial outsourcing.

An improved version of van Weele' s definition of partial outsourcing is that, partial outsourcing is to outsource a part of an integrated function , while the coordination responsibilities and power still are “SHARED BY BOTH SUPPLIERS AND OUTSOURCERS”.

### **4.8.2 Difficult to co-operate with outsource vendor**

As principal-agent theory claims, the objective of principal and agent is not always in alignment. Because of the information asymmetry, outsource provider may behave opportunistically, and it is even almost impossible to observe and to document it.

When the conflict of interests occurs, it will be difficult to cooperate by the two parties in order to achieve a win-win agreement.

How to solve these difficulties becomes the next question.

My suggestion is to improve the information transparency, especially from the agent side.

By “Other challenges” option (open-ended), the answers are very different from each other.



### **4.8.3 The speed of change was slower due to complex access to necessary documentation to make the outsourcing change; Functional in-compatibility among different departments due to different systems**

Complex access to necessary documentation may arise from outsourcing vendor. Due to system incompatibility between outsourcing vendor and the buyer, it may slow down the access to documentation, hence communication, coordination and fulfillment of the outsourcing process.

During a procurement process, it requires much communication, coordination and cooperation between the outsourcer and outsourcing service vendor to speed up the access to necessary documentation hence increase the speed of outsourcing implantation. Hence, to improve relationship management can be an important issue in a procurement outsourcing process.

### **4.8.4 Service was not customized, and needs were not met accurately.**

The experienced problem of un-customized service and demand were not met accurately indicate that a governance on outsourcing process is necessary.

Although the function is outsourced, its dynamic and complex nature still exists. It is necessary to continuously monitor the ongoing process, to identify what practices have been performing well and what might needed to be changed, or improved. A continuous communication and coordination with outsourcing supplier is also necessary to ensure the service received fits the firm well.

Governance cost may hence bring hidden cost, and this has to be noted by outsourcers.

### **4.8.5 Agreements made between trade-brokers is not so visible; Service providers have been too reluctant to react on delivery schedule and need changes**

These two problems can be illustrated by TCE and principal-agent theory.

TCE claims there are special types of asset: physical asset such as trucks or human asset such as a logistics coordinator. Asset specificity is contributing to the level of customization or specification of the transaction (McIvor, 2008).

For example, to change the delivery schedule, it requires physical and human asset, hence transaction cost. To increase transaction cost implies the reduction of profit loss for service provider, this might have explained itself why service providers have been too reluctant to react on delivery schedule.

Conclusion: Due to its small size, it is not convincing to draw any conclusion from the questionnaire. However, it is still possible to see some hints: Motivations behind outsourcing decision are multiple, but to share a larger network and others' knowledge are in the mind of many decision makers. This matches the globalization trend, which is also one of the reasons why enterprises are intending to outsource procurement function. The majority of the organizations only outsource a very small portion of their whole procurement function. There are indeed differences before and after procurement outsourcing. Almost everyone has been experiencing the similar positive aspects: lower cost, shorter lead-time, service became more flexible, core business focus and knowledge shared from outsource vendors. Experienced challenges are quite diverse: Difficult to cooperate with outsourcing service providers, services offered didn't match the company's requirements, information asymmetry and more. Most of the problems can be explained by TCE and principal - agent theory while others remain for further research.



## Chapter 5 Summary and future research

This thesis aims to identify which benefits and challenges some Norwegian firms have experienced during and after they outsourced their procurement function to a national procurement outsource provider – Inventura.

The research question in this paper is hence: What benefits and challenges have the Norwegian firms who outsourced their procurement function experienced and how may they implement strategies and processes to mitigate these challenges or risks?

To reach this goal, the following actions have been taken:

1. An online questionnaire was designed and distributed to Inventura's 88 clients through emails and 9 responses were received, which gives around 10% response rate. Among the 9 respondents, 2 are public institutions while the rest 7 are business enterprises.
2. A substantial literature review has been undertaken. The purpose of taking on a review of earlier research is to find what problems have been investigated from this field and what more research needed.

It appears that there is much literature on procurement and outsourcing, but very little about procurement outsourcing research, and it is almost none of the work has been done in a Norwegian context. This research, therefore, has potential to contribute to research in general and to the Norwegian society in specific.

3. A thorough analysis of the collected data has also been undertaken. TCE and principal-agent theory have been applied as theoretical framework to explain certain benefits and challenges that have occurred in implementing procurement outsourcing strategy in the research case.

The analysis shows:

- a) There is probably a difference on the extent of procurement outsourcing, between public and private sectors. Public institutions outsource in average 50%-60% of their procurement function. Because of the very small population (around 2000 each) of the two public sectors, the interpretation of the reasons behind the high portion of outsourced procurement function, will be only limited to this case. The reasons behind it could be the

two public institutions in sample were small, and may not have project-specific needs of procurement. The purchased goods/services there were thus limited to routine buying, which hence are easier to be outsourced. Perhaps they get economic subsidiary from government, or do to the same extent fear for risks of loss? Maybe private enterprises who compete in the market, are more explicitly responsible for risks of losing money, bankruptcy, thus more uncertain to outsource? This remains for a future research.

- b) Respondents experienced rather similar benefits: lower rejection rate, smaller lot, cost savings, core business focus, and shared knowledge from outsourcing vendors.
- c) The experienced challenges by respondents are very different from each other, to name some of them:
  - Reduced control on procurement progression
  - Too dependent on service providers
  - Difficult to cooperate with suppliers
  - Service offered are not tailor-made
  - Information not visible

In a general perspective, these problems can be explained by TCE and principal-agent theory. Limited human rationality determines we cannot predict all future situations, hence, we are not able to write the corresponding solutions, rewards and penalties in a contract to regular both parties' performance before the situations really occur. This is to say continuous governance, re-negotiation, coordination are required, and it will bring forth and explicate higher transaction cost. Human nature of self-interest, and the nature of information asymmetry in a principal-agent relation, may potentially be exploited by an agent to reach his/her own interest rather than a joint interest, and this is difficult to document.

However, certain problems occurred cannot be explained by these two theories, such as the ways in which IT systems are not compatible between outsources and outsourcers and reduced control on procurement progression. These are natural obstacles in a business process. The questions might imply how we can manage a better outsourcer and outsourcing service vendor relationship, for the cooperation to reach a win-win situation with low cost in an overall point of views.

## 5.1 Future work

For procurement outsourcing services to develop, more research needs to be carried out in the future. Suggested areas, which have been developing from the research project documented by this thesis, could be:

1. What are the reasons behind the difference between public sector's procurement outsourcing portion and private sector's procurement outsourcing portion?
2. What could public and private sectors learn from each other's success and failures in the process of implementing procurement outsourcing?
3. What is the applicability of recommender systems to an outsourcing strategy, when choosing a supplier or even other areas of a business?

## Reference list

- Aman, Aini, and Hasmiah Kasimin. 2011. "E-procurement implementation: a case of Malaysia government." *Transforming Government: People, Process and Policy* 5 (4): 330-344.
- Aubert, Benoit A., Michel Patry, and Suzanne Rivard. 1998. "Assessing the risk of IT outsourcing." *System Sciences, Proceedings of the Thirty-First Hawaii International Conference*, vol. 6, pp. 685-692.
- Aubert, Benoit A., Michel Patry, and Suzanne Rivard. 2002, *Managing IT outsourcing risk: lessons learned*. Springer Berlin Heidelberg.
- Aubert, Benoit A., Suzanne Rivard, and Michel Patry. 2004, "A transaction cost model of IT outsourcing", *Information & Management*, 41(7): 921-932.
- Barney, Jay. 1991. "Firm resources and sustained competitive advantage." *Journal of management* 17 (1): 99-120.
- Bernstein, Jeffrey R., and David E. Weinstein. 2002. "Do endowments predict the location of production? "Evidence from national and international data." *Journal of International Economics* 56(1): 55-76.
- Berntsen, Simen Horsberg og Dahl, Morten Blakstad 2015, "Outsourcing av innkjøp Hva driver priseffekten i forbindelse med outsourcing av innkjøp innenfor forbruksmateriell? ", Master thesis, Norges Handels Høyskole, Bergen, Norway, <https://brage.bibsys.no/xmlui/bitstream/handle/11250/300201/MasterThesis.PDF?sequence=1&isAllowed=y>
- Bills, S. 2004, "Deutsch outsources all purchasing", *American Banker*, 169 (25):12-12.
- Brewer, Barry L., Bryan Ashenbaum, and Joseph R. Carter. 2013. "Understanding the supply chain outsourcing cascade: when does procurement follow manufacturing out the door?" *Journal of Supply Chain Management* 49 (3): 90-110.
- Carmel, Erran, and Brian Nicholson. 2005. "Small firms and offshore software outsourcing: High transaction costs and their mitigation." *Journal of Global Information Management (JGIM)* 13(3): 33-54.

- CASRO, "Code of standards and ethics for survey research"\_\_accessed on 17.04.2016,[https://c.ymcdn.com/sites/www.casro.org/resource/resmgr/casro\\_code\\_of\\_standards.pdf](https://c.ymcdn.com/sites/www.casro.org/resource/resmgr/casro_code_of_standards.pdf)
- Cavinato, Joseph L. 1992."Evolving procurement organizations: logistics implications." *Journal of business logistics* 13 (1): 27.
- Chen, Rachel R., Robin O. Roundy, Rachel Q. Zhang, and Ganesh Janakiraman. 2005. "Efficient auction mechanisms for supply chain procurement." *Management Science* 51 (3): 467-482.
- Cheon, Myun Joong, Grover Varun; Teng James 1995. "Theoretical perspectives on the outsourcing of information systems" *Journal of information Technology*, 10, 209-219.
- Christiansen, Poul Erik, and Arnold Maltz. 2002. "Becoming an" interesting" customer: Procurement strategies for buyers without leverage." *International Journal of Logistics* 5 (2): 177-195.
- Coase, Ronald H. 1937. "The nature of the firm." *Economica* 4 (16): 386-405.
- Croom, Simon, and Alistair Brandon-Jones. 2007."Impact of e-procurement: experiences from implementation in the UK public sector." *Journal of Purchasing and Supply Management* 13 (4): 294-303.
- Davila, Antonio, Mahendra Gupta, and Richard Palmer. 2003. "Moving Procurement Systems to the Internet: the Adoption and Use of E-Procurement Technology Models." *European management journal* 21 (1): 11-23.
- Davis, Charles E., Elizabeth B. Davis, and Lee Ann Moore. 1998. "Outsourcing the Procurement-through-Payables." *Management Accounting* 80 (1): 38-44.
- Davison Dean. (2004) "Top 10 Risks of Offshore Outsourcing", CIO News, accessed on May 13, 2016, [http://searchcio.techtarget.com/news/article/0,289142,sid182\\_gci950602,00.html](http://searchcio.techtarget.com/news/article/0,289142,sid182_gci950602,00.html).
- De Boer, Luitzen, Jeroen Harink, and Govert Heijboer. 2002. "A conceptual model for assessing the impact of electronic procurement." *European Journal of Purchasing & Supply Management* 8 (1): 25-33.
- Deming, W. Edwards. (1986). "Out of the crisis, Massachusetts Institute of Technology." *Center for advanced engineering study, Cambridge, MA, 510*.



- DNB. "Average currency 2014", accessed on April 19, 2016, <https://www.dnb.no/bedrift/markets/valuta-renter/valutakurser-og-renter/historiske/hovedvalutaer/2014.html>
- Eisenhardt, Kathleen M. 1989. "Agency theory: An assessment and review." *Academy of management review* 14(1): 57-74.
- Elmuti, Dean. 2003. "The perceived impact of outsourcing on organizational performance." *American Journal of business* 18 (2): 33-42.
- eSourcing Wiki," Procurement Outsourcing", accessed on May14.2016. [http://www.esourcingwiki.com/index.php/Procurement\\_Outsourcing](http://www.esourcingwiki.com/index.php/Procurement_Outsourcing)
- Favre Donovan, Findlay Charles, Zanker, Jeffery C. "The case for procurement outsourcing", Accessed on March.27. 2016. <http://mthink.com/article/case-for-procurement-outsourcing/>
- Furneaux, Craig W., Kerry Brown, and Don Allan. 2008. "Public values embedded in Australian public works procurement." *Public Money and Management* 28 (3): 167-172.
- Geo Richard Glavee (2008) "Public Procurement Reforms in Ghana: An Evaluation of the Implemented Changes", Master Thesis, University college of Molde. [https://brage.bibsys.no/xmlui/bitstream/handle/11250/153439/1/master\\_glavee-geo.pdf](https://brage.bibsys.no/xmlui/bitstream/handle/11250/153439/1/master_glavee-geo.pdf)
- Gil, Ana, and Francisco García. 2003. "E-commerce Recommenders: Powerful Tools for E-business." *Crossroads* 10, (2): 6-6.
- Gilley, Matthew K. and Abdul Rasheed. 2000. "Making more by doing less: An analysis of outsourcing and its effects on firm performance", *Journal of management*, 26(4):763-790
- Golafshani, Nahid. 2003. "Understanding reliability and validity in qualitative research." *The qualitative report* 8 (4): 597-606.
- Hartley, Janet L., Michelle D. Lane, and Edward A. Duplaga. 2006. "Exploring the barriers to the adoption of e-auctions for sourcing." *International Journal of operations & production management* 26 (2): 202-221.
- Hitt, Michael A., and R. Duane Ireland. 1986. "Relationships among corporate level distinctive competencies, diversification strategy, corporate structure and performance." *Journal of Management Studies* 23 (4): 401-416.

- Jaafar, M. and Radzi, N.M., 2012. "Building procurement in a developing country: a comparison study between public and private sectors." *International Journal of Procurement Management*, 5(5): 608-626.
- Jensen, Michael C., and William H. Meckling. 1976. "Theory of the firm: Managerial behavior, agency costs and ownership structure." *Journal of financial economics* 3(4): 305-360.
- John, G. 2003. "The core conundrum", *Supply Management*, 8 (9):20.
- Kedia, Ben L. and Somnath Lahiri. 2007. "International Outsourcing of Services: A Partnership Model", *Journal of International Management*, 13(1):22-37
- Kern, Thomas, Leslie P. Willcocks, and Eric Van Heck. 2002."The winner's curse in IT outsourcing: Strategies for avoiding relational trauma." *California Management Review* 44 (2): 47-69.
- Kettner, Peter, and Lawrence L. Martin. 1985. "Issues in the development of monitoring systems for purchase of service contracting." *Administration in Social Work* 9(3): 69-82.
- Klein, Benjamin, Robert G. Crawford, and Armen A. Alchian. 1978. "Vertical integration, appropriable rents, and the competitive contracting process." *The Journal of law & economics* 21 (2): 297-326.
- Kolenko Sean. "Stages in procurement outsourcing", accessed on March 27,2016, <http://blog.procurify.com/2014/09/16/stages-procurement-process/>
- Koss, Patricia A., and B. Curtis Eaton. 1997. "Co-specific investments, hold-up and self-enforcing contracts." *Journal of Economic Behavior & Organization*, 32 (3): 457-470.
- Lacity, Mary C., and Rudy A .Hirschheim 1993b. "The information systems outsourcing bandwagon." *Sloan management review* 35 (1): 73.
- Lacity, Mary Celia, and Rudy A. Hirschheim. 1993a. *Information systems outsourcing; myths, metaphors, and realities*. John Wiley & Sons, Inc.
- Laudon, K., & Laudon, J. (2001). *Essentials of Management Information Systems: Organization and Technology in the Networked Enterprise*. Upper Saddle River, NJ: Prentice Hall.
- Lee, Jason Wai Chow, Osman Mohamad and T. Ramayah. 2010. "Outsourcing: is the social exchange theory still relevant in the developing countries?" *Journal of Research in Interactive Marketing*, 4(4):316-345

- Leenders, Michiel R., and Anna E. Flynn. 1995. *Value-driven purchasing: Managing the key steps in the acquisition process*. Irwin Professional Pub.
- Leenders, Michiel R., Harold E. Fearon, Anna Flynn, and P. Fraser Johnson. 2003. *Purchasing and Supply Management*. 12th edition. New York: Mc Graw – Hill Irwin.
- Linder, Jane C, 2004. "Outsourcing as a strategy for driving transformation", *Strategy & Leadership*, 32 (6):26 - 31
- Longman, A., Jim Mullins, Steve Hindy, Tom Potter, Michael R. Bloomberg, William B. Rouse, Timothy L. Keiningham et al. 2005. *The Black Book of Outsourcing: How to Manage the Changes, Challenges, and Opportunities*. Hoboken. New Jersey and Canada. John Wiley & Sons Inc.
- Lucking-Reiley, David. 2000. Auctions on the Internet: What's being auctioned, and how? *The Journal of Industrial Economics*. 48(3):227–252.
- M.V.Manikandan. "Why should you consider procurement outsourcing? A holistic approach towards vertically integrated to virtually integrated business process services", Wipro, accessed on March 27, 2016, [http://www.enterprisemanagement360.com/wp-content/files\\_mf/white\\_paper/Why\\_should\\_you\\_consider\\_Procurement\\_Outsourcing\\_MMI\\_A\\_Nov08\\_073\\_0.pdf](http://www.enterprisemanagement360.com/wp-content/files_mf/white_paper/Why_should_you_consider_Procurement_Outsourcing_MMI_A_Nov08_073_0.pdf)
- Marshall, Donna, Ronan McIvor, and Richard Lamming. 2007. "Influences and outcomes of outsourcing: insights from the telecommunications industry." *Journal of Purchasing and Supply Management* 13 (4): 245-260.
- McCue, Clifford P; Pitzer, Jack T. 2000: "Centralized vs. decentralized purchasing: Current trends in governmental procurement practices", *Journal of Public Budgeting, Accounting & Financial Management*, 12(3):400-420.
- Min, Hokey, and William P. Galle. 2003. "E-purchasing: profiles of adopters and nonadopters." *Industrial Marketing Management* 32 (3): 227-233.
- Ministry of Government Administration, Reform and Church Affairs, "Stricter enforcement of public procurement", accessed on My 23. 2016, <https://www.regjeringen.no/en/aktuelt/stricter-enforcement-of-public-procureme/id662949/>

- Monczka, R.M., W.J. Markham, J.R. Carter, J.D. Blascovich and T.H. Slaight. (2005) "Outsourcing Strategically for Sustainable Competitive Advantage" CAPS Research.
- Monczka, R.M., Carter, J.R., Markham, W.J., et al 2005, Outsourcing strategically for Sustainable Competitive Advantage, Tempe, AZ: Center for Advanced Research Studies.
- Mukhopadhyay Tridas and Kekre Tridas (2002) "Strategic and Operational Benefits of Electronic Integration in B2B Procurement Processes", *Management Science*, 48(10):1301–1313
- Nathan Lea. "The 10 Steps of the Procurement Cycle", accessed on March 27, 2016, <http://www.businessdictionary.com/article/572/the-10-steps-of-the-procurement-cycle/>
- Neupane Rajan. "Centralized vs localized buying", accessed on March 27, 2016, <http://www.slideshare.net/RajanNeupane/centralized-vs-localized-buying>.
- Ngwenyama, Ojelanki K., and Noel Bryson. 1999: "Making the information systems outsourcing decision: A transaction cost approach to analyzing outsourcing decision problems." *European Journal of Operational Research* 115 (2): 351-367.
- Ouchi, William G. 1980. "Markets, bureaucracies, and clans." *Administrative science quarterly* 25(1): 129-141.
- Padovani, Emanuele and David W. Young. 2008. "TOWARD A FRAMEWORK FOR MANAGING HIGH-RISK GOVERNMENT OUTSOURCING: FIELD RESEARCH IN THREE ITALIAN MUNICIPALITIES." *Journal of Public Procurement* 8 (2): 215-247.
- Parry, Glenn; James-Moore, Mike; Graves, Andrew. 2006. "Outsourcing engineering commodity procurement", *Supply Chain Management*, 11(5):436-443
- Pibernik, R. 2001. "flexibility planning in value network – works". *Journal of Economics*, 71 (8):893-913.
- Pierce, Roger. "Evaluating information: Validity, reliability, accuracy, triangulation." *Research Methods in Politics* (2007): 79-99.
- Pires, Guilherme D., and John Stanton., 2005. "A research framework for the electronic procurement adoption process: drawing from Australian evidence", *Journal of Global Business and Technology*, 1(2):12-20.

- Porter, Michael.E. 1980. *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. Free Press, New York, NY.
- Prahalad, C. K. G Hamel. 1990. "The Core Competence of the Corporation [J]." *Harvard Business Review* 68 (5): 6.
- Quayle, Michael; Quayle, Sharon. 2000 "The impact of strategic procurement in the UK further and higher education sectors", *The International Journal of Public Sector Management*, 13(3): 260-284.
- Quinn, James Brian, and Frederick G. Hilmer. 1994, "Strategic sourcing", *Sloan Management Review*, 3(4): 19-21.
- Raffa, Lelio and Gianluca Esposito. 2006. "THE IMPLEMENTATION OF AN E-REVERSE AUCTION SYSTEM IN AN ITALIAN HEALTH CARE ORGANIZATION1." *Journal of Public Procurement* 6 (1): 46-69.
- Rameezdeen, Raufdeen; Jayasena, Eranga 2013. "Comparing the procurement selection parameters of private and public sector clients", *International Journal of Construction Project Management* 5(2): 171-184
- Reck, Robert F., and Brian G. Long. 1988. "Purchasing a competitive weapon", *Journal of Purchasing and Materials Management*, 24(3): 2-8.
- Reddick, Christopher G. 2004. "The growth of e-procurement in American state government: A model and empirical evidence", *Journal of Public Procurement* 4(2): 151-186.
- Resnick, Paul, and Hal R. Varian. 1997. "Recommender systems." *Communications of the ACM* 40 (3): 56-58.
- Salmond, Susan S. 2008. "Evaluating the reliability and validity of measurement instruments." *Orthopaedic Nursing* 27, (1): 28-30.
- Sappington, David. 1991. "Incentives in principal-agent relationships." *Journal of Economic Perspectives*, 3(2): 45-66.
- Simon, Herbert.A. 1961, *Administrative Behaviour*, 2nd edition, New York: Macmillan.
- SSB. "Public purchases 2014", accessed on April 19, 2016, <http://ssb.no/en/offentlig-sektor/statistikker/offinnkj/aar/2015-12-11?fane=tabell&sort=nummer&tabell=249181>

- Stefan Bensch, (2012), "Recommender systems for Strategic Procurement in Value Networks" *AMCIS 2012 Proceedings*. Paper 13.
- Svane Henrik and Charlotte Bang-Hansen, 2015, accessed on 23 May 2016, <http://www.iclg.co.uk/practice-areas/public-procurement/public-procurement-2016/norway>
- Tassabehji, R., W. A. Taylor, R. Beach, and A. Wood. 2006. "Reverse e-auctions and supplier-buyer relationships: an exploratory study." *International Journal of Operations & Production Management* 26 (2): 166-184.
- Trefler, Daniel. 1995. The case of the missing trade and other mysteries. *The American Economic Review*, 1029-1046.
- Van Der Vegt, Gerben, Ben Emans, and Evert Van De Vliert. 1998 "Motivating effects of task and outcome interdependence in work teams." *Group & organization management* 23 (2): 124-143.
- Van Weele, Arjan J. 2005. *Purchasing and Supply Chain Management: Analysis, Strategy, Planning and Practice*. 4th Edition. London: Thomson Learning.
- Van Weele, Arjan J. 2010. "Purchasing and Supply Chain Management: Analysis, Strategy, Planning and Practice". 5th Edition. Hampshire: Cengage Learning EMEA.
- Van Weele, Arjan J. 2014. *Purchasing and supply chain management*, 6th ed. Hampshire: Cengage Learning EMEA.
- Wang, Eric TG. 2002. "Transaction attributes and software outsourcing success: an empirical investigation of transaction cost theory." *Information Systems Journal* 12 (2): 153-181.
- Wikipedia, "Transaction cost", accessed on May 22. 2016, [https://en.wikipedia.org/wiki/Transaction\\_cost](https://en.wikipedia.org/wiki/Transaction_cost)
- Williamson, Oliver, Eaton. 1985" The Economic Institutions of Capitalism: Firms, markets, relational contracting", Free press, New York.
- Williamson, Oliver. 1975. *Markets and hierarchies: Analysis and antitrust implications*. New York: Free Press.
- Wisner, Joel, Keah-Choon Tan, and G. Leong. 2015. *Principals of supply chain management: a balanced approach*. Cengage Learning.

World Bank," Norway-data", accessed on April 19, 2016,<http://data.worldbank.org/country/Norway>

Wu, Fang, George A. Zsidisin, and Anthony D. Ross. 2007. "Antecedents and outcomes of e-procurement adoption: an integrative model", *Engineering Management, IEEE Transactions*, 54(3):576-587.

Yin, Robert K. 1989."Case study research: Design and methods, revised edition." *Applied Social Research Methods Series 5*

Zhao, Weilin and Chihiro Watanabe. 2010. "RISK MANAGEMENT IN SOFTWARE OUTSOURCING-A PORTFOLIO ANALYSIS OF INDIA'S CASE BASED ON SOFTWARE EXPORT MARKET CONSTITUTION." *Journal of Services Research*10 (1): 143-155.

Zikmund, W.G. (2003). *Business Research Methods* (7th edition.) USA: Thomson Learning, South- Western.

## **Appendix 1: Procurement outsourcing survey**

### **Pre- procurement outsourcing VS post- procurement outsourcing**

The intention of this research is: By comparing the situation before and after procurement function is outsourced, to identify the (potential) opportunities and challenges procurement outsourcing strategy has brought in to your firm and the offshore industry.

When question asks something about "After outsourcing" it means to compare with situation before outsourcing.

If you have any questions, please send email to [130937@stud.himolde.no](mailto:130937@stud.himolde.no)

The information from your reply will be kept confidentially.

Thank you for your interest, it is very much appreciated.

If you wish a copy of the analysis result, please write down your email address:

Email:

---

1. What is the size of your company?

- A. Less or equal to 50 employees
- B. 51-250 employees
- C. 251-500 employees
- D. 501-1000 employees
- E. 1000 employees

2. What are the motives of your firm to outsource the procurement function?

(Multiple choice, Matrix)

Not motivated-A little motivated-Somewhat motivated- Quite motivated- Strongly motivated

- A. To focus on the core businesses
- B. To lower the entire procurement cost
- C. To apply procurement service providers' networks and knowledge
- D. No sufficient professional employee to perform procurement jobs
- E. Other motivations. Please describe the other motivations:

3. What procurement function has your firm outsourced to a third party?

(Multiple choice)

- A. Construction work (eg. Rig construction)
- B. Selection of supplier
- C. Contract negotiation
- D. Order placement
- E. Other functions. What other procurement functions has your firm outsourced to a third party company?

4. What are your firm's strategic goals in procurement? (Multiple choice)

- A. Low cost
- B. Low rejection rate



- C. Short lead time
  - D. On-time delivery
  - E. Service flexibility - ability to quickly respond to changes in delivery schedule and procure new / different goods
  - F. Long term cooperation with suppliers
  - G. Other strategic goals. Please describe the other strategic goals your firm has in procurement functions:
5. Please estimate how much of procurement activities has your firm outsourced:
- A. 1%-20%
  - B. 21%-40%
  - C. 41%-60%
  - D. 61%-80%
  - E. 81%-100%
6. How much is your firm satisfied with the procurement performance delivered by the outsourced suppliers?
- A. Very Dissatisfied. Please explain what made you dissatisfied:
  - B. Dissatisfied. Please explain what made you dissatisfied:
  - C. Indifferent
  - D. Satisfied
  - E. Very Satisfied
7. After outsourcing, how much has the lead-time of goods delivery from suppliers been decreased?
- A. 0%
  - B. 1%-20%
  - C. 21%-40%
  - D. 41%-60%

- E. 61%-80%
  - F. 81%-100
  - G. Lead-time increased. Please explain why the lead-time of goods delivery from suppliers was increased but not decreased:
8. After outsourcing, how much has your firm saved on inventory cost?
- A. 0%
  - B. 1%-20%
  - C. 21%-40%
  - D. 41%-60%
  - E. 61%-80%
  - F. 81%-100
  - G. Inventory cost increased. Please explain why after outsourcing, inventory cost increased but not decreased:
9. After outsourcing, how much has the rejection rate of goods received been decreased?
- A. 0%
  - B. 1%-20%
  - C. 21%-40%
  - D. 41%-60%
  - E. 61%-80%
  - F. 81%-100
  - G. Rejection rate of goods received increased. Please explain why rejection rate of goods received increased, after outsourcing:
10. Please estimate the savings on procurement expenses after outsourcing (including administrative costs and purchasing costs).
- A. 0%
  - B. 1%-20%
  - C. 21%-40%
  - D. 41%-60%
  - E. 61%-80%
  - F. 81%-100

G. Procurement cost increased. Please explain why procurement expenses increased, after outsourcing:

11. What challenges did your firm encounter when outsourcing procurement function was assessed and introduced? (Matrix. All 4 choices have to be answered)

None of it    A little bit    Some    Much    Quite much    Very much

- A. Internal conflict (exp. fear to lose jobs)
- B. Fear for becoming too dependent on suppliers
- C. Internal information (exp. payroll) exposed to suppliers
- D. Other challenges. Please provide some examples of the challenges occurred:

12. What benefits has your firm experienced because of outsourcing? (All choices have to be answered)

- A. Cost savings
- B. Innovative knowledge shared from suppliers
- C. Smaller lot
- D. Service became more flexible, able to change delivery schedules and procure new/different goods in a timely manner.
- E. Other. Please write down the other benefit(s):

13. What problems has your firm confronted after procurement function is outsourced? (Multiple choice)

- A. Difficult to cooperate with procurement service providers
- B. Too dependent on procurement service providers
- C. Reduced control on the progression of procurement performances
- D. Integration problems relates to different procurement systems (accounting, warehouse, software...)
- E. Other problems. Please describe what problems your firm has met after procurement function is outsourced:

14. What negative experiences did your firm experience after outsourcing procurement activities? (Multiple choice)

- A. Larger order quantity
- B. Less reliable on-time delivery.
- C. Longer fault correction time.
- D. Service became more rigid, unable to respond quickly to needed changes in delivery schedule / procure different goods.
- E. Other negative experiences. Please state: