



# CHALMERS

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## Examining the sourcing process at a construction company to explore improvement potentials

- How to achieve Operational Excellence

*Master of Science Thesis*

*in the Supply Chain Management & Quality and Operations Management Programme*

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Examining the sourcing process at a  
construction company to explore improvement  
potentials  
- How to achieve Operational Excellence

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## Abstract

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Historically, the purchasing process in the construction industry has attracted limited attention. Mainly this has been due to the organisational structure of construction companies, where projects are more or less isolated from each other and operate as smaller companies within a larger organisation. Projects make call offs on material and services and have strong relationships with suppliers. This decentralised structure has led to multiple contracts with the same suppliers and the identified saving potential has placed a requirement for a centralised function to consolidate these contracts in Framework Agreements.

At the construction company in focus, category managers that analyse the supply markets to create leverage towards the suppliers manage this operation. Pursuing to increase savings, the Company involves top management in all sourcing decisions. While their main objective is to increase savings in direct costs, the sourcing process is in itself time consuming, where category managers in spend six months in general on the sourcing process. Streamlining this administrative process is therefore of great interest for the organisation and an investigation was desired on whether the time consumption could be reduced.

Through process mapping, interviews and benchmarking, non-value adding activities have been identified. The improvement suggestions presented in the thesis add up to a potential time reduction of 14.1% for FTE=1. In addition, a model for reaching Operational Excellence in administrative processes at the construction company has been brought forward based on the theory and the methodology used for the thesis.

**Key words:** sourcing process, procurement, construction industry, operational excellence, administrative process



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*Sara Frisk & Rania Karat, Gothenburg 2016*

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# Abbreviations

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<b>BPE</b>	Best Practice Example
<b>BI</b>	Business Intelligence (business system)
<b>CFT</b>	Cross functional team
<b>FTE</b>	Full time Employment
<b>FWA</b>	Framework Agreements
<b>NPU</b>	Nordic Procurement Unit
<b>NSB</b>	Nordic Sourcing Board
<b>OE</b>	Operational Excellence
<b>OnePager</b>	Common presentation template slide used in all TG presentation that highlights key points such as savings, spend, risks & challenges, category strategy
<b>PPT</b>	Project Plan Template
<b>RFI</b>	Request for information
<b>RFP</b>	Request for proposal
<b>RFQ</b>	Request for quotation
<b>RFx</b>	Request for X
<b>SB</b>	Sourcing Board
<b>SP</b>	Sourcing Process
<b>SSPG</b>	Strategic Sourcing Process Guideline
<b>TG</b>	Tollgate
<b>TGPT</b>	Tollgate Presentation Template
<b>UKT</b>	Swedish. Utökat Kategori Team (extended category team)
<b>VSM</b>	Value stream mapping

## **1. Introduction**

Companies operating in the construction industry are divided into multiple autonomy units, projects, where the respective project manager takes most decisions. Hence, most construction companies have a decentralised approach to decision-making (Dubois and Gadde, 2002). In the case of the procurement operations, typically the project managers are responsible for budgeting and decide on supplier selections and have a dedicated team within their own unit that calls off the material. There may also exist a centrally organised department that is dedicated to the procurement but disconnected to specific projects (Frödell, 2014). Thus, the centralized purchasing department within most construction companies has been characterized by huge integration difficulties, where processes are loosely coupled and are likely to be duplicated (Frödell, 2014; Dubois and Gadde, 2002).

As projects result in smaller purchase volumes and shorter time frames, relationships among construction companies and their suppliers have not been developed to a wider extent (Frödell, 2014). By not consolidating material throughout the organisation, these companies have not been able to gain leverage towards suppliers by larger purchasing volumes. Nor has it been possible to reach a fair amount of economies of scale and scope (Frödell, 2014). Centralising the purchasing department enables construction companies to reach larger purchasing volumes and develop better relationships with suppliers (Frödell, 2014). Given the characteristics of the construction industry, this is especially true for suppliers of standard products that are purchased on a regular basis across most projects.

To this background, the Company that has been investigated, which from now on will be noted as the Company, started the unit for coordinated procurement within the Nordic region, i.e. Sweden, Norway and Finland, called Nordic Procurement Unit (NPU). NPU is responsible for the procurement processes, strategies and tools within the Nordic as well as national projects. The vision of NPU is to create leverage towards suppliers and thereby achieve price efficient solutions and high quality, while assuring that their operations are aligned to the Company's overall strategy of achieving Operational Excellence (OE).

### **1.1 Background**

For the Company in this thesis, approximately 70-75% of all purchased items are bought within the projects and 25-30% are bought within Framework Agreements (FWA) on local, regional, national and Nordic level. FWAs are further used in the projects where project managers can call off material at a lower price through the consolidation work

done by the category manager in the sourcing process. Usually, FWAs last for 2+1 years, but there are cases where they last one year longer or shorter.

The strategic sourcing process is divided into four sub processes according to Figure 1, where the primary focus for the thesis will be on the second sub process; *sourcing*.

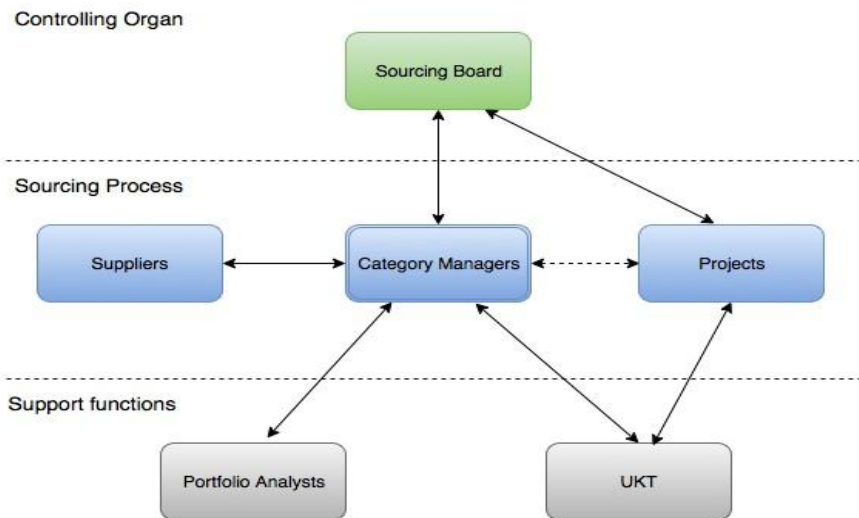


*Figure 1 – The Strategic Sourcing process divided into its four sub processes*

The category manager is seen as the user and facilitator of the sourcing process and (s)he gains input from an extended category team (in Swedish UKT) that represent the projects' requirements. The initiation of the sourcing process can arise from two sources. Either an identified need by the category manager after completing the category planning, or as a strategic decision based on a need seen by the portfolio manager, i.e. the category managers' director, for that specific category.

The suppliers selected are either strategic because of their partner potential, their recurring cooperation with the Company or the characteristics of the supplied material. These facts makes it necessary for the Company to have a controlling function within the organisation that approves the content of the contracts signed and the suppliers selected suggested by the category manager. This controlling function is the SB, to whom every category manager needs approval of before continuing the sourcing process and signing a FWA, choosing supplier and/or choosing strategy. The SB consists of the top managers from the purchasing organisation. On national level it is the Head of Procurement in the respective country. On Nordic level, the Head of Procurement in Sweden, Norway and Finland are all represented in the SB together with the Head of Nordic Procurement. For NPU, the Head of Nordic Sourcing will also be part of the SB together with the Head of Category Management for all Nordic countries.

Another stakeholder of the sourcing process is the portfolio analyst that supports the category manager with analyses regarding market trends, saving potentials etc. All stakeholders involved in the sourcing process are presented in Figure 2.



*Figure 2 – Stakeholders of the sourcing process at the Company*

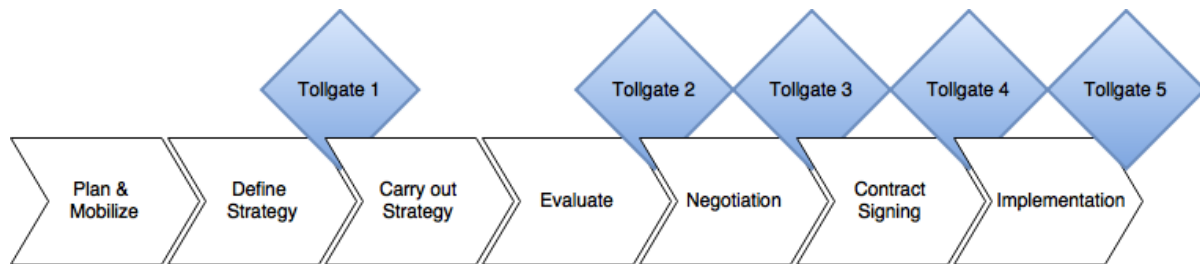
The first phase of the sourcing process, see Figure 3, *Plan and Mobilize* aims to define the project organisation and the team members to include. The output of this phase is to develop a plan for the sourcing process and to set its scope. This is done through analyses and data collection of former and current agreements aligned with further research. In addition to the Plan and Mobilize phase, category managers need to define the Sourcing/RFx Strategy before presenting their proposed strategy to the SB or Steering Group in TG1. In this phase, category managers evaluate data from analyses and set strategies for the category. Further, a supplier long list is presented. If category managers wish to skip certain TGs as they do not find them appropriate for the certain sourcing case, they can request to do so in the TG1 presentation.

After decision in TG1 follows the Carry-out Strategy phase, including documentation, preparation and pre-qualification of RFx. In the evaluation steps, offers are analysed and compared and potential suppliers are listed. A negotiation strategy is set up and the material is presented in TG2. Negotiation mandate is requested and the outcome of the sourcing process is presented. If it has not been done earlier in the process, request for final supplier selection mandate can be made in TG2.

Once the negotiation strategy is approved, either by SB or a Steering Group, category managers start the negotiation phase. The negotiation strategy is set for each supplier and if possible, e-auction can be used and the category managers handle these setups. For TG3, category managers need to compile negotiation results and provide information on which supplier(s) to nominate for a FWA. The SB have to approve the

recommended supplier(s) in TG3 before a decision on who to select for contract signing can be made.

The contract is updated according to the negotiation and an implementation plan is created after TG3. Documentation and lessons learned from the sourcing process are compiled and presented in TG4. Results from the whole sourcing case are presented and implementation along with attached target is decided in TG4. A follow-up is done for TG5.



*Figure 3 – The steps and TGs of the sourcing*

## **1.2 Purpose**

The thesis aims at evaluating the sourcing process at the Company and identifying potential improvement areas. Suggestions for the current process will be given as well as for how the Company in general can work with continuous improvement of processes to achieve OE.

## **1.3 Limitations**

The study is limited to investigate the activities within the sourcing process. The study will only look at the sourcing process for NPU, Sweden, Norway and Finland at the Company and their internal operations and no other functions than the purchasing department will be examined. The geographical scope only covers Sweden, Norway and Finland. The methods to be applied will consist of surveys, semi-structured interviews and observations.

## **1.4 Problem analysis and research questions**

Evaluation of the current sourcing process is requested in order to find potential improvement areas and visualise waste. Currently, the Company does not know the time frame of the sourcing process. Their frameworks for how to conduct sourcing apply for all different categories and are not tailored according to each category's unique characteristics. There are existent Best Practice examples, but their prominent characteristics have not been identified. Further, the frameworks for the sourcing

procedure are not aligned with the available Best Practice material. On top of this, the Company has not investigated how category managers are experiencing the procedures that they are expected to follow. Thus, the Company is unaware of which steps in the sourcing process that add value and which do not.

It is believed that the ambiguities mentioned above are due to not having commonly established guidelines of how to evaluate processes in NPU. Currently, the Company does not have a standardized way of working with improvement in processes and therefore lack procedures to reach OE from a general point of view. For these reasons, it is believed that investigating all steps and evaluating the tools and guidelines available to facilitate the procedures can heavily improve the sourcing process at the Company. By doing so, the Company will not only identify new areas for cost and time savings, but also gain insights in how they should work to achieve OE. It is the Company's vision to ensure this mind-set in every aspect of operations, which is in consistency with what can be found in most literature. Bigelow (2002) describes that OE is reached when internal processes are in compliance with customer requirements, while decreasing quality costs. According to Morash and Clinton (2001), companies should seek ways to optimize the internal material flows to reach OE. Miller's (2014) definition of OE might be the closest one to the Company's, as it underlines the importance of having an OE mind-set in every area of the organisation.

These statements do, however, entail little information on how to actually reach OE. Both research (Basu, 2004; Bigelow, 2002; Miller, 2014, Liker and Meier, 2013) and the Company put a heavy focus on continuous improvement for succeeding in implementing OE, but the methodology is in conflict with this goal. The main objectives according to Basu (2004) lie within designing profitable processes and ensuring a competitive advantage towards the market before implementing holistic quality and sustainable programmes. Bigelow (2002), however, puts a heavy focus on identifying and serving both external and internal customer requirements to reach OE. The Company's methodology is a mixture of both these author's' guidelines, as they want to effectively deploy the best processes, systems and people to always match customer requirements. This is done by continuously evaluating and monitoring the way of working with estimations, planning, project executions, bid selection and development, risk assessments and administrative and support functions.

However, how this strategy actually works in practice is in question. Given that guidelines should be well documented and accessible for every user (Bigelow, 2002), it is difficult to assess how the Company is actually working with OE in all processes in all areas of the organisation. Apart from viewing the OE methodology in the core value webpage at the Company's intranet, little information is provided on how to actually implement it in different procedures. Even if guidelines to processes can be accessed on

both the intranet and the internal systems, there exist multiple ways of describing the same processes and updated versions are not highlighted. This has been the case for the sourcing process, where descriptions of it differs from document to document, conflicting with both research and the Company's vision of achieving OE.

As continuous improvement is the foundation for OE, it is crucial to get a deep understanding of the current activities involved in the sourcing process to seek ways to make operations more efficient and to meet the Company's overall strategy. Given the presented background, the Company's visions and the purpose of this thesis, the report aims at answering the two following questions:

- How is the current sourcing process and its tools followed and what are the strengths and weaknesses?
- Which activities in the sourcing process at the Company should be revised or eliminated in order to achieve OE?

## **2. Theoretical framework**

The theoretical framework is divided into two focus areas in order to provide an academical background to answer the research questions. Firstly, literature reviews regarding administrative processes will be presented, where both definitions and means of improving such processes will be in focus. This subject area is crucial to the study when analysing the current state of the sourcing process and from there apply tools suggested by theory to improve it.

Secondly, the setting of the process will be described by including literature related to procurement in the construction industry. The construction industry places different demands on the procurement function that are very different compared to other industries and categories are to a large extent differentiated from each other. These requirements will in turn place certain demands that need to be taken into consideration for the sourcing process as well. Hence, the characteristics of procurement in construction need to be examined.

### **2.1 Operational Excellence**

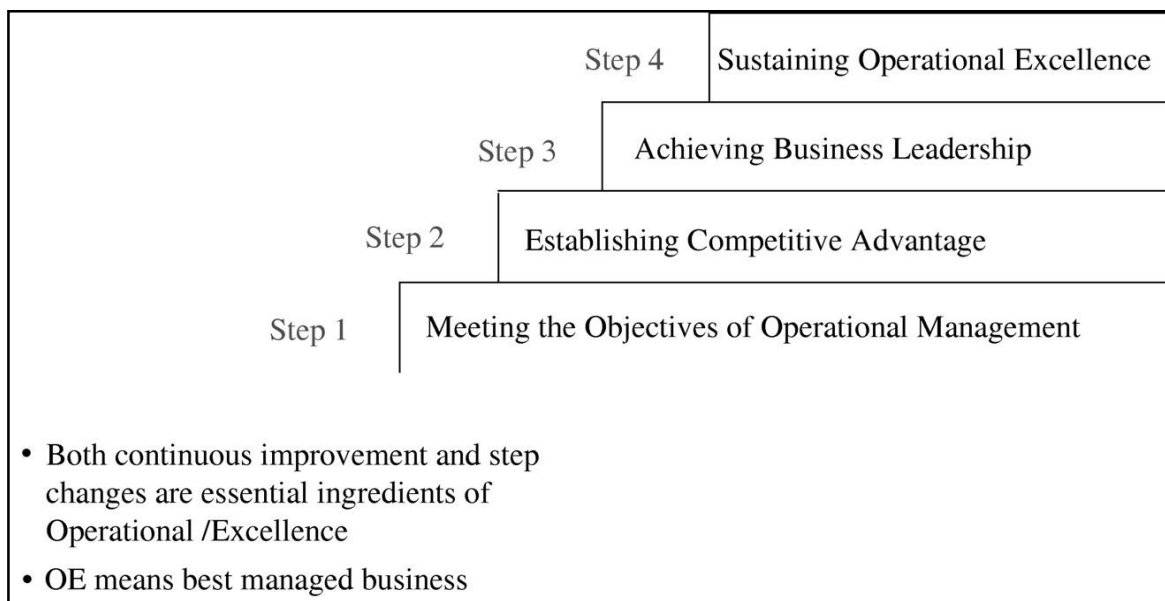
The goal of OE is according to Bigelow (2002) for companies to maintain quality of products and services, preserving total compliance and meet customer requirements while reducing quality costs and remaining competitive. In other articles, OE is defined as measures for optimizing inter-company material flows (Morash and Clinton, 2001). There has not been a clear consensus about the definition of OE according to research.

A common ground can be found in the citation – “We are what we repeatedly do. Excellence then is not an act, but a habit” (Liker and Meier, 2013). Miller (2014) also shares the view of OE as a mind-set rather than a method. Further Miller (2014) says that OE is a “constant pursuit of improved performance and profitability in all areas of our organisation”. Similarities to this perspective are found in *The Toyota Way* (Liker and Meier, 2013), where excellence is seen as a pursuit and when improvement takes place, we are getting closer to excellence. Guidance towards excellence in our achievements is given by the greatest grade of performance and provides a “true north” (Liker and Meier, 2013). The Institute for Operational Excellence describes it as “when each and every employee can see the flow of value to the customer and fix that flow before it breaks down” (Institute for Operational Excellence, 2002).

In addition to the mind-set theories, Basu (2004) claims that OE contains measures for improving and sustaining business performance in the quality management operations. The author provides a roadmap for achieving OE seen in Figure 4 below. The foundation of OE lies within the company’s ability to stay profitable when balancing the customer requirements with the available resources. Secondly, companies should strive for

reaching a competitive advantage through benchmarking against competitors. Step 3 is considered as the OE step, where companies conduct holistic quality programmes aiming at being “best-in-class”. The fourth and final step of the road map is sustaining the benefits achieved from the previous step. This could be done through different sustainable processes such as self-assessment, knowledge management etc. (Basu, 2004).

The objective of the road map is to allow companies to place themselves as the very best in their industry and maintain that position. To do so, continuous improvements are necessary and that journey may take a very long time. Thus, Basu (2004) provides both a methodology for achieving OE as well as agreeing with previous authors that OE is a mind-set that needs to be adopted by the organisation.



*Figure 4 – Steps of Operational Excellence (Basu, 2004)*

Bigelow (2002) presents a methodology for reaching OE through an iterative cycle, consisting of three phases, see Figure 5. Unlike Basu (2004), Bigelow (2002) states that the fundamental step revolves around setting clear, accurate and appropriate requirements from both internal and external customers. The first phase of the cycle therefore evolves around clarifying the key points that need to be undertaken and settling the where, why, how, when and who will answer to those needs. Similarly, responsibilities, frequencies, time frames, materials, components, equipment, quantities, formulas, methods, measurements, environmental conditions and documentation need

to be established in this first phase. Further, the requirements need to be accessible and properly packaged through written instructions in an easily understood language for the users, preferably by using some visualisation tools such as flowcharts, pictures, diagrams or illustrations (Bigelow, 2002).

Once the needs are collected, these requirements are to be effectively communicated at an appropriate frequency between users and managers. For new employees, these discussions should be more extensive upon the new employee hire. Training programmes with qualified trainers are also considered necessary and should be offered either as refreshers or if employees have committed deviations in the operations. Retraining should however only be offered with limitations as multiple deviations is usually a syndrome of an underlying problem not covered in the training. By documenting trainings, these can be evaluated, costs can be allocated and information about the participants be collected and properly reviewed (Bigelow, 2002).

OE is achieved when requirements are in compliance with their effectiveness, communicated visions and actual practices. This is done through continuous assessments through audits between internal, external and, in some cases, extrinsic parties to see if the company is meeting regulatory settlements. By performing audits, companies can internally confirm, measure and determine the effectiveness of the requirements settled. By involving the external second party in the audits, suppliers' capacity can be firmly investigated to see if they can meet specifications. Through the assessment of new requirements, the cycle begins again (Bigelow, 2002).

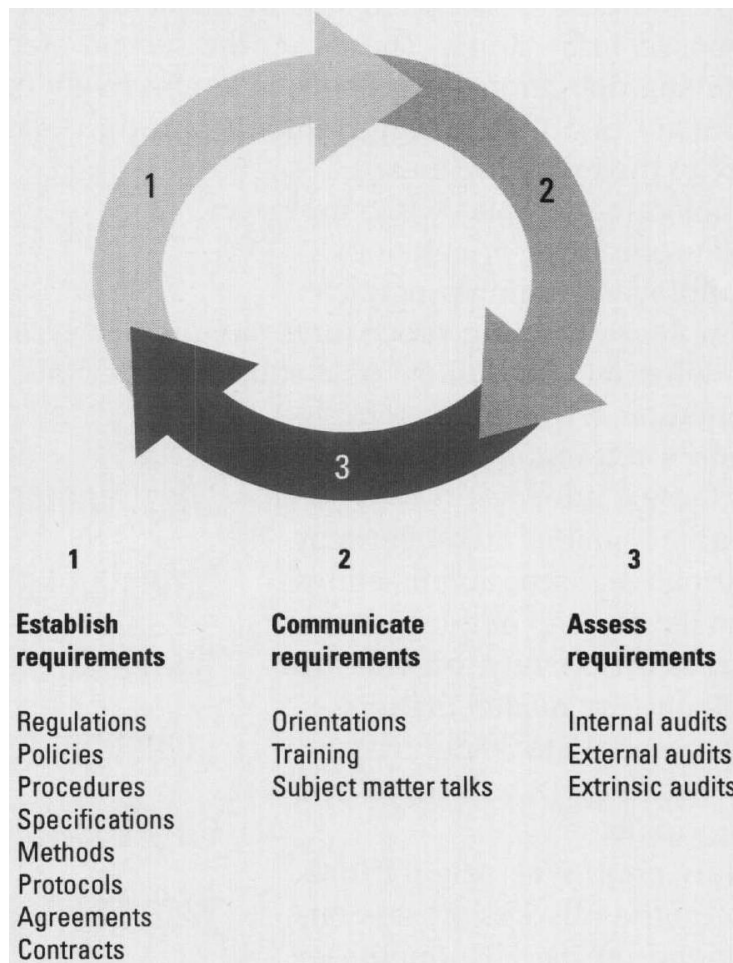


Figure 5 – Operational Excellence Cycle (Bigelow, 2002)

## 2.2 Process management

In an example described in Bergman and Klefsjö (2010), a process improvement was done to a purchasing process at a company and different sources of variation were found. Those variations could be due to who was doing the job and what training that person had. It could also depend on the reliability of equipment and computer systems that were used. Further, the purchasing procedure itself and to what extent it was followed may also have caused variation. The workload was another possible reason for variation (Bergman and Klefsjö, 2010). Summarized, to improve a process it is crucial to establish a consensus regarding process management in general and also how to value activities within a process.

According to Bergman and Klefsjö (2010), a process is defined as “a network of activities that are repeated in time, whose objective is to create value to external or internal customers”. They stress that processes to a large extent are about coordination between people. Hence they involve conventions about individuals’ competences as well as agreements between collaborating persons. Further processes are more a matter of teamwork than assembly lines.

A way to classify processes, as suggested by Bergman and Klefsjö (2010), is by considering who the customer is and who the supplier is. The suppliers of a process should be carefully clarified and provided with clear information what is needed from them. Each process has the objective of satisfying its customers by consuming as few resources as possible. Resources can be in terms of information, working hours etc. It is crucial to conduct accurate planning and to secure necessary assets to manage a process (Bergman and Klefsjö, 2010).

Bergman and Klefsjö (2010) describe three categories that can be used to distinguish processes within an organisation. Main processes have external customers and aim to fulfil their needs. These processes can be seen as the core of the organisation since their output generates the income. Support processes mainly have internal customers and back up the main processes with necessary resources. Similar to the support processes, the management processes also deliver to internal customers. Their purpose is to act decision makers on the organisation strategies and targets and to carry out improvements in the other organisational processes (Bergman and Klefsjö, 2010).

The importance of continuously improving processes and using a process perspective is the origin of process management methodology. It has been adopted within a wide range of areas, such as purchasing, marketing and product development with good results. One way to describe the principles of process management is given by Bergman and Klefsjö (2010) and includes four major steps:

- *Organize for improvement* - Assign responsibilities (process owners, process managers, competence suppliers)
- *Understand the process* - Define phase, where customers and suppliers are identified as well as interfaces between processes. Process mapping is conducted.
- *Observe the process* - Set control measures and establish routines for measuring.
- *Improve the process continuously* - Make use of the results from measurements and use these for process improvements.

It is crucial to gain understanding of the process ahead of doing improvements. The most important part of process management is to identify the customers to know whom value is created for and what composes that value. This requires information on customer requirements, which are gathered both through asking and close dialogues, in order to capture how outcomes from processes are affecting customers' operations (Bergman and Klefsjö, 2010).

Observing the current process is necessary to establish a foundation for improvements. Further it is necessary to measure the performance of a process in various ways to determine suitable areas for improvements. Customer satisfaction and consumption of resources and time are useful measurements when looking at the capacity of a process.

According to Bergman and Klefsjö (2010), continuously improving a process means focusing on the following criteria in the processes:

- Quality - "the capability to satisfy customers' needs and expectations"
- Efficiency - "How well the processes are utilizing the resources in organisation to produce results."
- Adaptability - "How well the processes can be adapted to changed prerequisites"

Another way to achieve continuous improvement is through identifying improvement areas by thorough benchmarking. Four different types of benchmarking have been described by Hollings (1992) in (Bergman and Klefsjö, 2010). One way is through internal benchmarking within the organisation, for example by comparing different departments or different countries. Benchmarking towards competitors is another approach and involves comparing a company's performance with competitors'. Functional benchmarking includes comparison towards organisations performing similar activities or that are operating in comparable areas. Companies can also do generic benchmarking among all industries where comparison is done against those with best performance regardless of industry (Bergman and Klefsjö, 2010).

### **2.2.1 Value stream mapping**

It has been shown that visualization of value-adding processes, both between and within a company, is important to understand value streams. Once the value streams have been visualized, measures can be put in order to eliminate waste and streamline processes (Hines and Rich, 1997). According to Manos (2006), value stream mapping (VSM) is one of the most powerful tools to achieve this as it shows the process from order entry to delivery. Keyte and Locher (2004) emphasize that VSM assists management to communicate current and future objectives regarding products or services in terms of cost and quality.

For a long time, this method has mainly been associated with manufacturing environments, but as companies have applied it in administrative functions as well, a successful adaption to the office environment has been established (Tapping and Shuker, 2003). The main VSM differences between the shop floor area and the office is the definition of material and information flow. The material flow in administrative processes consists of data exchange and is typically an intangible rather than a physical flow. In terms of the information flow, these are usually informal and loosely structured in office systems. Further, the majority of administrative processes supports several value streams, adding on to the mapping complexity in comparison with the shop floor (Keyte and Locher, 2004).

VSM focuses on both the material and information flow of a specific product family. It is therefore important to first identify the product family of interest before drawing the current state map (Rother and Shook, 2003). In office environments this is best translated as a service family that represents all the work and transactions that the team wants to change (Keyte and Locher, 2004). Once the service families have been identified, the VSM follows the steps that are shown in Figure 6.

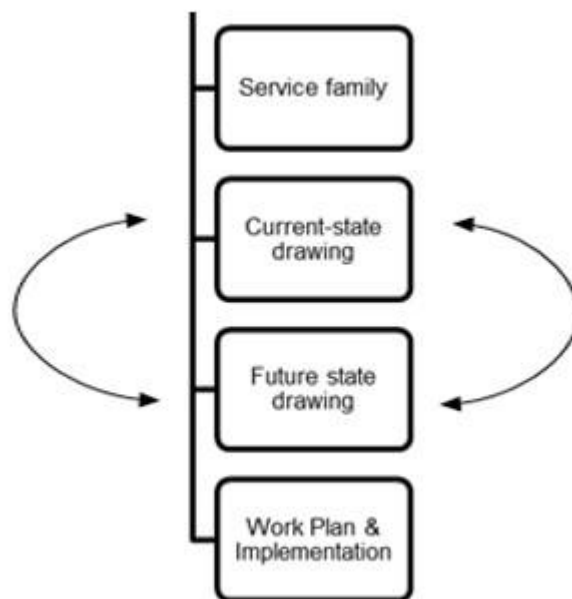


Figure 6 – The value stream mapping steps, (Rother and Shook, 2003)

The current-state map should point out how things are currently operating, preferably by following the actual data exchange upstream (Rother and Shook, 2003). For administrative processes, Keyte and Loche (2004) recommend a six step guideline:

1. Documentation of customer information and need.
2. Identify main processes in respective order, but it is however not necessary to mention names or departments.
3. Select suitable process metrics that help to both visualize the process and its issues.
4. Perform value stream walk-through and fill in all data boxes including inventory and resident technology. However, it could be beneficial to identify the basic boxes before the walk-through.
5. Establish how each process prioritizes work. Specifically for administrative work is to establish how employees manage their work and observe their performance during the walk-through.
6. Calculate system summary metrics, such as lead time versus process time, first pass yield, cost and/or other value stream summary measures.

### **2.2.2 Swimlane diagram**

Another way of mapping processes is by creating Swimlane diagrams, also called cross-functional process maps (Damelio, 2011), to show a workflow of interrelated work activities preceding a clear path. The input to the workflow, meaning the resources needed to perform an activity, are transformed into output in terms of items that brings value to the customers. It is a tool that focuses on important variables in a process, who is doing what, what is being done and when different activities take place (Damelio, 2011). The diagram further presents stakeholders represented in the process, which distinguish this kind of modelling from other types that often focus only on the characteristics of the process (Sharp et al, 2009).

According to George et al. (2005) a Swimlane diagram is suitable when studying administrative processes such as in the service sector. It also provides an easy way to look at the handoffs taking place in a process between functions and groups. By using Swimlane diagrams a complete presentation of a process can be given. It further enables a proper way of visualising a process on different levels of details, from specific tasks to a high-level picture (Sharp et al, 2009).

When looking into workflow theory a common way to describe a process is by using the 3 R's; *Roles, Responsibilities and Routes*. *Roles* entails information on who is completing the different steps in the process. Different functions or persons within a

process are assigned with *Responsibilities* to complete each of the individual steps. The sequence of the steps and how they are related to each other will define the specific *Route* within the process that an item will pass through.

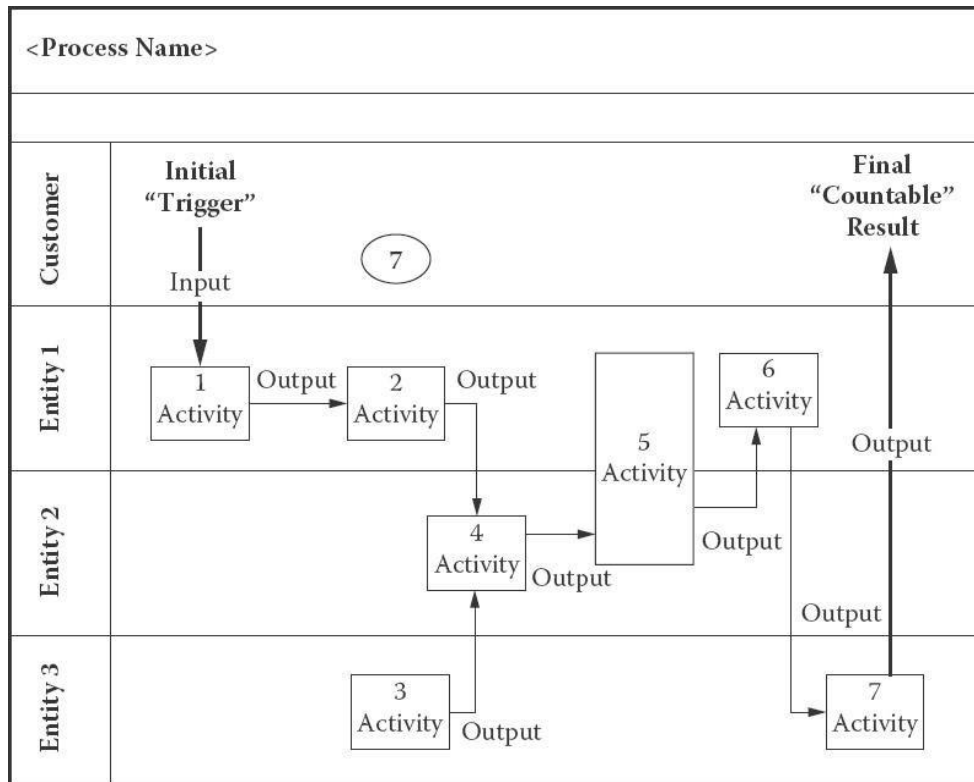


Figure 7 – Example of Swimlane diagram (Damelio, 2011)

Sharp et al. (2009) and Damelio (2011) propose that the sequence and time-dependency of the flow goes from left to right. Further they stress the use of simple set of symbols and to show every actor handling the work, which is represented by the left column in Figure 7. Usually Swimlanes consist of two main elements, name of entities in the left part and lines showing boundaries of entities (Damelio, 2011). Entities are those holding a work, for example it might be a function or department, see different entities in Figure 7. Boxes represent activities within a process, inputs and outputs for each activity are shown by labelled arrows showing the direction of the workflow. Input should be in terms of resources that need to be transformed in the specific activity. The transformation and the value created from an activity should be displayed in the output.

A diamond symbol can be used to announce decision points and normally those have several options about what direction to continue in, see Figure 8. When an activity is performed by more than one entity, a box covering all involved entities is drawn, see

Activity 5 in Figure 7. Entities not involved are marked with dotted lines. Activities conducted by different entities but at the same time are called parallel.

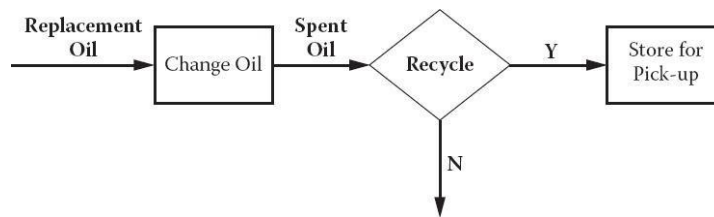


Figure 8 – Decision point (Damelio, 2011)

The benefits with the diagrams lie within their ability to show where in the organisation the work is done. They are further useful as they provide a good overview of the whole process and clearly present where the process starts and ends, see Figure 7. They also show where customers are involved as well as visualise the relationship between customers and suppliers. The diagram also displays so-called handoffs, when an input or output is crossing a boundary, and thereby moving from one entity to another. Moreover the diagram enables recognition of patterns in the workflow (Damelio, 2011).

Damelio (2011) and George et al (2005) suggest inclusion of the customer in the top Swimlane to put focus on the role they have in the work and where the work is related to them, this is shown in Figure 7 as the top entity. When using several entities, the order of them should be related to how they are interacting with the customers (Damelio, 2011). The more frequent or direct contact, the closer the entity should be to the customer lane. Further, the more Swimlanes, e.g. entities, between customers and the work indicate that the work should be taken into account when evaluating customer value.

If asking the right questions, cross-functional process maps, such as the Swimlane diagram, will provide answers about where a workflow starts and ends and what activities that contributes to the output of the process and the sequence in which these activities are conducted (Damelio, 2011). Three questions should be asked about each step in the process to capture the most crucial; “Who gets the work next?”, “How does it get there?” and “Who really gets the work next?”. These questions should preferably be asked and answered in their respective order (Sharp et al, 2009). The input needed for each activity and the output created will also be given as well as what is triggering the process to get started. Further, knowledge of countable results present in the workflow will be provided (Damelio, 2011).

The result from establishing the Swimlane flowchart can be used to start discussions on improvement of the workflow (George et al, 2005). Having each entity touching the item

once would be the ideal, to avoid duplicate work. Further it is necessary to search for reasons why handoffs might be repeated between entities. If possible, it is suggested to merge or rearrange work in order to have one person finalizing all their duties at the same time. If the reason behind repeated handoffs is due to incomplete information it will be helpful to error - or mistake proof the process to assure work is not continuing to the next phase if it is not finished at the current point (George et al, 2005).

### **2.3 Classification of process activities**

Activities within a process can be classified by conducting a value-add/non value-add analysis. The analysis enables identification of process steps that customers are either willing to pay for or not. It aims at finding and eliminating costs that does not add value for customers and reduce complexity. The result is therefore a decrease in both errors as well as reducing the process lead time. It also increases capacity by improved utilization of resources (George et al., 2005). Furthermore, suggestions on different classifications of activities will be described.

*Value-added/Customer value-added (VA)* are those activities in a process that are vital to deliver a product or service to customers. They have to be carried out to fulfil customer needs and increase the service quality, assure accurate or competitive delivery or have a desired influence on price competitiveness. To determine whether a task adds value or not one can question if customers would complain if the activity is not done.

*Business Non-Value-Added (BNVA)* are those activities that fail in adding value from a customer perspective, but are prerequisites from a business standpoint in order to accomplish the value-adding activities. Tasks included in this category are those stated by law or regulations or activities reducing the financial risk. BNVA also includes work that is required for financial reports. A BNVA activity is characterized by not affecting the internal customers when not executed.

*Non-Value-Added/Waste (NVA)* is activities that do not add any value for customers and that are not necessary for other business-related tasks either. Examples of NVA activities are rework, duplicate work, waiting, delays, over-processing or overproduction. Determination of NVA work is when no customers, neither internal, nor external, will recognize if the work is stopped.

Conducting a value analysis includes classification of all the steps within a process and to label them as value-adding, non-value-adding or business non-value-adding, according to the criteria mentioned above. The time allocated in each value-category is summarized and decisions on how to proceed can be taken. Activities that are adding value should be standardized and optimized. Further is elimination of non-value adding

activities required. For the business non-value adding ones more investigation with customers is necessary to decide whether activities could be minimized or removed (George et al, 2005).

## **2.4 Improvement opportunities in processes**

According to Trent and Monczka (2005) one of the characteristics for Best Practices within Global Sourcing Excellence is that they have “Rigorous and Well-defined Processes”.

That means that several aspects are fulfilled; operating with such a process, the participants should develop goals and reach milestones and report advancements to the executives. Further, the executives, in charge of the Steering Board, should request process improvements based on information from participants and feedback reports. When a project is about to end, a “lessons learned” discussion takes place where conclusions are spread to all participants. The global agreements are constantly checked and when required they are redefined (Trent and Monczka, 2005).

Page (2016) describes improvements within a business process as a wheel, see Figure 9, including six techniques to use. It is suggested to work with the areas in a clockwise order, starting off with Bureaucracy, Value added, Duplication, Simplifications, Cycle Time and finishing with Automation, when inefficient steps have been eliminated. When using the improvement technique wheel it is crucial to clearly define and explain the benefits it will bring. For each technique the process map should be used to walk through the process. Further, Page (2016) stresses that the steps are related, e.g. simplification might reduce cycle time as well.

Bureaucracy within business processes means that activities have to be carried out in a specific order and thereby decreasing the effectiveness and efficiency of a process. Questions to discuss when eliminating bureaucracy might concern the number of approvals in place versus number of approvals required, where decisions are made and whether they are made at the right point. Further should it be asked if people get the right information, if sent information is understood and if and by who work is followed-up (Page, 2016). The next step concerns value-adding activities, which can be identified by using a Value-add-analysis, as described in Chapter 2.3 Classification of process activities.

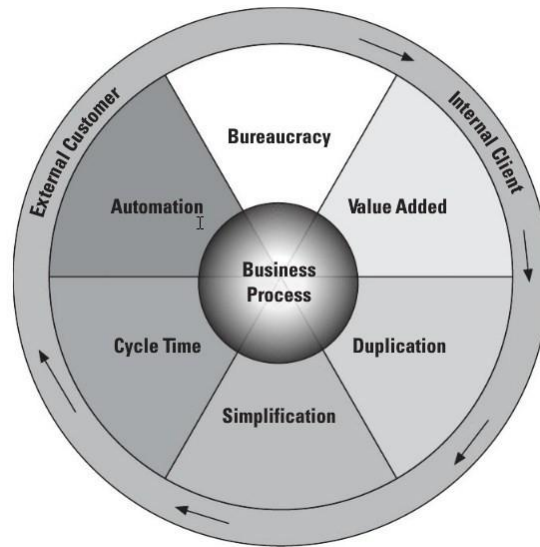
When evaluating duplication it is necessary to look what happens after completion of the process, especially if only a single department is investigated. Duplication appears when several teams are part of a process without being integrated. The teams keep their data to themselves, either in order to declare their version of the story, or the teams do not understand what other teams are doing. An example is so-called hand-offs, which occur

when information goes from one department to another. Those situations often cause duplication in terms of mistakes, efforts or repetition and should therefore be given attention. Page (2016) gives advice on eliminating works where two persons are performing or updating the same information. Further, it will also be beneficial to minimize the storage of documents and to have only one source of data. (Page, 2016)

The following step is simplification, meaning elimination or reduction of complex steps within a business process, in order to streamline and making the process effective and easy to follow. While making changes to the business and its processes over time the complexity increases. By using the process map and look into where complexity occurs, simplification of activities can be executed. Redesigning the process might be relevant in this step. Further it should be mentioned that the steps are related and simplification of one activity may include elimination bureaucracy. The important aspect is to address the steps from different angles to uncover all potential improvements areas. (Page, 2016)

When it comes to reduction of the cycle time, the total time to complete a process, it is of interest to customers to get results and to the business to unfreeze resources by increased productivity. By identification of activities duration, it is possible to find where long cycle times occur and to further investigate why the delays happen and how to get rid off or reduce them. Suggested areas to pay attention to, that can be either reduced or eliminated, are handoffs, non-value-adding activities and, activities with long cycle time. Further, one should optimize the value-adding activities and where it is possible, combine or perform activities in parallel.

The last step in the improvement technique wheel is Automation and then one look into the process and tries to find where technology have potential to increase efficiency.



*Figure 9 – The improvement technique wheel (Page, 2016)*

As described in Chapter 2.3 activities can be classified as value adding, non-value adding or business-non-value adding. According to Keyte and Locher (2004) there are two types of activities required to produce a product or to deliver a service, activities creating value from a customer perspective and activities necessary to support the business but not seen as value from the customers. When looking into administrative activities, a lot of processes belong to the latter category of activities. Keyte and Locher (2004) argue that a company aiming for lean has to challenge its business model to succeed. In order to determine which activities that are bringing value and which are containing waste the activities taking place on an everyday basis have to be uncovered. The common seven wastes according to lean can be used and Keyte and Locher give Office examples and suggest adding an additional category. They call it “underutilized people”, meaning waste occurring when a person's abilities are not fully used. Eaton (2013) also suggests eight classifications of unnecessary activities in non-manufacturing settings. Explanations of the different types of waste according to Eaton and Keyte and Locher are described in Table 1 below, as well as an interpretation of both of these combined.

*Table 1 – Waste in non-manufacturing settings according to Eaton (2013) and Keyte and Locher (2004)*

Type of waste	Description (Non-manufacturing) (Eaton, 2013)	Office Examples (Keyte and Locher, 2004)	Interpretation of (Eaton, 2013) and (Keyte and Locher, 2004)
<b>1. Waiting</b>	For material, information, persons etc.	Time for system to respond or downtime, waiting on approval from people or data from customers	Waiting for approvals from others, information, materials or system response.
<b>2. Overproduction</b>	Overprocessing and do work that is not definitely necessary.	Print documents/ purchase products ahead of absolutely necessary.  Administrate work before receiver ready	Over-processing before the work is really required
<b>3. Rework</b>	Work required to fix what was not correct in the first place.	"Correction" Errors in design, order entries, invoices, engineering work or as a result of reorganisation where employees are replaced.	Correction work is required due to error in the first place
<b>4. Motion</b>	Movements done by persons.	"Excess Motion" - People have to walk to copiers or other offices etc.	People moving to copiers, offices etc.
<b>5. Transport</b>	Movements of data, materials or machines/equipment.	Large amounts of attachments in emails or several approvals or handoffs.	Several hand-offs, approvals etc. Moving information or material

<b>6. Processing</b>	Activities that are not expressed as required, for example unnecessary tests or reports.	“Extra processing” Re-typing information, produce extra copies, expediting, budget processes or unrequired reports etc.	Activities not absolutely necessary to undertake. Producing extra copies or reports that are not required
<b>7. Inventory</b>	Queuing of activities that are not needed. Persons gathered for meetings or store an excessive stock.	Full in-boxes, office supplies, literature, reports and extensive processing of reports and transactions.	All queuing that is not necessary, for example full in-boxes, a bunch of persons gathered for an appointment
<b>8. Talent</b>	A person is asked to perform tasks that either suits someone else better or are not necessary at all.	“Underutilized People” Employees not getting the responsibility or authority they should, management controls and the business tools accessible are deficient.	Not using the right person for the right task. Not utilizing people's skills for the right activities

## 2.5 Purchasing concepts

There exists no consistency in literature about the definition of purchasing but one commonly used is stated by van Weele (2014) who defines purchasing as “The management of the company’s external resources in such 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 under the most favourable conditions”. Further he describes the activities included within the purchasing function in a process model, see Figure 10, (where light-marked activities are aligned with, but not within the purchasing function):



*Figure 10 – The purchasing process model (van Weele, 2014)*

According to van Weele (2014), a purchasing manager should in some way be involved in the six main activities shown above, even though it should be stressed that the structure of a purchasing department may differ from the one described.

The first step, determining specification, includes requirements regarding quantities and quality of the product to be purchased. It is followed by selecting the best supplier and the defining of necessary procedures required to do so. Preparation for and the actual negotiations with supplier take place to establish agreement and do the contracting. Further the supply function deals with the ordering. In order to assure that suppliers perform according to what has been agreed upon, expediting and evaluation is necessary. The follow-up work is necessary to update information and claims. The different steps are aligned, meaning that the quality of a previous step will have a large impact on the following step. Often when incoming material has poor quality, it is due to issues with specifications or that suppliers are not able to deliver according to the specifications. (van Weele, 2014)

Further, van Weele (2014) stresses the importance of well-defined output for each phase of the purchasing process. In the most desirable state each and every activity should be traceable and a new step only begins after decision is taken in the preceding steps. The purchasing process is often cross functional and involves different parts of an organisation, which requires good communication and clearly defined responsibilities. van Weele (2014) describes purchasing management as "all activities necessary to manage supplier relationships in such way that their activities are aligned with the company's overall business strategies and interests".

### **2.5.1 Organisational structure in purchasing departments**

Two of the most common purchasing structures are decentralization respectively centralization and those two alternatives will be further described below. A decentralised structure is typically used in companies divided into business units. The manager for each unit then has the responsibility for the unit's financial results, and thereby also for the purchasing activities within the unit. This structure is favourable for companies with diverse business units, dealing with completely different products, where little advantage would be gained if gathering purchasing across units. Disadvantages occur when several units do negotiation with the same suppliers for the same products, which may result in getting different prices and conditions. Two business units within the same

company may end up in situations where they become competitors to each other, especially in case of a limited supplier capacity. (van Weele, 2014)

The opposite structure is centralized purchasing, where the purchasing department consists of corporate experts within sourcing that are operating with a tactic and strategic approach to coordinate purchasing. Decisions concerning specifications for products are done on a central level, which also is the case for decisions about which suppliers to select. Further, the contracts agreed with suppliers are prepared and negotiated centrally. Those contracts are valid for several years and include conditions for purchasing. The operating units are conducting the actual purchasing. (van Weele, 2014)

A primary advantage with a centralized structure is that it enables to gain better conditions from the supplier, from a cost and price perspective, as well as from a quality and service perspective. Another advantage is that it is beneficial when trying to standardize, both the product offered but also the supplier base. Centralized purchasing structure is beneficial for companies where the same, strategically important, products are bought by a number of business units from global suppliers. When having a decentralized purchasing structure the business units and their management end up with limited impact on purchasing decisions. There may be a conflict where the managers for the business units believe they will get better conditions by themselves and want to use their preferable business partners rather than comply with corporate FWA. The challenge of dealing with issues of contract compliance is found within many companies having a centralized purchasing department. (van Weele, 2014)

An integrated cross-functional approach is used when decisions concerning purchasing cannot and should not be done separately. Decisions should consider not only getting the best performance from a purchasing perspective but also include factors affecting other parts of the business, for example logistics and operations management. van Weele (2014) suggests purchasing decisions should also revolve around taking the optimal value for the purchasing spend of the company and the total cost of ownership instead of just viewing the price aspects.

Centralized decision-making therefore demands a team-based approach that is both cross functional as well as integrated between the business functions involved. Strategies for supply and purchasing are most effectively developed when all interested parties are collaborating, business functions as well as top management. Within purchasing process management it is crucial that the purchasing managers take the lead when arranging the activities among all participants. (van Weele, 2014)

### **2.5.2 Control and evaluation**

Purchasing management examine that the planned activities and results are executed with the financial resources disposable. Further van Weele (2014) describes purchasing management as a closed loop, where activities risk to get out of control if there are components not getting enough attention. In case of non-existent objectives and unclear targets that have not been put into action plans, the purchasing procedure will lack not only guidance but also clear responsibility roles. A main reason to the lack of understanding what purchasing has provided to the bottom-line of a company, is the lack of structure for management reporting. Issues linked to supply and purchasing management are often linked to managerial issues and not concerns of the actual purchasing field. (van Weele, 2014)

One of the essential theories of purchasing is composed by Kraljic (1983) and reflecting that suppliers' and the company's interest differ from the each other. Therefore different strategies are required for the supply markets, which the purchasing managers have to develop. Fundamental when creating strategies for purchasing and supply is how the company should deal with the power towards to their key suppliers. According to van Weele (2014) is it desirable that the balance of power benefits the buyer. In the opposite case, the buying company could hurt if it is too reliant on a single supplier. If the company gets too reliant on a supplier it is necessary to take actions.

Lately top management teams have been given an increased attention to purchasing than earlier. van Weele (2014) mentions several reasons to this, by using specialized suppliers, activities can be performed to a lower cost and the company is able to be more flexible.

Many companies are outsourcing activities, which increase their dependency on the supply base to gain competitive advantage. Looking at purchasing from a strategic perspective, it should aim at creating global competitive advantage of the supply base and make sure that suppliers are well integrated in the business processes of the company. It is also important that the corporate and the purchasing strategy are aligned.

### **2.6 The role of purchasing in the construction industry**

The construction industry differs a lot from the manufacturing industry where most research regarding procurement and supply chain management has been conducted. Compared to the process-based manufacturing, the construction industry is heavily characterized by a pull-approach as it is dominated by project-based production (Behera, et al., 2015). The projects create fragments of the larger organisation and can be viewed as individual firms with own relationships between customers and suppliers. Projects' requirements on goods and services from suppliers are based on their different customer's specifications. Therefore, the supply, purchasing and logistics is ultimately

executed by these decentralized units (Frödell et al., 2013). The setting in which the projects operate is lacking of complete specification, uniformity and is ultimately unpredictable. According to Dubois and Gadde (2002) this result in strong management reliance on local decision-making, as projects have more local knowledge regarding resources, environment and adjustments.

The presence of many different projects leads to a multiple amount of different stakeholders in comparison to the manufacturing industry (Behera, et al., 2015). According to Karim et al. (2006) “approximately 90% of the construction work is carried out by a variety of subcontractors while the main contractor tends to focus on management and coordination” making defect rates higher due to the coordination issues. One of the challenges concerns the cost pressures put on contractors, making it vital to implement robust procurement practices with their sub contractors that are often many smaller firms with widely spread specialties (Karim et al., 2006). The small firms do generally not have capabilities to supply greater geographical areas or systems. In certain markets such as steel, concrete, insulation material etc., there however exist a narrow amount of suppliers where procurement is characterised by the oligopoly and monopoly structures. Apart from this, the construction industry is heavily characterised by regulations and rules that affect the buying behaviour at the contractor (Spencer, 2008). Thus, contractors’ supply chain generally contains many more requirements and is therefore viewed as much more complex than supply chains in other industries (Behera, et al., 2015).

Even if the construction industry differs from the production industry, there does not exist many definitions on purchasing in construction. One author that provides a definition is Frödell (2014), who defines the strategic perspective on purchasing in construction as: “Purchasing is the management of a construction company’s external resources in terms of goods, services, capabilities and knowledge, based on both long-term and short-term perspectives, in order to enable the running, maintaining and managing of the construction company’s projects and support activities while integrating the project perspective and the company’s perspective”. Through this definition, it is evident that the purchasing department greatest concern should lie in integration between the business and project strategy, i.e. the decentralised operations should be supported and aligned with the centralized.

In a study by Björn Axelsson (2008), one initiative for upgrading the purchasing function at NCC was closely followed for four years. Top management had seen that the purchasing within the company accounted for 73% of the revenue for the business area and 76% for the business area of civil engineering. A number that was higher than the typical 50-70% that is common for most manufacturing firms. The new CPO, Klas Frisk, came from the automotive industry with the aim of improving the purchasing function.

The objectives were to differentiate the purchasing methodology for different goods, making use of new technology such as ICT, increasing dialogues with other purchasing professionals in other industries, create internal changes without consultants and include the R&D department as well as suppliers in improvement processes. The CPO was eventually let go after four years as the owners became discontented with the revenues. Many of the new units that were created, including the central purchasing department, were shut down after Frisk's departure. These layoffs were part of the new strategy to make the organisation more field-based and operational, going back to the old strategy before Frisk's arrival (Axelsson et al., 2005).

Even if Frisk's initiatives were initially viewed as unsuccessful, many of the changes that he made were still employed. Organising the purchasing department according to different commodities was one of the greatest changes that Frisk brought in and this is still employed at NCC. Through the new systems and processes, Frisk laid the foundation of reducing the number of suppliers from 74 000 to 36 000 and the amount of invoices by 30 % (Axelsson et al., 2005). Due to organisational resistance and the complicated nature of construction industry it is stated by Axelsson, 2008, that even if many initiatives of upgrading the purchasing function within the construction industry have taken place, most of them have failed (Axelsson et al., 2005).

### 3. Method

Hines and Rich (1997), Damelio (2011), Rother and Shook (2003), George et al. (2005), Bergman and Klefsjö (2010) and Basu (2004) claim that observing the current process is necessary to establish a foundation for improvements. Further it is necessary to measure the performance of a process in various ways to determine suitable areas for improvements (Bergman and Klefsjö, 2010; Hines and Rich, 1997; Keyte and Loche, 2004; Bigelow, 2002). The research method for this master thesis addresses the current process and its performance to find potential improvements and the approaches that have been used will be described in this chapter. It covers the qualitative methods, such as observations and interviews held with category managers in both the initial phase and as follow-up in the end. To gather data from a larger sample, quantitative methods were used in terms of a survey to category managers and a content analysis of available documents. A process mapping was done to visualize the activities and responsibilities in the current process and benchmarking was conducted to make comparisons towards other companies and industries. The method approach that has been applied is described in Figure 11, where a current state analysis was made. Once the process had been mapped, the activities were compared to other industries to find the improvement potentials.

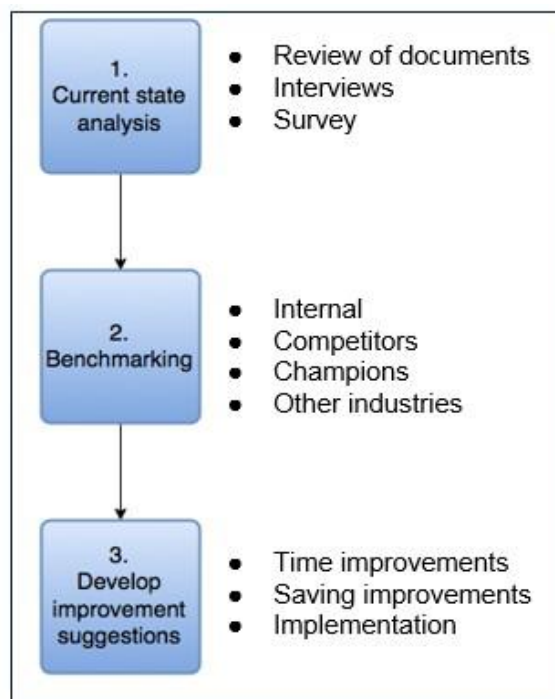


Figure 11 – Method approach applied in the thesis

### **3.1 Quantitative methods**

The quantitative data collection included a web-based self-completion survey, which was sent out to all 43 category managers in the Nordic, who were doing sourcing according to the set procedures. The questions were designed in collaboration with the supervisors at the company and Chalmers and aimed for gaining a general view of how category managers view the sourcing process and how much time they actually spend on this activity. Bergman and Klefsjö (2010) suggest customer satisfaction and consumption of resources and time as useful measurements when looking at the capacity of a process. Further, self-completion questionnaires are suggested, as they provide an easy way of collecting and analysing a larger amount of data (Bryman and Bell, 2015). The survey therefore examined potential deviations in how different category managers conduct the sourcing procedure. The questions covered process time and full time employment (FTE) spent on the sourcing process and are presented in Appendix A. That data was not possible to obtain from other sources and was important input when creating the current-state analysis. It was optional to fill in name in order to allow participants to be anonymous.

To further analyse the data collection and gain insights in the process it was appropriate to conduct a content analysis (Bryman and Bell, 2015). All available material regarding the process were viewed and compared. This included the Company's best practice examples and different guideline documents that were collected from the intranet, from both the Nordic and the national folders, as well as folders used for training.

The self-completion questionnaire, Best Practice Examples (BPE) and guidelines served as indicators to which category managers to contact for more thorough interviews, i.e. the qualitative part of the empirical data collection. The criteria for selecting these people varied and the Head of NPU, the tutor and the Head of Sourcing at NPU suggested some selections of experienced category managers. Other examples of selection criteria were managers that had been involved in sourcing processes last year, who had contributed to a lot of savings, who had high spend processes and category managers from different countries.

### **3.2 Qualitative methods**

The empirical results were collected through the triangulation technique to increase the credibility of the findings (Bryman and Bell, 2015). The triangulated research method in this thesis was a combination of qualitative and quantitative data collection. The qualitative results were based on interviews with different stakeholders of the process. Therefore this method was in favour when searching for improvement areas, as these were most likely to be entailed during discussions. In contrast, the quantitative method served as basis for collecting information on a general note regarding process time and

hours spent. The pitfalls with using triangulation derives from inconsistent results from the different methods and even if it is not ultimate, one method could, in some cases, be in favour over the other (Bryman and Bell, 2015). This was the case when drawing the current-state map, where the quantitative research in terms of content analysis was inconsistent with itself and also in comparison with the qualitative results. To overcome this, respondent validation was applied to confirm the different findings (Bryman and Bell, 2015). Thus, the qualitative methods did fill in inconsistent gaps as the results were interpreted with the selected stakeholders.

For ethical reasons, the participants were asked to review the transcribed material to be used before passing on the information to the supervisors at the Company and before publishing. According to Bryman and Bell (2015) confidentiality can be of utter importance. This was considered as the participants were asked if their name could be included and none of them wanted to be substituted.

The qualitative data collection included initial interviews with 11 randomly selected stakeholders of the sourcing process. These conversations aimed to create a deeper understanding of the processes currently in use for sourcing at the Company. The initial interviews were held in the early stages of the study and served as a foundation to the survey questions, deeper interview questions and as a starting point for the benchmarking. Questions were of open-ended nature to capture new areas to investigate, by allowing unusual and unexpected responses (Bryman and Bell, 2015) and can be found in Appendix B.

Participant observations were also conducted, which according to Bryman and Bell (2011) is a good way to gain understanding of the daily operations within an organisation from an employee's perspective. The authors attended three meetings in Nordic Sourcing Board (NSB) as well as three meetings with the Swedish SB. During these, category managers presented different cases according to the TG instructions. By doing so, it was possible to capture questions often recurring from the SB and to see differences in presentation set-up, depending on category, participants and TG presented.

The initial interviews, together with observations, the quantitative data collection and the process mapping created a thorough current-state analysis the Company's sourcing process. The result from the initial interviews and the survey was verified with supervisors at the Company and the supervisor at Chalmers. In collaboration with them, questions to ask in the follow-up interviews were discussed and agreed upon. The current state analysis, in turn, did also serve as a foundation for the interview guide that was used for follow-up interviews. The guideline can be found in Appendix C.

The follow-up interviews were conducted with four category managers that had filled in the survey and given approval to be contacted for further discussions. Three Portfolio managers were also interviewed, because of their wide knowledge of several categories and for verification of the portfolio specific results presented in the empirical chapter.

Another way to achieve continuous improvement is through identifying improvement areas by thorough benchmarking. One way is through internal benchmarking within the organisation, for example by comparing different departments or different countries. For this study, comparison towards other countries has been done by interviewing a person working as category manager and portfolio analyst in Finland and the Head of Category Management in Norway about their experiences of the sourcing process in their countries. Apart from this, external benchmarking has also been conducted. A champion within procurement was interviewed, namely a consultancy company specialized in procurement. This selection was made in collaboration with the Head of Sourcing at the Company as the consultancy firm was seen as a good company to compare efficient sourcing processes against, with the best performance regardless of industry. Another company, also working in the construction industry, STENA Fastigheter, was further interviewed for the benchmarking study as a part of functional benchmarking (Bergman and Klefsjö, 2010). Finally a person working with public procurement was interviewed to get a completely different perspective on the sourcing function.

Once the theoretical framework and the quantitative and qualitative data collection were finished, an improvement suggestion on how to mend the sourcing process was developed. A combination of techniques for analysing and improve process flows mentioned in theory, for example the Improvement Technique Wheel (Page, 2016) and methods for how to achieve OE as suggested by Basu (2007) and the OE cycle recommended by Bigelöw (2002) were used. Lastly, the methodology of how this sourcing process was examined was evaluated. This evaluation sought conclusions regarding how the Company can work with process improvement in general to achieve and maintain OE.

### **3.3 Research quality**

Dubois and Gadde (2014) raise the importance of describing the specific characteristics of different research methods when combining several approaches. Further they mean that it is crucial to clearly outline the methods applied in order to increase the scientific confidence of the research. This research has used a number of different research approaches, which have captured several improvement areas within the sourcing process. To provide a clear picture of the strengths and weaknesses for the research methods used, the research's utility and relevance will be discussed in this chapter.

Concerning the answer frequency, the survey was filled out by 32 of the invited category managers, equal 78 %. All category managers in the Nordic countries, except for the category managers of logistics categories, were invited to participate in the survey. The reason for excluding the category managers of logistics was based on the fact that these are not part of the sourcing process and would therefore not provide any input to this study. Thus, the survey was sent out to a total of 41 category managers. Not all category managers succeeded in filling in the entire survey, making the answer frequency for the entire survey much lower, as will be presented further in this chapter.

Not all of the asked category managers had presented a sourcing case to a SB according to the TG instructions. The result from the survey is only based on the answers from category managers that have actually been part of a sourcing process. Hence, only the category managers that did not fill in "0" in the question about number of times presented to a SB. Thus, out of the entire sample, only 23 category managers had ever presented a sourcing case to a SB according to the TG templates.

As seen in Table D1, D2 and D3 in Appendix D, the answer frequency for the survey decreases, thus the reliability of the results for the questions appearing later should be questioned. The results are presented as a comparison between how many times category managers have presented sourcing cases, respectively how much time in FTE they spend on sourcing cases. Since the number of respondents differs among the selected filters, the answers are shown in percentage to be able to compare, but it might be misleading with not equal amount of responses in the filters. Further, category managers can be represented in different combinations of the filters, such as presented many times but having a low FTE, or vice versa.

Due to the low answer frequency in the survey in this thesis, it can be discussed if the results are reliable. Reliability includes questions about whether the study can be repeated with the same results, if measures are stable and is mainly aligned with the quantitative part (Bryman and Bell, 2011). In order to increase the reliability the managers for each portfolio viewed the results and discussions were held if conclusions could be drawn or if there were special occasions causing unexpected or questionable results. From these discussions it was concluded that the numbers provided were appropriate for the different categories. However, as only Swedish portfolio managers were interviewed and all category managers from the Nordics participated there were some difficulties in interpreting the results. This was especially true for the answers regarding presented TGs were all portfolio managers were under the belief that TG1 would always be presented and TG3 and TG4 would almost always be presented. However, as the results indicated, not every category managers presents TG1, which was not aligned with portfolio managers' view of the performance of the sourcing process. The explanation for this provided by each portfolio manager was that there

could probably be deviations between the different countries, where category managers in Sweden usually outperform their Nordic colleagues in terms of following set procedures.

There were questions in the survey where the interpretation by the respondents should be taken into account. An example is the question 4 regarding duration time between TG1 and TG2 where the answer “Not Applicable” was frequently occurring, regardless of how experienced the category managers were or FTE spent on the case. Linking this result to the question 2, concerning which TGs that are usually presented, it is common to skip TG2, making it hard to set a duration time between TG1 and TG3, which can have been included in TG1 to TG2 or TG2 to TG3 or not included at all. The question should therefore have had a formulation allowing having additional options in case of getting mandate to skip TGs. However some results are remarkable, such as category managers not always presenting TG1, which is considered as the foundation for a sourcing case as top managers approves of a “go or no go”.

### **3.4 Mapping of the sourcing process in the current state**

When mapping, teams must visualize the tasks, information flow and performance of each service task before addressing questions that challenges the present process structure (Keyte and Locher, 2004). To outline the activities conducted for sourcing at the Company today, Swimlane mapping was most suitable to use in this case. Since the sourcing process involves people from different functions and requires decisions from SB in order to continue, a Swimlane approach was beneficial to show where different functions are included and where hand-offs and decisions take place. The mapping was done by using the software Procydo, which was an appropriate tool for describing and analysing the process. Procydo allowed the use of different symbols for activities, storing systems and templates to be visualised properly.

## **4. Results from interviews and observations**

The sourcing process is extensive and contains many activities that are linked to several different stakeholders and gateways. Besides from only observing the available guidelines, it has been important to try to capture the user's perspective on it, as well as other main stakeholders from different countries. The chapter begins with an explanation of the sourcing process according to the guidelines available. As the process characteristics are highly dependent on the user, initial discussions with selected stakeholders will be presented in the second part of the chapter. The outline of these interviews can be found in Appendix B and the transcribed interviews are further presented in Appendix E.

In the third part of this chapter, observations of the available documents and tools are presented. In this subchapter, only those tools that have been considered as most important for the sourcing process will be viewed. This selection was made in collaboration with the supervisors, the implications from the initial interviews and the guidelines different references to respective tools. All material was located on the internal folders available for all category managers at the Company and the intranet.

Follow-up interviews with category managers are presented is also presented. The four selected category managers were asked about their reviews on SB. The reason for this incidence was a result of the survey outcome and initial interviews that entailed that category managers' view of feedback from the SB sometimes did not correspond to the outcome of their participation.

The benchmarking results are presented in the end of this chapter. Three representatives from different industries were selected for the benchmarking. Björn Petersson which is a representative for a consultancy firm, specialized in procurement, ProcurementPower, Mats Eliasson, purchaser for another company in the construction industry and Henrik Eriksson, an associate professor at Chalmers University of Technology that have studied the quality aspects of public procurement of healthcare at municipalities.

### **4.1 Mapping of the sourcing process in the current state according to guidelines**

A Swimlane diagram was used for mapping and visualising the current state of the sourcing process. The Swimlane diagram shows hand-offs and in what order different activities take place. One example of the process mapping can be seen in Figure 12, which shows the first phase of the sourcing process, Plan & Mobilize. In Figure 12, the presented activities are those suggested by the guidelines in their namely order. Symbols are used to show where templates can be used, i.e. the "Master Time Plan and Project Routines". The mapping also entails which systems to use for storing information

and documentation, i.e. "Avtalsforum". The diamond symbol entails when a milestone is reached, i.e. when a "Supplier Long List" is completed.

It was necessary to consider which activities that were required for the category managers to continue in the process and where the sourcing team, the portfolio analyst and the SB got involved. Each phase of the sourcing process was examined, with starting point in the documents Strategic Sourcing Process Guideline (SSPG) and Project Plan Template (PPT) from the intranet. When the current state, according to interpretation of the instructions, was created, a value analysis was conducted based on the mapping to determine potential waste. All activities were examined step by step and their necessity and value was questioned. According to the guidelines, some activities had support documents and tools, which were non-existent in both the intranet and the internal folders. Further, it was found that some activities could be related and thus be performed simultaneously.

When confirming the maps with category managers and Nordic portfolio analysts it became clear that the sourcing process is applied in different ways, meaning that the activities in the guidelines are conducted but not in a systematic order as described in the guidelines. The OnePager is the common presentations slide that category managers use for presenting a TG to the SB. The OnePager contain information about the category spent, the saving potential, the extended category team, risks & challenges, category strategy, time plans and a HeatMap of legal, environmental and financial risks. Apart from the OnePager, different category managers use the activities and their different support functions differently. It was therefore hard to distinguish activities to move or remove. The mapping was an important tool for visualization and was further used in discussions with category managers when describing their way of working.

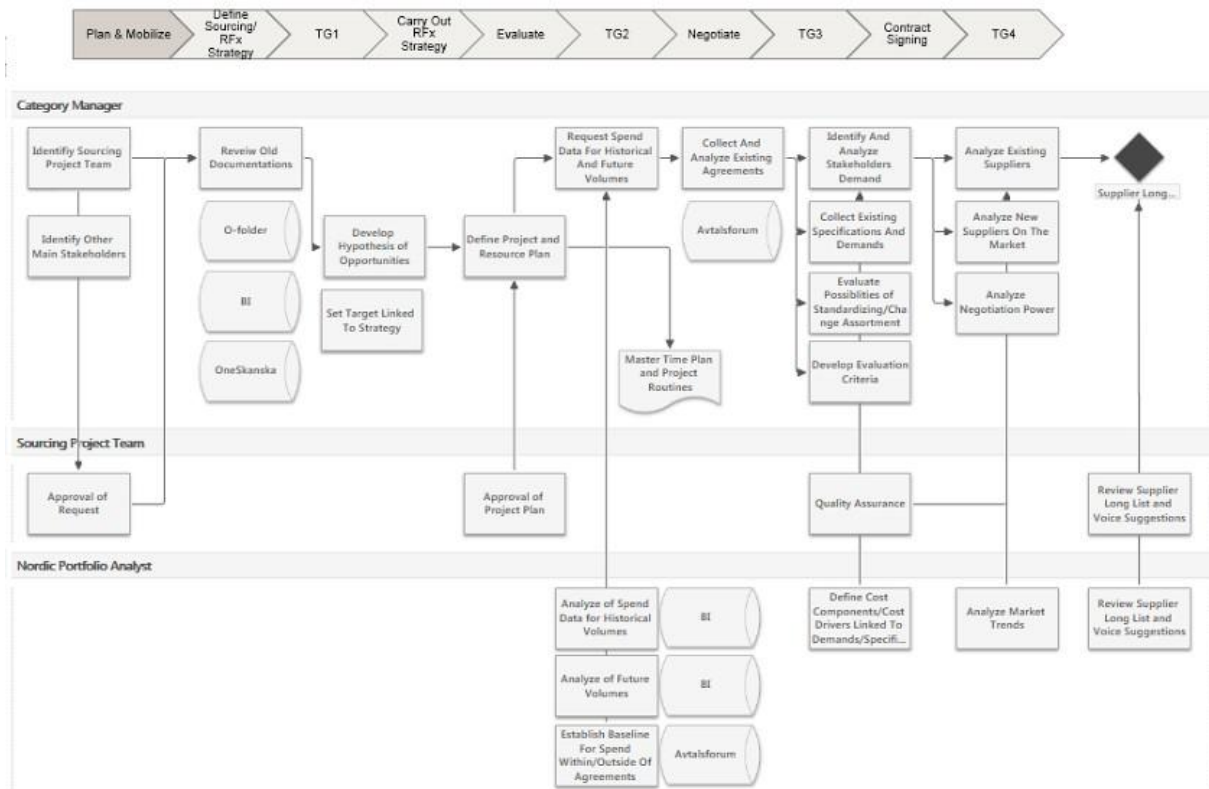


Figure 12 – Process mapping of the Plan & Mobilize phase

## 4.2 Key managerial conclusions from initial interviews

This chapter is based on initial interviews regarding the sourcing process that have been held with category managers, SB members and a Nordic portfolio analyst. The objective with this chapter is to view different stakeholders' perspectives on the sourcing process. The conclusions from these interviews are presented to provide broader knowledge in how the process is actually conducted in a real life setting. The chapter will also briefly touch upon subjects regarding where the process' strengths and weaknesses lie. They did also serve as starting point on how to map the process in order to better make a current state analysis and what questions to address in a survey.

Table 2 concludes key points regarding the sourcing process according with the initial interviews with Swedish category managers. Table 3 presents the main opinions from interviews with people working cross Nordic, a member of the Swedish SB, the Head of Category Management in Norway and a Finnish analyst's perspective.

#### **4.2.1 Communication with the Sourcing Board**

The general view of the sourcing process is positive, all participants felt that top management involvement provides certain strength to the settled agreement. The category manager for steel constructions, see Table 2, points out that SB meetings are a good way of anchoring the work with the organisation and receive necessary feedback to direct the strategy. Similarly, the category manager for plumbing and installation, see Table 2, underlines that receiving feedback from top managers before moving on with the sourcing case is a valuable aspect of the TG presentations.

Based on the initial interviews, most category managers believe that the sourcing process provides good tools for enabling communication between themselves and the top management through the presentations to the SB. This is mainly due to the guidelines regarding TG presentations' structure, where similarity is a strength. The secretary of the Swedish SB, see Table 3, underlines the importance of resembling presentations, where the best ones are "neat and tidy, with the same structure". This had to do with the fact that the SB consists of people with different knowledge regarding the categories. By presenting the different sourcing cases in a similar manner, the management can easily understand how different strategies would affect the outcome of a sourcing case even for categories where they have little initial knowledge.

#### **4.2.2 Difference between the Nordic countries**

The Nordic portfolio analyst in Finland who compares the Nordic Sourcing process to the Finnish further enforces this importance of resembling presentations the Finnish sourcing process is divided into two different approaches, where the process of obtaining frameworks follows the same structure as the Nordic procedure. However, these sourcing case presentations differ among category managers, as the templates are not very well anchored in the line work. This is a drawback in the Finnish sourcing process according to the analyst as it leads to communication difficulties when material is presented in different formats.

Viewing the different countries alignment with the Nordic Sourcing process it can be stated that the Swedish is the most formal. The Norwegian Category Manager explains that this has to do with the fact that Sweden has regular board meetings. These could be considered as formal and bureaucratic. In Norway, reports are not made in formal meetings for sourcing outside the Nordic activities. Sourcing activities in the civil and building categories are reported to EVPs through either phone or mail after wishes from EVPs. It is believed that this communication channel anchors the work easier and is convenient. Another benefit is that it shortens the lead time of the process as category managers does not have to wait for board meetings to lift an issue in order to get approval of continuing with the next steps.

### 4.2.3 Tools and support

The opinions regarding the tools that support category managers in this process differs among the participants in the initial interviews. The Head of Category Management in Norway, Table 3, express that the tools are of great support for unfolding opportunities and possibilities in the process. According to him, the PPT is the main tool to be used as it defines all steps in the sourcing process, which is a great starting point. Since everyone has access to the tools the only potential issue that the Norwegian Head of Category Management express is to know what tools to use when.

This opinion is however in conflict with the Swedish category manager for roof and scaffolding, Table 2, who has not reviewed all support available as the location of these are scattered. In his case, new sourcing cases are based on the long-version templates for the TG presentations, which are available on the intranet and not the PPT. These templates provide instructions and guidance on how to make a TG presentation. However, the best starting point for a sourcing case is, according to the category manager, old TG material in order to compare past reasoning behind the sourcing case in terms of which people to contact and what the savings potential could be.

The secretary for the Swedish SB, Table 3, is also under the impression that the instructions are unclear due to their extensive characteristics. According to her, revisions on TG material are mainly due to missing numbers, such as how the spend is divided. When speaking to the category manager for plumbing and installation, Table 2, revisions are due to the fact that guidelines cannot provide information on the analysis part of the TG presentations. A good TG presentation should describe the scope of the case and entail information on the spend volume division. The proposed strategy needs to be aligned with internal requirements and for this, relevant analysis needs to be made. The category manager for plumbing and installation underlines the importance of teamwork in order to make analysis dense and mainly views the available material as guidelines to what the SB wants to see in the TG presentations.

Reviews of old TG material seem to be the most common approach by category managers when starting a sourcing case. This could depend on the fact that all the interviewed category managers have great experience in the sourcing process and do not need the same amount of support as a category manager that is less experienced. The category manager for isolation material, Table 2, mentions that the OnePager, a summary slide of the TG presentation that is included in all TG presentations, is clear and consistent throughout the entire process. Although, its benefits should be possible to evaluate. The OnePager seems like a big success, as it is short and clear. It is a central part of the presentations and constitutes the whole presentation in the later TG presentations. Its implementation has been successful in the both the Finnish and Norwegian sourcing processes as well. In some cases it can be e-mailed directly to the

SB for approval, without going through the SB meeting. One complaint regarding its content lies in the HeatMap for the TG1 presentation. It entails risk zones with the proposed strategy in terms of environmental, financial and legal aspects as well as the compliance with the company's code of conduct. The purpose of the tool is to give the SB an indication on how the chosen strategy affects these areas and makes it possible for them to ask questions and give feedback on how to address certain risks. The category manager for roof and scaffolding, Table 2, believes that the Heat Map needs improvement as it currently does not take consideration to category specifics and does not entail what measures to take once it turns red.

#### **4.2.4 Strengths**

The sourcing process greatest strength lies in the managerial involvement as it brings a strategic outlook on the activities involved. Presenting the strategy and receiving feedback from top managers helps direct the sourcing in a way that is beneficial for the Company. All of the respondents expressed that in general, they are very pleased with the activities evolving around the sourcing process and consider the process as good.

According to the category manager of isolation material, Table 2, its greatest strength lies within the fact that it is flexible. Not all TGs need to be presented and a decision on this can be made when reaching a TG presentation. In her case, TG2 is usually skipped as the category consists of very few suppliers, making it unnecessary to not seek mandate to negotiate in TG1 already. The category manager for steel construction, Table 2, entails that she has never attended a TG4 presentation but rather e-mailed the OnePager for approval by the SB.

Skipping certain TGs depends on category characteristics and the process allows space for customizing it depending on those characteristics. But once there is a completely new sourcing case or an extensive one, it is good to follow the suggested procedures for the entire sourcing process.

#### **4.2.5 Concerns**

In the scaffolding and installation categories, Nordic procurement is not possible due to the category characteristics. Thus, the interviewed category managers have a different group to whom TG presentations are presented to, i.e. a Steering Group. This group is mainly composed of managers on lower levels than in the SB and they have closer contact with the projects. It is believed that including them in the TG presentations and listen to their input is crucial to increase the contract compliance. This setup is also similar for the Finnish process, where the SB always have a present portfolio manager that enables communication between the purchasing department and the projects.

This setup is however not possible for Nordic procurement, as the geographical scope is greater. Therefore, the SB does not work as a communication channel to the projects. For that reason, implementation relies heavily upon the extended category team, as they need to communicate requirements from the projects. All interviewed category managers fear implementation issues, where a sense of working far from the projects could mean that contract compliance drops. The category manager for isolation material, Table 2, express that even if the SB are the ones that needs to approve the category managers chosen strategy, it is the extended category team that represent the information channel towards the projects. This collaboration needs to work well in order to bring the established agreements between the SB, category managers and suppliers out to the projects. The communication between the category managers and the extended category team is therefore important for implementing the outcome of the sourcing process. Their ability to raise comments and opinions from the projects affects the result of the sourcing process. This concern is shared with all interviewed category managers. The category manager for steel construction, Table 2, express that the implementation work needs to be considered throughout the entire process and the Nordic Portfolio Analyst, Table 3, expresses that including and communicating the projects on an early stage of the process would benefit the implementation of the FWAs.

For the category manager of steel construction, sourcing does not only cover one category and thus the extended category team is not sufficient. In these cases, it is very important to mobilize main stakeholders for the other affected categories at an early stage and gain their support and input regarding certain strategies. This results in another concern, namely that the members of the SB are able to understand how one sourcing case affects different categories. Therefore, they need to read through the material thoroughly and participate in the meetings. The category manager of steel construction express that there have been many times where SB members have not participated in TG meetings and thus valuable feedback have been lost.

*Table 2 – Summary of key viewpoints from initial interviews with category managers*

<b>View of area/Person</b>	<b>Strength of the sourcing process</b>	<b>Issues of the sourcing process</b>	<b>Ideal state of the sourcing process</b>
<b>Category manager for plumbing and installation</b>	Focus on cost drivers and potential savings. Easy to gain feedback from managers.	Guidelines do not include how to analyse numbers and this can only be done through teamwork.	Anchoring the work in the projects through teamwork with the reference team.

	Clear guidelines for presentations.	Good presentations do not equal good analysis.	
<b>Category manager for steel construction</b>	<p>Puts strategic focus on the sourcing through top management involvement which also enables anchoring.</p> <p>Clear milestones with TGs.</p> <p>SB provides feedback and knowledge regarding internal resources available.</p>	<p>Follow up on the processes by reviewing that it has resulted in right agreements, prices and suppliers.</p> <p>Participation of SB is low.</p>	<p>Consider implementation through the entire process.</p> <p>SB that understand how decisions affect all categories.</p> <p>Consider existing agreements to avoid exceeding the needed amount.</p>
<b>Category manager for isolation material</b>	<p>The tool "OnePager" provides clear instructions.</p> <p>Flexible enough so not all TGs need to be presented.</p>	<p>Balancing the priorities between numbers, e.g. prices and savings, and soft values, e.g. service and delivery rate.</p>	<p>Communicate with reference team to gain good implementation.</p> <p>Previous TG presentations to gain input.</p>
<b>Category manager for scaffolding and roof covering</b>	<p>Existing guidelines provide great support with space for interpretations.</p> <p>Similar format for TG presentations which enables communication with SB.</p>	<p>Scattered information.</p> <p>Low availability on old TG presentations from other categories.</p> <p>Tool "HeatMap" is neither category specific, nor does it have actions related to it.</p>	<p>Clearly state category specifics and make them easy to understand for the SB.</p> <p>Collaboration with regional managers to gain good implementation.</p> <p>Previous TG presentations to gain</p>

			input.
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*Table 3 – Summary of key viewpoints from initial interviews with other stakeholders in the Nordics*

<b>View of area/Person</b>	<b>Strength of the sourcing process</b>	<b>Issues of the sourcing process</b>	<b>Ideal state of the sourcing process</b>
<b>Secretary of the Swedish Sourcing Board</b>	Clear and standardized presentation structure that makes it easy for SB members to follow category managers' logic, issues and strategy proposed.	Inexperienced category managers can lack important numbers in presentations and use wrong presentation structure.  Extensive presentation instructions rarely followed.	Category managers should clarify important issues and the benefits and drawbacks with proposed strategy.
<b>Portfolio Analyst in Finland</b>	Good framework with good standard format that makes it easy to present.  Supportive guidelines.	Finnish presentations do not use same structure in all presentations.  Scattered info, not reviewed all available material.	Evaluation should be made on lead times and revisions.  Reviews old material for updated work and to gain input.

<b>Head of Category Management in Norway</b>	<p>Norwegian process less formal and shorter lead time than Swedish/Nordic</p> <p>Clearly defined process with good tools that are easy accessible. Same format in presentations makes it easy to communicate.</p>	<p>Not always clear on when or what tools that are most applicable to use.</p>	<p><i>No comments.</i></p>
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### 4.3 Documents and tools

The Company's internal tools for managing the sourcing process are located on different sources. The main guidelines that are to be used for new category managers are primarily located at the intranet. In this chapter, the focus will be on three of the most important tools used within the sourcing process: The PPT, an Excel document that is supposed to cover all necessary steps in the sourcing process in detail. The SSPG, a PowerPoint that includes all relevant steps and deliveries that is to be achieved before reaching a TG milestone. The TGPT, templates for TG presentations include both long and short versions. The long version is directed to category managers that are unfamiliar with the process as it provides information regarding methods that are needed in order to make the analysis required for TG1. The short version is simply a template version of a TG presentation, where the most central part is the OnePager that provides all information necessary regarding risks, saving potential, suppliers etc. Besides from these tools, there exist many more templates and information that is to be used both for ensuring that all information to the TG presentation are correctly presented, how supplier audits should be conducted etc.

The material available is very extensive, the TGPT Long version is a PowerPoint document that contains 53 slides with varying content in terms of information that is mandatory, highly recommended and information/examples for the TG1 presentation. The PPT has 147 rows, where each contains at a minimum rate 1 activity that category managers need to do for the sourcing case. However, the number of rows decreases rapidly after the TG2 milestone has been reached. Let alone, the activities for reaching TG1 contains 57 rows with multiple activities for each of them.

Another conclusion from the material reviewed is that there is a degree of inconsistency and referrals to material that does not exist or that is out-dated. Referrals to negotiation templates that can should used, IMS tools, usage of Kraljic matrix, Porters 5 Forces, etc.

are all documents that cannot be found on either the intranet nor the internal folders but listed as support. One major inconsistency is that the PPT places the activity of establishing a supplier long list as the final milestone in the Plan & Mobilize stage of the sourcing process, while SSPG place it under the Define Strategy stage.

The biggest deviations are found between the SSPG and the PPT. In SSPG it can be stated that when category managers should define the Sourcing/RFx strategy, they need to “establish evaluation criteria including non-price related benefits”. In the more comprehensive guideline, the PPT, this is simply stated as “develop detailed evaluation criteria - how the suppliers and their quotes shall be evaluated”. The non-price related benefit is implicit in the latter example but clearly stated in the SSPG. In some cases however it is not as clear as how to interpret the instructions. In the PPT, category managers should “Identify and analyse possible new suppliers on the market (ownership structure, turnover, margin, any cost breakdown, product-/service offerings, geography etc.)”. This is something that is not covered at all in the SSPG or the same phase.

The mentioned tools are all written in English, but some material that should work as an input to inexperienced category managers can be found in Swedish instead of English. For example, the OnePager templates that are mandatory to include in each TG presentation are written in Swedish for all TGs both on the hard disk and on the intranet. Another example is the Best Practice Examples (BPE) for TG1 that includes 3 presentations, where only one is displayed in English. For TG3, both the existing BPE are written in Swedish. TG2 and TG4 do not contain any BPE. Further, the OnePager that is mandatory to include in each TG presentation is missing from the two of the BPE's for TG1 and in one of the BPE's in TG3. This is due to the OnePager being introduced after these BPE's were created. Since the Swedish organisation operates on a larger scale than the Norwegian and Finnish, NPU processes and tools are highly adapted to the existing Swedish structures as it was created some years ago.

#### **4.4 Follow-up interviews with selected category managers**

Four category managers were chosen for follow up interviews according to their provided answers from the survey and in collaboration with the supervisors at the Company. General questions about the category were included to give background about specific characteristics. The questions revolved around their perception of the sourcing process and means of improving it and their perception of the SB. The complete interview guideline can be found in Appendix C.

The characteristics of the categories differed as some category managers had limited amount of suppliers that could supply on a national basis and some could make use of global suppliers but had limited spend in their categories for their purchases. FWA's are written on a different basis for different categories, where some signed 5-7 FWA the past

year and others had signed all agreements previous years so none took place this year. All category managers generally signed national agreements with some exceptions on a Nordic basis, but with national adjustments. FWA's usually lasts for 2 plus 1 year and in some cases 3 plus 1 year. The sourcing process is usually handled in parallel with other tasks, such as managing the existing agreements or other sourcing cases. All category managers follow the process structure set by the Company for the sourcing process. However, sometimes it is agreed during the SB that some TGs does not need to be presented. Usually this concerns TG2 and in almost all cases this is associated with TG5, where implementation is discussed.

According to two of the respondents, the most time consuming part of the sourcing process is the preparation work for TG1. Gathering information and analysing it is seen as most crucial for the sourcing process but also the activity that brings most value. In addition, one category manager mentioned that the preparation work to do the presentations of the TG material as time consuming but necessary. Category managers are asked to send in the TG material to the SB one week in advance of the presentation, making it impossible for category managers to work with the sourcing case on the week in between send in and the TG meeting. Another category manager mentioned that the time consumption for preparing TG4 as most time consuming. The reasoning was that in TG4 a lot of material from suppliers that needs to be negotiated and signed.

Regarding the SB and its function it was revealed that in some cases, the SB is not as prepared as could be wished for. Thus, the agreements made in previous TGs for the same cases are changed due to new participants. When the direction of the sourcing strategy changes, the category managers have to re-do some of the work, which is perceived as non-efficient. This is believed to be associated with a lack of preparation work from the SB's side as questions regarding multiple/dual sourcing, risks, requirements, currency, material and contract risks should be handled in the beginning of the sourcing process. In addition, one category manager mentioned that communication with the extended category team is difficult to manage as no meetings where the entire team is gathered is possible to arrange, but all members are contacted one by one.

Category managers usually work by themselves in the category and for the sourcing process, making it difficult to discuss strategies before the actual sourcing process, which could be seen, as non-efficient. This is aligned with the need that category managers should prepare TG presentations with all information needed for approval and all unexpected questions. There is also a lack of directions when it is necessary to present a TG. Sometimes it is sufficient to only have the extended category teams approval, for example when there is a low spend for the sourcing case.

One tool that is believed to help future analysis work is the e-sourcing tool. When used, it provides a lot of information of previous buying behaviour and spends in a good format to evaluate. It is however very time consuming to add in the material and most category managers use old TG presentations for evaluation work. The PPT is mentioned as a good tool to get an overall view on what activities is needed to perform but is seen as very extensive. The views are differentiated regarding when the implementation should be taken into account. As no supplier is selected from the beginning, one category manager believes that implementation should not be considered until this is decided. However if there are indications of changing the supplier, the risks are important to lift from an early stage. Here, many category managers believe that the extended category team plays an important role as they will communicate the changes to the projects. The extended category team also raise projects' opinions so that category managers' strategies correspond to their wishes.

Category managers expects to receive feedback regarding purchasing strategies from the SB as well as help with implementation work due to their knowledge about the organisation. Apart from this, they expect to get an input on similar work from other categories as they have limited insight in what happens outside of their own category. They are seen as decision makers that has an overall view of the organisation and it would therefore, according to one category manager, be beneficial to receive the decisions made in a written format in order to not risk a change in the agreement in a later state.

The usual question that rise in a TG presentation are often linked with the numbers and how the calculations has been made, if category managers have taken considerations to the currency etc. The category managers state that the most important questions has to do with savings and cost reductions. Apart from this, the supplier market is usually in question as well as international opportunities for the sourcing. The implementation is usually not lifted as much but the SB sometimes asks questions regarding the extended category team's opinion of the proposed strategies. One category manager mentioned that there could be a lack of discussions regarding development plans and indirect savings that could lead to huge saving potential in the future. There is a conflict between the anticipation of the SB and how it actually works in reality. Most category managers' feels that the TG presentations are mainly of a reporting characteristic and not enough feedback is provided. This is especially the case in the early TG presentations but most discussions occur in TG4 where the supplier is already selected and not much can be done in order to change the strategy.

#### 4.5 Benchmarking of the sourcing process

Following Basu (2014) and Bergman and Klefsjö (2010) methodology on benchmarking toward other industries and competitors in order to achieve OE, three interviews were held with representatives from the purchasing organisation at STENA Fastigheter, a specialized consultancy firm named ProcurementPower and therefore not a regular company but these findings should be seen as a special case and towards public procurement. A compiled list of key points and differences between the Company and the selected industries is viewed in Table 4.

##### *STENA Fastigheter*

STENA operates in the construction industry, where their main work is to manage the existing 25 000 private apartments and 100 000 commercial apartments in Stockholm, Malmö and Gothenburg. The purchasing organisation consists of three people, where the central unit is placed in Gothenburg and handled by one person for nationwide purchasing. The purchasing volume is mainly comprised of contractors, where there are huge difficulties in specifying the work through FWA. STENA divides their purchases according to three different categories, namely contractor's, material and consultancy. A sourcing case for a FWA always starts by viewing certain needs for a category. This is either when a FWA expires, when the rest of the organisation lifts a requirement or when STENA can see trends of increasing buying behaviour in one certain category in the economy systems. Together with the contract compliance, the buying behaviour is viewed upon four times per year and the purchasing group meet once in a year to go through different strategies.

The sourcing process for FWA at STENA follows the steps described in Figure 13. Once the need for a FWA is established, the purchaser views the buying behaviour for the particular category. Metrics that are used are saving potentials, quality and environmental aspects. If the purchaser decides that a sourcing process should be conducted the supplier market is viewed. For local agreements, the rest of the organisation is asked to send in a supplier proposal. The purchaser establishes a proposal with interactions to some key people within the organisation. The purchaser sends out the proposal to different suppliers and places it in the systems, where it is open for a month. After that time period has expired, the purchaser looks through the different tenders and based on price, quality and the suppliers ability to meet STENA's code of conduct. The purchaser then decides to contact a smaller amount of suppliers for negotiations. Negotiations are usually carried out in teams of two from STENAs side in order to avoid misinterpretations. Often, it is either a specialist that accompany the purchaser during negotiations or a property manager/project manager. On a general notice, negotiations take 3 weeks and there are no reporting of strategies conducted.

Once a decision has been reached, the purchaser signs the contract and sends a copy to the local CEO at STENA to sign.



Figure 13 – Sourcing process for FWA at STENA Fastigheter

### *Public Procurement*

Purchasing in the public sector is usually initiated by politicians or by an expiration of contract. In public procurement, price is essential and supplier review is done quite differently. By the state of law, municipalities need to invite all suppliers and review them equally. The municipal officials handle the procurement and they either have a background in political science or are people from the health care management team within the municipality and not on a high level unit. The procurement is very decentralized as Sweden is divided into 270 municipalities that handle their own procurement in their own geographical scope.

Often, quality is secondary in the procurement process as price usually governs the supplier selection. Due to privatization, the supplier market has increased in number, making the procurement process more complex than earlier. However, as most suppliers are owned by venture capitalist there only exist 5 larger suppliers and a few smaller. Often the sourcing relates to the operation of the lodging with a perspective of 3 year with a chance of extension of 3 year. According to the law of public procurement there are two ways that the sourcing can be done.

Both cases starts with a purchaser specifying certain requirements put on the service, for example the elderly will be able to go outdoors a certain amount of times, they will be provided this for, etc. For the first case, see Figure 14, only price is taken into account. In order to avoid suppliers that have misbehaved in the past, purchasers try to set specifications that would not allow these circumstances. This part is considered as the most time consuming part where purchasers sometimes contact relatives and associations for input to include in the specifications. Once the specifications are set, the purchaser will post the RFQ on a web portal available to all suppliers. Suppliers then checks each requirement of what they are able to provide according to the specifications and send it back to the municipality. Once all suppliers have answered the RFQ, the

purchaser view all quotations. No negotiation take place, but the purchaser will only chose the one that offers the lowest price on the service and meet the requirements, regardless of how the supplier has behaved earlier or in other municipalities. This way is the most commonly used method in Sweden.

The other way is the economic most valuable, see Figure 15, where not only lowest price is essential, but the specification is based on certain criteria. The suppliers then need to specify how they will actively work with some quality aspects, e.g. how to prevent falls. The inquiry is then released and suppliers will write an explanation on how to work with those requirements. Once all inquiries are gathered, experts at the municipalities will view these texts and grade them according to a scale of 1 to 5. These experts are decided by the municipalities and could also involve politicians, sometimes one single person does this but there are cases where multiple people are involved to ensure objectivity. In cases where more than one person is involved in the grading, these are weighted and handed over to the purchaser. From the grading, the purchaser weights the costs and quality to get a criterion for each supplier. This makes it possible for municipalities to contract a supplier with a higher price but whom they believe will provide higher quality. However, there are difficulties in finding a proper way of grading, making this method less commonly used than the one based on lowest price.



Figure 14 – Price centred sourcing process for public procurement of medical healthcare



Figure 15 – Economically valuable sourcing process for public procurement of medical healthcare

#### ProcurementPower

For the consultancy firm ProcurementPower the sourcing process of FWA is quite different, see Figure 16. Here, activities are well defined and linked to certain time measures. Since ProcurementPower is a consultancy firm, the initiative for a sourcing

case starts with a customer requirement. The first phase contains activities linked to establishing a team, defining the geographical coverage and defining the scope by viewing SKU data from the suppliers. This part is not related to the time management of coming activities for the actual process but takes according to Petersson anything from 1 to 4 weeks.

The actual sourcing process starts once every unit is defined, a team is established, invoice data is gathered and all coverage measures set. In this step, consultants at ProcurementPower gather facts for 4 weeks. Here the category is broken down into SKU's and current Procure to Pay process for each subcategory is described. Supplier workshops are conducted at first with top suppliers and later with other suppliers in order to understand and describe improvement potentials. The material is co-developed with the Cross Functional Team (CFT) before the workshop is conducted. After the supplier workshops, an extensive supplier market research is done to assure a supplier long list is found. A RFQ is established with price tags on different alternatives based on the input from both internal stakeholders and suppliers. This is further crosschecked with the CFT and supplier workshops are held to test the overall RFQ structure. Once the baseline is broken down to SKU level and a revision of specifications is done, a first draft of supplier contract is established and prioritized volumes are described. The CFT is contacted for a sign-off of the strategy. The strategy is defined as what activities that will be done differently in this RFQ compared to the previous RFQ.

After this, a supplier long list is refined and additional potential suppliers are called and the RFQ invitation is sent out. Input and a sign off from the CFT, stakeholders and yet another supplier workshop, results in an RFQ that is adjusted to its final form. Follow up work on suppliers that have not answered is conducted as well as establishing the necessary TCO changes together with the CFT.

Sending out all the relevant documents to all long listed suppliers launches the actual RFQ process. All suppliers are then invited to an RFQ kick-off meeting where all suppliers get the same information at the same time. This is the only way to ensure an equal and fair treatment of all suppliers. The feedback process is transparent, fact based and iterative. This entails the following iterations:

- Iteration 1: Quality feedback – After first submission all suppliers receive feedback on how they have completed the RFQ and are requested to clarify any concerns
- Iteration 2: Price feedback 1 – All suppliers receive price feedback on how much they need to improve their bid to reach best price offered on each individual price point (Cherry picking)
- Iteration 3: Price feedback 2 – Same as 1, but another round

- Iteration 4: Price feedback 3 – At this stage the supplier will receive ABCD letters. A-letter is an invite to a negotiation, B-letter is a preliminary invite to a negotiation, C-letter is out of the process, unless a substantial improvement can be obtained and a D-letter is out of the process.

The negotiations start after the deadline for the ABCD agreement has passed. After the first round of negotiations, the CFT is contacted for reporting and input on supplier selection. After the first round of negotiations, suppliers are selected and the contract is signed off by the internal stakeholders and in accordance to legal requirements. A second round of negotiations is held where suppliers are contracted. ProcurementPower then develops an implementation plan and starts quantifying the savings and describing other implications. The CFT is contacted and the physical contracts are sent out. A development of KPI's for implementation is conducted as well as communication material for the new changes. The last CFT meeting is held where approval of savings and implementation plan is decided.



Figure 16 – Sourcing process for FWA at ProcurementPower

Table 4 – Comparison of purchasing organisations and a consultancy firm

Company/Field	The Company	STENA Fastigheter	Public Procurement	Procurement Power
<b>Purchasing organisation</b>	Centralized for FWA, decentralised in projects	Decentralized	Decentralized	Consultancy company, not applicable
<b>Top Management Involvement</b>	Top management decides on go or no go	No top management involvement	No top management involvement	No top management but regular meetings with customers

<b>Time management for FWA</b>	Generally 6 months	3-4 months, 6 months for new agreements	Generally 6 months	4 months, without the definition scope (generally 1 week plus)
<b>Standardization</b>	Standardized with room for changes	Flexible	Standardized	Standardized
<b>Type of FWA</b>	Indirect and Direct	Mainly direct material	Indirect, services	Indirect and direct
<b>Length of FWA</b>	2+1 years	2+1 years	3+3 years	2 years
<b>FWA compliance</b>	80%	70-75%	100%	80-90%
<b>Defined sourcing process</b>	Yes	No	No	Yes
<b>Implementation follow up</b>	Yes	No	No	Yes

## **5. Results from data collection**

Apart from initial interviews, observations and follow-up interviews, a survey has been conducted to receive more input from all affected category managers. The outline for the survey can further be found in Appendix A. The results from the survey are presented as questions related to time management, general views of tools and improvement of these, followed by category managers' views of the sourcing process.

Data regarding time are further clustered according to the Swedish Portfolio structure to see differences among these. The results were crosschecked with Swedish portfolio managers to verify the findings and their comments are further presented to clarify interpretations.

### **5.1 Survey outcome**

The questions for the survey are to be found in Appendix A and the comments to open-ended questions are found in Appendix F.

The following figures and tables in this chapter will start by covering the multiple-choice questions and are numbered according to their order in the survey. There are four different divisions that these tables have been clustered in, to get a better understanding of the answers and be able to make comparisons. Experienced category managers are defined as those that have presented a sourcing case to a SB more than 6 times and inexperienced are those that have only presented 1-2 times. Further, the division is also presented as those category managers that allocate a lot of their time to the sourcing process, Full Time Employment (FTE) between 0.5 and 0.75 and those that do not spend that much time on the sourcing process for the different case questions, FTE less than 0.25. Also presented are the total answers for category managers, titled as "Original" in the figures.

As the survey also included category managers' views on the available tools for the sourcing process, these results will be presented in the later part of the chapter. These results highlights which tools are considered as great support and which need to be improved. Some comments from the participants will further be presented and viewed as more input in order to improve the sourcing process.

Some comments of the sourcing process' alternative steps according to category managers will be presented as means to highlight pitfalls and improvement areas for the process. These comments cover the later part of the survey and had an answer frequency that was much lower than the multiple-choice questions. This answer frequency will be presented in the last part of this chapter and be taken into consideration in the analysis stage.

### 5.1.1 Survey outcome - Time management

According to Figure 17 there was a relation between those that have presented more than 6 times and how much time in FTE that was spent, less than 0.25 was more frequent in this case.

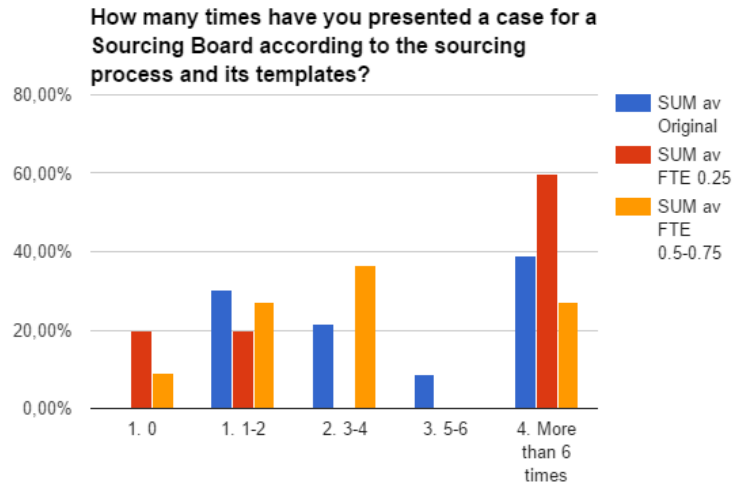


Figure 17 – How many times category managers have presented a case for a SB according to the sourcing process and its templates

The most common TGs to present were number 1 and 3. As can be seen from Figure 18, TG2 was uncommon to present for a SB unless category managers had not participated in the sourcing process more than 1-2 times. In general, experienced category managers viewed TG3 as the most important to present. This could be explained by the fact that this TG is where the negotiation results are presented and where the SB gives their approval on which supplier(s) to contact for contract signing. Even if TG5 was not part of this project, it was clear that this TG rarely was presented at any time for a SB, regardless of category managers' experience and time spent on the sourcing process.

One note that stood out was the fact that not all category managers actually present TG1 for a SB even if this TG was seen as a mean to get the start off for initiating the sourcing process.

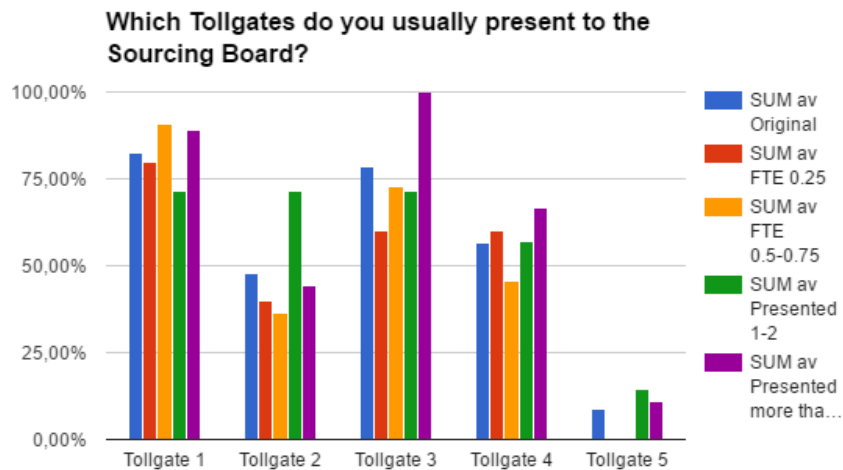


Figure 18 – Which TGs does category managers usually present to the SB

From Figure 19 it could be concluded that in general it was most common for category managers to spend 4-6 weeks preparing for a TG1 presentation. This is regardless of how much time category managers spend on the sourcing process or how many times they had presented before. Meanwhile, there were scattered results for the longer cases, most notably category managers that had presented 1-2 times before found it not applicable to set a duration time. This might have been due to combining different TG presentations or that they might find it hard to define duration time with few previous cases presented.

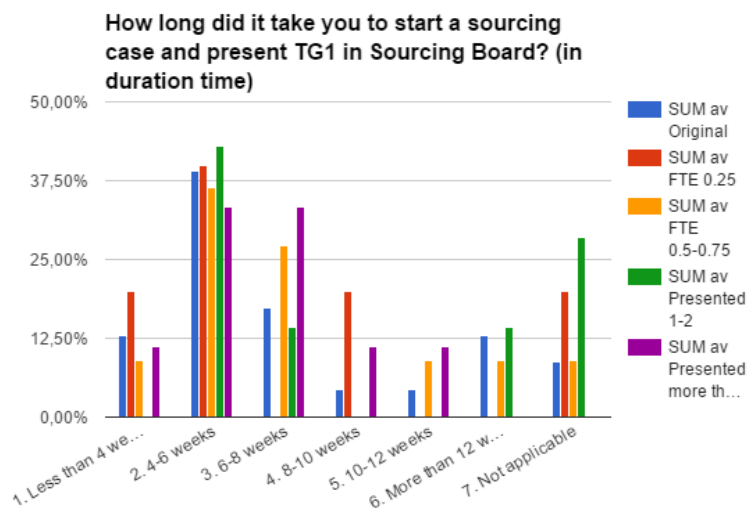


Figure 19 – Time mapping for TG1 according to category managers

From Figure 20 it was concluded that spending 4-6 weeks preparing to present TG2 seemed to be the most common case, especially among category managers that had presented more than 6 times. Further, it occurred among all cases to set duration time between TG1 and TG2 as Not applicable, in particular for those spending less than 0.25 FTE and for those that had present 1-2 times. Here it should be mentioned that, according to question 3 in Figure 18, some category managers did not present the TG2 and went directly to TG3 instead, since it was common to ask for mandate to take decisions without presenting TG2 for the SB.

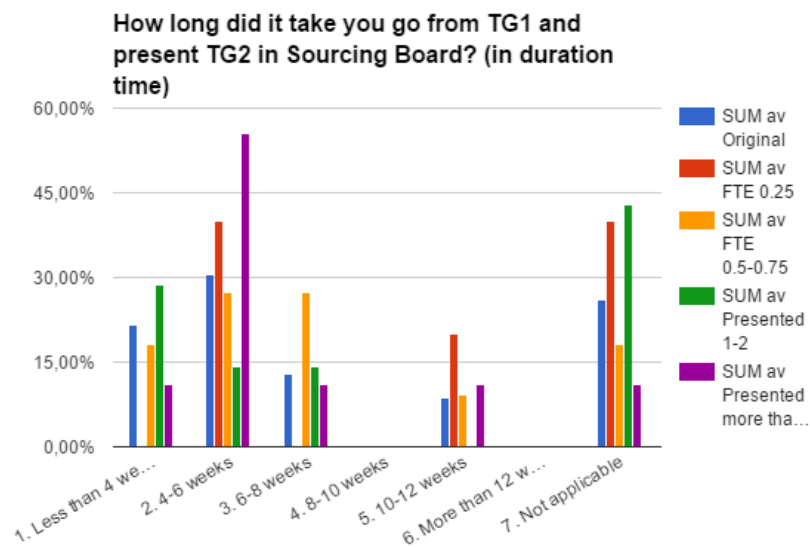


Figure 20 – Time mapping for TG2 according to category managers

As in question 5 the alternative *Not applicable* was represented from all different cases, which could be due to skipping TG2, making this question irrelevant. Compared to the duration time between TG1 and TG2, the duration time between TG2 and TG3 seemed to be slightly longer in general, with responses concentrated around 4-6 weeks, 6-8 weeks and 8-10 weeks. The responses for the different cases can be viewed in Figure 21.

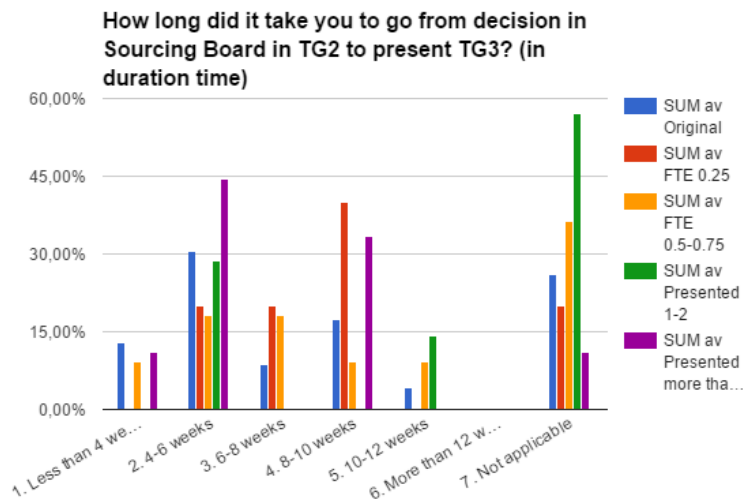


Figure 21 – Time mapping for TG3 according to category managers

All the category managers that had presented more than 6 times spent 4-6 weeks or 6-8 weeks between TG3 and TG4. Another significant response was among those with FTE less than 0.25, where 40 % spent 6-8 weeks. Similarly to question 5 and 6, the high rate for *Not applicable* might have been due to skipping TGs. However, according to the initial interviews category managers might not have been presenting TG4 to a SB but rather sent the information by mail to the group. This could explain why all experienced category managers filled in a time interval for TG4 in Figure 22 and not marked it as not applicable as one could imagine by viewing Figure 18.

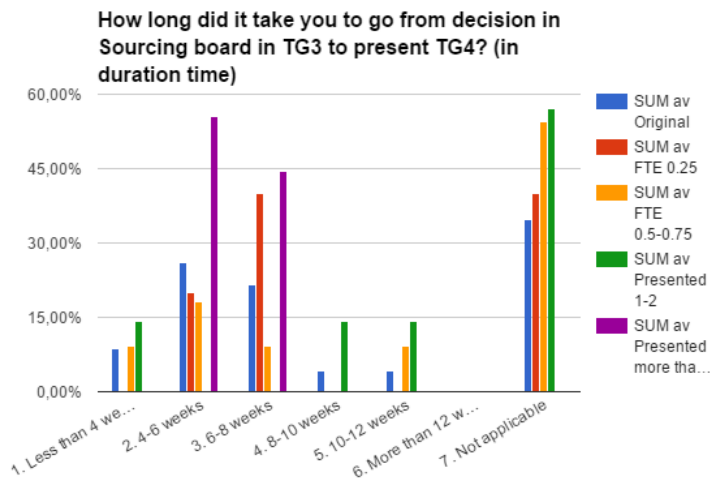


Figure 22 – Time mapping of TG4 according to category managers

*Not applicable* got a high response rate for the time spent on TG5 presentations as can be seen in Figure 23. This was especially the case for category managers that had presented 1-2 times and those spending FTE 0.5-0.75. When applicable, the duration time goes from 8-10 weeks up to more than 12 weeks.

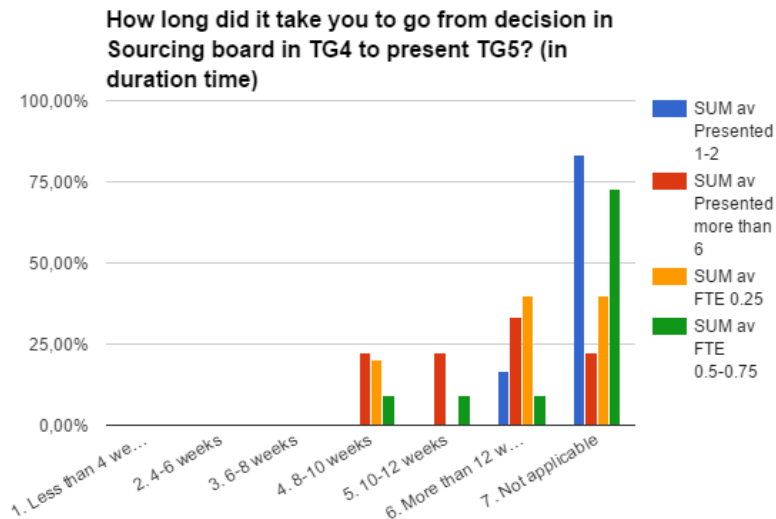


Figure 23 – Time mapping of TG5 according to category managers

Figure 24 illustrates how much time category managers spent on the sourcing process based on their experience. When comparing the divisions based on number of times presenting a case for a SB with time spent in FTE, a high peak was shown for FTE 0.5-0.75 for those that had presented few times. The outcome for *Presented more than 6* was an even distribution among *Less than 0.25*, *0.25-0.50* and *0.50-0.75* and no relation could be found towards FTE in that case. According to the original sample, the rate for FTE distribution was in increasing order, from *Less than 0.25* to *0.25-0.50* to, *0.50-0.75*. Not in the original sample, nor in the filtered ones, had anyone been answered that they spend FTE 0.75-1.00 for a sourcing process.

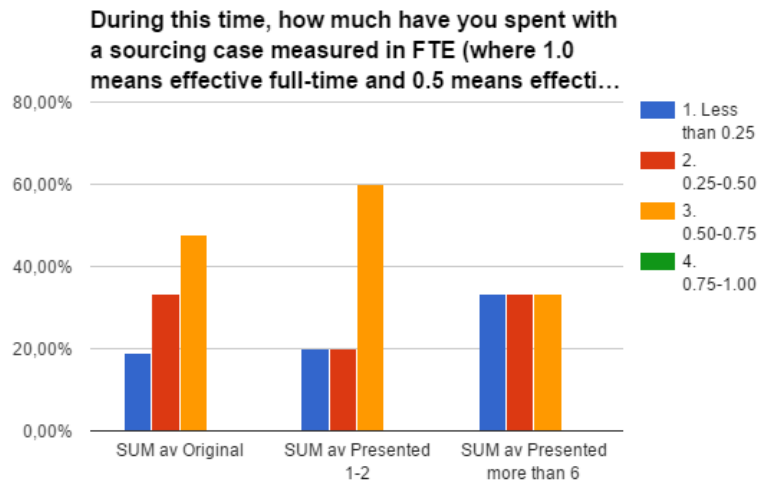


Figure 24 – Time spent on the sourcing process according to category managers

These combined results gives an average of time spent for each tollgate. As is seen in Table 5 category managers spends approximately similar amount of time on each tollgate preparation. This result is in conflict with the results from the interviews where most said they spent most time in TG1. These calculations can be found in Appendix G.

Table 5 – Total time spent on each tollgate

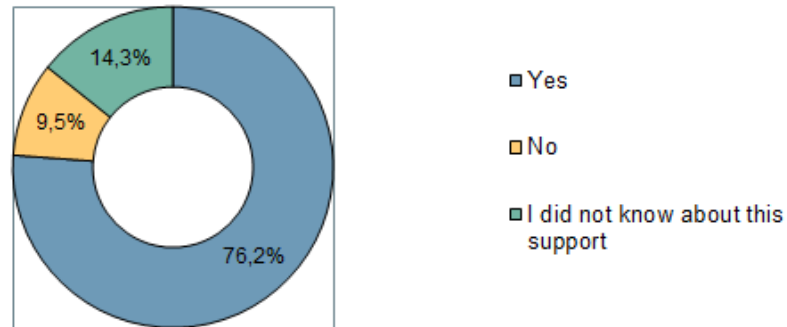
	<i>Duration time, weeks</i>	<i>Time spent (FTE=1), weeks</i>
<b>TG1</b>	6,5	2,6
<b>TG2</b>	5,6	2,2
<b>TG3</b>	6,3	2,5
<b>TG4</b>	6,0	2,4

### 5.1.2 Survey outcome - General views on the tools

Question 10 asked whether category managers had viewed the available Best Practice Examples at all when preparing a TG presentation. As can be seen from the chart below, the majority of category managers had viewed this tool, but almost a quarter of

the asked candidates did however not know of the support it provided or had not viewed it at all, as can be seen in Figure 25.

**10. Have you viewed the Best Practice examples when preparing for a tollgate presentation?**



*Figure 25 – Category managers’ usage of Best Practice Material*

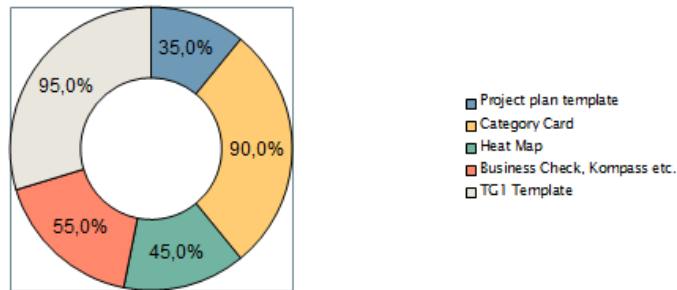
In question 11, category managers were asked about their opinions regarding the available tools linked to the specific TGs. The responses on what tools most category managers had used are presented in Figure 26, 27, 28 and 29. These responses were collected through multiple-choice questions, hence the percentage did not add up to 100 %. Instead the division of the circles represent how commonly tools were used for their respective TG case.

For the provided options regarding the tools to be used before a TG1 presentation, the TG1 template together with the category card were most commonly used. The category card was the result from a process taken place before the sourcing process, the category planning, and played a central role in the TG presentations, as it was a required field to report to the SB.

Further, from the comments it was understood that 15% of the category managers used previous TG presentations as means for preparing a TG1 presentation. These documents were mainly collected from the category folder or from other colleagues.

Notable is that the PPT was not used by many category managers as a mean of support for TG1. It seems that even if the purpose of the PPT was to cover all necessary activities for the sourcing process, it was not taken advantage of.

**11. Which of the following tools have you used for a Tollgate 1 presentation?**



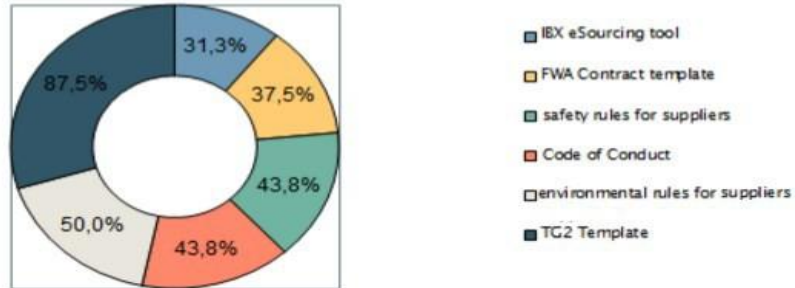
*Figure 26 – Most commonly used tools for TG1 according to category managers*

Similar to the previous question, the TG2 Template was the most used tool for a TG2 presentation, as seen in Figure 27. Several other tools were used as well, but not to that wide extent. Half of the respondents included the Company's environmental rules for suppliers. The IBX e-Sourcing tool was used by about a third of the respondents. About the Company's own safety and environmental rules for suppliers and the Company's Code of Conduct a half or less was using these tools and in the additional comments it was mentioned that these rather should be seen as requirements instead of tools.

Further it should be mentioned that it was common to ask for mandate to skip TG2 and go directly to TG3. There were also categories where presentations were done to the Reference Team rather instead of the SB.

Regarding the questions about tools used for presentation, it appeared in the comment field that the question might have been misinterpreted and tools that had been used in the sourcing had not been selected due to not being an obvious part of the presentation itself.

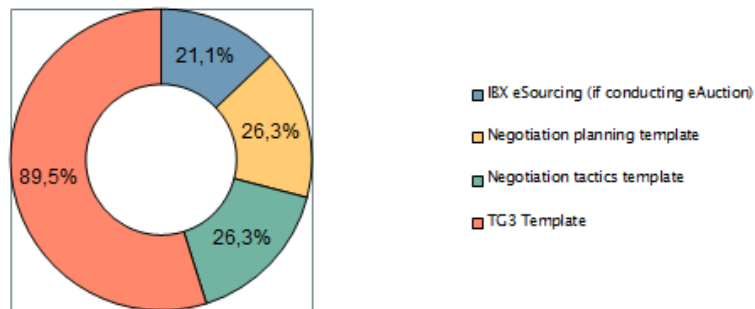
**Which of the following tools have you used for a Tollgate 2 presentation?**



*Figure 27 – Most commonly used tools for TG2 according to category managers*

The trend of using the TG templates was consistent even in the third step of the process, as can be seen in Figure 28. The negotiation planning and tactics templates were used to a minor scale and the same for the IBX sourcing tool. The latter was however only applicable when eAuction was conducted and the result can therefore not be validated according to this response. Again, previous material for TG3 was used in order to provide relevant information and solid presentations.

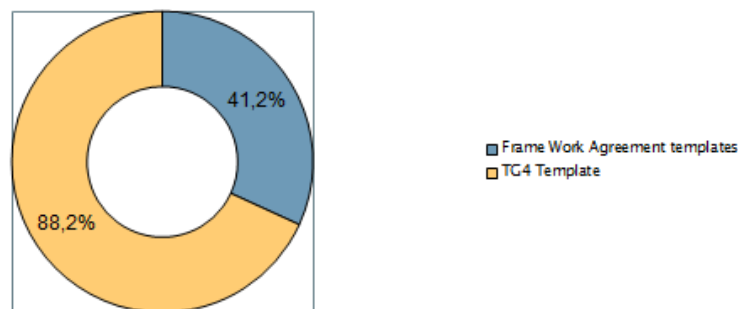
**13. Which of the following tools have you used for a Tollgate 3 presentation?**



*Figure 28 – Most commonly used tools for TG3 according to category managers*

As for the previous TG presentations, the TG4 template is widely used for the presentation in TG4. Some Category managers, about 40%, used the FWA Template, but it should be mentioned that according to the PPT, Old FWA could be used as well. This division is represented in Figure 29 below.

**14. Which of the following tools have you used for a Tollgate 4 presentation?**



*Figure 29 – Most commonly used tools for TG4 according to category managers*

**5.1.3 Survey outcome - Improvement of tools**

The results regarding what tools that were viewed as great support and in need of improvement are presented in Table 6 and Table 7 respectively. The trend of favouring TG templates is spotted in Table 6, where these were viewed as a source of great support along with the category card and FWA templates. This was further aligned with the importance of the BI and Business Check tools, as they provided relevant information about numbers that were needed to analyse and base recommendations on. Many of the respondents had inserted comments that the templates were a good foundation for achieving similar presentations and point of contact towards the supplier. For the Framework templates, one respondent wrote that they harmonized the agreements and minimized their differences. Another one states that these were subject for continuous improvement and that the reference group chosen to improve them are well defined.

Consistency was viewed as a strength that was achieved by using these tools. Most comments regarding this were especially found for category managers that were positive to the TG templates. The consistency was believed to enable the decision process, as the SB more easily could understand recognizable presentations. Another common comment was that the templates offer great tips and served as a checkpoint so that the category manager did not risk forgetting important steps during the process. Some did

believe that the TG templates could be good in order to facilitate the SB presentations, but were not sure whether the ones currently used were great presentation templates.

However, when comparing this with the results on which tools that were of great need of support, Table 6, two category managers still listed templates and FWA as documents that still need to be worked with. In particular, the HeatMap tool that was included in the template versions was not considered as a great support by most category managers and was the highest ranked tool that needed improvement according to Table 7. The main objective was that the HeatMap fulfil its purpose of working as a warning sign, but that no actions were actually linked with it.

The PPT was another source of negative views, according to a third of the correspondents it needed improvements but this needs to be put in the light that another third considered it as a source of support according to Table 7. However, there only existed one positive comment regarding the PPT and that was that it worked well as a checklist. Although there were multiple locations where the PPT was viewed as poorly designed and needed to be worked through as it did not provide a visual overview of what actions that were required to conduct. Among the comments, category managers usually viewed it as too dense and general. Some has even inserted that they were not aware of its existence. This was a comment that was also true for the negotiation template, as many category managers had commented that they were not aware of this support either.

As for the safety rules and code of conduct, these were mainly considered as important for the RFX's and not believed to add value for the sourcing process itself. Their importance was however not to be argued with since those were internal requirements compulsory to fulfil.

Table 6 – Tools that were considered as a support for the sourcing process

<b>Tool</b>	<b>Percentage</b>	<b>Count</b>
Category Card	71,4%	15
TG3 Template	71,4%	15
TG2 Template	66,7%	14
TG1 Template	61,9%	13
Framework Agreement templates	61,9%	13
TG4 Template	61,9%	13
Business Check, Kompass etc.	52,4%	11
The Company's safety rules for suppliers	52,4%	11
The Company's Code of Conduct	52,4%	11
The Company's environmental rules for suppliers	52,4%	11
FWA Contract template	47,6%	10
Project plan template	33,3%	7
IBX eSourcing tool	33,3%	7
Negotiation tactics template	33,3%	7
Heat Map	28,6%	6
Negotiation planning template	19,0%	4
Respondents		21

Table 7 – Tools that needs improvement according to category managers

Tool	Percentage	Count
Heat Map	45,5%	5
Project plan template	36,4%	4
The Company's Code of Conduct	27,3%	3
Category Card	18,2%	2
TG1 Template	18,2%	2
FWA Contract template	18,2%	2
TG2 Template	18,2%	2
TG3 Template	18,2%	2
Framework Agreement templates	18,2%	2
TG4 Template	18,2%	2
Business Check, Kompas etc.	9,1%	1
Negotiation planning template	9,1%	1
Negotiation tactics template	9,1%	1
Respondents		11

#### 5.1.4 Survey outcome - Category managers' view of the process

The category managers were asked about challenges they have experienced with the sourcing process and the most significant response was that the process is too long. Two other factors that were pinpointed concerned the process being too formal and that the feedback from the SB being insufficient. Only a few mentioned the guidelines and tools being non-efficient or having insufficient process support. In the additional comments, several persons are talking about the process being too formal for some specific cases or categories with a low spend. It is also mentioned that a formal process is required in order to achieve conformity and to be able to coordinate among the Nordic countries. A more frequent discussion about the sourcing process is desired to create knowledge about and understand its purpose. Another challenge that was commented

was how to deal with different interests within the company, for example when different categories are part of the same sourcing case with different interests.

There is a wish that the SB should to a wider extent use their wide network in the line organisation in order to support the category managers' work and help with contact persons and other resources. When it comes to participation it is mentioned that preparation can be insufficient, material might not be read beforehand and the questions asked can be too detailed. The function of the SB is questioned and whether it is a decision role but lacking mandate to take decisions.

There is a demand of an improved strategy setting in the beginning of a case and a more active participation of the SB when setting the sourcing strategy in order to assure that the strategy does not have to change along the process.

When discussing parts of the sourcing process that are considered as time-consuming the opinions are widely spread, appearing several times are collecting data, the negotiation phase and the implementation. The time waiting for responses is also mentioned as extensive, as well as the administration aligned with the process. The time after negotiation includes waiting for presenting TG3 and the work of agreement negotiation and what to include in the contract begins, which is seen as intense but very important. This work is rarely finished to the presentation, which it should be according to the process.

Collecting the right data and to do the initial analysis are considered as time-consuming but also worth spending time on. Further is the preparation time for the presentations brought up and also the need of sending in material in advance, which is questioned if that time can be shortened.

Other areas that are mentioned are the time needed to gather the right resources to include in the sourcing process and to cooperate with colleagues at other sites, having meeting with suppliers and comparing offers. What is time-consuming is also depending on the characteristics of the case and what category that is considered. Further, implementation of the agreements is discussed and seen as crucial spending time on.

Differently from the question regarding time-consumption, where activities can have a long-duration time but still be important, a question was asked about parts that are not adding value to the result of a sourcing case. Some answer that all parts are necessary or that all parts can be relevant, depending on how they are used. Input that is seen as non-value-adding might turn out to be essential in the end. Further is the relevance of TG2, 4 and 5 challenged and whether these could be skipped or combined. Two category managers believe that it would be possible to combine the TG milestones in order to make it more consistent. One believes that 3 TG milestones would be sufficient

and the other believes that one could expand the category card to include TG1 and TG2 and only present TG3 for the sourcing process. Comments about having to re-do a TG presentations, due to unexpected questions that were different from the ones asked by the national Steering Group is seen as uncertain for the continued process.

Parts of the process that are adding value to the result of a sourcing case are for example the capability to gather the right resources for a procurement and the Extended category team is brought up as a cornerstone. Good discussions in SB, as well as SB's ability to bring in expertise in different areas are seen as valuable. The pre-work necessary in order to understand and manage the internal requirements and the interaction with suppliers are viewed as value adding. The process in general is seen as valuable and its parts add value, more or less depending on the category. The implementation is a key to succeed with the sourcing cases, but it is also seen as being widely depending on individuals rather than set procedures of way of working. Investing time in discussing with suppliers and stakeholders ahead of contract signing is suggested in order to save time when doing the actual implementation.

## **5.2 Portfolio specific mapping of time consumption**

Based on category managers' category selections in the survey, a mapping of the portfolio specific time consumption has been conducted. All calculations can be found in Appendix G. The result of this is presented in Table 8 according to the Swedish portfolio division. On a Nordic basis, all categories are similarly fractionated, however, as Sweden is the densest in terms of category managers, it has resulted in a larger amount of portfolios for coordination purposes. Presenting the results according to this division is considered as most detailed as it entails where fluctuations are current for the different category characteristics. Further, the time consumption of category managers according to the Nordic portfolio division is presented in Table 8. All results have been verified with three Swedish portfolio managers.

Table 8 – Time consumption according to the Swedish portfolio division

Portfolio	Time spent preparing for TG1	Time spent preparing for TG2	Time spent preparing for TG3	Time spent preparing for TG4	FTE spent on average until TG4	Average time spent, weeks	Average time, weeks
<b>1. Civil (V&amp;A)</b>	9-12 weeks	8-10 weeks	8-10 weeks	5-7 weeks	0.25-0.5	13	34,5
<b>2. Civil (Industry &amp; Job site)</b>	4-6 weeks	6-8 weeks	4-6 weeks	4-6 weeks	0.375-0.625	11	22
<b>3. Structures</b>	4-6 weeks	4-6 weeks	2-5 weeks	2-5 weeks	0.25-0.5	6,5	17
<b>4. Skin</b>	5-7 weeks	3-5 weeks	5-7 weeks	5-7 weeks	0.25-0.5	8,5	22
<b>5. Installation &amp; Ground work</b>	6-8 weeks	7-9 weeks	9-11 weeks	8-10 weeks	0.25-0.5	13	34
<b>6. Interior</b>	5-7 weeks	3-5 weeks	5-7 weeks	4-7 weeks	0.33-0.60	10	21,5
<b>7. Indirect</b>	4-8 weeks	2-5 weeks	2-5 weeks	4-6 weeks	0,125-0,375	4,5	18

In general, it takes six months to start a sourcing case until category managers can summarize lessons learned in a TG4 presentation. The average time spent differs a lot however, where category managers usually spend a little more than two months working actively with the process on a general note. Thus, approximately two thirds of the process is comprised of idle time. This number is representative for a majority of the portfolios according to both the Swedish division, where only portfolio 2 and 6 has half of the process time represented by idle time. This number is also much closer to the reality

in portfolio 1 and 2 according to the Nordic standard as can be seen in Table 9, where idle time represents approximately 60 %.

On the other hand, two thirds of portfolio 7, e.g. portfolio 3 according to the Nordic standard, consists of idle time. Managers from the indirect category spend less time than other category managers preparing for TG presentations and on the sourcing process on a whole. However, the gap between the length of the process and the actual time spent is larger than for any other category. This could be explained by long idle times when waiting for other parties to respond. Due to the characteristics of indirect material, specification issues are usually associated with the purchasing procedure. Also, long waiting times for supplier response could be another factor. Long idle times is also true for Portfolio 1, which in turn is where the sourcing process takes the longest time and where category managers spend most time on the process. It usually takes ten weeks more for category managers to conduct a sourcing process in portfolio 1 and 5 compared to the average time for all categories combined. This result could be the effect of large reconstructions in the FWA, compared to the rest. Portfolio 5 is further usually divided into regular SB meetings along with Steering group meetings for specific sourcing cases to cut down time.

*Table 9 – Time consumption according to the Nordic portfolio division*

<b>Portfolio</b>	<b>Time spent preparing for TG1</b>	<b>Time spent preparing for TG2</b>	<b>Time spent preparing for TG3</b>	<b>Time spent preparing for TG4</b>	<b>FTE spent on average until TG4</b>	<b>Average time spent, weeks</b>	<b>Average time, weeks</b>
<b>1. Civil/Jobsite</b>	7-9 weeks	7-9 weeks	7-9 weeks	5-7 weeks	0.313-0.563	13,5	30
<b>2. Building</b>	5-7 weeks	4-6 weeks	6-8 weeks	5-7 weeks	0.27-0.525	10,5	24
<b>3. Indirect</b>	4-8 weeks	2-5 weeks	2-5 weeks	4-6 weeks	0,125-0,375	4,5	18

It is not only the time consumption that differs between the portfolios. One of the greatest strength in the sourcing process is the freedom it provides in terms of flexibility. All TGs are not mandatory to present, but category managers can seek managerial approval to skip some of them based on their necessity for the specific sourcing case. In Table 10,

the regularity of presenting the different TGs according to the Swedish portfolio division is presented in percentage numbers. Light blue fields represents 100% participation while the darker fields is where no participant has indicated that the TG is usually presented to the SB. Again, as the Swedish portfolio division is most detailed, the differences will be most visible by presenting the results according to this sectioning.

*Table 10 – TG presentation regularity according to the Swedish portfolio division*

<b>Portfolio</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>TG1</b>	66,67%	100,00%	33,33%	100,00%	75,00%	71,43%	66,67%
<b>TG2</b>	66,67%	33,33%	100,00%	0,00%	75,00%	42,86%	66,67%
<b>TG3</b>	100,00%	83,33%	33,33%	100,00%	50,00%	85,71%	66,67%
<b>TG4</b>	66,67%	33,33%	0,00%	100,00%	50,00%	71,43%	100,00%
<b>Respondents</b>	<b>3</b>	<b>6</b>	<b>3</b>	<b>3</b>	<b>4</b>	<b>7</b>	<b>3</b>

These results provide insights on how some characteristics affects the sourcing process and how it is currently utilized in the different portfolios. As can be seen, in portfolio 4, TG2 is usually not presented to the SB according to all respondents, while TG1, TG3 and TG4 are always presented. In portfolio 3, it is instead TG2 that is always presented while TG4 is never used. For portfolio 2, there were more respondents, which is why TG2 and TG4 are marked red even if a third stated that they have presented these TGs for the SB. In portfolio 1 TG3 is always presented for the SB, in portfolio 7 TG4 is never skipped. All white-marked field are fields where no conclusion can be drawn, either due to a low number of participants or because of scattered results.

One major insight that Table 10 provides is the fact that TG1 is not as widely presented as first believed. This was something that the portfolio managers were unaware of and raised concerns about. In fact, it is only in portfolio 2 and 4 where all category managers have presented this TG compared to portfolio 3 where only one category manager states

that he/she have presented their findings to the SB to get an approval of starting a sourcing case from top management.

Even if the survey has provided insights on how the sourcing process differs between categories, there are still great information losses as not all contacted category managers have participated in the study. In Table 11, the answer frequency is presented according to the Swedish portfolio division. The table provides insights on how large the coverage of the study has been and additional information regarding the error sources that will be brought up in the analysis. As can be seen, portfolio 3 is the only portfolio that has been completely covered by the survey and portfolio 4 has the lowest participation results.

*Table 11 – Answer frequency according to the Swedish portfolio division*

<b>Portfolio</b>	<b>TG1</b>	<b>TG2</b>	<b>TG3</b>	<b>TG4</b>
<b>1</b>	90,00%	60,00%	60,00%	60,00%
<b>2</b>	60,00%	60,00%	60,00%	60,00%
<b>3</b>	100,00%	100,00%	100,00%	100,00%
<b>4</b>	37,50%	37,50%	37,50%	37,50%
<b>5</b>	50,00%	50,00%	50,00%	50,00%
<b>6</b>	66,67%	66,67%	66,67%	66,67%
<b>7</b>	50,00%	50,00%	50,00%	50,00%

## **6. Analysis**

Results from the current state analysis as well as comparison of the Company's sourcing process with others will be analysed in this chapter. The general aspects of the sourcing process and its structure will be presented as well as documents, tools and presentation material. The SB and the expectations to presentations are showed and the time frames are analysed in the light of the compared processes.

### **6.1 Current state analysis**

According to Bergman and Klefsjö (2010) the most crucial part of process management is identifying the customers to know whom the value is created for and the suppliers should be given information what is required from them. A model of how the organisation involved in the sourcing process at the Company can be illustrated is shown in Figure 30. The projects are seen as customers, the suppliers of material are seen as suppliers to the sourcing process. Category managers are the users of the sourcing process and they are getting support from the portfolio analysts as well as the extended category team, which also function as communication channel and enablers of the agreements towards the projects. The SB is a controlling function, assuring the process is conducted according to the set-procedure and a decision maker, approving go or no-go to continue the sourcing process.

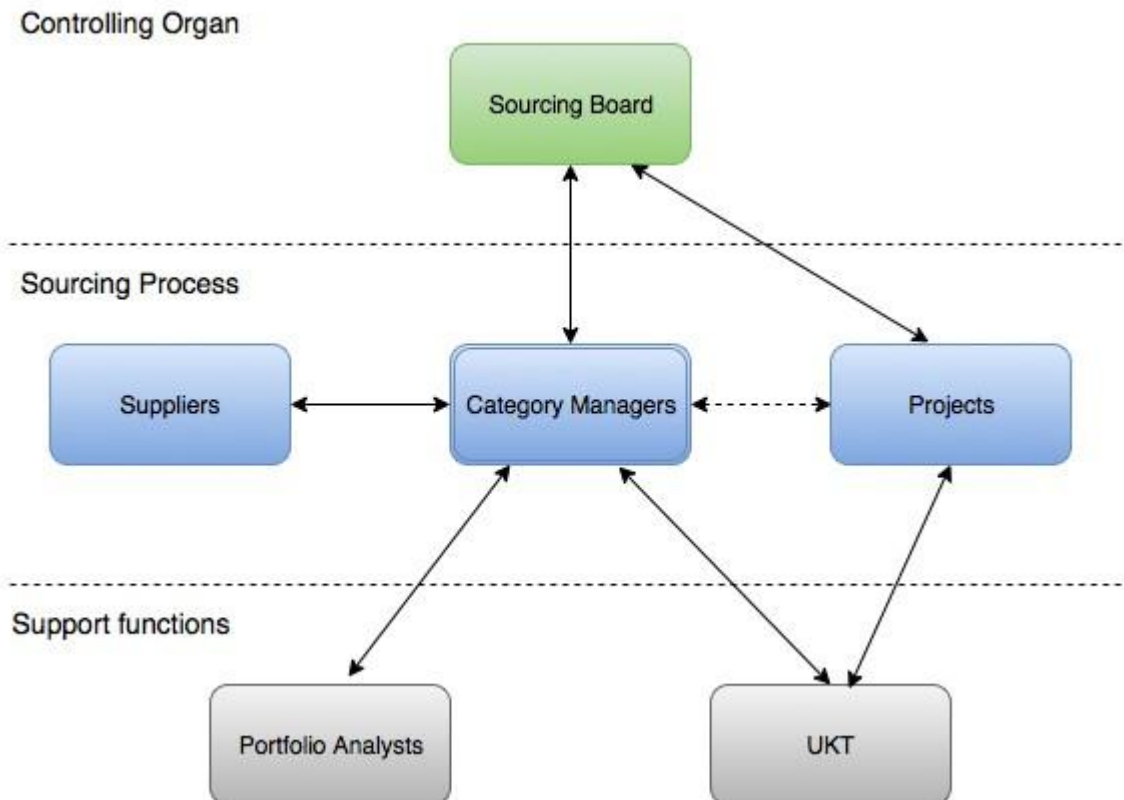


Figure 30 – Stakeholders in the sourcing process and communication channels

### General aspects of the sourcing process and its structure

The sourcing process itself could be seen as a support process, which Bergman and Klefsjö (2010) mean has mainly internal customers and support the main processes with the resources required. On the other hand, it is a management process, which also have internal customers but aim to function as decision makers to targets and strategies for the organisation and to perform improvements to processes in other processes within the organisation (Bergman and Klefsjö, 2010). The SB could be seen as the decision makers and the sourcing process do work as a support for the organisation and enable agreements to be signed and it is also aligned with the carry out of strategies.

Several strengths of the current sourcing process are in line with what Trent and Monczka (2005) mean characterize Global Sourcing Excellence when looking at

processes. According to Trent and Monczka (2005) a “Rigorous and Well-defined Process” is where actors establish goals and reach milestones as well as report advancements to the executives. For the Company, the goal establishment is done in the previous phase, category planning, further the TGs could be seen as milestones and the executives, which are represented in SB get continuous updates about the sourcing cases through the TG presentations. The SB should request process improvements, which can be a part of the feedback given to category managers in the TG presentations. Further Trent and Monczka (2005) stress that when a case is finished a lessons learned session should be held and the conclusions should be spread to involved parts, which is what TG4 include where the case is summarized and Lessons learned are discussed.

From initial interviews as well as follow-up interviews it was stressed that strength of the current sourcing process is its ability to adapt to different circumstances depending on category and type of case (e.g. volume, spend, renegotiation etc.). Adaptability is also a criterion Bergman and Klefsjö (2010) suggest to focus on for continuous improvement. Another criterion they mention is Quality, meaning “the capability to satisfy customers’ needs and expectations” (Bergman and Klefsjö, 2010). SB is a quality control of the sourcing process itself and give approval for continuing. They give feedback on the setup of the presentation and data about savings, volumes etc. and if there are areas that are insufficient or that require corrective actions.

#### *Documents, tools and presentation material*

Based on both initial interviews and the survey outcome, many category managers viewed the sourcing process’ strength as the consistency in the presentations held and the managerial weight that it provides. By presenting sourcing cases in a common format, it is easy to communicate the information to the managers of the SB and receive relevant feedback even when managers possess little initial knowledge of the category. The TG templates are tools that help facilitate this, but they need to be improved. Many comments that the tools are too general in some cases and from the initial interviews with the category manager of plumbing and installation it was concluded that these templates do not provide enough information in order to make a good analysis. This has been the common view from all interviews and discussions with different stakeholders and considered as a crucial aspect as the preparation work for TG1 is mainly connected to the analysis. It is here category managers spend most time and the analysis made at the beginning is further the foundation for the rest of the process.

By viewing the templates and guidelines for the sourcing process, it was found that they contain a lot of information that is not supported by the PPT and references to documents that did not exist, i.e. analysis documents based on Porters 5 forces,

implementation plan in the early stages etc. Further, it is difficult to achieve a common structure on the TG presentations due to the different categories' characteristics. Some categories have many suppliers within the category while others only have a few. The supplier market impacts both the presentations and the strategy proposed.

Presentations therefore need to be adjusted accordingly.

The main finding when analysing the available material is that the tools need to be more closely viewed upon. Today, they are very extensive, available in many different versions, located on different locations and written in different languages. They are not as result oriented as could be wished for, but provides support from a general point of view.

According to the survey, many category managers do not use the PPT for the purpose that it was designed for, a checklist for guidance, and some were not even aware of its existence. This result could be obtained by many different reasons. For example, experienced category managers might not feel the need to view the PPT as they have experience from the sourcing process and can rely on old material. The issue then concerns inexperienced category managers who are those that are of greater need of a consistent PPT. This conclusion is drawn since inexperienced category managers would have greater need to use the PPT as a checklist of necessary activities to perform. In the PPT, many activities are combined with general tips, causing confusion regarding what the outcome of certain activities is and what needs to be presented. This document is considered as the most crucial to be improved according to empirical findings, the initial interviews and the survey outcome. Another main focus area concerns the HeatMap. From the initial interviews it was concluded that it still has a great purpose of consistently visualising certain risk areas for the SB. But since no actions are aligned with its usage, it brings little value of the time spent to fill in. However, the HeatMap is currently under review by the Company in another project and is therefore not further investigated in this thesis.

### *Sourcing Board and expectations linked to presentations*

Many indicators points that the SB is currently not using any template for what questions need to be answered during the TG presentations. Even if there exist templates on what a TG presentation needs to contain, there is no way of measuring the actual outcome of the process. This can be viewed in the light of the Best Practice examples, where much of the available material does not follow the TG templates. The SB consists of managers from a high level in the purchasing organisation, but their feedback and questions are reliant on their own internal characteristics, as was mentioned by the category manager for building. The survey further concluded this, as many category managers linked one weakness of the sourcing process to insufficient feedback from the SB. By providing a

template to the SB of what questions that needs to be addressed, it is believed that consistency could be achieved even when there is low participation of managers on the meetings and regardless of who is attending.

There is a conflict regarding category managers and the SB's expectations from the TG presentations. The main focus should always be on the outcome of the sourcing process, i.e. the implementation part of the FWA. These questions therefore need to be covered in an early stage in the sourcing process. Even if the template provides instructions on its presence in the TG1 presentation, this is not applicable in the PPT and more crucially in the actual TG1 presentations that have been witnessed. From observation in both the Swedish and NSB it was concluded that not once did the SB ask questions regarding the implementation in TG1 presentations. This is not in line the purpose of the sourcing process, to establish competitive agreements that the projects actually are using for their procurements.

### *Presented and skipped TGs*

Both the survey and the initial interviews points to the fact that it is common to skip TG2 in the sourcing process. Many commented that this TG could be presented in TG3 instead, while some believe that it fills a better purpose of combining it with TG1. The category manager for building states that some discussions with suppliers have already taken place during TG1. It is however not skipped entirely and for inexperienced sourcing managers, TG2 fills a great purpose as the survey outlined that 71% of the category managers present this TG for a SB. However, when addressing this issue with portfolio managers, many were surprised that TG2 was presented to the extent that the survey entailed. All questioned portfolio managers were under the impression that this TG could be skipped in most cases as it provided limited value for experienced managers and mature categories.

It was further revealed that it is common to skip TG4 and especially TG5. From the initial interviews it was told that the format for TG4 can differ from the formal process and the result of the sourcing case could be sent back by e-mail. TG4 is not seen as necessary to present, especially when the case concerns low volumes, low spend or it just an updated agreement. It is necessary to evaluate when it is important to include TG4 or if it is possible to combine its activities within another TG. This further needs to be communicated to the category managers and shared by the SB.

The TG5 is rarely presented and through initial interviews and the survey it was confirmed that evaluation of the implementation phase is generally skipped. However the implementation part should to a wider extent be considered throughout the whole sourcing process and as mentioned earlier, questions how to manage the

implementation should be asked in an early phase to increase the focus on implementation.

### *Process mapping*

The results from the process mapping, as well as the initial interviews revealed that there are several activities that could be revised and either be rearranged in another sequence or removed if not bringing value. Several steps needs further investigation; hence they are already done in earlier steps or could be combined with similar activities. Further investigation and discussions with category managers are required to question what activities that are necessary and what sequence that is logical and helpful to perform in. It is important to keep in mind the difference between time-consuming and non-value-adding activities and what time that equals waste and what time that is worth spending on an activity. The contract compliance could be a way of measuring if time spent on a sourcing case brought value in the end.

## **6.2 Comparison among sourcing processes**

In comparison to the Company, ProcurementPower manages their process after strict time measures, regardless of the characteristic of the purchase. It will always take them 16 weeks to perform a sourcing case from the beginning until time of implementation where the Company is currently operating on a 24 weeks basis. However, ProcurementPower does not include the time taken for defining the case in the initial stages. This could be linked to the initial phase of the Plan & Mobilize stage for the Company's sourcing process, which generally takes 2-3 weeks. Thus, ProcurementPower has still managed to make the purchasing process very time efficient.

### *Planning of activities and views of a good process*

ProcurementPower also seems to be the only one of the companies that have a clear set of activities that are linked to the time management, making it crucial for them to meet the time restrictions. In comparison, category managers at the Company creates their own project plans, where some derive their activities from the PPT while other create completely different documents with limited insights on each activity. This was found both in the survey and when viewing collected project plans for different sourcing cases. Some category managers keep the project plan on a very high level, while others go deep into detail regarding when certain activities should be carried out. How this layout differs is not of importance when wanting to achieve OE, but according to Bigelöw (2002), the foundation for OE relies heavily on identifying needs and place time frames

on each and every one of those requirements. OE would according to Bigelow (2004) be achieved once the requirements are in compliance with their effectiveness, communicated visions and actual practices.

According to Basu (2004), OE revolves around being best in class. How this is defined depends on who is asked. According to the representative at ProcurementPower, a good sourcing process is characterized by the ability of breaking down the costs to the absolute minimum levels in order to leverage against suppliers, allow part tenders while keeping a transparent attitude towards suppliers and provide solid RFQs and moving towards e-auctions and keeping time constraints. Most category managers asked at the Company announced that the analysis part is most time-consuming while very value adding in order to set a strategy. It is their belief that working strategically with suppliers would be of most importance, even if a price reduction still is the ultimate goal. A purchaser in the municipality would however stress the importance of price with no regards of strategic alliances as this conflicts with the legal aspects.

### *Time frames*

Besides from time control in the process, the supplier involvement differs between the companies. For the public sector, no negotiations take place. According to van Weele (2014) negotiations characterizes a good sourcing process and are essential for the outcome. Hence, in this aspect, public procurement will not be analysed further. The negotiations held at STENA Fastigheter last for three weeks, where suppliers are met one by one. According to the survey result regarding time spent between TG2 and TG3, Figure 21, general time for category managers is usually around 5-6 weeks. This however includes the preparation time for the TG material where a negotiation strategy also needs to be set. According to ProcurementPower, the negotiation together with a sign-off on implementation plan with KPIs is done in 4 weeks. Time differs, but so does activities. One important note is however that ProcurementPower meet with the suppliers before the actual negotiations in order to collect spend data, create the RFQ and the TCO structure of the contract. Hence, suppliers are involved in the material before the actual negotiations takes place, making the operations run more smoothly. However, as the Company and STENA Fastigheter operate in the construction industry, where some categories lack a wide number of suppliers and competition is tough (Spencer, 2008).

From an international perspective, the sourcing process takes the longest time in Sweden due to the bureaucracy linked with it. Both Norway and Finland have smaller organisations, where spend is lower and key people within the organisation are easier to

contact. By not presenting the case to a SB, Finnish and Norwegian category managers do not have to wait a week for a decision in the SB, but will get a reply within days instead.

## **7. Discussion**

The analysis of the sourcing process in alignment with the theoretical framework lays as a foundation for the improvement suggestions and discussions. Further, general suggestions regarding how to continuously work with OE within processes at the company are described, based on the findings and research approaches used to examine the sourcing process. Lastly, implications for further research are given.

### **7.1 Possible improvements to the sourcing process**

When viewing the sourcing process through the Swimlane diagram, example presented in Figure 12, some non-value adding activities could be identified. The most striking, that category managers need to send in the TG presentations one week in advance to the SB before actually presenting the TG. During this time, there is nothing else that category managers can do in order to work with the sourcing process. For category managers that present each TG in the scope of this thesis, this waiting time adds up to 4 weeks per process. The Swimlane diagram has therefore been evaluated together with category managers to see how one could move different activities to make use of the idle week between the submission of the TG material and the actual TG presentation.

The best way of eliminating non-value adding steps is by skipping TGs when appropriate, something that is currently employed at the Company. However, as TG presentations usually bring a lot of value to the sourcing process, there is an important trade-off between when to skip TGs and when it could be beneficial to present the TG for the SB. Currently, there exists no instructions on when, how and why it is necessary to present a TG. In Finland and Norway, TG's are usually emailed and agreed upon within days, making it possible to streamline the process. Even if this approach saves time, it is not considered possible on a Swedish or Nordic level, as those organisations are much larger, making it important to make use of the SB's internal network for coordination. Purchases, coordination need and volumes are more extensive in the Swedish and Nordic cases, making TG presentations and managerial input more important for successful sourcing cases. However, information from both the interviews and the survey revealed that TG2 is usually not considered as necessary to present as the rest of the TGs. It is therefore recommended that for low spend, renegotiated FWA and low volumes, TG2 should not be presented. These instructions need to be included in the process guidelines and followed in every case.

#### **7.1.1 Time improvement suggestions for the sourcing process**

Even if some of the managers in the SB make use of the read-in week from the first day that the presentation is sent, there would still take an entire week before the material is actually discussed and presented by the category manager. The preparation time is still needed for the SB managers to familiarize themselves with the case. Therefore it will not

be possible to eliminate it completely. Ultimately, category managers should be able to send in the material the same day. This could be possible if the members of the SB could schedule their time to read the TG material on the same day as the TG presentations. However, as participation from the SB is already low and coordination issues could arise from this setup, as the TG meetings content could be reported too late, it is not recommended. Instead, shortening the time for preparation to 3 days is believed that no major changes would be necessary, and a great time potential reached.

Other means of shortening the length of sourcing process have also been identified. At the Company, contract signing is made physically, meaning that a document needs to be signed and posted back and forth before it is valid. From discussions with category managers and portfolio managers, it can take up to 2.5 days before the activity is completed. Digitalization has allowed faster ways of dealing with this handling and since there already exists a digital portal for the contracts, it would be beneficial to also include digitalized contract signing, not only to make the process more effective but also from an environmental point of view.

It is further recommended that the evaluation criteria for RFX's should be developed after sending in the TG2 material to the SB as these are not presented in the TG presentation. By doing so, category managers could make use of the idle time between send in and presentations. Further, as TG4 and TG5 are not as commonly presented but linked to each other it is recommended that the Company try to combine these two TGs. This recommendation is as follows:

- TG4 should only address the implementation plan as it is of greatest strategic importance for the following work and a supplier has been selected by then.
- "Lessons learned" should not be presented in TG4 as the implementation has not yet taken place and its sequence conflicts with the findings of OE. Instead, this should be presented in TG5.
- A structure of lessons learned should be developed during the idle time between presentation send in and TG4 presentation.
- Contract signing should be done digitally and not sent physically to shorten idle times.
- For updated frameworks, low volumes and low spend, TG4 should only be sent for approval and no presentation should be held.

Another identified issue revolves around the time spent on preparing implementation plans. Currently, category managers should fill in an implementation plan before TG1 according to the guidelines. Even if all interviews with category managers revealed that the implementation should be taken into account in an early phase in the sourcing

process, it is believed that this work is duplicate and therefore non-value adding in the early stages of the sourcing process. Since neither category managers, nor SB or the extended category team know which supplier that is going to be chosen for the sourcing before TG3, implementation plans developed beforehand are of limited relevance. As they do not bring forward much value and are probably revised or undergo major changes once a supplier has been chosen, these activities are seen as non-value adding. However, risks with changing suppliers and how certain suppliers will be used are still vital and need to be addressed. But this should rather follow a discussion on the current contract compliance and challenges that can be seen from an early stage.

### **7.1.2 Indirect time and quality improvement suggestions**

From the follow-up interviews and the survey it was revealed that the analysis part of TG1 presentations was considered as most time consuming. Even if this part adds most value to the sourcing strategy, it is believed that scattered information, poor communication and guidelines on how to make proper analysis could affect the analysis negatively. With poorly made analysis at an early stage, either duplicate work in terms of revisions will be inevitable or higher risks of a decrease in contract compliance. The main action for this is believed to be clearer role descriptions between analysts and category managers. As for now, some category managers have no analyst to rely on, making it their job to develop a target image, estimate cost reductions, analysing trends, compile spend data per article and sub category, compile future volumes and establishing baselines. By providing support for category managers in these areas, process time could be shortened and better estimations could be done, as the analyst will gain greater knowledge when working with different categories in similar tasks. It was further revealed that the category managers saw finding appropriate numbers sometimes as a difficult task. By making use of e-sourcing and other digital tools, numbers will be consolidated and placed on one location, which will reduce the time for searching for the material and information needed when starting a sourcing case. By also including a portal for previous TG presentations at the Company, category managers will be able to gain input on how strategies could be proposed, making their own more accurate. Further, discussions from the benchmarking suggested that contacting suppliers for previous orders was good input on the actual buying behaviour and that information should be collected and archived in-house.

### *Implementation phase*

It is of great importance to include the extended category team at an early stage in order to succeed with the implementation. It was stated in the interviews with category managers that the collaboration with the members of the extended category teams did not work as wished in some cases. The main issue seemed to be that the extended

category team did not participate in meetings but conversations were usually held through e-mails or by phone.

One way of addressing the implementation issues is by changing the current OnePager to include contract compliance for previous FWA so that the setting is highlighted from the beginning. Also, it is considered beneficial to include project referrals of suppliers when presenting the suppliers long lists in an easier manner. This could be done in the OnePager for TG1 where an inclusion of the contract compliance for previous cases is presented along with recommendations from the projects for the supplier long list.

### *Supplier proposal, quotation and information*

Through the benchmarking it was found that some companies actually include suppliers before setting the RFX. This was also implied by the category manager of building and is believed to be a good strategy for improving RFX's and prepares suppliers for negotiations, thus shortening the time spent on these. Another aspect is the time set for having an RFX open. By including suppliers early, response times for RFX's could be made shorter. Currently, RFX's are open for 2.5 weeks at the Company. This is already a good result in comparison with public procurement and STENA Fastigheter that has a time of 1 month for this. But in comparison with what could be possible, i.e. ProcurementPower, this time could be further reduced without risking the quality. It is proposed that category managers should seek suppliers after approval in TG1 to develop RFX's. As was stated in the follow-up interviews, this could be aligned with a risk of including certain supplier requirements and thus excluding other suppliers to meet the RFX's. Therefore, this strategy should only be employed in markets with many suppliers. By doing this, negotiations are shortened, as category managers will already have started the discussions with the suppliers.

### *Communication with the Sourcing Board*

From the empirical data, it was found that many category managers felt that feedback from the SB sometimes was considered as non-efficient. Their role was sometimes in question as of where they acted as gatekeepers or as a function of only giving feedback and support. All category managers saw their strength as being able to give a larger view of all operations at the Company. SB also provides information on key stakeholders in the organisation that could help with the implementation work and a great resource for the purchasing aspects because of their experience. Many did however feel that they were not challenged enough by the SB and that it sometimes felt as managers had not read through the material properly or that questions could be very unexpected. The SB's role is not established, therefore no guidelines for their role is set and their feedback depends on the individual characteristics of its members. It is therefore recommended

that there should be clearer instructions on what to expect from the SB both to category managers, but also as a checklist for the members of the SB to use. A proposal of these questions could be found in Appendix H.

Further, it was revealed that strategies agreed upon in the beginning of the sourcing process sometimes were reconsidered. Therefore, category managers have to start over from the initial strategy and adjust activities to the latter. This was believed to be a result of both participation, where some managers might not have attended the SB in earlier TGs but entered later on, with implications on how category managers should change the strategy, or because earlier agreed strategies were simply forgotten. To overcome these issues, it is a necessity to include previous agreed strategies in TG presentations and also document these for the SB. Currently, there is always a present secretary in the Swedish SB that manages this, but for the Nordic, no such person can be found. It is also of importance that the SB's responsibility should be to communicate the set strategies to the rest of the organisation, making it even more vital to document agreed strategies.

### *Time Frames*

According to van Weele (2014), a good sourcing process follows the six steps he suggests, without mentioning time restrictions, as a good process is not dependent on time spent. Since purchasing stands for 70% of the total spend in the construction industry and OE is at focus, targets needs to be set. From the value stream mapping and Swimlane, much was taught regarding time frames for improving processes in order to make it more efficient. The time measures could be done by either including measures of FTE, total time from initiating a process including idle times to see how one could eliminate such waste.

Since the sourcing process never is measured on time and only on potential savings from the outcome, the process time will probably not decrease without any changes. After participating on several TG presentations, both Swedish and Nordic, it was found that not once did any of the managers ask about the time frames. By benchmarking with other competitors, it is clear that while the Company has a very developed sourcing process, with top management involvement and steps of achieving a good outcome of the FWA, they are still lacking in time management. In other industries, e.g. public procurement and at another company, STENA, the process of reaching a FWA took similar or less time as it does for category managers at the Company. This was without the idle time of one week before each TG presentation. However, the time spent at the Company could generally lead to larger consolidation volumes and greater potential savings as for other players in the field. Even if this is the case, it is still recommended that the controlling function, i.e. portfolio managers and SB should consider this aspect

to a larger extent than what is currently done. Measuring time spent over a longer period of time would visualize bottlenecks and actions could be set into place for decreasing the process time.

For the support of the process, tools and documents need to be reviewed. In particular, the BPE and PPT are in great need of development. The first is not consistent with the current process and also only used by 33% of category managers. Further, BPE's contain structures of old TG presentations and does not cover TG2 and TG4. The latter is reviewed as extensive, with too much information that is inconsistent as it spans over both activities and general recommendations.

### **7.1.3 Possible time savings of improvement suggestions**

When calculating possible time savings of the improvement suggestions, three category managers filled-in project plans were used as reference points for the different activities time allocation. For example, one suggestion is to eliminate the creation of an action plan. In one project plan, this activity took 2 weeks but was made in collaboration with 20 other activities in the first week and 22 other activities during the second week. The estimated time saved by eliminating this activity was therefore set to 1/20 of one week added with 1/22 of one week. Since only one of the three project plans followed the PPT in a Gantt schedule, information on time consumption for specific activities could not be estimated from the other two project plans. Instead they worked as a reference point for the received Gantt schedule. In cases where one activity could be identified in more than one project plan, the average duration time was used. As category managers perform the sourcing process in parallel with other tasks, the FTE average from the survey, i.e. 0.4 was used to calculate a more accurate time spent for the activities.

Table 12 shows the possible time savings according to these calculations for the suggested changes in the sourcing process presented in the subchapter 7.1.1. The time savings presented as a percentage was calculated by the changes in time spent compared to the result given from the survey. According to the survey, the general duration time of a sourcing process is six months, i.e. 120 working days but the actual time spent is 9.5 weeks, thus 47.5 days. The time improvements shown in Table 12 and 13 are therefore only addressing the improvement of the actual time spent. Thus, it does not take consideration to the idle times of the original 120 days.

**Table 12 – Time improvement suggestions and possible time savings**

<b>Activities for time improvement</b>	<b>Potential days gained according to PPT</b>	<b>Potential active days (FTE=0.4)*</b>	<b>Subprocess part</b>	<b>Implementation timeframe</b>
<i>Skip action plan and early implementation plan</i>	0.9	0.4	<i>Plan &amp; Mobilize</i>	1 year
<i>Evaluation plan of RFX and draft of supplier audit after TG submission</i>	1.0	0.4	<i>Plan &amp; Mobilize</i>	1 year
<i>Move "lessons learned" to TG5</i>	2.6	1.0	<i>Negotiation</i>	1-2 years
<i>Allow digital contract signing</i>	2.5	1.0	<i>Negotiation</i>	1-2 years
<i>Decrease time for Sourcing Board to read TG-material to 3 days</i>	N/A***	8.0	TGx	1 year
<b>Total days gained:</b>	<b>7.0 days</b>	<b>10.8 days</b>	<b>N/A</b>	<b>N/A</b>

<b>Total improvement**:</b>	<b>10.8/47.5 = 22.7%</b>
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The improvement suggestions presented in chapter 7.1.2 were from a quality perspective and to calculate the possible outcome of the time consumption, broader estimations had to be made. For example, by assigning an analyst for each category manager, calculations and supplier market analysis could be made in parallel instead of successively and thus shortening the lead time. Some suggestions presented in 7.1.2 includes that category managers should perform additional activities to reach higher quality in the sourcing process outcome. Project plans have been used as a basis to estimate the suggested activities time consumption by reviewing similar activities. In addition, these time estimations were also crosschecked with category managers and through the benchmarking discussions.

For the additional time spent on each of the recommended activity, the highest rounding was used so that the result would point at the minimum expected outcome. For example, by including suppliers in the RFX development, ProcurementPower spent a total of 1 day and category managers at the Company currently spend 1 day without supplier involvement. Thus, including suppliers in the RFX development was estimated to take an additional 2 days in the sourcing process. The results of the indirect time savings are

presented in Table 13, where a negative number represents additional estimated time spent and positive numbers estimated time saved. The final time improvement is the

result of the added time savings from the previous improvement suggestions that were presented in Table 12.

*Table 13 – Improvement suggestions and possible indirect time savings and costs*

<i>Activities for time improvement</i>	<i>Potential days gained according to PPT</i>	<i>Potential active days (FTE=0.4)*</i>	<i>Subprocess part</i>	<i>Implementation time frame</i>
<i>Include contract compliance in TG1***</i>	<i>N/A</i>	<i>-0.5</i>	<i>Plan &amp; Mobilize</i>	<i>1 year</i>
<i>Provide all Category Managers with analyst resources</i>	<i>3.5</i>	<i>1.4</i>	<i>Plan &amp; Mobilize</i>	<i>More than 2 years</i>
<i>Include supplier data for analysis***</i>	<i>N/A</i>	<i>-2.0</i>	<i>Plan &amp; Mobilize</i>	<i>1-2 years</i>
<i>Include suppliers in RFx discussions***</i>	<i>N/A</i>	<i>-10.0</i>	<i>Define strategy</i>	<i>1-2 years</i>
<i>Reduce RFx proposal time available to 1.5 weeks***</i>	<i>N/A</i>	<i>5.0</i>	<i>Carry out strategy</i>	<i>More than 2 years</i>
<i>Reduce negotiation time</i>	<i>5.0</i>	<i>2.0</i>	<i>Negotiation</i>	<i>More than 2 years</i>
<b><i>Total days gained:</i></b>	<b><i>-8.5 days</i></b>	<b><i>- 4.1 days</i></b>	<b><i>N/A</i></b>	<b><i>N/A</i></b>

<b><i>Total improvement:</i></b>	<b><i>(10.8-4.1)/47.5 = 14.1%</i></b>
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## **7.2 Suggestions for how to continuously work with process improvements to achieve Operational Excellence**

The common definition regarding OE is the heavy focus on continuous improvement. It would therefore be beneficial to encourage discussions and visualise improvement potentials on a firm-internal basis. For the Company, this could mean to include an improvement box on the intranet, where category managers could leave comments anonymously on perceived improvement potentials.

Bigelöw further proposes that organisations should seek to minimize storage to one location, which is in line with Bergman and Klefsjö views on eliminating waste. As category managers are already required to report “lessons learned” in the sourcing

process, this information would be beneficial to share outside the category. Category managers have pointed out that the SB's greatest strength lies in providing information about other categories. By making it easier for category managers to receive information on challenges and improvements in other categories, this input would be reached

through fewer communication channels. The “lessons learned” documents are of crucial importance as means of achieving OE. These needs to be communicated to all parts involved in the sourcing process and workshops with this theme should be held on a more common basis than what is currently employed at the Company.

Bergman and Klefsjö suggest ways to achieve continuous improvement by identifying improvement areas through thorough benchmarking. Basu who views it as the most crucial step in order to stay “best in class” further underlines benchmarking. In this thesis, benchmarking was done towards different industries and some aspects were concluded. First, process time was similar regardless of clear instructions in place or not. Second, the Company’s sourcing process has a stronger strategic focus compared to other processes. Third, as could be seen from the benchmarking towards ProcurementPower, it could be beneficial to include suppliers in an earlier stage of the sourcing process. This could smoothen negotiations, provide needed information on the internal buying behaviour to make better analysis and develop the RFX. Benchmarking should be performed on a regular basis in order to ensure top class results.

Bigelöw further stresses the importance of clear instructions. Today no instructions on how to achieve OE in processes within the purchasing department exist, which conflicts with the definition of OE. In particular, for the sourcing process, there should be a document providing information on what TGs that can be skipped and consistent instructions in the PPT to reach good results in the TG presentations. Further, even if the process’ material is of extensive character, these instructions are not perceived as clear descriptions on what activities that should be included.

In Figure 31, a proposal on how to achieve OE at the Company is presented. The first step is to visualize the current process by mapping activities, by for instance using a Swimlane diagram to show hand offs and responsibilities. In this step, it is important to evaluate measures for each milestone, which for the Company should be in terms of time, contract compliance and savings. To find pain points and improvements, all stakeholders’ involvement is necessary to capture improvement potentials on all levels in the organisation. Thirdly, roles need to be assigned where clear responsibilities are linked with each activity in the process to assure high quality in the process outcome. To achieve OE, benchmarking needs to be conducted further towards champions in the area and other industries to ensure that the Company stays best in class. Documentation and information should be stored on a common portal available for every user and other stakeholder in a transparent manner as a mean to spread knowledge. The lessons learned part needs to be accessible for all stakeholders and presented at the end of the process. This is best done through regular meetings and workshops.

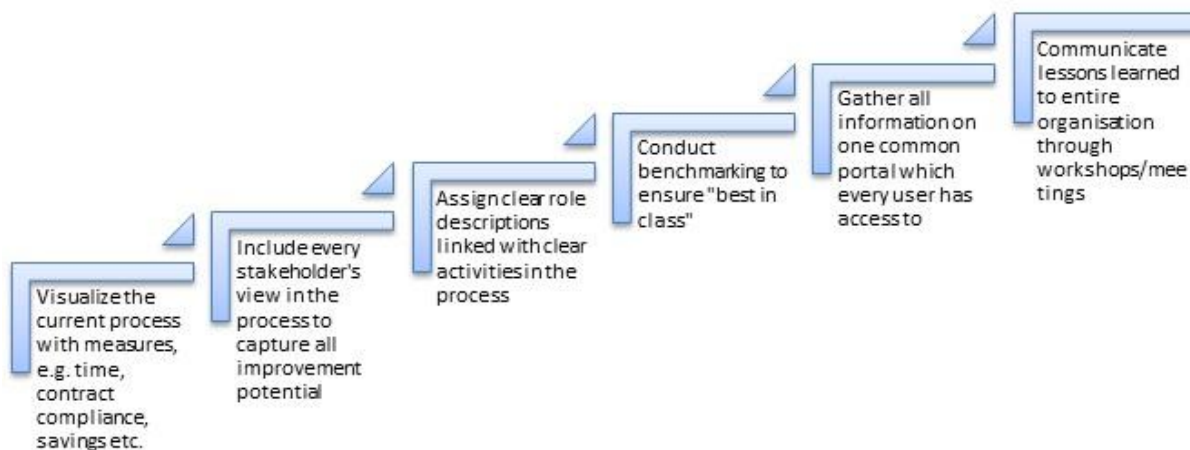


Figure 31 – Method how to achieve Operational Excellence

### 7.3 Implications for further investigations

The TG5 was not within the scope for this research but possibilities to combine TG4 and TG5 were found. If the results from the case are not seen, the lessons learned part is not fully accomplished and it might therefore be more beneficial to conduct in latter phases instead. In general the implementation is something that has been lifted throughout this research, both as crucial for succeeding with the FWA but also deficient many cases. Therefore, it is suggested to investigate further how to efficiently include the Implementation in the Sourcing process and how to facilitate a high contract compliance.

Further research should aim at studying the sourcing process from other stakeholders' perspective, e.g. projects or extended category teams, to gain input from different perspectives. To be able to compare cases in real time, category managers' progress should be tracked from the initiation of a case until signed agreement and implementation is achieved.

In order to measure the efficiency of the sourcing process it would be beneficial to take consideration to the numbers available in the e-sourcing tool. This could be by measuring the extension of the FWA (in monetary measures) against the time spent. To do this, there must be a controlling function that reports time spent on sourcing cases. Another dimension that is also of value is the contract compliance as implementation is still the only real outcome from the sourcing process that considers efficiency. Savings are also of importance, hence time spent could also be weighed against larger saving potentials in order to identify which category managers that conducts the best sourcing processes and compare their activities with the least efficient.

## 8. Conclusions

If the process lead time for sourcing cases is shortened several advantages can be expected. There will be more time available to spend on the implementation phase, which is considered as the most crucial work in order to achieve high compliance for the agreements out in the projects. Shorter process time would also allow the SB to get more involved in the different cases and thereby be able to gain a better understanding of the challenges associated with specific categories. Another benefit by decreasing the process time is that better relationships with suppliers can be achieved due to more frequent communication and faster replies.

The improvement suggestions presented in this thesis derives from the identification of activities made through mapping of the process in the Swimlane diagram, discussions with stakeholders of the process and through benchmarking. In general, the Company has placed a high focus on the purchasing function and developed a thorough process that could be viewed as “best in class” within the construction industry. The suggestions therefore deal with minor changes in activities that are not presented to the SB and where indications have shown that they are not performed. By removing these steps in the sourcing process, the time consumption could be reduced by 17% as shown in Table 12. The additional improvement suggestions in Table 12 could further increase the collaboration with the suppliers and increase savings. These suggestions would increase the time spent within the process with 5 days with FTE=1. All suggestion would in general mean that the approximate process lead time could be shortened by 14.1%.

In addition to the presented time savings in Table 12 and Table 13, recommendations on how to indirectly streamline the process further and improve the FWA compliance in the projects have been highlighted. This involves suggestions on clear instructions for skipping TGs, better communication between SB and category managers and higher focus on the extended category team’s responsibilities for bringing forward the implementation work. Further it is recommended to include time restrictions for the cases in the TG presentations in order to put more focus on finishing projects within reasonable time.

OE is achieved through continuous improvements. In the purchasing department at the Company these improvements are best visualised through collaboration and discussions with all stakeholders. Figure 31 shows a methodology for how to actively work with OE in the purchasing department. The main weakness identified in the current sourcing process is the lack of a common portal where knowledge is shared across the organisation.

## **Appendix A - Survey Outline**

Question 1. What categories do you do the sourcing process for?

- 1.1 Loader & Excavators Service
- 1.2 Water & Sewage Civil Material
- 1.3 Ballast & Crushed
- 1.4 Road & Ground Material
- 1.5 Foundation Work
- 1.6 Road Surfaces
- 1.7 Reinforcement
- 1.8 Concrete
- 1.9 Formwork
- 2.1 Bitumen
- 2.2 Cement
- 2.3 Fuels
- 2.4 Heavy Equipment Investment
- 2.5 Construction Haulage
- 2.6 Road Maintenance
- 2.8 Light equipment
- 2.9 Cranes & Aerial Lifts
- 2.10 PPE
- 2.11 Tools
- 3.1 Steel
- 3.2 Concrete Prefab
- 4.01 Facades

- 4.3 Roof Covering
- 4.4 Scaffolding
- 6.1 Doors, Fittings & Locks
- 6.2 Windows
- 5.1 Electrical Installation
- 5.2 Cooling & Ventilation
- 5.3 Heating, Water, Sewage & Fire
- 5.4 Elevator & Escalator
- 5.5 Ground Work
- 4.02 Insulation & Board
- 6.3 Flooring
- 6.4 Tiles & Bathroom
- 6.5 Kitchen & White Goods
- 6.6 Painting & Wall Finishing
- 6.7 Builders Hardware Wholesalers & Other Interior
- 6.8 Modules & Wood
- 6.9 Waste Management
- 6.10 Ceiling
- 2.07 Fleet Management
- 7.1 IT & Communication
- 7.2 Facilities Management
- 7.3 Travel & Accommodation
- 7.4 Consultants
- 7.5 Professional Service

## 7.6 Insurance

Question 2. Which Tollgates do you usually present to the Nordic Sourcing Board?

Tollgate 1

Tollgate 2

Tollgate 3

Tollgate 4

Tollgate 5

Question 3. How long time do you spend preparing for Tollgate 1?

Less than 4 weeks

4-6 weeks

6-8 weeks

8-10 weeks

10-12 weeks

More than 12 weeks

Not applicable

Question 4. How long time do you spend preparing for Tollgate 2?

Less than 4 weeks

4-6 weeks

6-8 weeks

8-10 weeks

10-12 weeks

More than 12 weeks

Not applicable

Question 5. How long time do you spend preparing for Tollgate 3?

Less than 4 weeks

4-6 weeks

6-8 weeks

8-10 weeks

10-12 weeks

More than 12 weeks

Not applicable

Question 6. How long time do you spend preparing for Tollgate 4?

Less than 4 weeks

4-6 weeks

6-8 weeks

8-10 weeks

10-12 weeks

More than 12 weeks

Not applicable

Question 7. How long time do you spend preparing for Tollgate 5?

Less than 4 weeks

4-6 weeks

6-8 weeks

8-10 weeks

10-12 weeks

More than 12 weeks

Not applicable

Question 8. During this time, how much have you spent during the whole sourcing process measured with FTE (where 1.0 means effective full-time)?

Less than 0.25

0.25-0.50

0.50-0.75

0.75-1.0

Question 9. Have you viewed the Best Practice examples when preparing for a tollgate presentation?

Yes

No

Did not know about this support

Question 10. Which of the following tools have you used for a tollgate 1 presentation?

Project plan template

Category Card

Heat Map

Business Check, Kompass etc.

TG1 Template

Other: Please insert description

Question 11. Which of the following tools have you used for a tollgate 2 presentation?

IBX eSourcing tool

FWA Contract template

The Company's safety rules for suppliers

The Company's Code of Conduct

The Company's environmental rules for suppliers

TG2 Template

Other: Please insert description

Question 12. Which of the following tools have you used for a tollgate 3 presentation?

IBX eSourcing (if conducting eAuction)

Negotiation planning template

Negotiation tactics template

TG3 Template

Other: Please insert description

Question 13. Which of the following tools have you used for a tollgate 4 presentation?

Frame Work Agreement templates

TG4 Template

Other: Please insert description

Question 14. What challenges have you experienced with the sourcing process?

Process is too long

Process is too formal

Unsufficient feedback from the Sourcing Board

Not enough guidelines to the process

Non-efficient tools for the process

Unsufficient process support

Other: Please insert description

Question 15. Which of these tools do you believe is of great support for the sourcing process?

Project plan template

Category Card

Heat Map

Business Check, Kompass etc.

TG1 Template

IBX eSourcing tool

FWA Contract template

The Company's safety rules for suppliers

The Company's Code of Conduct

The Company's environmental rules for suppliers

TG2 Template

Negotiation planning template

Negotiation tactics template

TG3 Template

Frame Work Agreement templates

TG4 Template

Question 16. Which of these tools do you believe is in great need of improvement?

Project plan template

Category Card

Heat Map

Business Check, Kompass etc.

TG1 Template

IBX eSourcing tool

FWA Contract template

The Company's safety rules for suppliers

The Company's Code of Conduct

The Company's environmental rules for suppliers

TG2 Template

Negotiation planning template

Negotiation tactics template

TG3 Template

Frame Work Agreement templates

TG4 Template

Question 17. If you checked a box in the previous question, please explain briefly why

Question 18. How often do you contact the extended category team/reference team?

Question 19. What parts of the sourcing process do you consider time-consuming?

Question 20. What parts do you consider add value to the result of a sourcing case?

Question 21. What parts do you consider do not add value to the result of a sourcing case?

Question 22. Are there any parts/tools you think could improve/make the process more efficient.

## **Appendix B - Questions for the initial interviews**

1. What is your experience of the sourcing process?
2. Which tollgate is most time consuming?
3. What material do you use when preparing for a TG? Do you use a template? Have you made an own template?
4. How did you prepare a TG presentation the first time?
5. Do you know the category specific KPIs for your category and can you relate these to the sourcing process?
6. Which TG is most difficult to prepare for?
7. Which TG is easiest to prepare for?
8. What initiates a sourcing process?
9. What is considered as input to the sourcing process and what is output?
10. How is your category different to other categories?
11. What is most important to include in a TG presentation?
12. Have you ever had a TG presentation revised? What were the reasons?
13. Do you have an example of when a TG presentation has been successful/unsuccessful?

## Appendix C - Follow-up interviews guideline

### Interview Category Managers – Follow-up

#### Background

- We are not so familiar with the category and the portfolio. Can you brief us about the market? Type of products, specific technologies/number of suppliers/Supplier relations etc.?
- Number of Framework Agreements per year?
- What type of agreements and to what extent for the category?  
Regional/National/Nordic, Length?
- Are you working with the sourcing process in parallel with other tasks? Are several sourcing processes on-going simultaneously?

#### General questions about TGs and the sourcing process

- Does all your sourcing cases follow the same process according to the procedures set by the Company? If not, in which cases does it differ and how?
- What do you believe requires most time? How do you believe this time can be shortened?
- Where do you see opportunities to make the sourcing process more efficient?
- In what ways can the sourcing process and the tools be changed?
- When do you think the implementation should be taken into account?

#### Expectations from N(SB)

- What do you expect from SB?
- What do you consider is the role of SB in the sourcing process?
- Which questions does SB commonly ask?
- Do your expectations from SB differ with what you actually are getting?
- What is good feedback?

#### Other:

Anything important we have forgotten?

## Appendix D - Answer frequency

The amount of respondents for the different cases per question in the survey, were not of open-ended nature or about general information.

*Table D1 - Amount of respondents for the different cases in questions 2-7*

<b>Cases</b>	<b>Number of respondents</b>
Original	23
FTE = Less than 0.25	5
FTE = 0.5-0.75	11
Presented 1-2 times	7
Presented more than 6 times	9

*Table D2 - Amount of respondents for the different cases in question 8*

<b>Cases</b>	<b>Number of respondents</b>
Original	22
FTE = Less than 0.25	5
FTE = 0.5-0.75	11
Presented 1-2 times	6
Presented more than 6 times	9

*Table D3 - Amount of respondents for the different cases in question 9*

<b>Cases</b>	<b>Number of respondents</b>
Original	21
FTE = Less than 0.25	5
FTE = 0.5-0.75	11
Presented 1-2 times	5
Presented more than 6 times	9

## **Appendix E - Initial interviews**

### **The secretary of the Swedish Sourcing Board**

The Company seeks to adjust the national sourcing processes to the Nordic one. It is believed that the Swedish sourcing process, unlike the Norwegian and Finnish, does follow the Nordic guidelines with the only difference being the steering group's composition. That is why an initial interview with KL has been conducted and will be of importance when analysing the Nordic sourcing process.

KL was previously a category manager for facility management in the indirect material portfolio. Currently, she is a secretary member of the Swedish Sourcing Board and approves tollgate presentations for Swedish sourcing processes. Her role in the Swedish Sourcing Board is to summon other members, hold the meetings, provide and control the documents that are to be presented. Her expert support includes controlling the material to suggest improvements to category managers, before they present it to the remaining sourcing members. If a category manager has not succeeded in including relevant information for the tollgate presentations, KL suggest completion measures that would be beneficial to take in order to get the material approved for holding tollgate meetings with the rest of the board. Some completion suggestions could be derived from missing numbers, most commonly the spend division or the user rate characteristics. However, KL also proposes that another usual reason for revision depends on the structure of the presentation. If she knows that the Sourcing Board will dislike the structure it is revised so that the category manager can adjust it to the instructions given by KL.

The focus on the presentation structure is aligned with the Sourcing Board's requirements on commonly established guidelines for the tollgate presentations. The reasoning lies within the composition of the Sourcing Board, where members have different backgrounds in different portfolios and work on very high levels in the organisation. By using the same structures in the presentations, the Sourcing Board will be able to follow category managers' logic on certain strategies, even if they have little initial knowledge regarding the specific category. According to KL, the members of the Sourcing Board are constantly given new information that they need to process, which is why a recognizable structure, where certain information is presented in a certain order is optimal. Most importantly is the category managers' ability to clearly state the question at issue and what benefits and drawbacks the proposed actions and current strategies contain.

KL means that usually, the quality of the tollgate presentations is highly dependent on the category managers' level of experience. Those who have attended the Sourcing

Board multiple times and thereby know what information that is relevant and how it should be presented give the best presentations. These people in the organisation usually have presentations that looks similar for different sourcing processes and are, according to KL “neat and tidy, with the same structure”. Inexperienced category managers usually have greater trouble in extracting what information that is relevant for presenting. Even if KL does not see any issues with the current sourcing process, she admits that the instructions for the tollgate presentations are followed in varying degrees as the material is extensive.

### **The category manager for plumbing and installation in Sweden**

MM is the category manager for plumbing and installation, with supplier agreements that stretch to many different geographical levels. Some agreements are covered on a national level and some, especially those in installation, are linked to the internal customer the Company Installation. For the latter agreements, sourcing is not conducted according to the sourcing process but follows a less strict procedure to get approvals on smaller changes and renegotiations. However, tollgate material is always used once the sourcing is extensive and for these processes the only difference is that MM presents the material for another Steering group called the Product Council.

In general, MM is satisfied with the current structure of the sourcing process. The heavy focus on completing certain tollgates by thoroughly analyse cost drivers and visualizing saving potential before continuing with the next steps are seen as its strength. Receiving feedback from managers before moving on with the sourcing is another valuable aspect of the tollgate presentations. MM however underlines the difference between presenting a case for the Sourcing Board compared to conducting the right sourcing strategy. The material and guidelines available provides relevant information on what information the Sourcing Board will need in the TG presentations. What the guidelines does not entail is how the category manager should analyse existing data and what conclusions that can be drawn according to the results. A good tollgate presentation is one that describes the scope and the strategy. It entails information on the spend volume and its division, it shows the Company's internal requirements so that a clear objective with the sourcing process can be formulated. MM does not think that these analyses can be done by following a process guideline, but rather through discussions with team members.

The biggest area of concern regards the implementation phase, as there has been issues with anchoring the agreements in the projects. As a category manager, MM sometimes feels far away from the line, since the projects are accountable and it is out there that the decisions are made. The sourcing process therefore needs to support this organisational setup.

The reference team from the Plan & Mobilize stage in the sourcing process are an important part in succeeding in the implementation. Currently, these groups are decided on a central administrative level but the category manager decides what competencies are needed. The reference team's main goal is to capture the needs of the organisation so that the category manager can translate the requirements to the suppliers in the negotiations. By this, the reference team will have a part of the projects' agreement allegiance, as they represent the line. MM stresses that the teamwork in these groups are essential for the outcome of the sourcing process.

### **The category manager for steel construction in Sweden**

MÖ is the category manager for the steel building categories, with a lot of money involved. In general, the sourcing process is a good way of working with procurement in a strategic way, with top management involvement and clear milestones that need to be passed. However, one big concern is the follow-up work, where it is important to assure that the Company has gained the right agreements, to the right prices, with the right suppliers through the sourcing process. The implementation aspect is something else that always needs to be considered throughout the entire process according to MÖ. Today, there exists a lot of FWA and whenever one expires it usually initiates a new sourcing process. How these are worked with and their expected outcome are important aspects to consider in order to not risk exceeding the needed amount of FWA.

As MÖ has gone through the sourcing process multiple times, she does not consider it as dense even if there is an understanding that others might do so. The preparation work usually consists of finding information that the Sourcing Board will easily understand and comprehend. These meetings are considered as both a strength and weakness of the sourcing process. The positive view is the opportunity to gain feedback on the chosen strategy for the sourcing from experienced managers. The board provides information on available internal resources that can be used for the specific case and what decisions that are most important to consider for the Company as a whole. Further, they make sure that the supplier market has been screened properly according to different category requirements. The Sourcing Board meetings are a good way of anchoring the work with the organisation and receive necessary feedback to direct the strategy.

The meetings are however associated with one concern for MÖ, particularly the participation of the management team that the Sourcing Board consists of. There have been multiple cases where more than two participants have not attended. This is usually translated into a simplified process of approval for the sourcing case, which for category managers is good. For the outcome of the process as a whole, the lack of feedback and

fewer requirements could be risky. MÖ stresses that there should be a certain priority between the decision points. The Sourcing Board needs to be well informed by reading through the case and consider how different strategies affects not only their category but other categories as well. Further, the Sourcing Board should ask relevant questions that, besides from hard numbers such as price, also takes consideration to the soft values such as quality, delivery and the projects' wishes.

It all comes down to the biggest concern, which is how to communicate the work done within the purchasing department so the projects make use of the agreements signed. To achieve this, the aim should be to always reconnect agreements and strategies to the line. This is achieved by including the reference teams and/or the extended category team not only in the sourcing process but in the category planning as well. For MÖ, the extended category team mainly consists of key people from the Building portfolio that provides valuable input. It is their responsibility to know exactly how the agreements are currently being used and communicate the utility and quality needs of the projects. However, since the sourcing may cover many different categories, these extended category teams will not be able to answer for other requirements put on the FWA from other categories. It is therefore important that the category manager identifies and summons the main stakeholders, e.g. a reference team. These teams are mobilized in the first stage of the process and they need to have a strong position in their respective organisations for anchoring the agreements in the projects. Their support is therefore an important ingredient for gaining the Sourcing Board's approval on certain strategies.

Apart from the support from the extended category and/or reference teams is the heavy focus on hard numbers, e.g. money spent and trends. Before the TG1 presentation, MÖ needs to screen the buying behaviour of both the Company and the suppliers. This is gathered through thorough analysis of statistics divided into different regions, projects and products in order to better anticipate saving potential for forecasted volumes. It is also important to define the, according to MÖ, soft parameters, e.g. needed service levels, logistics, transportation etc., in an early stage. Further, the supplier market needs to be fully understood and the supplier's' position in the supply chain should be clear.

It is before the TG1 presentations that the heavy work is done. Other tollgate presentations are either skipped or mainly reporting of chosen directions. It is an oddity to present all tollgates to the Sourcing Board and MÖ has never been up to a TG4 presentation. For this, it has always been sufficient to only email the OnePager to the members of the Sourcing Board and digitally answer questions through emails rather than having meetings with all parties.

### **The category manager for isolation material in Sweden**

CB, category manager for isolation material, a category consisting of standard material, is very familiar with the process. Due to her multiple appearances at the Sourcing Board, CB can rely on previous templates instead of the support tools offered by the Company. These tools are however necessary for people that are not as familiar with the process as they offer great support with solid information. The concluding template that is to be presented to the Sourcing Board, e.g. the OnePager, is clear and consistent throughout the entire process. Over all, CB views the OnePager as a good tool but according to her, there exists some improvement potential in the OnePager and since it has been used over the past years, the Company now has the knowledge to evaluate its impact.

CBs general view of the sourcing process is that it is flexible, which above all should be considered a good quality. Category managers are able to adjust the process according to their different cases. By skipping some tollgates, all parties involved can save a lot of time as the preparation work is time consuming. In practice this means that not all tollgates needs to be presented to the Sourcing Board, but can be passed after an agreement from the Board members and the category manager.

In CBs case, TG2 is the usual tollgate to be skipped and she believes that this is a mutual opinion among the other managers that operates in categories with standard material. Further, since CB's category has a limited amount of suppliers, the supplier base is already perspicuous in TG1. In TG2, one usually seeks mandate to negotiate with suppliers, but since this mandate can be reached in the TG1 already, TG2 has always becomes otiose for CB. TG1 and TG3 are considered the most important steps of the sourcing process in the isolation material category.

The danger with the sourcing process lies within the communication between the purchasing department and the line. Here, it is important to remember that even if the Sourcing Board are the ones that needs to approve the category managers chosen strategy, it is the extended category team that represent the information channel towards the projects. This collaboration needs to work in order to bring the established agreements between the Sourcing Board, category manager and suppliers out in line. The communication between the category manager and the extended category team is therefore important for implementing the outcome of the sourcing process. Their ability to raise comments and opinions from the line affects the result of the sourcing process.

One common difficulty is to balance the priority between quantitative and qualitative requirements from the Sourcing Board and the projects. The category manager's job is to translate these different needs to an agreement that takes consideration to both and also decide which requirements that should be assigned what priority for each sourcing case. According to CB, having some representation from the line in the Sourcing Board

could favour the category managers work and be beneficial to the outcome of the sourcing process as the feedback from these meeting would become more relevant.

### **The category manager for scaffolding and roof covering in Sweden**

FT graduated from the University three years ago and has built his working experience within the purchasing department at the Company. During the past two years, FT has been the category manager for scaffolding and roof covering, he was part of the team that brought the new sourcing process forward, so it would be handled more professionally and thoroughly. FT views the available guidelines of the sourcing process to be supportive and that they provide the necessary space for own interpretations. This is also believed to be applicable for the templates and tools. However, as their availability is scattered, FT has not reviewed all support available. For new sourcing cases, FT uses the long-version templates specifically attached to each tollgate presentation. In cases where old tollgate material is available, FT uses this to compare past reasoning, questions, prices, spend and saving potential. By viewing older tollgate presentations, information regarding the teams will uncover, providing FT with additional people that might have valuable input regarding the sourcing strategy.

The old presentations are located in the category folder on the hard disk while the templates can be found in both on the hard disk as well as the intranet. There does exist old presentations on the intranet, however, these are only available for members of the Sourcing Board and not for category managers. FT believes that knowledge about these folders would be valuable for category managers as well. According to FT, the best practice examples are not necessarily a best practice in terms of sourcing. When FT views old presentations, the aim is to gain more input for the sourcing process rather than learning how the Sourcing Board wants the presentations to look like.

The Best Practice examples do however fill a purpose; they underline the importance of a common tollgate presentation structure. A common format highlights the key figures, making it easier for category managers to communicate their concerns and strategies to Sourcing Board and for the Sourcing Board to easily understand figures and concerns even if they have little initial knowledge regarding the category. For example, the OnePager consists of a HeatMap that shows environmental, security, legal and financial risks along with the Company's code of conduct compliance. This gives the Sourcing Board an indication on how the chosen strategy affects these areas and makes it possible for them to ask questions and give feedback on how to address certain risks. FT do however think that the Heat Map needs improvement as it currently does not take consideration to category specifics and does not entail what measures to take once it turns red.

Even if the tollgate presentations for the Sourcing Board follow the same structure, FT believes that the category characteristics distinguish one sourcing process from another. According to FT, it is up to category managers to decide what is most important for their category and communicate these requirements to the Sourcing Board. For example, certain categories need to have a heavier focus on the technical parts, for bulk materials a price analysis is of more importance. In FT's case, the roof category evolves a lot around guarantees and responsibility issues, which needs to be addressed in the sourcing process.

How the sourcing process is conducted also depends on where the need has been identified. For FT, FWA in the scaffolding category is nothing to be signed on a Nordic level, or even a national one. Instead, these are signed on a regional level, meaning that the sourcing process does not have to be as dense and the time placed on these processes usually consist of negotiations. In these cases, the Steering Group consists of people located on the regional level, which have gained trust from the Sourcing Board to ensure that the sourcing is in accordance with the national strategies. According to FT, the regional managers are able to provide more relevant feedback in this category than the Sourcing Board. The time spent on these cases is often very much shorter than for the large-scale sourcing processes, in general around three months. For the roof category, where FT is currently working on an extensive sourcing process, the time spent is forecasted to six months. However, in this case most time will be spent on the first steps, agreeing on a strategy and content of the contract. Here, it is believed that the price negotiations and contract implementation will demand the least time.

The reasoning for having a Steering Group composed by managers on lower levels, e.g. regional managers, is that they are considered as key figures for succeeding in implementing the FWA out in the line. By including them in every part of the process and having a process where the category manager needs to listen to their input, FT believes that the contract compliance increases. In the more extensive sourcing processes, the Sourcing Board is composed of people that are not based in a certain region, which could result in lower local anchoring. They have different knowledge regarding certain categories, which in turn affect the feedback given from different tollgate presentations. When presenting for this type of Sourcing Board, the extended category team will be important as they represent the line divided into different regions. Regional managers do not compose them, but rather people that have good knowledge regarding the categories, usually district purchasers, and are updated on a yearly basis.

The communication channels between the category managers and the extended category team differ between the processes. At minimum rate, the extended category team is contacted through email before a tollgate presentation to go give an approval or feedback on the category manager's chosen strategy. Besides from this, category

managers meet the extended category team twice on a yearly basis to go through the strategy for the category.

### **The Nordic Procurement Analyst in Finland**

NK is part Nordic Procurement Analyst and part category manager for insulation and board in Finland. NK has been working for the Company during the past five years but graduated from the University with studies towards Supply Management last year. During the last year at the University, she wrote a thesis about the category planning process and development in the construction industry. The thesis covered some aspects of the sourcing process and through her work as a category manager; NK has done three Nordic sourcing processes. Her opinion about the Nordic sourcing process is positive and she stresses that it is a good framework to follow.

Despite the fact that the national sourcing process should follow the same principle as the Nordic, NK explains that the Finnish process does not contain the same managerial involvement. The Nordic framework is mainly used as a baseline for the national sourcing processes that is divided into either a tollgate or project procurement approach, namely T5 and Y3. The Y3 is separated from the Nordic operations and does not involve FWA. For T5, the resemblance with the Nordic process is greater as it follows the same structure with the same scope and same tollgate regulation, e.g. where a category manager seeks a Steering Group's approval. The national Steering Group consists of the Finnish procurement manager, regional procurement managers and also category managers. In the Finnish sourcing process, category managers' present information according to own preferences rather than the proposed Nordic structure. NK expresses that the national agreements and sourcing cases are not done as specific as for the Nordic cases since some steps are skipped.

Since the information in the presentations are not the same in the national cases as in the Nordic ones it leaves to a situation that is not as communicative. By using the same format, the process development and reasoning are much easier to follow and people should aim for a standardised way of presenting. NK feels that the tables and tools available at the intranet are a good way of achieving this, the problem is that few people actually use them. This could depend on reluctance as people are used of working in a certain way and not eager to change their habits. There are however some changes that have experienced a successful integration on the daily work. The OnePager is one of those changes that most people consider helpful and it is now used in most presentations for the Finnish Sourcing Board.

According to NK, the sourcing process is evolving all the time and it is through these changes that one can improve it. When starting a sourcing case, category managers should seek to satisfy national needs and if the category manager is able to include the

Nordic countries in the sourcing process, this should be considered as a bonus. A sourcing process should be adaptable enough to meet geographical and category specific requirements while still having the same guidelines. For example, in cases where a category contains many different suppliers there should be room to put more efforts in evaluating these than for cases where the output is to update old FWA.

When evaluating the sourcing process, NK believes that one should take consideration to the lead times, specifically how long it takes to run through the process and the number of tollgate revisions for each sourcing case. The latter measure is seen a mean of evaluating the quality aspect of the process as it provides information on the work done.

Contract compliance is a general KPI for the Finnish Procurement department and implementation is according to NK the most important step of achieving this. In the sourcing process, this work can be made easier through proper communication to the line organisation on an early stage. By receiving feedback from the projects, the line's opinions can be taken into consideration before signing the final agreements. This involvement differs between cases and also between categories where the projects might already have strong connections to certain suppliers. In Finland the communication channel to projects usually goes through the regional manager or the Sourcing Board; where a portfolio manager is always present. By addressing these people, NK can gain information faster than by contacting the projects directly. When conducting a Nordic sourcing process, NK mainly uses the Sourcing Board to communicate with the projects and is never in contact with the final user of the FWA

### **The Norwegian Head of Category Management**

TL is Head of Category Management in Norway and he is also a member of the Nordic Sourcing Board. The Norwegian sourcing process is based on the Nordic one, they include the tollgates, OnePagers, but try to simplify it on a national level. They try to keep it less bureaucratic but still have the numbers and facts and send that as a part of the Tollgate Materials but do not put in the templates used for the Nordic.

The Steering Group in Norway consists of the EVP for each business area, and there are three groups in total. They are familiar with the category from the beginning and if they want to have more information TL assumes they seek it themselves. According to TL there are only a few cases that have not been approved when first presented and where further discussions have been required. Normally the Steering group trust that the work has been done in a good way and they look into the reference team and how it is composed to approve the issue.

TL wanted to make clear on the fact that all the Nordic countries are following more or less the same process. Sometimes they shorten the process down in Norway but they still follow the Nordic category process. They work the same way when it comes to cross-Nordic activities. As far as TL knows, the Swedes also follow the Nordic process but they report to the purchasing board on a frequently basis. Norway does not have these formal meetings as Sweden has, but they have it on the Nordic activities and the Nordic Sourcing Board. Even if the sourcing process is similar between the two countries, it is concluded that the Norwegian could be seen as less formal and not as bureaucratic in some cases. For instance, the Norwegians do not report in a formal meeting for all sourcing activities in building and civil categories. Instead they have a mail or phone conversation with the EVP. Swedes, in comparison, have regular board meetings where all category managers have to report to the board on all issues they are working with in the sourcing process.

The reason behind why the Norwegian process is less formal originates from a wish from EVP, who believes that this kind of reporting simplifies the anchoring of the decisions taken. Further, the lead time of the sourcing process becomes shorter and the sourcing is easier handled if there are no specific tasks they have to go deeper into. For instance, TL does not have to wait for the next board meeting to lift an issue as he can send an email the same afternoon and get an answer on the same day. He believes this way of working is convenient.

Looking at the Nordic sourcing process in general, TL thinks the Company has a good sourcing process, which is thoroughly defined, and with good tools to use. Depending on the category, if it for instance is a mature category it might be right when defining the strategy to have TG1 and TG3 since they already know the market, the suppliers and there are no news in the specific issue. Then they are able to work more effectively and can go directly to the negotiation mandate and into the negotiation with the selected suppliers. This way of using the parts from the sourcing process needed for a specific sourcing activity can be applied based on knowledge and previous experiences within in a category.

Regarding the potential issues in today's process, the greatest concern is to know what tools to use and when to use them. Anyhow, everyone has access to all the tools and all the processes on the intranet and they know where to find the information and the tools that they need. One of the main starting points for all processes is the project plan template where all the steps in the sourcing process are defined. Everyone should look into the project plan and in the early phases define what part of the sourcing process they should implement in the specific activity they are going to run. He sees only good opportunities and possibilities in the whole process and the tools. He stresses that it is important to know how to use and when to use the different tools.



## **Appendix F - Comments from Survey**

For the questions with Comment fields and for the open-ended questions the unedited comments will be presented in this chapter.

### **11. Which of the following tools have you used for a Tollgate 1 presentation?**

Information concerning our daughter companies and how our suppliers distribution works.

Oracle BI

Previous presentation within the category

Previous presentations from myself and colleagues.

Previous sourcing cases - TG presentations

### **12. Which of the following tools have you used for a Tollgate 2 presentation?**

If you mean used in the presentation for Sourcing Board only TG2 template. But the suppliers will in the RFI get information about safety rules, code of conduct etc. But I dont use this in the presentation.

My agreements are presented in front of the extended category team instead of Sourcing Board and the MD of The Company Installation.

Ovan är del av krav /RFQ - men redovisas ej separat - inget verktyg i sig. - Övrigt som alltid tas med för TG2 i tillägg till vad som nämns i TG2 Template är pris/kostnadsjämförelse

Usually we ask for mandate to skip TG2.

### **13. Which of the following tools have you used for a Tollgate 3 presentation?**

I used print screens from when we had a e-auction otherwise a price comparison between the suppliers.

My agreements are presented in front of my extended category team instead of Sourcing Board and the MD of The Company Installation.

Previous presentation within the category

Previous presentations from myself and colleagues.

### **14. Which of the following tools have you used for a Tollgate 4 presentation?**

Återigen - Inte visar man avtal som del av TG4 presentation - möjligen avvikande delar som förhandlats fram (trolige redan highlightade i TG3)

My agreements are presented in front of my extended category team instead of Sourcing Board and the MD of The Company Installation.

**16. Please explain briefly why you believe that the marked tools are of great support?**

Återigen blandas krav och verktyg ihop. Men templates är en bra bas för att få en likriktad presentationsform. (behöver ej uppfinna hjulet varje gång) sen räcker de ej till för att beskriva enskilt case. (kompletterande mtrl. är alltid nödvändigt). Project plan är undermålig måste omarbetas. Heat Map tveksam - övriga är bra

Because I can make effective presentations

De som är ifyllda är de mest relevanta, de andra är också bra, men kanske av sekundärt intresse i den rena kommersiella förhandlingen om pris.

eSourcing is a good tool. Keeping the history regarding prices and answers. Structure and professional way of working.

for compliance of the Company's process

Frame work agreement template is the best help. Think it's important that all agreements with the Company is similar.

FWA templates and the Company's requirements is a must-have in the process. Other templates are good as reminders and also in order to structure presentations in a good way. Business Check and Oracle BI etc are needed in order to gather facts and numbers to analyse and base recommendations and decisions on.

I haven't used the project plan template nor the negotiation templates, I'm not aware of their existence.

I do believe that TG templates can be good in order to facilitate the Sourcing Board presentations. However, I'm not sure the ones that we use today are great presentation templates.

It makes the process more efficient and set a minimum in the standard.

It's a big support to have templates as a Foundation for a presentation.

Planning tool good check list and important to plan TG dates. The Company's basic demands should be covered in RFI (if not in PreQ)

The Company's safety rules, code of conduct, environmental are essential in the sourcing process in order to our suppliers to know our demands. But not in the presentations with Sourcing Board.

The templates makes the work more effective and can help me to focus on the most important things.

I haven't seen the negotiation templates.

They harmonize the agreements and minimizes the differences between the agreements.

This is the Tools I use.

To simplify the decision process the SB should recognized the presentations.

You get good tips out of them and that way can make sure that you don't forget anything important during the process.

**18. Please explain briefly why you believe that the marked tools are in need of improvement?**

Återigen blandas krav och verktyg ihop. CoC ?? är väl inget verktyg i Sourcingprocessen !

Tycker Ramavtalsmallarna ständigt förbättras - bra jobb av mallgrupp.

Project plan är undermålig måste omarbetas. ger ingen bra grund för visuell överblick av tidplan/projektplan

Heat Map tveksam - övriga är bra men borde slås samman till 3 st TG presentationer för att få mer fokus & tydlighet

Create a specific supplier code of conduct - but I think this is already done?

first the process then the tools ....

Heat map needs to be more Sharp, in order for it to fulfil its full potential. It works as a warning sign today, but with no actions linked to the score on the heat map.

The other templates i havent used very much, and since i havent used them i guess they need improvement. But i cant Point my finger at what needs to be done.

I am not using these tools very much. The tools I am using is ok.

I can not comment the tools I don't use. The reason for not using them is more that the theme they describe dont fit to the categor.

I cannot specify any improvements

Its difficult to get fresh information about international suppliers.

Kan inte se att ngn är föremål för större förändring, de kompletterar varandra och utgör ett bra urval för att genomföra sin upphandling beroende på behov.

need to be more relevant.

Project plan: too much info in order to be used as project plan. Good as a checklist.

Heat map: something you fill out but not easily applied - how shall we use the information? what actions to be done?

The templates that I use are ok.

The TG- templates are good in general but could probably be finetuned and Nordic templates should be created from the national templates.

The TG templates includes too many slides by default.

The last version of the heat map that I saw did not really work, around 2014. Has it been updated since?

There are some paragraphs

To save time. Expand the Category card more so we can put in more information. So that covers Tg1-2 and only present TG 3 to the Sourcing Boarding.

We need a supplier Code of Conduct

**19. Please explain briefly how these tools could be improved.**

Code of conduct must be clearly communicated to our suppliers

I can not tel you how to improve the Tools.

I cannot specify any improvements

Kan inte se att ngn är föremål för större förändring, de kompletterar varandra och utgör ett bra urval för att genomföra sin upphandling beroende på behov.

Look above.

Maybe there is other ways to get the information. Using colleagues in the Baltic, Poland etc.

need to be more relevant.

Project plan: refine the project plan so that it is easier to use. Extract "nice-to-know" into a checklist.

Heat map: make it more applicable by adding recommended actions for example.

Streamline the presentation.

The category card can also be approved in order to more easily communicate the strategies.

We need something that is directly applicable to our suppliers

What happened with the survey that was done regarding those? You can probably find some suggestions reading these

## **20. What challenges have you experienced with the sourcing process?**

Depending on a category/subcategory the process can sometimes be too formal. Some categories spend is very low, but if you go thru the whole process it takes a long time, so the savings might not be worth the time.

I feel the process is to long. But I see that if the Company wants conformity in how they work world wide. There must be formal processes. For Nordic sourcing there is a problem to coordinate Sw, Fi, No. Then the Company must be Formal

Keep it simple !

More frequent info/ discussions about the process. Creating knowledge about it and why we use it.

My challenge is handle different interests within our company.

Some sourcing cases needs a sourcing process "light"

Sourcing Board could contribute more with their influence with the line organization. Contact persons etc. Help to make way for KA's work.

Resources dedicated for e-sourcing for example.

Sometimes the process can be a bit too formal, depending on the specific case

Sometimes the the participants don't prepare enough.

- Reading the material Before.

- To detailed questions.

The strategy should be set better in the beginning and the sourcingboard should be more Active in setting it so it is not changed during the process.

What role is the Sourcing Board striving for? Having a decision function without mandate to take decisions kind of water down the purpose of it.

## **21. What parts of the sourcing process do you consider time-consuming?**

Waiting time for responses.

Cooperation with the Nordic colleagues.

After ended Price negotiation. Then we must wait for TG3. Then the work starts to negotiate the text for the contract. This is a intensive time. The process expects that the contract text is finished to TG3, but it's never so.

Agreement negotiations and implementation, these are also the most important

All administration around the process

analysis, and the presentations (PPT)

collecting correct data, preparing presentations

Depends on a category, sometimes creating RFP-material sometimes evaluating the offers

I think the process works very well at the moment.

Implementation, we work so many hours with implementing the agreement. From day one to 3 years after, when the agreement is about to expire. We are still trying to sell/implement the agreement. If we could get a pull-effect instead of a push-effect from the line organizations about our agreements that would save us a huge amount of time. (maybe some smart way to visualize the agreements, tips and trix etc)

But its Worth taking time with suppliers and stakeholders Before the contracts is signed, this saves you a lot of time during implementation.

Implementing the agreement.

Initial analysis phase - which should actually be time-consuming

Negotiations

Preparation to TG1, need to plan towards planned TG-meetings and need of sending in presentation one week ahead, would it be enough with a few Days?

Samla rätt personal (extended category team, leverantörer och övriga intressenter) för att genomföra processen "by the book", men vi har å andra sidan ett väldigt bra system som vi ska vara stolta över. Jag anser att verktygen är de rätta och att vi kan anpassa dem väl beroende på de behov som resp. upphandling kräver.

Supplier meetings and comparing products

## **22. What parts do not add value to the result of a sourcing case?**

all parts are necessary

All the templates.

Cant come to Think of anything. I all parts of the process adds value, but that doesnt mean that we shouldn't rationalize in the process.

Time vs Value

Difficult to answer, sometimes you don't see the value of the input during the sourcing.

When you have the result the reflection is that some input that was considered as "no value" was the dealbreaker.

Every step in the process can add value to the result, it depends on how you use them.

In each country there is a sourcing team, and steering Group. In the TG3 Meetings the Board can ask other questions than the countrys steering Group. Some times you can not answer and then you must do the TG once more some weeks later. That is not always helping the process.

non that I can think of at the moment

Nordic Sourcing Board

TG 2,4 &5 i sin nuvarande form - se tidigare kommentar

TG2 och TG 4 är tveksamma i vissa fall, kan slås i hop i t ex TG3 eller TG5.

### **23. What parts add value to the result of a sourcing case?**

all parts add value, some more than other depending on a category

Coordination between the countries. The Suppliers feel that they meet the Company Nordic. Directing is 60% of a negotiation

Difficult to answer

Förmågan att samla rätt personal och resurser för att sammantaget kunna ta rätt beslut i en upphandling

Good discussions in the Sourcing Board

My extended category team

Preparation in order to understand and manage your internal requirements and your position towards the supplier market.

Negotiation and supplier interaction in order to get the best solution possible for your needs.

Sourcing Board can bring in experts for different question and material. Meetings with the supplier.

The process in it self. But i Think Implementations is the key to succesful sourcing cases.

One problem is that implementation can depend on singel persons and their approval, instead of ways of working / guidelines / system set ups.

## Appendix G - Portfolio specific calculations

Portfolio	1	2	3	4	5	6	7
#Unique ID	3	6	3	3	4	7	3
TG1	2	6	1	3	3	5	2
TG2	2	2	3	0	3	3	2
TG3	3	5	1	3	2	6	2
TG4	2	2	0	3	2	5	3
Time TG1	9-12 weeks	4-6 weeks	4-6 weeks	5-7 weeks	6-8 weeks	5-7 weeks	4-8 weeks
Time TG2	8-10 weeks	6-8 weeks	4-6 weeks	3-5 weeks	7-9 weeks	3-5 weeks	2-5 weeks
Time TG3	8-10 weeks	4-6 weeks	2-5 weeks	5-7 weeks	9-11 weeks	5-7 weeks	2-5 weeks
Time TG4	5-7 weeks	4-6 weeks	2-5 weeks	5-7 weeks	8-10 weeks	4-7 weeks	4-6 weeks
FTE	0.25-0.5	0.375-0.625	0.25-0.5	0.25-0.5	0.25-0.5	0.33-0.60	0,125-0,375
Time weeks	30-39 weeks	18-26 weeks	12-22 weeks	18-26 weeks	30-38 weeks	17-26 weeks	12-24 weeks
Average interval time with FTE=1 [weeks]	9-17 weeks	8-14 weeks	4-9 weeks	6-11 weeks	9-17 weeks	7-13 weeks	2-7 weeks
Average time with FTE=1 [weeks]	13	11	6,5	8,5	13	10	4,5
Average duration	34,5	22	17	22	34	21,5	18

<b>time [weeks]</b>							
<b>Comparison on total duration time average</b>	42,90%	40,83%	-8,88%	-8,88%	-10,95%	-25,44%	-29,59%

<b>Total duration time between starting a sourcing case to presentation in TG4 [weeks]</b>	24,143
<b>Total time between starting a sourcing case to presentation in TG4 for FTE=1 [weeks]</b>	9,5

The average time for each tollgate is calculated by taking the sum of all lower values and add the sum off all the upper values, and then divide the sum of these values with the number of portfolios.

## **Appendix H - Expectations on and FAQ from Sourcing Board**

### **Expectations on Sourcing Board**

- Category managers expects information regarding other categories work and how similar cases have been handled in other sourcing processes. They expect that the meeting with Sourcing Board should result in greater insights on the work handled by their colleagues.
- Sourcing Board should give information regarding other functions/people within the organisation that can help bring forward the implementation work.
- In order to standardize the presentation formats, Sourcing Board should mention once category managers deviate from the common structures. This should not be a reason for revision, but rather a reminder of the agreed format use.
- Time frames should be asked more frequently upon. Using the survey data as a reference point for how long a sourcing case can take would therefore give a hint to the Sourcing Board regarding if the category manager could the potential in shortening the time spent on a sourcing case.

### **FAQ Sourcing Board**

- International opportunities regarding supplier selection
- Exchange rate and how it has been taken into consideration
- Extended category teams opinions and concerns needs to be voiced
- Potential savings, what numbers are based on this?
- How have calculations been made?
- Development plan, indirect savings and long-term savings
- If Nordic case - how do the countries differ concerning supplier market, stakeholders, savings etc.
- What is the implementation plan supposed to look like? What challenges may occur and how do we approach them in early phases?

## Appendix I - Improvement suggestion calculations

The numbers presented in Table 12 and Table 13 are based on the calculations that will be shown in this chapter.

**Action plan** = 2 weeks in total = 0,47 days = 0,50 days

Week 1 is parallel with 9 activities within in the same area + 6 additional activities + 1 additional activities + 4 additional activities = 1/20 weeks = 0,25 dagar

Week 2 is parallel with 9 activities within the same area + 5 additional activities + 6 additional activities + 1 additional activity + 1 additional activity = 1/22= 0,22 days

**Implementation plan** = 1 week in total,

Parallel with 1+5+6+1 activities in other areas = 1/13 weeks = 0,38 days

**Lessons Learned** = 2 weeks = 2,66 days

Week 1 is parallel with 3 activities =  $\frac{1}{3}$  weeks = 1,66 days

Week 2 is parallel with 5 activities =  $\frac{1}{5}$  weeks = 1 day

**Digital contract signing** = 1 week in total, parallel with 1 activity = 2,5 days

**Decrease reading time** = 8 days

**Move evaluation plan after send-in** = 3 days

### *Potential improvements*

Include contract compliance in OnePager

Analytics 2 weeks in total

Week 1 = 9 +6+1+4 activities =20, 1/20 week= 0,25 days

Week 2 = 9+5+6+1+1 activities = 22, 1/22 week= 0,23 days

Analytics 2 weeks in total ,

Week 1 =  $9+5+6+1+1$  activities = 22,  $1/22 = 0,23$  days

Week 2 =  $5+2+1+6+1 = 15$  activities,  $1/15 = 0,33$  days

Analytics 3 weeks total

Week 1 =  $9+6+1+4$  activities = 20,  $1/20$  week = 0,25 days

Week 2 =  $9+5+6+1+1$  activities = 22,  $1/22$  week = 0,23 days

Week 3 =  $5+2+1+6+1 = 15$ ,  $1/15$  week = 0,33 days

Analytics 4 weeks in total

Week 1 =  $3+5+2 = 10$  ,  $1/10$  week = 0,5 days

Week 2 =  $9+6+1+4 = 20$ ,  $1/20$  week = 0,25 days

Week 3 =  $9+5+6+1+1 = 22$ ,  $1/22$  week = 0,23 days

Week 4 =  $5+2+1+6+1 = 15$ ,  $1/15$  week = 0,33 days

Analytics in total = 3,16 days

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