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# Creating a Post-merger Global Tactical Sourcing Process for Metso Outotec

Metropolia University of Applied Sciences

Master's Degree

Degree Programme in Business Informatics

Master's Thesis

9.4.2022

Author Title Number of Pages Date	Sebastian Santasärkkä Creating a post-merger global tactical sourcing process for Metso Outotec 78 pages 9.4.2022
Degree	Master of Business Administration
Degree Programme	Business Informatics
Instructor	Zinaida Grabovskaia, PhL, Senior Lecturer
<p>The objective of this thesis was to create a global process for Metso Outotec Tactical Sourcing team after the merge. Metso Outotec is a Finnish publicly traded company that was established in 2020 when Outotec and Metso Mineral merged. The company is a frontrunner in sustainable technologies, end-to-end solutions and services for the minerals processing, aggregates, metals refining and recycling industries globally. The business challenge for the thesis was to harmonize the current working processes and methods of the two legacy companies, and create a global process for the Tactical Sourcing team.</p> <p>The study was conducted using applied action research approach and used qualitative research methods, such as interviews, discussions, observations and workshops. The data was collected in three phases, for the current state analysis, the proposal building and validation of the proposal.</p> <p>The current state analysis pointed to the challenges in the current process where two legacy companies are using their own processes and tools. The conceptual framework of the thesis focused on the topics of selecting (1) the communication channels and tools which will be used throughout the tactical sourcing organization, (2) creating a unified working process for the tactical sourcing team which will be implemented for both ex-legacy companies with the aim of working as one organization and (3) managing change to ensure that the change process is managed efficiently.</p> <p>The proposal was built via co-development with the internal stakeholders and focused on the development of one unified working process that will be implemented globally and in addition the appropriate tools were selected for this new unified process. The selected tools were Jaggaer and Salesforce. In the new process global quotation support (GQS) creates a case for tactical sourcing in Salesforce and tactical sourcing uses Jaggaer to send out the quotes to the suppliers. Once the quotes are received, tactical sourcing send pricing and lead time information back to GQS via Salesforce.</p> <p>The outcome of this thesis is the unified global tactical sourcing process for the case company after the merger. The process was evaluated by the key stakeholders as ready for implementation which should start in June 2022 at the earliest. This new global unified working process was needed for the case company, especially after the recent merge, as it brings the benefits of a clear single process across the tactical sourcing organization globally.</p>	
Keywords	Jaggaer, Salesforce, Microsoft Dynamics, Global Quotation Support (GQS)

## Contents

### List of Figures

1	Introduction	1
1.1	Business Context	1
1.2	Business Challenge, Objective and Outcome	2
1.3	Thesis Outline	2
2	Method and Material	3
2.1	Research Approach	3
2.2	Research Design	5
2.3	Data Collection and Analysis	7
3	Current State Analysis of the Companies' Tactical Sourcing Processes	11
3.1	Overview of the Current State Analysis	11
3.2	Description of the Two Legacy Processes	11
3.2.1	Roles and responsibilities common for both processes	12
3.2.2	Metso's process	13
3.3	Analysis and Key Findings from the Current State Analysis	23
3.3.1	The Strengths and Weaknesses of Both Legacy Companies' Processes	23
3.3.2	Selected Focus Areas	34
4	Existing Knowledge and Best Practice of Managing Tactical Sourcing	35
4.1	Role of Tactical Sourcing in Supply Chains and Best Practice in Global Sourcing Process Management	35
4.2	Building a Global Unified Process for the Sourcing Team	39
4.2.1	Process Development and Improvement	39
4.2.2	Building a Global Process	41
4.2.3	Tactical Sourcing Tools and Software	47
4.3	Managing Change in Business Processes	50
4.3.1	Forces That Promote Change	50
4.3.2	Resistance to Change	52
4.3.3	Principles and Tools for Successful Change	53
4.4	Conceptual Framework of This Thesis	55
5	Building the Proposal for the New Global Tactical Sourcing Process	57

5.1	Overview of the Proposal Building Stage	57
5.2	Inputs into the Proposal Building and Stakeholders Suggestions (Data 2)	58
5.3	The Global Process for the Sourcing Team	61
5.4	Selection of Tools for the Global Sourcing Team	66
5.5	Change Management Commitment for the Team	67
6	Validation of the Proposal	69
6.1	Overview of the Validation Stage	69
6.2	Developments to the Proposal (based on Data Collection 3)	69
6.3	Final Proposal	72
	Figure 18. Final Proposal	74
7	Conclusion	76
7.1	Executive Summary	76
7.2	Thesis Evaluation	78
7.3	Closing Words	78
	References	1

## List of Figures

Figure 1	Research design and outcome of each step	6
Figure 2	Current process map of Metso process 1	15
Figure 3	Current process map of Metso Process 2	18
Figure 4	Current process map of Outotec´s Process	22
Figure 5	The interface of Jaggaer procurement tool	25
Figure 6	Strengths and weaknesses of Metso´s legacy process	28
Figure 7	Strengths and weaknesses of Outotec´s legacy process	32
Figure 8	The interface of Microsoft Dynamics	33
Figure 9	The basic steps in process development	40
Figure 10	Procurement outsourcing market size by region or country 2016-2021	42
Figure 11	Global sourcing process	43
Figure 12	Raw materials procurement at case company	45
Figure 13	The material and information flow in a global sourcing process	46
Figure 14	Economic and social forces driving the need for major change in organizations	51
Figure 15	Eight stages of change	54
Figure 16	Conceptual framework of this study	55
Figure 17	The proposal for the global sourcing team	62
Figure 18	Final Proposal	74

## 1 Introduction

Process harmonization plays an important role during the post-merger integration (PMI) phase. After the merger is signed off and a new organization is formed, the critical task is to reorganize and create a unified way of working. As McKinsey research points out (2010), only 16% of merger reorganizations are able to reach the objectives set in the planned time, 41% take longer than originally planned, and in 10% of cases, the reorg can be detrimental to the newly formed company. Mistakes that are often seen are cultural misunderstanding between the two sides, poor integration leadership, and setting wrong targets or focusing on the wrong activity.

This study is focused on creating a unified tactical sourcing process for the newly formed tactical sourcing organization within Metso Outotec. The proposed process can be used globally, as Metso Outotec has offices in more than 50 countries.

### 1.1 Business Context

Metso Outotec was established in 2020 when Metso Minerals and Outotec decided to merge organizations with the aim to form a market-leading company in process technology, equipment and services serving the minerals, metals and aggregates industries. Metso Outotec is a leading organization in sustainable technology, end-to-end solutions and services for the minerals processing, aggregates, metals refining and recycling industries globally. Metso Outotec has offices in 50+ countries and employs more than 15 000 people globally.

The researcher has worked as a Senior Procurement Specialist in the organization since 2017 and starting from October 2020, the researcher's role is Tactical Sourcing Specialist within a new team that was formed after the merger. There have been macro-level discussions and workshops to facilitate post-merger integration and manage change in the newly formed organization, but despite the efforts, there is a need for a micro-level process development for each operational function within the company. After the merger, the two legacy companies are still using their own processes and systems for sourcing activities.

## 1.2 Business Challenge, Objective and Outcome

Even though the merger of Metso and Outotec took place over half a year ago, there is still no unified tactical sourcing process. Both legacy companies have their own processes and systems, making the integration process difficult. The two companies have been competitors in the past, so it has been a challenge to harmonize working processes and methods. Both legacy companies' processes have their strengths and weaknesses and they should be analyzed and used as input for the new universal process.

The objective of this study is *to create a global tactical sourcing process for Metso Outotec*. The outcome is a tactical sourcing process that will be implemented within the organization globally.

## 1.3 Thesis Outline

This thesis is written in seven sections. Section 1 is the introduction. Section 2 contains the description of research approach, research design of the thesis as well as the data collection description of the thesis. Section 3 describes the results of the current state analysis and key finding from this analysis. Section 4 explores the relevant existing knowledge; it also includes conceptual framework created for conducting the next steps in the thesis. Section 5 describes how the initial proposal was built. Section 6 reports on the results of validation according to the feedback from the key stakeholders and testing. Finally, Section 7 includes the summary, conclusions and managerial implications.

## 2 Method and Material

This section presents the research method and material utilized in this study. Firstly, the research approach and research design are described. Secondly, the data collection plan and analysis method are overviewed.

### 2.1 Research Approach

The best approach when choosing a research method is to select an approach that considers the context of the challenge and works for the problem at hand. All approaches have their strengths and weaknesses. (Denscombe 2010:163.) Basic research involves theoretical understanding of business processes and their results, and does not focus too much on the theory's practical applications. Applied research focuses more on addressing the practical issues which can be used for solutions regarding an issue a company is facing. (Saunders et al. 2009:8).

There are also two types of research methods – quantitative and qualitative research methodology. Quantitative research is in essence a study of relationship between variables. Quantitative research is designed to produce numerical data and then analyzing it by statistical methods or by studying how the variables are related to each other. Qualitative research, on the other hand, is used to find out the thoughts, opinions, behaviors, reasons and motivations of a particular population or a social context. The issues might not be readily apparent, and the job of qualitative researcher is to understand the difficult reality of a given scenario. Quantitative and qualitative research methods differ primarily in their analytical objectives, the types of questions they pose, the types of data collection instruments they use, the forms of data they produce, and the degree of flexibility built into study design. Table 8 briefly outlines these major differences. (Mack et al. 2005, 3.)



Table 1. Comparison of quantitative and qualitative research approaches (Mack et al. 2005, 3).

	Quantitative	Qualitative
<b>General framework</b>	Seek to confirm hypotheses about phenomena  Instruments use more rigid style of eliciting and categorizing responses to questions  Use highly structured methods such as questionnaires, surveys, and structured observation	Seek to explore phenomena  Instruments use more flexible, iterative style of eliciting and categorizing responses to questions  Use semi-structured methods such as in-depth interviews, focus groups, and participant observation
<b>Analytical objectives</b>	To quantify variation  To predict causal relationships  To describe characteristics of a population	To describe variation  To describe and explain relationships  To describe individual experiences  To describe group norms
<b>Question format</b>	Closed-ended	Open-ended
<b>Data format</b>	Numerical (obtained by assigning numerical values to responses)	Textual (obtained from audiotapes, videotapes, and field notes)
<b>Flexibility in study design</b>	Study design is stable from beginning to end  Participant responses do not influence or determine how and which questions researchers ask next  Study design is subject to statistical assumptions and conditions	Some aspects of the study are flexible (for example, the addition, exclusion, or wording of particular interview questions)  Participant responses affect how and which questions researchers ask next  Study design is iterative, that is, data collection and research questions are adjusted according to what is learned

This thesis is conducted by using qualitative research methods. The research strategy selected for this study is Applied action research (in the sense of Kananen 2013). When the researcher and customer work together to diagnose the issue and develop a solution based on the diagnosis, this can be considered traditional action research. (Bryman & Bell, 2011). This approach is suitable for the business field and social studies because the aim is to solve an organizational problem in the real world. Action research study has the assumption that the social environment keeps changing with both the researcher and research being a part of this change. (Collis & Hussey, 2003). In this study, the thesis research is done via the stages of business problem and topic definition; selection of the research approach, methodology and particular methods for developing a solution; data collection and data analysis; and obtaining and integration of results, and solution

development, which comes closest to the thesis research type described by Kananen (2013: 12) as Applied action research.

In this thesis, the thesis researcher is collaborating and discussing with team members and stakeholders. This involves gathering and analyzing data to understand the concepts and opinions of different stakeholders. The methods to collect information and data include interviews and conducting experiments and then implementing the learnings to the business processes. In addition to this, the thesis researcher also explores available knowledge and recent research, by collecting information about different technologies and how they are used in procurement processes. This review is critical, because it allows the thesis researcher to understand what technologies are available and how they have been used in the business and procurement environment. After that, it becomes possible to present concrete findings and build a road map for Metso Outotec.

## 2.2 Research Design

The research design of this study is shown in Figure 1 which shows the steps that are taken within this study and presents the outcome of each step. It also points out the data collection stages.

As shown in Figure 1, this study starts with setting the objective. Next, the current state analysis is conducted. The outcome of this stage is the process maps and clearly defined strengths and weaknesses of each legacy company. This is a baseline and helps understand what current practices are good and could be retained and what needs further development.

After the current stage is mapped, available knowledge and best practice are searched in the form of literature review. Based on the selected best practice and findings from the current state analysis, the first version of the proposal is built. The initial proposal is validated in workshops and in discussions with the internal stakeholders and managers. The proposal is subsequently revised according to the feedback and the final proposal is defined and implemented within the organization.

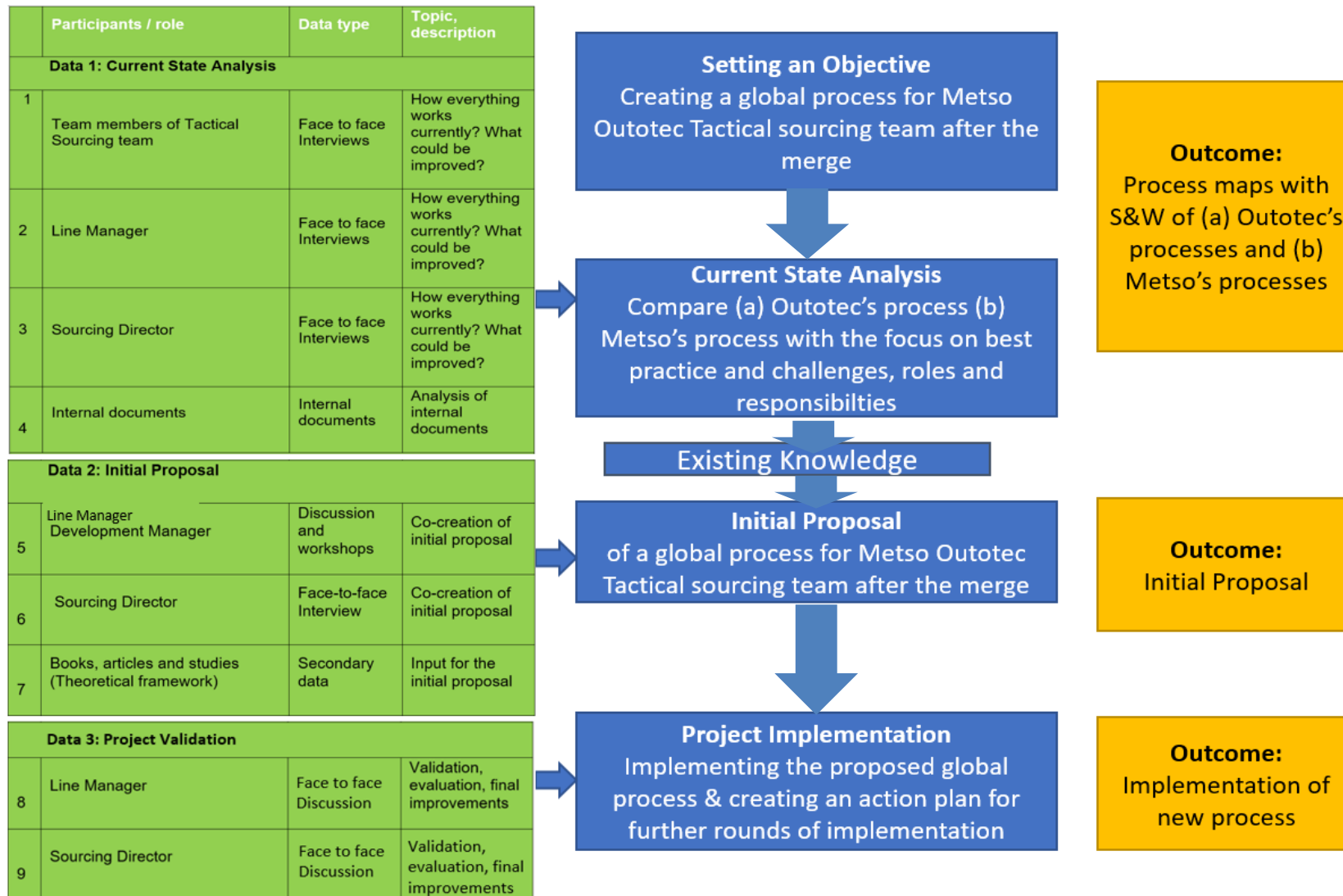


Figure 1. Research design and outcome of each step.

### 2.3 Data Collection and Analysis

This study used a number of data sources that were gathered in three rounds of data collection: Data 1, Current state; Data 2, Initial proposal building; Data 3, Validation of final proposal. The data collection rounds included different focus groups as can be seen in Table 1.

Table 2. Details of Data collections 1-3 used in this study.

Participants / Role		Data Type	Topic / Description	Date, duration	Documented as
Data 1: Current State Analysis					
1	Line Manger and Sourcing Director	Teams meeting	How everything works currently; what processes are used	January - February (Multiple meetings)	Field Notes
2	Team Members of Tactical (Finland) Sourcing Team (Ex Metso Side)	Teams meetings	How everything works currently. What kind of processes are used.	12.2.2021, 30 minutes	Field Notes
3	Team Member of Tactical Sourcing Team (Ex Outotec Side)	Teams meetings	How everything works.	12.2.2021, 30 minutes	Field Notes
4	Team Memebers of ex Outotec GQS	Teams meetings	How everything works.	12.2.2021, 30 minutes	Field Notes
5	Tactical Sourcing Specialist (Finland)	Teams meetings	What can be improved and what works.	23.3.2021 30 minutes	Field Notes
6	Global Quotation Support Manager 1 (Finland)	Teams meetings	What can be improved and what works.	23.3.2021 30 minutes	Field Notes
7	Tactical Sourcing Manager (South Africa)	Teams meetings	What can be improved and what works.	23.3.2021 30 minutes	Field Notes
8	Tactical Sourcing Manager (Sweden)	Teams meetings	What can be improved and what works.	23.3.2021 30 minutes	Field Notes
9	Global Quotation Support Coordinator	Teams meetings	What can be improved and what works.	24.3.2021 30 minutes	Field Notes

10	Global Quotation Support Manager 2 (Finland)	Teams meetings	What can be improved and what works.	24.3.2021 30 minutes	Field Notes
11	Tactical Sourcing Manager (North America)	Teams meetings	What can be improved and what works.	26.3.2021 30 minutes	Field Notes
12	Global Quotation Support Manager (North America)	Teams meetings	What can be improved and what works.	26.3.2021 30 minutes	Field Notes
Data 2: Initial Proposal					
13	Line Manager	Discussions and workshops	Co-creation of initial proposal	16.6.2021 minutes	Field Notes
14	Sourcing Director	Face to face interview	Co-creation of initial proposal	16.6.2021 30 minutes	Field Notes
15	External Consultant	Workshop in Tampere	Brainstorming about process development and tools	16- 18.11.2021	Field notes and pictures of created process flow
16	Sourcing Director	Workshop in Tampere	Brainstorming about process development and tools	16- 18.11.2021	Field notes and pictures of created process flow
17	Line Manager	Workshop in Tampere	Brainstorming about process development and tools	16- 18.11.2021	Field notes and pictures of created process flow
18	Sourcing Manager	Workshop in Tampere	Brainstorming about process development and tools	16- 18.11.2021	Field notes and pictures of created process flow
19	Sourcing Specialist 1	Workshop in Tampere	Brainstorming about process development and tools	16- 18.11.2021	Field notes and pictures of created process flow
20	Sourcing Specialist 2	Workshop in Tampere	Brainstorming about process development and tools	16- 18.11.2021	Field notes and pictures of created process flow
21	Tactical Sourcing Specialist 1	Workshop in Tampere	Brainstorming about process development and tools	16- 18.11.2021	Field notes and pictures of created process flow
22	Tactical Sourcing Specialist 2	Workshop in Tampere	Brainstorming about process development and tools	16- 18.11.2021	Field notes and pictures of created process flow

23	Tactical Sourcing Specialist 3	Workshop in Tampere	Brainstorming about process development and tools	16-18.11.2021	Field notes and pictures of created process flow
24	Tactical Sourcing Specialist 4	Workshop in Tampere	Brainstorming about process development and tools	16-18.11.2021	Field notes and pictures of created process flow
25	Tactical Sourcing Specialist 5	Workshop in Tampere	Brainstorming about process development and tools	16-18.11.2021	Field notes and pictures of created process flow
Data 3: Validation of Final Proposal					
26	Line Manager	Face to face interview	Validation, evaluation, final improvements		
27	Sourcing Director	Face to face interview	Evaluation of Final proposal		

As seen from Table 1, data for this Thesis was gathered in three rounds. The first round, collecting Data 1, was conducted for the current state analysis. In this round, the data is collected by interviewing relevant stakeholders and gathering data from internal documents.

In the next round, Data 2 was collected to gather suggestions from Metso Outotec's Sourcing and Development managers for developing the initial proposal. This data included discussion, interviews and workshops with the management of the sourcing department.

In the third round, Data 3 was gathered when conducting validation of the initial proposal. Data 3 included feedback for the proposal from the line manager and top management of the sourcing department.

In this study, the interviews made the primary method of data collection. The interviews were conducted as semi-structured, teams' interviews and face to face interviews, held at the office, with questions created in advance. The interviews were recorded and field notes taken.

The textual data was analyzed using content analysis. Content analysis can be considered as a general term for numerous different strategies used to analyze text (Powers & Knapp, 2006). It is a systematic coding and categorizing approach that can be used to better understand different kinds of trends, patterns and words that appear in a text, their frequency, their relationships, and their structures (Gbrich, 2007). Content analysis is used to describe what the characteristics are in a document's content by analyzing who says what, to whom, and with what effect (Bloor & Wood, 2006).

The biggest part of data was analyzed for the current state analysis, to establish the current state of the two legacy processes. The findings from the current state analysis are discussed in Section 3 below.

### 3 Current State Analysis of the Companies' Tactical Sourcing Processes

This section discusses the case company's tactical sourcing practices after the merge, where two different processes are being used simultaneously. This section provides the process maps for both sourcing practices that are being used by the legacy companies Metso and Outotec. Furthermore, this section compares the similarities and differences of the two processes to identify the strengths and weaknesses of each process.

#### 3.1 Overview of the Current State Analysis

The current state analysis (CSA) was conducted from February to March 2021. To conduct the CSA, the core sourcing team from both Metso and Outotec legacy companies were involved and interviewed. In addition, both legacy companies' internal documents were reviewed in this CSA to get a comprehensive view of the whole process map from each company's side. The goal of the CSA was to get a clear understanding of how things are currently done in the sourcing department and to compare the two processes and evaluate their strengths and weaknesses.

The first part was focused on describing the two processes, (a) from Metso's side and (b) from Outotec's side. It also outlines the roles and responsibilities of teams / departments who are involved in the sourcing process. Section 3.2 provides both process maps for a clear understanding of the business practices of the two companies and becomes the foundation for the next section, where the processes are analyzed.

In the next part, Section 3.3, analysis and key findings from the analysis are reported. It ends with identifying the strengths and weaknesses of both processes, and points to the identified areas for development.

#### 3.2 Description of the Two Legacy Processes

After the merger that happened in 2020, the two legacy companies still use their own processes for tactical sourcing. The processes differ from each other quite significantly. In this section, the two legacy processes are described. To begin with, the roles and responsibilities of team / departments who are part of the sourcing process are described.



### 3.2.1 Roles and responsibilities common for both processes

These roles and responsibilities are used in both processes in the two companies.

#### Sales Managers and Sales Coordinators

The Sales Managers and Sales Coordinators (Sales) receive price and lead time requests directly from the customers. Sales passes on the customer requests to the Global Quotation Support team in the format that they receive it from the customer.

#### Global Quotation Support (GQS)

In Outotec's case, the job of the Global Quotation Support is to find out the technical information that the customer might not have, such as data sheets and technical drawings. They open any possible item codes into SAP and pass the customers' request to the Tactical Sourcing team in a clear and simple format which includes the requested product, quantity and necessary data sheets and technical drawings in case of a special product request. This team also acts as technical support for Tactical Sourcing, in case there are discrepancies or more detail needed from a supplier.

In Metso's case, the Global Quotation support's task is to pass the request received from the customer to tactical sourcing and open any possible item codes into SAP. GQS only provides the item codes and do not necessarily provide other relevant information such as drawings and technical data.

#### Tactical Sourcing

Tactical Sourcing receives the request from Global Quotation Support, and they pass it on to the appropriate suppliers. Tactical sourcing oversees getting product pricing and lead time information from suppliers. In most cases, the team asks for offers from at least 3 different suppliers to secure the best price and lead time offer. Terms and conditions negotiations with suppliers is also a big part of this team's daily work.

The above-mentioned roles are common for both legacy organizations, but the differences appear in the way the tasks are handled and with what tools are being used for daily tasks. This will be discussed later in the current state analysis section.

### 3.2.2 Metso's process

The ex-legacy Metso side's tactical sourcing teams' tasks are being executed with two different processes. These processes follow the same structure throughout the company globally however, the tools and practices used differ to a great extent. Even though ex Metso has tools and programs available which are meant to be used to pass information from team to team in order to maintain transparency, a lot of the information is passed through different channels, like emails, online excel sheets and SharePoint.

There are currently 5 team members from the legacy Metso side who work in the tactical sourcing team. There are 3 different processes which are being carried out by different team members. The tactical sourcing team on Metso's side receives inquiries from many different channels including cloud based excel sheets, tickets to the procurement digital platform Jaggaer, SAP, SharePoint and even emails.

Below is the description of Metso process 1.

#### Process 1 has 7 steps:

Step 1: The customer sends a request for quotation to the sales team using email.

Step 2: The sales team receive the request and create a ticket into salesforce for the GQS team.

Step 3: GQS receive the ticket in salesforce and passes the request on to the tactical sourcing team from sales force to Jaggaer. This inquiry usually consists of different SAP items that need pricing and lead time information in order for the sales team to provide a quotation to the customer. The available information regarding each item differs to a great extent, some having clear descriptions and can easily be inquired from suppliers while others lack important information and requires more information such as drawings or technical specifications. Gathering all necessary information is completely up to the tactical sourcing specialist.

Step 4: The tactical sourcing team receives the inquiry in Jaggaer and analyzes the required items and finds the correct suppliers who the request for quotation can be sent to. The guideline is to always ask at least three different suppliers in order to get the most

competitive pricing and lead time possible. The request for quotation is sent to the suppliers.

Step 5, Option 1: The supplier gets back to the tactical sourcing team asking for more information, usually meaning that the information provided to the supplier lacked important details not making possible to provide an offer. If the information required by the supplier is simple, tactical sourcing usually will be able to provide this information themselves. If the tactical sourcing team is not able to answer on their own, they need to find out where to get the missing information for example by talking to the product line. Once the tactical sourcing team has the information the supplier asked for it is provided to the supplier. If the provided information is still not sufficient enough for the supplier to prepare a quotation the above-mentioned process is repeated.

Step 5, Option 2: Tactical sourcing receives quotes from the suppliers. The SAP items are then updated with prices and lead time information and the information is passed from Jaggaer to Salesforce to the GQS team.

Step 6: The GQS team receives the pricing and lead time information. They add the correct margins and create a sales quotation through SAP. The quote is then sent through salesforce to the sales team.

Step 7: The sales team receives the quote from GQS and finally send it to the customer through email.

The above-mentioned process visualizes ex-Metso's process in Figure 2 below.

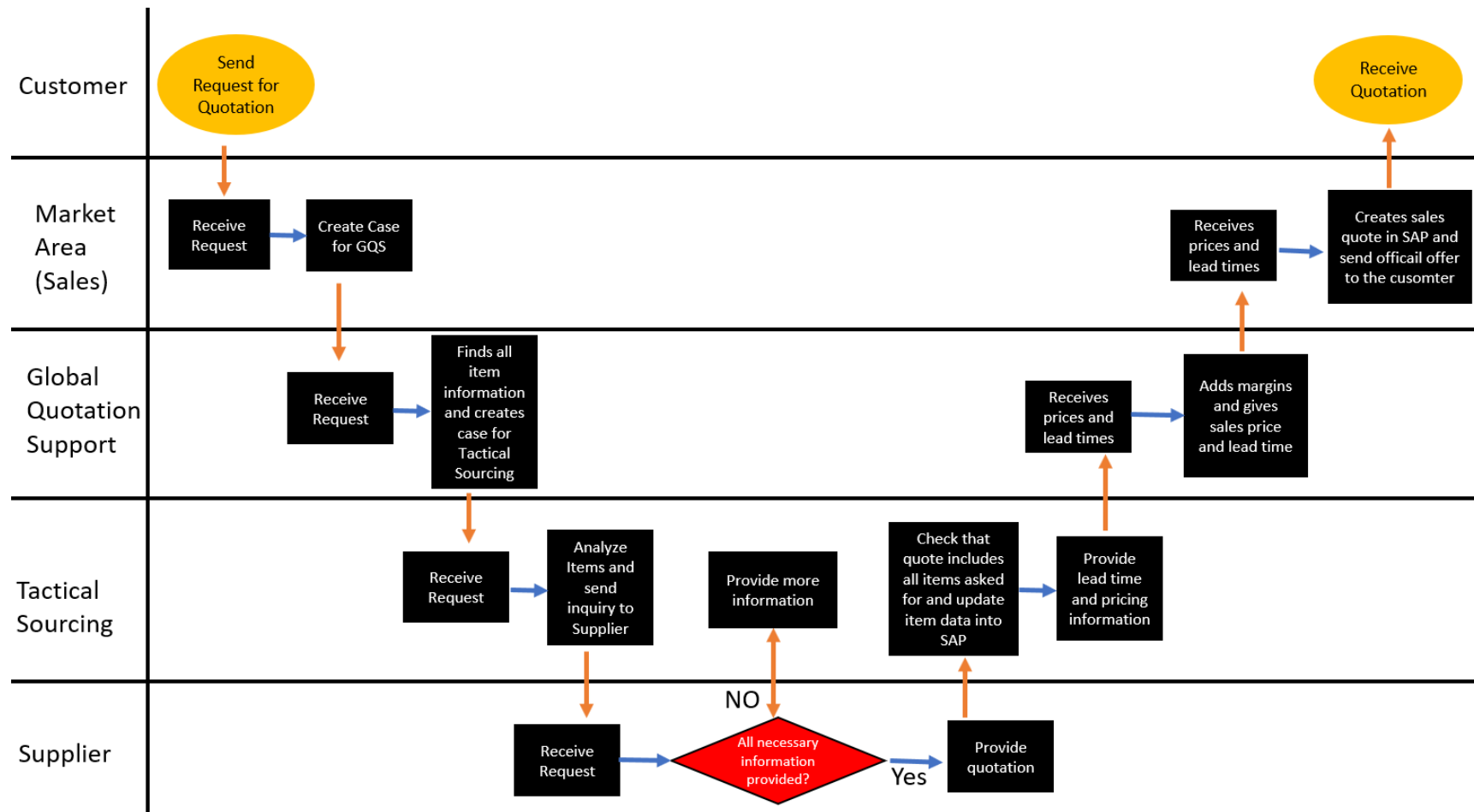


Figure 2. Current process map of Metso process 1.

Below is the description of Metso process 2.

Process 2 has 8 steps:

The second process used by the legacy Metso side has 4 steps. The majority of items that the customers ask for quotes are quoted based off estimates which are calculated by a cost review specialist. This means that tactical sourcing is not involved in the quoting process and only if the customer decides to place an order the following steps are taken:

Step 1: The customer sends an order to the sales team through email, usually in PDF form.

Step 2. The sales team receive the order and they then create a sales order in SAP based off of estimated pricing which had been provided by the cost review specialist. This creates a purchase requisition in SAP, which goes to the purchasing queue of procurement. All items which lack supplier, price or lead time information go to a specific queue in SAP which is looked after by two of the tactical sourcing team specialists.

Step 3: The tactical sourcing team finds the items from the purchasing queue, they analyze the items and gather all possible information available, for example, drawings and technical specifications if applicable. The request for quotation is sent to the appropriate suppliers through Jaggaer.

Step 4: Option 1: The supplier gets back to the tactical sourcing team asking for more information, usually meaning that the information provided to the supplier lacked important details not making possible to provide an offer. If the information required by the supplier is simple, tactical sourcing usually will be able to provide this information themselves. If the tactical sourcing team is not able to answer on their own, they need to find out where to get the missing information for example by talking to the product line. Once the tactical sourcing team has the information the supplier asked for it is provided to the supplier. If the provided information is still not sufficient enough for the supplier to prepare a quotation the above-mentioned process is repeated.

Step 4, Option 2: The tactical sourcing specialist receives the offers from the supplier and checks that everything is according to what the initial inquiry was for, and inputs the

pricing and lead time information in SAP. The items are then assigned by the tactical sourcing specialist into the correct queue of a procurement specialist.

Step 5: The procurement specialist finds the items from their own purchasing queue.

Step 6: Procurement places an order to the supplier.

Step 7: Procurement receives order confirmation from the supplier and inputs the lead times into SAP.

Step 8: The sales team gets the lead time information directly from SAP and then sends the order confirmation to the customer.

The above-mentioned process visualizes ex-Metso's process in Figure 3 below.

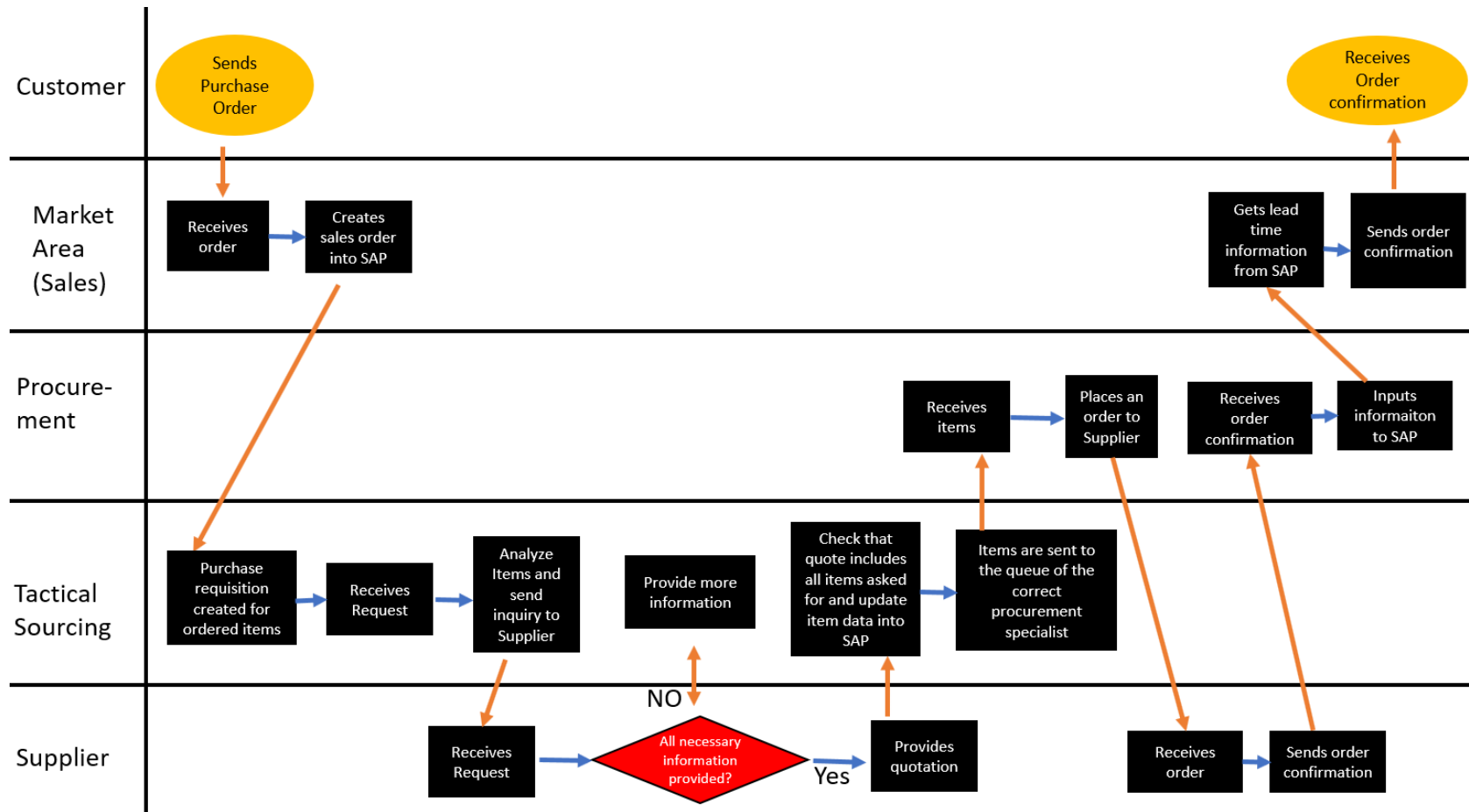


Figure 3. Current process map of Metso Process 2.

Below is the description of the quoting process in ex-Outotec.

The legacy Outotec side has 3 members working for the tactical sourcing team. Unlike Metso, Outotec has 1 process which is used throughout the team and all inquiries are received using the same online platform called Microsoft Dynamics. When customers approach for a quote, the tactical sourcing team side gets accurate information in every case and estimated pricing and lead time is not sent out to the clients. (Compared to Metso) This means that in all cases, official quotes are asked from suppliers.

This team is called the global tactical sourcing team which means that all cases throughout the world come to this specific team who is in Finland. Cases are handled locally only if the supplier and customer are both located in the same country, otherwise cases are created to the global team.

This Outotec process consists of 7 steps:

Step 1: The market area (sales team) receives a request for quotation from the customer. Every market area has their own dedicated sales team and the customer reaches out to the market area's local email address which automatically opens up a new case into Microsoft Dynamics. The new case then pops up to the market area's general case queue where members are able to assign the cases to themselves or team members. The sales team then creates a sub-case to the GQS team providing the information received from the customer. After the sub-case has been created, it is routed to the appropriate GQS team.

Step 2: The GQS team finds the newly created case from their own queue and assign the new case to themselves or team members. The requested parts are analyzed by a GQS member, they find all possible information from internal sources like drawings, and technical data specifications. GQS then create yet another sub-case for the tactical sourcing team. Once the case has been created, all information is added to case and it is then routed to the tactical sourcing teams' general queue.

Step 3: The tactical sourcing team find the new case from their own queue and assign the case to themselves or a team member. This case usually consists of different SAP items that need pricing and lead time information in order for the sales team to provide a quotation to the customer. The tactical sourcing team analyzes the items and



information provided to them by the QGS team, and find the best possible suppliers to send request for quotations to. After this, tactical sourcing creates final sub cases for the different suppliers, for example, if the request is sent to three different suppliers, three different sub-cases are created for each supplier.

Step 4: The sub-cases for each supplier are created and supplier information is added to each case making it easier for the team to keep track of everything and to avoid confusion. From this case, the tactical sourcing team then sends an email to the supplier providing all the previous information received from GQS.

Step 5, Option 1: The supplier gets back to the tactical sourcing team asking for more information, usually meaning that the information provided to the supplier lacked important details not making possible to provide an offer. If the information required by the supplier is simple, tactical sourcing usually will be able to provide this information themselves, but in the majority of cases these questions are extremely technical. If the tactical sourcing team is not able to answer on their own, they send an internal message from their case to GQS's case. Once the message is sent, this creates a notification for the GQS team who then review the message and provide the supplier requested information back to tactical sourcing. This again creates a notification for the tactical sourcing team, and then this information is provided to the supplier. If the provided information is still not sufficient enough for the supplier to prepare a quotation the above-mentioned process is repeated.

Step 5, Option 2: Tactical sourcing receives quotes from the suppliers. The SAP items are then updated with prices and lead time information and the supplier case in Dynamics is resolved. The quotes received are added to the sub-case created by GQS and an internal message is sent to GQS informing that quote have been received, which creates a notification for the GQS team.

Step 6: The GQS team checks the pricing and lead time information provided by tactical sourcing and then add the appropriate sales margins. An internal message is sent by the GQS team from their case to the market area informing the sales price and lead time, which again creates a notification for the sales team.

Step 7: The sales team receive the information provided by GQS and create a sales quote in SAP. A pdf quote is then printed and sent to the customer.

The legacy Outotec process is illustrated in Figure 4 below.

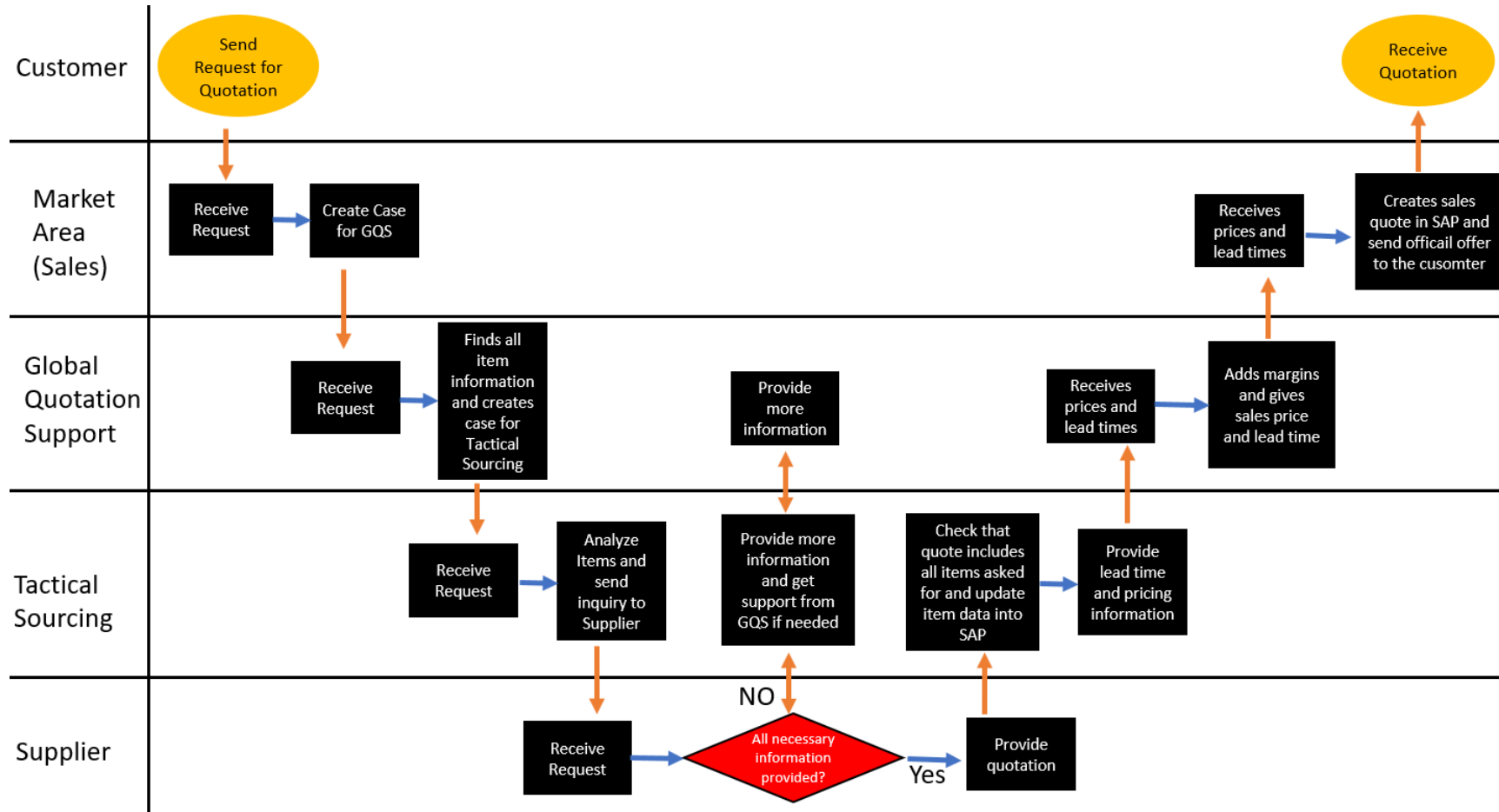


Figure 4. Current process map of Outotec's Process

When looking at the differences between Metso's processes and Outotec's process, the main difference is that GQS plays a much more important role in Outotec's process. They offer support for the tactical sourcing team, always provide all necessary information while in Metso's processes GQS does not provide detailed information for the tactical sourcing team.

### 3.3 Analysis and Key Findings from the Current State Analysis

This section discusses the differences between the two legacy companies processes and analyzes their strengths and weaknesses and goes into what areas could be improved when building the global process. To keep this section as neutral and unbiased as possible, several interviews were conducted with different key stakeholders from both legacy companies to get their views and opinions on how everything works currently and what needs improvement.

#### 3.3.1 The Strengths and Weaknesses of Both Legacy Companies' Processes

The strengths and weaknesses of the current process are important to identify so that the researcher can focus on the critical improvement points of the process. This also gives insight to what current strengths to keep for the proposal for a new unified process, and what weaknesses to target that need the most improvement.

The strengths and weaknesses of the current processes were identified by reviewing the current process descriptions and by conducting interviews with the tactical Sourcing managers in different countries, such as Finland, Sweden, Canada and South Africa. The findings are summarized in Table 3 and Table 4 below.

Table 3. Strengths and weaknesses of both Metso’s legacy process (shown in Figure 7 below).

Strengths	Weaknesses
1. Request for quotations can be sent to multiple suppliers at once	1. Too many channels used to pass information from team to team (poor visibility)
2. Multiple vendor quotes can be updated to SAP with one click through Jaggaer	
	2. No clear guideline to who oversees getting drawings and documents which need to be passed to suppliers
	3. Different locations have different practices on who updates master data
	4. Sometimes hard to find the correct person to contact regarding technical inquiries
	5. In order to use Jaggaer with suppliers, this requires the supplier to also be a user in the Jaggaer software

In regard to the strengths and weaknesses of both Metso’s legacy processes, it is clear when looking at Table 3 above that the strengths are associated with **the main procurement tool, Jaggaer**, and the weaknesses are associated with **the way of working and how information is passed between the teams**.

*“A lot of inquiries are coming through different channels like emails, instead of Jaggaer” (Ex-Metso Stakeholder 1).*

*“There are too many different channels used to pass information” (Ex-Metso Stakeholder 2).*

*“Requests are coming through many locations and different channels” (Ex-Metso Stakeholder 3).*

*“It’s hard to find the correct people to contact when different kind of questions rise” (Ex-Metso Stakeholder 4).*

*“It wastes a lot of time when GQS creates cases for us but doesn’t provide the necessary information like drawings and specifications. This is always up to us and may take days or up to weeks to find all necessary information before being able to approach suppliers for quotes.” (Ex-Metso Stakeholder 5)*

*“Communication between the GQS team and Tactical sourcing team is almost nonexistent in Jaggaer. The internal communication feature is not used.” (Ex-Metso Stakeholder 5)*

Jaggaer, which is the main tool used by tactical sourcing to send our quotation requests to suppliers, is a much faster option than sending a regular email, especially if requests need to be sent to multiple vendors. When quotes are received back from the vendors, it is simple to compare quotes in Jaggaer to see which one is the most competitive and updating master data can be done automatically in one go, instead of manually having to input pricing and lead time information from each vendor. However, this means that the vendors are required to use Jaggaer software as well. This means, that if the vendor refuses to use Jaggaer or uses some other software, communication has to be done with emails.

Figure 5 shows the interface of the procurement tool Jaggaer. From here it is possible to access ongoing and new tickets that are created for the tactical sourcing team.

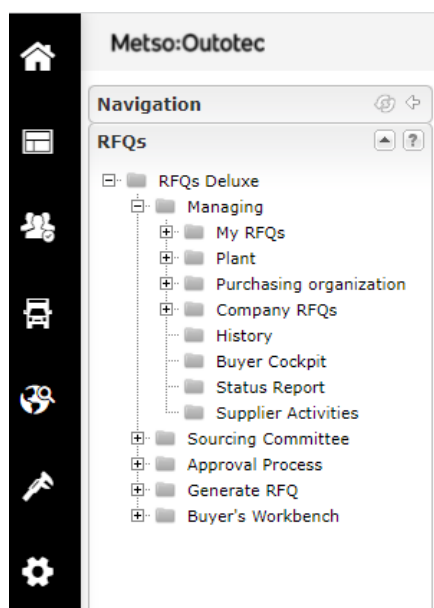


Figure 5. The interface of Jaggaer procurement tool.

Once tactical sourcing has received the request from GQS (that was sent from the interface shown in Figure 5), the RFQ process unfolds in a straight forward way in almost all cases right to the point to when tactical sourcing receive the quotes back from the suppliers. The major differences come during communication between the GQS and tactical sourcing team.

When GQS passes on an inquiry to tactical sourcing, there is no single channel used globally, which can easily lead to confusion. Also, regards to what information is passed differs between different teams, for example in some cases only an item code is given to tactical sourcing and it is up to them to find necessary information.

Once tactical sourcing receives an offer back from the supplier, updating master data is also done in different ways. In some cases, tactical sourcing updates the pricing and lead time information into SAP before passing on the information to GQS. Another practice is that tactical sourcing does not update anything and just passes the pricing and lead time information to GQS, and a specific master data team updates SAP.

Metso's strengths and weaknesses are analyzed below.

Weakness 1: Too many channels used to pass information for example, SharePoint, emails, Teams, SAP and Jaggaer. Because of this, teams do not have a quick overview of cases. Finding relevant information can be tricky, since there are too many channels where information could be, this can slow down work, especially when team members are filling in for each other.

Weakness 2: When GQS passes the information to the tactical sourcing team, this information most of the time is lacking and is missing vital information. This means that it is up to the tactical sourcing team to gather all necessary information and in some cases this information is hard to find and many days are wasted. The tactical sourcing team does usually not have the technical knowledge that is required to answer all the questions suppliers have. In these cases, they need support from experts with technical knowledge, which GQS has.

Weakness 3: Different locations have different practices on who updates master data. The company should have global practices that all teams in different locations follow. It

does not make sense to have different practices, but one best practice should be used across the global organization.

Weakness 4: If the provided information to the supplier is not enough and further details need to be provided, once again it is up to tactical sourcing to find the correct person who to contact and provide this information. This might again delay the process by several days.

Weakness 5: In order to use Jaggaer with suppliers, this requires the supplier to also be a user in the Jaggaer software. This means, that if the vendor refuses to use Jaggaer or uses some other software, communication has to be done with emails.

Strength 1: Once the tactical sourcing team sends the request for quotation to the suppliers, Jaggaer enables the request to be sent out to multiple suppliers in one go. This saves time and effort since there is no need to send individual requests separately to each supplier.

Strength 2: If multiple quotes are received from multiple suppliers, updating SAP is very quickly done with a click of a button. Items do not have to be manually updated in SAP, because Jaggaer is synced with SAP and updating is done automatically, saving time from performing repetitive manual tasks.



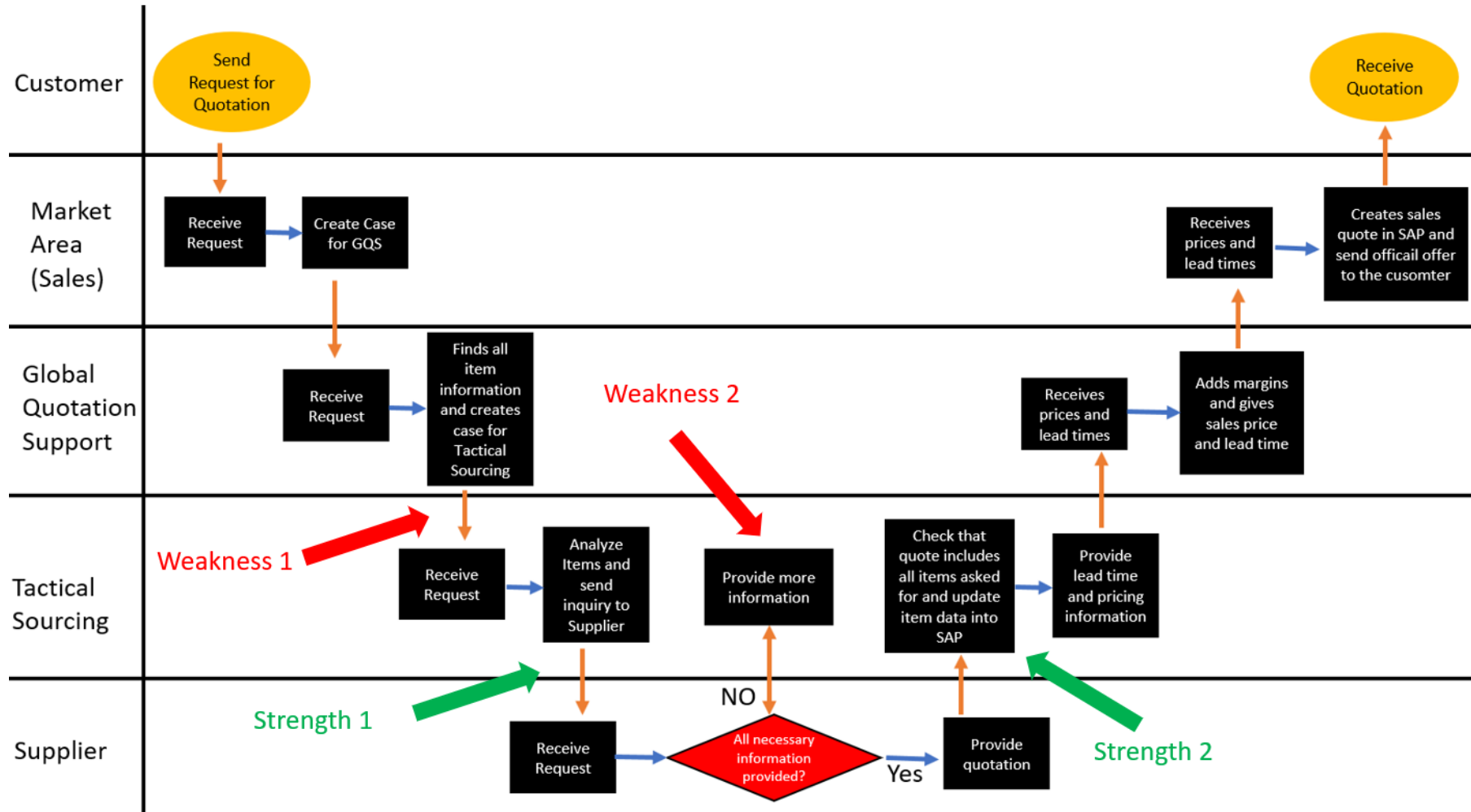


Figure 6. Strengths and weaknesses of Metso’s legacy process (shown on the process diagram).

In regard to the strengths and weaknesses of Outotec's legacy, Table 4 summarizes the key strengths and weaknesses of Outotec's approach.

Table 4. Strengths and weaknesses of Outotec legacy (shown in Figure 7).

Strengths	Weaknesses
1. 1 single program (Microsoft Dynamics) used for all tasks	1. Microsoft dynamics, slow and clumsy
2. GQS passes all necessary information, to tactical in order for tactical to send a request for quotation	2. When sending out a request for quotation to suppliers, a separate request has to be sent to each supplier
3. Tactical sourcing has one point of contact for technical inquiries	3. Master data has to be updated manually per supplier

As seen from Table 4, opposite to Metso's strengths and weaknesses, Outotec's strengths are associated with **the way of working** and **how information is passed between teams**, and the weaknesses are associated with **the system being used, Microsoft Dynamics**.

*"Outotec's way of working makes much more sense. The fact that the whole quoting process is in one system makes things much more straight forward and adds visibility between teams."* (Ex-Metso Stakeholder 6)

*"Microsoft Dynamics is not very use friendly and sometimes makes daily work a bit slow, but regarding how and what information is pass from team to team works really well."* (Ex-Outotec Stakeholder 1)

*"Microsoft Dynamics provides great visibility to our team since we are able to check the status of the cases we create for tactical sourcing"* (Ex-Outotec Stakeholder 2)

*"Measuring different KPI's is conveniently done through Microsoft Dynamics. This makes it possible to measure the different goals set by the team and management"* (Ex-Outotec Stakeholder 3)

Regarding Outotec's process, the major strength is Outotec uses one single system throughout the quoting process all the way from the customer to the supplier. This adds a lot of visibility for the tactical sourcing team. Information like who is the customer and where they are located are available for sourcing. Since there is one system used, this also enables all requests to come through the same channel, this means that sourcing have their own queue where new cases come to.

Outotec's strengths and weaknesses are analyzed below.

Weakness 1: Microsoft Dynamics, slow and clumsy. If requests are sent out to more than one supplier this requires a separate case to be opened for each supplier and a separate email to be sent to each supplier. When suppliers reply with a quotation, all the cases also need to be closed one by one. There is a lot of manual and repetitive tasks in Dynamics, that take up too much time of the team.

Weakness 2: If multiple requests for quotations need to be sent to multiple suppliers, a separate email needs to be sent to each supplier from each separate child case. This is connected to weakness 1. The Dynamics system doesn't allow to send an email to all relevant supplier at the same time, but a separate email needs to be created for each supplier.

Weakness 3: Items need to be manually updated into SAP and can't be done with a click of a button like in Jaggaer. When multiple suppliers give price and lead time information, the tactical sourcing team needs to manually fill in the details to SAP for each individual supplier, whereas in Jaggaer, which is synced with SAP, the details can be mass uploaded into SAP, and a lot of manual labor is avoided.

Strength 1: One single program (Microsoft Dynamics) used for all tasks. This adds visibility and transparency for the entire tactical sourcing team and other teams in the supply chain as well, who can easily look up all relevant information and communication between the supplier regarding a case. Even though Dynamics is not the best tool, it is still good to have everything consolidated in one program.

Strength 2: When GQS creates a case for tactical sourcing, they provide all necessary information in order for tactical sourcing to reach out to supplier and ask for quotes. They provide the following details: drawings, data sheets and technical information. This

means that the tactical sourcing team does not have to spend time to find out the relevant information and can start working on finding the right suppliers straight away and pass on the details from GQS to the suppliers.

Strength 3: If the supplier needs further information and the initial information provided is not enough, GQS is the main point of contact who will support the tactical sourcing team. Again, GQS is the go-to support for the tactical sourcing team, who do not necessarily have the technical knowledge, but GQS on the other hands are experts at it and provide excellent support for these types of requests. It also means that cases are handled quickly, because tactical sourcing has the support that is needed. and they do not have to work alone to provide the suppliers the relevant technical details.

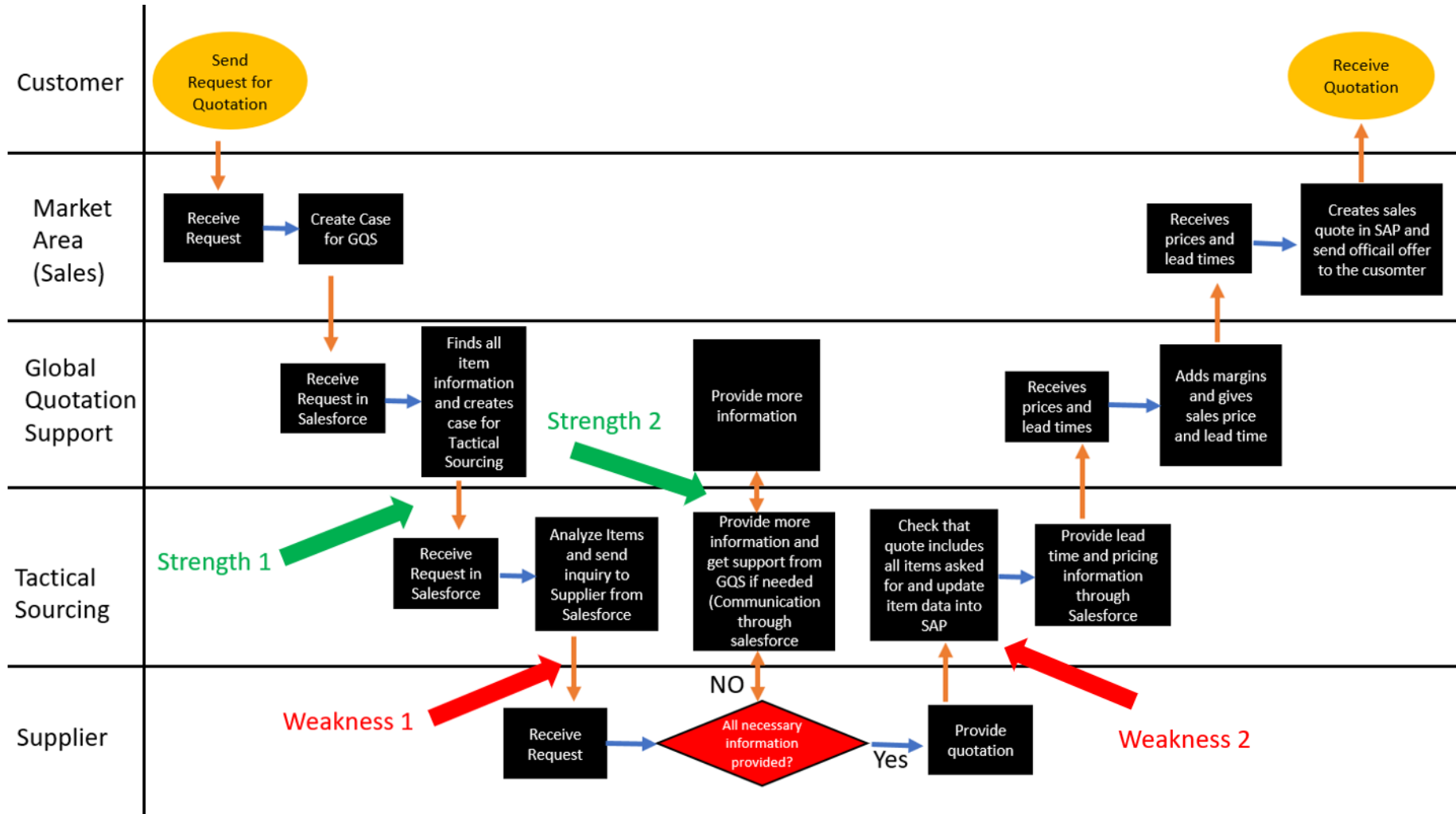


Figure 7. Strengths and weaknesses of Outotec’s legacy process (shown on the process diagram).

As seen from Figure 8, passing information from GQS to tactical sourcing follows a certain guideline. Cases created for tactical sourcing include everything needed to get a supplier quote, such as drawings or other technical data. QGS also act as the main point of contact whenever there are questions that are too technical for sourcing to answer. This eliminates one of the major issues the legacy Metso side faces, which is not knowing who to contact.

Regarding the weaknesses, the issues come when looking at Microsoft Dynamics and its features. Although it is convenient to have one single system for the whole quoting process, Dynamics is slow to use and a lot of manual work is required when comparing it to Metso's Jaggaer. Sending out requests to supplier's requires the tactical sourcing specialist to manually send out an email to each supplier. When quotes are received back, once again manual work is required when updating the pricing and lead time information to SAP.

Figure 8 shows the interface of Microsoft Dynamics front page.

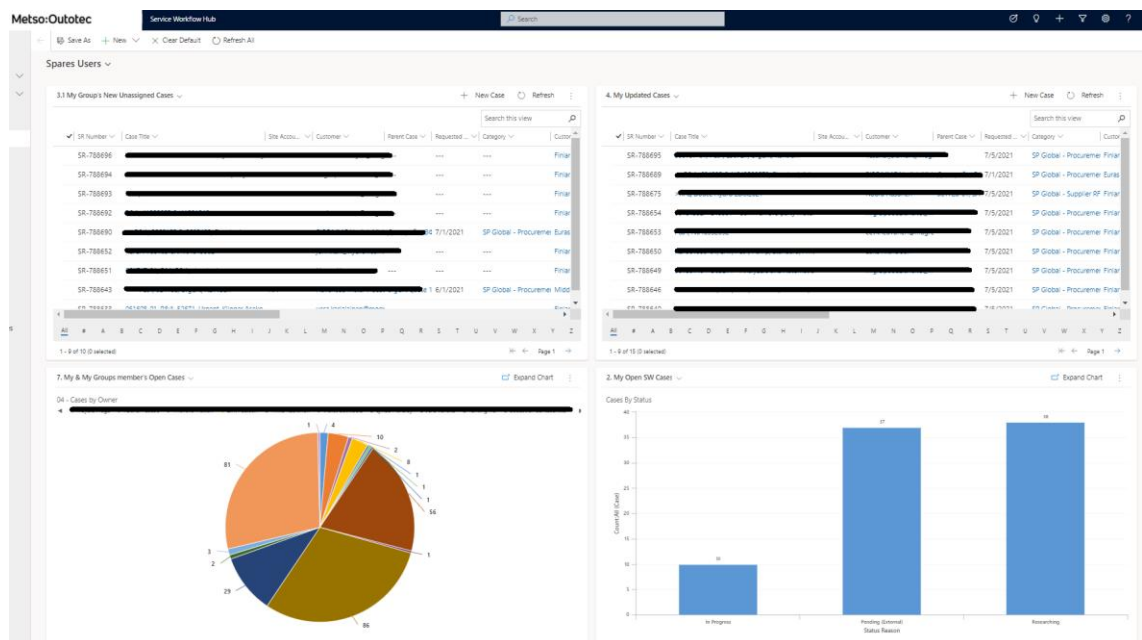


Figure 8. The interface of Microsoft Dynamics.

As seen from Figure 9, the front page of dynamics shows all the new incoming cases, the tactical sourcing specialist's ongoing cases that need action and how cases are distributed among the team.

To summarize, Outotec has a streamlined process with a clumsy Microsoft Dynamics while Metso has an unclear process with a better tool. Metso and Outotec merged in 2020, but currently, both legacy companies still use their own processes, and they lack a unified way of working and operating. It is critical for the two companies to start working together post-merger to integrate and become one company and reduce complexities.

### 3.3.2 Selected Focus Areas

The thesis researcher has established that both legacy companies' processes have both strengths and weaknesses. After conducting multiple interviews with different tactical sourcing teams, the common theme of their responses about the need of improvement were that there are too many different channels that are being used between the teams. The managers also pointed out that it has been almost 1 year since the merge and the two legacy companies are using their own processes and now it is time to start operating as one company.

Based on the findings, this study will focus on two major areas. The first is *selecting the communication channels and tools* which will be used throughout the tactical sourcing organization. The second area of focus is *creating a unified working process for the tactical sourcing team* which will be implemented for both ex-legacy companies with the aim of working as one organization. The third area will focus on *managing change* to ensure that the change process is managed efficiently.

Those priorities were chosen because they support the post-merger integration needs of the case company. The ultimate target is to create a single unified working process for the Tactical Sourcing teams globally. In that way the company will reap the benefits of the merger by synthesizing the strengths of both legacy companies and by focusing on eliminating the complexities and working as two separate companies.

The next section describes some best practices from literature related to post-merger integration and process improvements in tactical sourcing. Based on the best practice, a proposal for a new, improved tactical sourcing process can be built.

## 4 Existing Knowledge and Best Practice of Managing Tactical Sourcing

This section discusses the findings from literature and existing knowledge related to process improvement, focusing especially on the latest research and best practice available in global tactical sourcing. In addition, this section explores what are the best tools and software available to manage tactical sourcing tasks and which could be proposed for the new global tactical sourcing process for the case company. Lastly, this section discusses managing change which is an important area of focus for managers when implementing a new process.

### 4.1 Role of Tactical Sourcing in Supply Chains and Best Practice in Global Sourcing Process Management

A supply chain can be considered as a set of activities which connects a company's vendors to the company's clients. The standard flow of a supply chain can be seen below:

*Receive supplier input -> Add value -> Delivery to client* (Harrison, Lee & Neale, 2015).

*Supply chain management* is a somewhat of a new concept. It was first introduced in 1982 by a consulting firm, that was then called Booz, Allen and Hamilton. The current definition for supply chain management is: *"The management of upstream and downstream relationships with suppliers and customers in order to deliver superior customer value at less cost to the supply chain as a whole"* (Christopher, 2011:3). In the modern business environment, the term supply chain management is used widely, and one might say that the chain is actually market driven rather than supplier driven. Extending on that idea, Christopher (2016) offers an alternative definition:

*"A network of connected and interdependent organizations mutually and co-operatively working together to control, manage and improve the flow of materials and information from supplier to end users"* (Christopher, 2011:4).

Other critical concepts and activities within the supply chain management include the following concepts. *Sourcing* is an important activity for managing a supply chain – it relates to identifying and securing either raw materials for further processing, supplementary materials, or services to help the operation or sourcing finished materials that are then sold directly to the customer. The sourcing process can be split into two



different sub-categories: sourcing and purchasing. Sourcing is more about identifying the source of the material, making sure that the source is relevant for the strategy and that it is legally compliant. The purchasing process is initiated once the source is confirmed. This process will manage the negotiations, contracts, ordering quantity and receipt of the consignment. The size of the organization will determine whether these functions are conducted as separate functions or combined into one activity. (Samir, 2020.)

Sourcing is done at a tactical, operational or a strategic level. *Tactical and operational* sourcing is concerned with lower-level decisions related to low-profit, low-risk, and non-critical items. Tactical sourcing is a short term transactional routine activity, sometimes with a reactive approach rather than a long-term knowledge-based activity that can lead to business competitive advantage. (Samir, 2020.)

*Strategic* sourcing on the other hand is concerned with top-level long-term decisions related to high profit, high risk strategic items. Developing a strategic sourcing strategy is a vital part of the supply chain strategy. Strategic sourcing is linked to the strategic objectives of the company. Strategic sourcing provides alignment of the purchasing function with the strategic planning process and improved returns and profitability from a focused purchasing approach. (Samir, 2020.) Business practice suggests that an effective sourcing process is as much strategic as operational. Developing the most effective sourcing process is also dependent of the business environment and focus. The comparison between tactical and strategic sourcing environment are presented in Table 6 below.

Table 6. Comparison of tactical and strategic sourcing (Eltantway et al. 2014).

<i>Tactical Sourcing Environment</i>	<i>Strategic Sourcing Environment</i>
Requirements and specifications are clearly defined	Development of a deep understanding of requirements – value analysis and engineering to identify operational value and trade offs
Open bid process with little or no ability for suppliers to offer alternative designs specifications – purchase price focus	Development of a deep understanding supply industry product and service offerings and performance drivers of key suppliers

As seen from the comparison in Table 6, both tactical and strategic sourcing processes are important and should be carefully considered and selected depending on the business environment and focus.

*Supply chain strategies* can be viewed from various perspectives. In the vast academic literature on supply chain management, these strategies and perspectives have evolved as business models have changed, as technology has evolved and as the customer focus has become more prominent. Samir (2020: 17) has listed some basic tenets for supply chain strategy that should be considered, shown in Table 7 below

Table 7. Main tenets of supply chain strategy.

- Today's world is an extremely uncertain *environment*
- *Sustainability* has greater focus in business
- *Technology* is rapidly evolving and influencing business environments
- It is important to focus on the *flows* and the associated *processes*
- It is important to understand *human behavior* and *relationships across supply chain entities*
- *Supply chains* compete and not organizations (Samir 2020: 17.)

All these challenges and concepts listed in Table 7 influence activities within the supply chain management. According to Eltantawy et al. (2014), turmoil in the international economic and business *environment* emphasizes the critical strategic role of contemporary supply chain management in companies.

The last decade has been an era of rapid change in *technology*, which has led to a high growth in the supply chain applications industry and a rapid commercialization of Enterprise Resource Planning (ERP) software, but also data driven supply chain management and information sharing among supply chain members. There are many success stories and examples across industries of how technology together with implementation of supply chain strategies has brought about big improvements in reduction of total supply chain cost, increase in on-demand delivery, reduction of inventories and increase in revenues. (Samir, 2020.)

In addition to implementing technologies and software to improve the performance of the supply chain, another important factor that affects the development and best practices of supply chain management is the movement towards *a customer centric approach*. There is a heightened awareness of the needs of the end customers, and according to the best practice, companies should find solutions to fulfilling customer needs. Such solutions require *increased coordination* within the supply chain, *flexibility*, and *responsiveness*. (Harrison et al. 2015: 176.)

It is especially difficult for management activities in a supply chain to provide customer centric solutions that are characterized by many customer segments. Each segment has specific service requirements and supply chain managers must balance the customer's needs and their willingness to pay for such service. As a result, leading management consultants have stressed the need to divide customers into different segments based on the service needs of different groups and the need to adapt the supply chain in order to better serve the segments profitably. (Harrison et al. 2015: 176.)

It is common for companies to take a standardized approach when designing their logistics network and organizing their inventory activities to meet a single service standard. On the other hand, the logistics network of some companies has been built to meet the average service requirements of all clients, and for some, the goal is to cater the most difficult requirements of a single customer segment. None of these approaches are able to offer the service requirement for each segment in a cost-effective way. There is an existing need for methodologies and strategies to adapt supply chains which can provide service for differentiated customers in the most cost-effective way. (Harrison et al. 2015: 176.)

In global sourcing, organizational issues are dependent of the degree of centralization of the organization. (Arnold, 1999). The increased need for global effectiveness and efficiency has resulted in the rise of coordination and centralization of the supply chain and purchasing functions (Faes et al., 2000). Purchasing activities being centralized is an increasing trend for both private and public companies. With the goal of replacing individual purchases done throughout the organization by using corporate wide framework agreements, companies are trying to acquire economies of scale in their process costs and purchasing prices. These benefits can be reached by standardizing purchasing channels and processes for example by using e-procurement and by reducing the supplier base. (Karjalainen, 2009.) Strategic sourcing benefits from a

centralized supply process. According to Van Weele (2002), the more developed centralized supply process is characterized by contract compliance, meaning that a reduction is made in the supplier base and only selected suppliers in centrally negotiated contracts are used in the organization. The use of e-procurement is high, processes are formalized and economies of scale are utilized.

Summing up, it is vital to understand the link between operational environment and strategy within supply chain management, which is crucial for organizations' survival in the era of rapid change. Having a centralized and unified working process throughout the global organization benefits the whole organization. A cohesive process means economies of scale are utilized properly in contracting with suppliers and a lot of duplicate and fragmented effort is eliminated on a unit level. Effective global sourcing is centralized and directed from the top as a part of the organization's overall strategy.

## 4.2 Building a Global Unified Process for the Sourcing Team

This part discusses the key principals of process development and improvement in the context of a global sourcing process and building a unified global process for a sourcing team.

### 4.2.1 Process Development and Improvement

Increasing the performance of companies through processes can indicate:

- A. A shift to a more process-oriented approach
- B. An introduction of a new single process
- C. The re-design of existing processes
- D. An introduction of new improvements into the current process.

These different improvements in practices differ in how they are implemented, but the common steps that are taken can be seen in Figure 9.

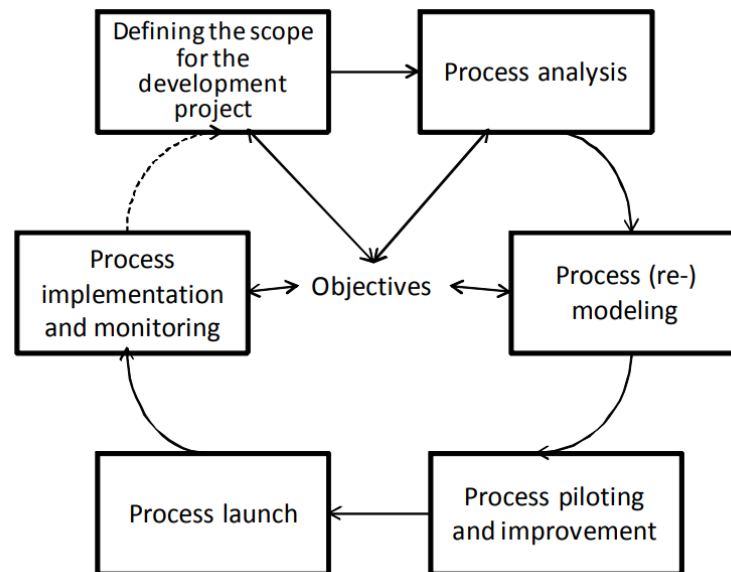


Figure 9. The basic steps in process development (Blomqvist & Martinsuo, 2010:8).

Blomqvist & Martinsuo mention (2010) that when process development is started, it is vital to define the scope of the development project in question and choose which processes will be affected. For companies in general, objectives have an important role in specifying the development project scope and the accessible data related to the existing processes provide additional support in establishing a clear scope.

In Blomqvist & Martinsuo's model (2010), once the project scope has been defined, the second step is to analyze the current process. It is important to get as much trustable data for the current process as possible or if the process is completely new, the data and analysis should be focused on how the value-added tasks have been performed before or how other organizations have implemented this process. The third step is to model the target process. The process that is being targeted should be explained in a way that the process performance objectives can be reached. After the target process has been described, it can be tried out in a simulation or alternatively it can be used in the real work place. By doing so, observation can be made after which final adjustments and corrections can take place. Testing is very important and greatly recommended before the process model is implemented as it can have a large impact on the whole company, and it would be very expensive to adopt a model which doesn't work or which has flaws. During piloting, high-quality data is gathered on whether the corrected process is beneficial and if it is able to solve issues that were present in the earlier ways of working. (Blomqvist & Martinsuo 2010.)

Next, in the process launch, new practices, guidelines and routines replace the old ones. All employees that are affected are instructed and trained to apply the new process and take on new roles. Control and monitoring systems are adjusted to better serve the newly created process and interfaces and connections to different systems and processes are updated. It is essential that the way the company operates, effectively supports the implementation of the process. (Blomqvist & Martinsuo 2010.)

Finally, in the implementation and monitoring stage, the new process is constantly tracked and monitored. It is crucial that the new process fulfills the organizational objectives, and that data is being collected for continuous improvement. (Blomqvist & Martinsuo 2010.) The model described above can be used as a basis for building a global process.

#### 4.2.2 Building a Global Process

Supply has become more globally available. Many different forces and occurrences have enabled world trade barriers to relax. In order to gain opportunities in international markets, firms are expanding their operations to a more global scale. For supply managers this can be a great chance to deliver improved and better value to end clients by creating highly sophisticated supply relationships when it comes to price, quality, performance and delivery. For many firms, global supply is necessary for competitiveness. Controlling international supply networks can bring on many issues in areas like source evaluation and identification, global logistics, information and communication systems as well as managing risk. (Johnson et al. 2011.)

Companies have been able to expand their business globally due to improved technologies. Increased competition has attracted companies to outsource a part of their secondary activities to third party firms who have better knowledge and expertise. It has become evident that big manufacturing firms develop their products in the USA and Europe, manufacture in Asia and South America, and sell globally. This strategy is called global sourcing and can be defined as integrating and coordinating different kinds of procurement requirements across the world's business units looking for standard items, technologies, processes and suppliers. (Zeng, 2003.)

The value of trade imports of worldwide merchandise has grown 95 times between 1948 and 2001. According to the findings of an international sourcing survey done in twelve

European countries, manufacturing companies source a lot more than companies in other sectors. More than 50% of UK and Irish companies and more than one third of Danish companies participated in global sourcing. (Eurostat, 2008.) This evidence shows that the manufacturing industry will keep expanding their global sourcing activities. According to Statista (2022), the global procurement outsourcing market in 2021 was 7,383 million US dollars.

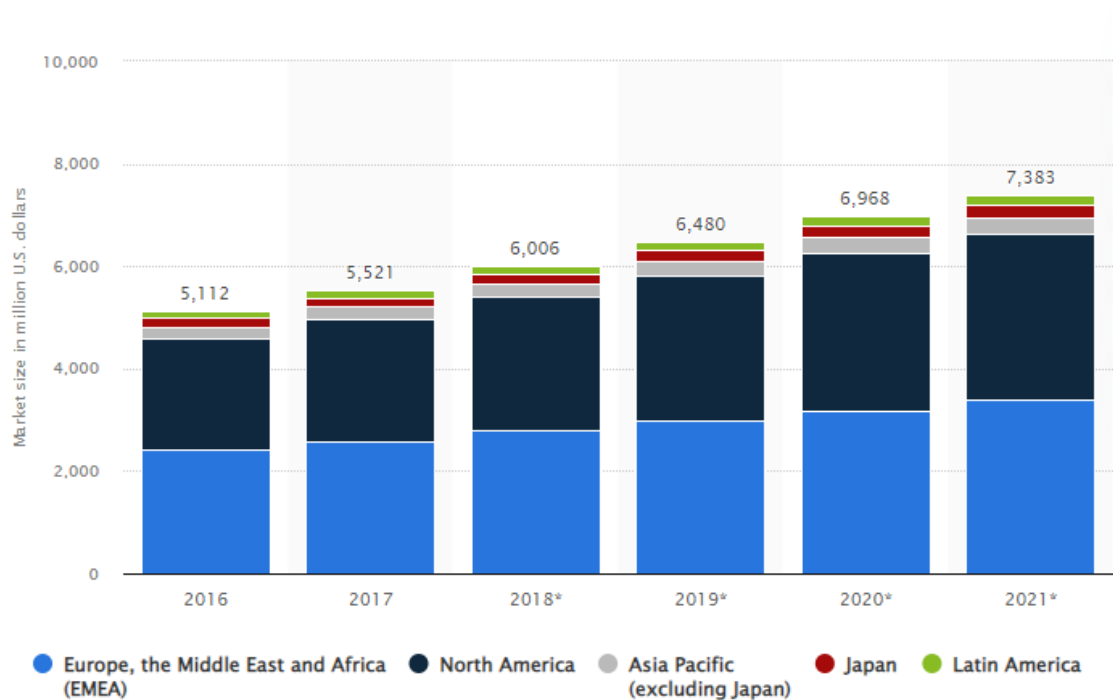


Figure 10. Procurement outsourcing market size by region or country 2016-2021

As seen in Figure 10, the global market has grown from 5,1 billion in 2016 to 7,4 billion in 2021. The growth trend has been continuing and based on this trend, the assumption is that the market size will continue to grow. (Statista 2022.)

The global sourcing process can be broken down into five stages, as illustrated in Figure 11.

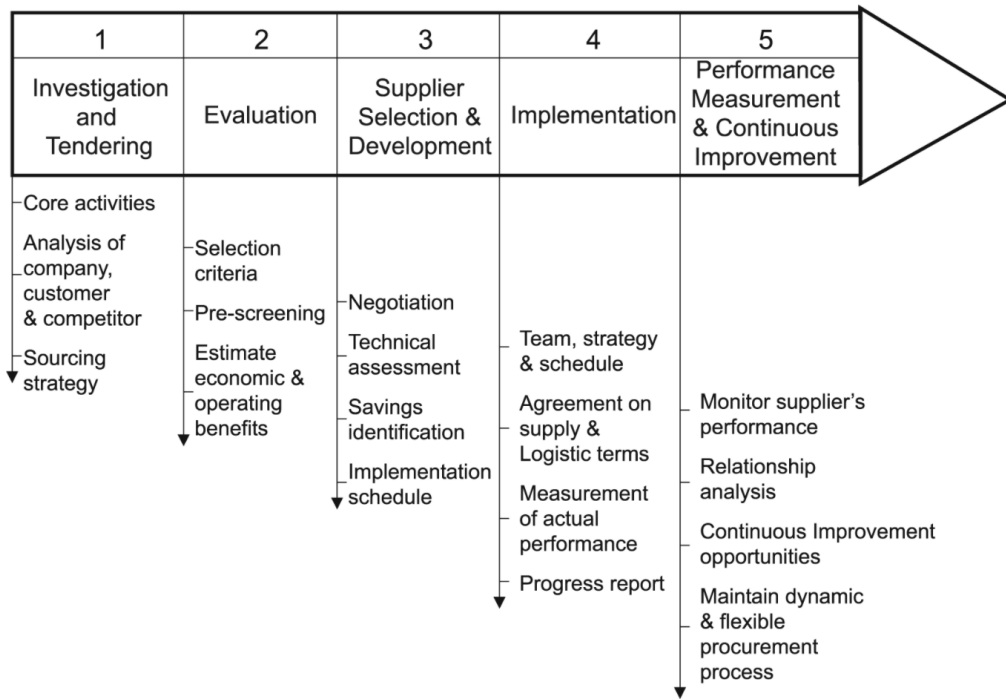


Figure 11. Global sourcing process (Zeng, 2003).

As shown in Figure 11, *Stage 1 – Investigation and tendering*. Before a global sourcing strategy can be used, the company needs to pinpoint their core and non-core activities and study the customer and market needs as well as their competitors so that it will be possible to determine the company’s goals, target markets and positioning. A strategic sourcing projects scope can be outlined in a business plan with top management, and the original work plan and criteria’s baseline for measuring improvements are set and documented in a process plan. Data collection is done in order to improve and update the requirements of stakeholders as well as confirm the baseline case. (Zeng, 2003.)

*Stage 2 – evaluation*. To create a short list of appropriate suppliers, specific supplier selection criteria must be created. The sourcing strategy is amended when needed and the costs models are finished. Final estimates are done on the economic and operating benefits of completing the project. (Zeng, 2003.)

*Stage 3 – supplier selection and development*. The selection of final suppliers takes place and the negotiation of an agreement with these selected suppliers is conducted. The selected suppliers need to be technically assessed in order to identify the possible savings. The timelines and implementation schedule for the selected suppliers are then created. (Zeng, 2003.)



*Stage 4 – implementation.* In this stage, an analysis program for performance needs to be implemented. This might include the following activities:

- a. The strategy for implementation and schedule is published and the implementation team is created
- b. Agreements on shared resources and supply and logistic terms are developed.
- c. The final step is to measure actual results of performance and the progress is periodically reported.

(Zeng, 2003.)

*Stage 5 – performance measurement and continuous improvement.* The performance of suppliers is monitored independently and together with the processes and recourses by the partners on a regular basis. An extensive evaluation of the effectiveness of the cooperative working relationship with the vendors is acquired, from which the involved partners can pinpoint issues and look for continuous improvement opportunities. This stage aims to hold on to a best-in-class procurement process that is adaptable enough to meet market conditions which are constantly changing. (Zeng, 2003.)

A case study by Zeng (2003) can be used to illustrate how a global sourcing process can be designed and managed efficiently. Figure 12 below illustrates the case of raw materials procurement by Company P. This example shows the complexity of actions in procurement on the example of Company P. According to Zeng (2003), Company P is a leader in aviation industry. Following the forecasts in the late 1980s that China would have an increased demand for jet engines over the next decade, Company P wanted to penetrate the Chinese market and established a joint venture (JV) in China in 1996 as means to provide low-cost machining and manufacturing to company P. The joint venture was established between company P, owning 50,5% of shares and the second partner was a state-owned local company and the third partner a state agency controlling the aviation industry in China. Since Company P provided most of the capital, it controlled the day-to-day operation of the JV through placing its own employees in the positions of general manager, finance manager and operations manager. These expatriates were contracted to two-year assignment at the JV with the option to renew. Local Chinese employees managed the remaining functional departments: quality control; logistics; and human resources. In addition to the US-based company P and the joint venture in China, there were other key trading partners in this global sourcing chain: a) raw material suppliers and sub-tier suppliers in the US and Europe, b) the international product center at company P for technical assistance, quality and materials management, c) freight

forwarders and international expeditors for air and ocean transport, customs clearance and other value added logistics services d) export management agency for providing specialized exporting services for companies engaged in foreign trade between China and the rest of the world and e) customs, because the custom procedures between China and the USA have special requirements and duties need to be paid at both frontiers. (Zeng, 2003.) The material flow in this case example is illustrated in Figure 12.

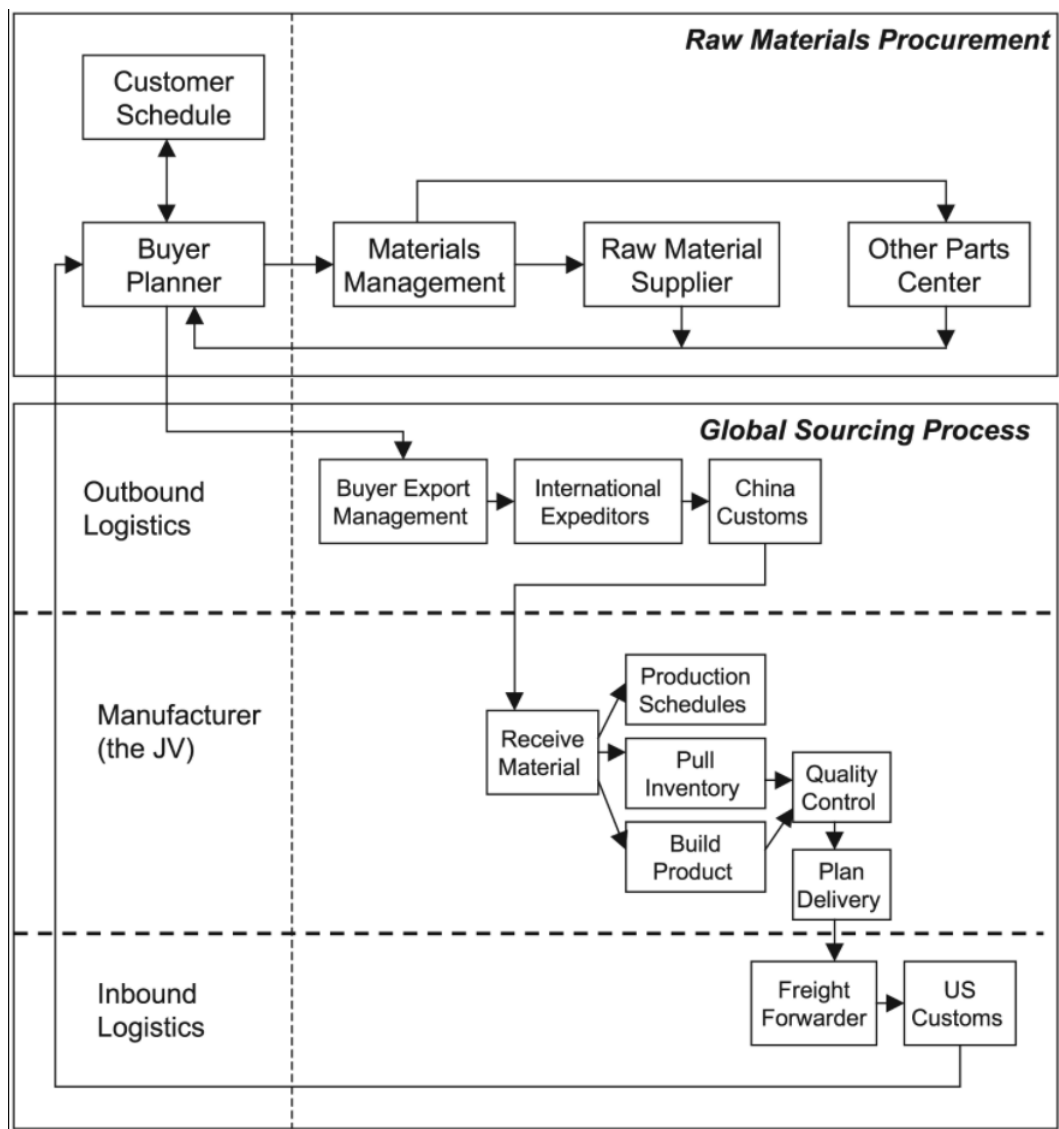


Figure 12. Raw materials procurement at case company (Zeng 2003.)

Figure 12 illustrates the material flow in this case example. The procurement of raw materials in Company P was done from the USA and Europe because there were no qualified sources of raw materials in China. Company P purchased the raw materials from the certified suppliers and then shipped the raw materials to the JV.

To fully appreciate the complexity of implementing a global sourcing strategy, the entire material and information flow are illustrated in Figure 13.

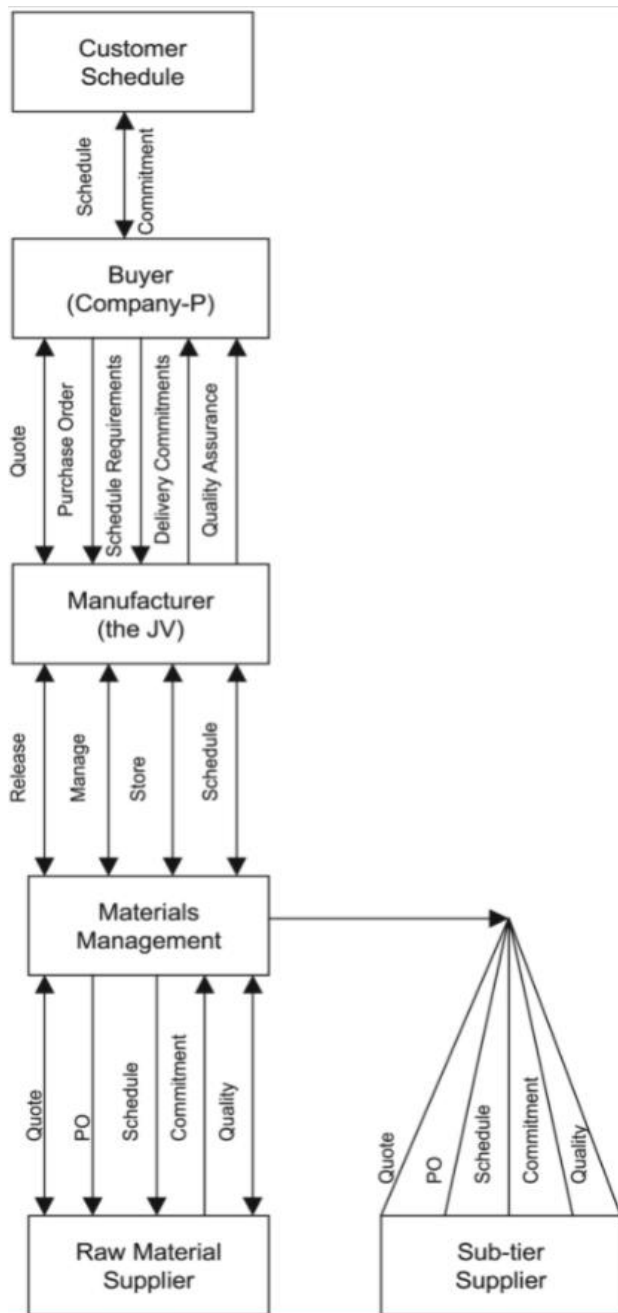


Figure 13. The material and information flow in a global sourcing process (Zeng 2003.)

Figure 13 illustrates the complexities in designing and managing a global supply chain. In addition, there are other challenges that come from operating in a global environment, such as economic, political, legal, social, cultural, geographical, and technological factors that need to be considered.

### 4.2.3 Tactical Sourcing Tools and Software

It is said that information is like glue that holds the supplier chain together. The internet can be seen as an open communication platform, while technologies that are web-based provide basic interfaces in different computer software and hardware. (Harrison et al. 2015: 114). This section looks at these technologies that are available for managing sourcing processes.

To see what information systems could be used to reinforce or establish effective and efficient processes, it is crucial to have an understanding of the advantages of technology, the tools that are available and how to choose between them. According to Johnson et al. (2011), information system technology can provide seven important benefits to the organization:

1. **Cost reduction and efficiency gains.** These can be achieved by streamlining the supply process and freeing up supply staff to do more value-adding work.
2. **Data accessibility.** Quick and easy access to critical data in real time aids sound decision making, makes it easier to identify supply problems earlier, and provides useful information to negotiations.
3. **Speedier communication.** Faster communication improves supply chain effectiveness and efficiency, especially with global suppliers. Faster turnaround may increase market share and lower inventories.
4. **Dedicate resources to strategic issues.** More resources (e.g., staff and budgets) can be spent on strategic supply chain initiatives, and strategic and critical suppliers and projects because less time is spent on administrative and tactical supply activities.
5. **Data accuracy.** Automation decreases errors, especially data entry errors. Benefits include lower inventories (safety stock) and stockouts, lower expediting costs, and improved customer satisfaction.
6. **Systems integration.** Integration across departments, suppliers, and customers can provide accurate information on a timely basis to assist with production and materials planning and decision making.

7. **Monetary control.** Enterprise systems provide control over how and where money is spent. (Johnson et al. 2011.)

In companies nowadays, there are various technology tools available to improve the global sourcing process efficiency and effectiveness in a supply chain. This selection covers the most used tools in supply chain management that belong to four categories: Electronic Procurement Systems, Enterprise Resource Planning (ERP) systems, Customer Relationship Management (CRM) systems and communication platforms.

1. **Electronic procurement or e-Procurement** is the procurement of goods and services over a digital internet-based network. There are many vendors on the market who provide e-Procurement solutions to businesses with various needs, for example, supplier discovery, contract management and e-ordering. According to Jaggaer (2018), with 2000 customers that are part of a 3.7 million supplier network in seventy countries, Jaggaer is the world's biggest spend managing company. Jaggaer has an extensive portfolio that it offers its clients, for example, spend analysis, supplier management, sourcing and contract lifecycle management. Jaggaer e-procurement platform also integrates with SAP, one of the most used ERP systems globally. (Jaggaer 2018.)
2. **ERP Systems** – Enterprise resource planning (ERP) is a type of software used by companies to handle everyday business needs like procurement, accounting, risk management, different kinds of supply chain operations, and project management. ERP systems enable companies to synchronize multiple business processes into one system, and makes it possible for information to flow between them. ERP systems are able to remove duplicates in data and ensures that the data is correct. (Oracle, 2021.) Systems Applications and Products in Data Processing (SAP) is the leader in the ERP market on a global scale and has more than 75000 customers in 120 countries. There are numerous other ERP systems on the market, for example Microsoft Dynamics and Oracle ERP. (Guru99, 2021.)
3. **CRM systems** – CRM systems are used to collect and organize data from customer interactions. Salesforce is the leading CRM software, but there are plenty of other service providers on the market. Big software providers such as

Microsoft and Oracle have CRM products, and in addition some other notable ones are Zoho, HubSpot and Pipedrive.

4. **Communications platforms** – As more and more companies operate globally with offices and suppliers all over the world, it is vital to have communication software for internal use and to seamlessly communicate with external business partners. Examples of communication tools are email, collaboration platforms such as Teams and Slack and video conferencing software such as Skype, Teams, Zoom, Google Meet.

It has always been a challenge to create a good infrastructure to interface members of a supply chain. According to Harrison et al. (205:115), such an infrastructure has to make it possible to simultaneously reach the following needs:

1. It needs to be user friendly to accommodate users with different degrees of IT skills.
2. It has to bring its users an extensive range of different functions, spanning from simple data transmission to access to applications on a remote computer.
3. It needs to be able to serve a wide supplier and customer base which is continuously changing (Harrison et al. 205:115).

In addition to these considerations, there are also costs related to switching or adopting new IT infrastructure or software. Organizations with different sizes have different needs and budgets.

There are many technologies available to manage a global sourcing process effectively. Selecting the right one depends on various aspects, as discussed above, and if utilized correctly, can bring many benefits to the organization. Changing to a new technology and new way of working may also bring challenges, because of this, change management should be considered to ensure changes are handled professionally.

### 4.3 Managing Change in Business Processes

The global economy is rapidly changing which promotes a never-ending need of change in companies. Business process management is a management approach which has a focus on the improvement and performance of processes. All changes do not create improvement, yet all improvement requires for something to change. This part will discuss the theories, principles, and tools that can help in change management.

#### 4.3.1 Forces That Promote Change

The world is changing rapidly, and all organizations in virtually every industry are affected. The four main forces that promote change, according to Kotter (1996) are change in technology, integration of international economies, markets in developed countries reaching maturity and the elimination of socialist and communist regimes. These forces are directly responsible of the globalization of markets and competition, as illustrated in Figure 14.



Figure 14. Economic and social forces driving the need for major change in organizations (Kotter, 2012:21).

The model shows how the globalization of markets and competition can create both hazards or opportunities to organizations and presents some methods to respond to the need to change. As Kotter (2012: 21) points out in the diagram above, there are ways how companies can capitalize on the opportunities in a changing environment, and become stronger competitors.

One of the ways is by mergers and acquisitions. For example, in a merger, two companies join forces to move forward as a single new entity. Companies merge in order to reach a larger market and customer base, lessen the amount of competition and reach economies of scale. Among other benefits of mergers, companies could also be looking for synergies, new product lines, intellectual property or human capital.



On an employee level, mergers bring uncertainty and many changes, which may be initially resisted. Resistance to change is addressed in the next part.

#### 4.3.2 Resistance to Change

As Kotter and Schlesinger (2008) point out, there is naturally resistance from people once changes are made. People and teams can have a very different reaction to change varying from passive resistance, to strongly undermining it, to being open and welcoming about it. In order to foresee what kind of resistance might be faced, managers need to be mindful of four of the most frequent reasons people are against change:

1. People do not want to lose something which brings them value
2. Incorrectly understanding the change and the effects it will bring
3. Thinking that the change will not benefit the company
4. Not tolerating change

(Kotter and Schlesinger, 2008.)

**The fear of losing something valuable** or holding on to something is explained by people's focus on their own best interest and not on those of the total organization. This can lead to political behavior, such as an individual trying to maintain one's own position and benefits in the organization. If change is a threat to personal power, it may be resisted strongly.

**Misunderstanding and lack of trust** happens when people do not understand the implication of change and perceive that they might lose more than they will gain. Such situations often occur when trust is lacking between the individual or group initiating the change and the employees who will be affected.

A reason to resist change can also lie in a **different assessment** of the benefits of change. People may see more costs than benefits resulting from change, not only for themselves but for the whole organization. Different groups in the organization, for example management and employees, do not always have the same level of information and facts, meaning that different groups could end up with different analysis and that can lead to resistance.

People might not **tolerate change**, because they are afraid they will not be able to adopt the new skills and behavior that will be needed from them. This means that people will sometimes resist change even when they realize it is good and useful for them and the organization. (Kotter and Schlesinger, 2008)

Although it is common to face human resistance in attempts to change, there are ways how to manage change successfully in an organization. The next part looks into the principles and tools for successful change.

#### 4.3.3 Principles and Tools for Successful Change

Many managers don't necessarily fully understand the different ways people react to change in companies, but also how they could influence certain people during the change. Kotter and Schlesinger (2008) offer the following principles and tools for successful change.

One of the most basic ways to defeat resistance to change is by **education and communication**. Communicating different ideas make it possible for people to realize why the change is needed and the logic behind it. The process of education can include individual discussions, team or group presentations, or memos and reports. The education and communication approach are the most effective when resistance comes from incorrect information and analysis.

**Participation and involvement** of people from design to implementation of the change process may promote the participants' understanding of the needed change and even increase their commitment to it. However, if too many people are involved and the process is not managed carefully, it can be very time consuming. When change must be made quickly, it can simply take too long to involve too many people.

**Facilitation and support** are also one way of taking on resistance to change, which means offering support and training. This is rather helpful when individuals are afraid that the skills they possess are not sufficient enough to handle changes. Often this approach turns out to be sluggish, very costly and in some cases even ineffective.

**Negotiation and agreement**, for example managers can offer higher salaries in exchange for the change people have to face. Other options can be giving different bonuses or benefits for instance bonuses to pension. Negotiation and agreements usually turn out to be quite a simple way to avoid resistance, but, like a few other processes they can be costly. Also, as soon as management shows that they are willing to negotiate to avoid resistance, this can lead to the possibility of blackmail. (Kotter and Schlesinger, 2008.)

Kotter (2012) has developed an effective change process to deliver successful change in eight stages, and it is presented in Figure 15.

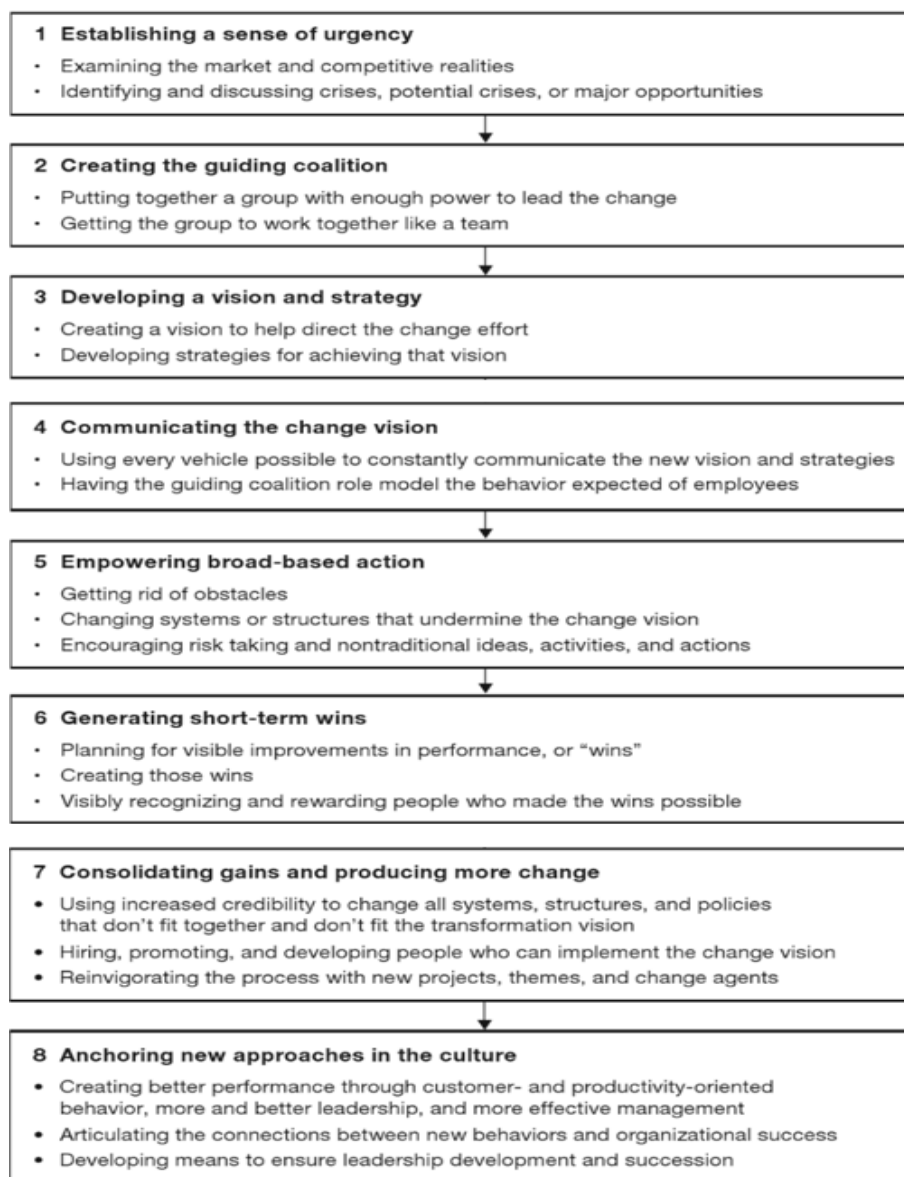


Figure 15. Eight stages of change (Kotter, 2012: 23).

Change management should always start with establishing a sense of urgency, which makes the case for why the change is needed. After that, a team should be put together who will lead the change. That team can then develop a vision and strategies, that can be communicated to the whole organization. After the whole organization is on board, action needs to be taken, in this stage, old systems that undermine the change should be removed. Generating short-term wins is important to keep the motivation for change high, which increase the credibility of the change process, which will anchor in new approaches in the company culture.

This sub-section looked into the theory of change management. Change is inevitable in life and in business, but that doesn't mean it is easy to manage. This sub-section provides the tools that are needed to effectively carry out a change project in the organization and will be important for Section 6, implementation/validation stage.

#### 4.4 Conceptual Framework of This Thesis

This section presents the conceptual framework of this study and the supporting literature that was reviewed for each section (Figure 16).

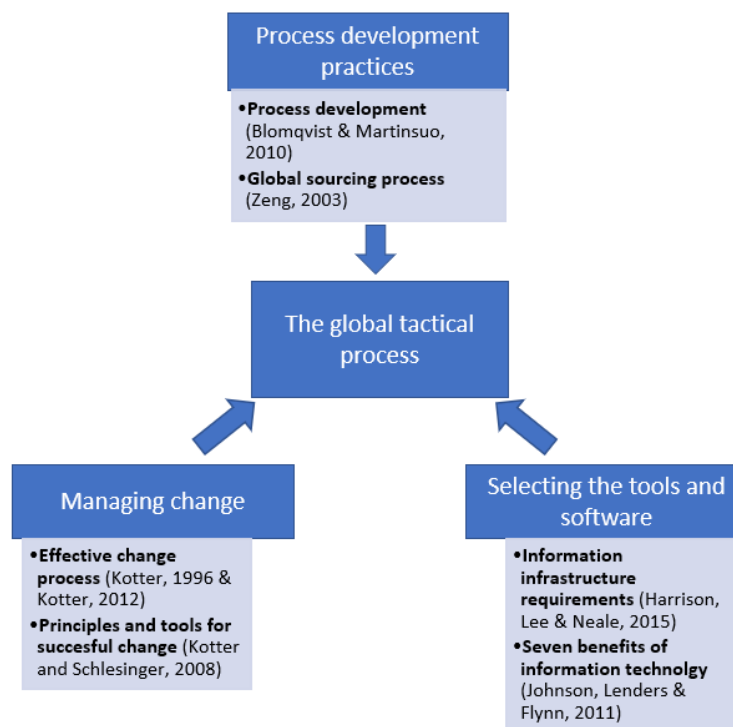


Figure 16. Conceptual framework of this study.

The particular elements were chosen, because they include the supporting best practices and existing knowledge about three main pillars, process development practices, selecting the tools and software, and managing change. Each pillar provides a strong foundation for creating a global tactical sourcing process for the case company, and the third pillar provides the foundation for the implementation stage, especially.

Its first element, process development practices, looks at the typical phases and steps in process development. It includes the process development model presented by Blomqvist & Martinsuo (2010) and the global sourcing process as described step-by-step by Zeng (2003).

The second element, selecting the tools and software, is related to the practical decisions related to selecting the tools and software to improve process efficiency. It includes the requirements that an information infrastructure needs to fulfill, according to Harrison et al. (2015). In addition, it relies on the seven benefits that information technology brings to an organization, as described by Johnson et al. (2011).

The third element, managing change, looks at the importance of managing change in the organization. It includes the eight stages of effective change process, according to Kotter (1996 & 2012) and the principles and tools for successful change, according to Kotter and Schlesinger (2008).

In order to reach the goal of creating a new process, these three topics were investigated and the findings from each element supported the proposal building stage. This conceptual framework provides a basis for building a new proposal for the global tactical sourcing team at Metso Outotec in the next section.

## 5 Building the Proposal for the New Global Tactical Sourcing Process

This section merges the results of the current state analysis and the conceptual framework towards the building of the improvement proposal for Metso Outotec global tactical sourcing department, based both on co-creation with the company and using Data 2.

### 5.1 Overview of the Proposal Building Stage

As described earlier, after the merger of Metso and Outotec, the legacy companies continued to use two different processes for tactical sourcing. In section 3, CSA, the two processes were compared and the strengths and weaknesses of each process was identified. Those findings serve as the basis for creating a unified global tactical sourcing process.

The result from the CSA revealed that Metso's legacy's main strength is the procurement tool, but weakness is the information and communication flow. Outotec's legacy has the opposite strengths and weaknesses – the procurement tool is not optimal, but the information and communication flow are better. Based on the findings from the CSA, the focus areas for improvement were selected and they are: *selecting the communication channels and tools* which will be used throughout the tactical sourcing organization. The second area of focus is *creating a unified working process for the tactical sourcing team* which will be implemented for both ex-legacy companies with the aim of working as one organization. The third area will focus on *managing change* to ensure that the change process is managed efficiently.

The proposal for a new unified process also relies on the literature review and reviewing best practices in the global sourcing field that are described in detail in Section 4. The case studies in Section 4.2.2 serve as examples on how complex global sourcing processes are, and thus, it is important to focus on process development, to design and manage the process efficiently.

In order to keep the proposal building focused, it relies on the conceptual framework that was defined after the literature review in Section 4.4, first - process development, second – selecting the tools and software, and third – managing change.

In addition, the Data 2 data collection was conducted. Data 2 was gathered in workshops and interviews with the stakeholders. Data gathered from the stakeholders was important for the proposal building stage, as each participant shared ideas, suggestions and expectations from their perspective from both the two legacy companies, and it was valuable information for creating a unified working process.

## 5.2 Inputs into the Proposal Building and Stakeholders Suggestions (Data 2)

The main inputs for the proposal building included Data 1, findings from CSA earlier, suggestions from literature and best practice, as well as Data 2, which was gathered from the stakeholders in this round. The proposal was built and inspired by these inputs.

Data Collection 2 concentrated on identifying suggestions from the key stakeholders. In Data 1, the strengths and weaknesses of the current process were identified. In Data 2, stakeholders were interviewed to get suggestions and ideas about improving the process and eliminating weaknesses. Data Collection 2 was also guided by suggestions from literature and best practice on improving and developing a global process.

Key stakeholders' suggestions and the conceptual framework for creating a unified global tactical sourcing process and building a proposal for the case company are summarized in Table 5, highlighting the key focus areas from CSA (Data 1), inputs from literature (CF) and suggestions from stakeholders for the proposal (Data 2).

Table 5. Key stakeholder suggestions (findings of Data 2) for Proposal building in relation to findings from the CSA (Data 1) and the Conceptual framework.

	<b>CSA Key Focus Areas</b>	<b>Literature Review / Conceptual framework</b>	<b>Data 2 Suggestions</b>	<b>Description of suggestion</b>
1	Different processes for Metso Legacy and Outotec Legacy	Process development model	-Improved GQS role -Outotec's process had many strengths except for the tool, Microsoft Dynamics	-GQS to start sending all necessary information in cases -The new proposal is built by improving Outotec's process

2	Too many tools used	Information infrastructure requirements - satisfies the needs of the organization	<ul style="list-style-type: none"> <li>-Salesforce suggested by North America's GQS manager and EMEA's Sourcing Director</li> <li>-It made sense to go with Salesforce since the whole supply chain was using it, except for tactical sourcing</li> </ul>	<ul style="list-style-type: none"> <li>-Salesforce is already widely used in the organization except for the tactical sourcing department</li> <li>-Salesforce meets all the criteria for selecting appropriate IT tools according to the conceptual framework</li> </ul>
3	Need to create a unified process for the whole tactical sourcing organization globally	<ul style="list-style-type: none"> <li>-Managing Change, dealing with resistance to change.</li> <li>-Change leadership group</li> </ul>	<ul style="list-style-type: none"> <li>-Global process vs many local processes</li> <li>-Some people were used to their way of doing things and don't want to make changes</li> </ul>	<ul style="list-style-type: none"> <li>-It makes sense to implement the new process globally, and not just locally</li> <li>-Big changes require too much effort, not everyone is welcoming change</li> <li>-Involve a group of people from different areas to push the process change forward and make people feel like they are involved</li> </ul>

As seen from Table 4, the proposal for a unified global tactical sourcing process was developed in co-creation with the stakeholders from both Metso legacy and Outotec legacy side and by using the conceptual framework of the focus elements: *process development practices, selecting the tools and software, and managing change*.

In the workshop held in Tampere from 16<sup>th</sup> of November 2021 to 18 of November 2021, the thesis researcher presented this process development model as seen in Figure 10. The team decided that, it would be a good tool as a backbone for this project. The team mapped own process development plan following this model. For example, the objective was formulated as to have a unified working process globally. The scope of the development process was that it should involve tactical sourcing and GQS. Also, part of the scope was to focus on the roles and responsibilities and choose one tool which would be used across the organization. Process analysis was covered in part 3, the current state analysis of this thesis and the results were presented. The process modeling section was co-developed in the workshop and it is reported in part 5 of this thesis below. The process piloting and launch will happen earliest in June 2022 as agreed with the taskforce team. After the launch, the new process will need to be monitored against the set objectives and see that the team is following through with the proposed changes.



Based on the feedback received in the interviews in Data 2 and what was discussed in workshop, the decisions were also made to revise some of the responsibilities of Tactical sourcing and GQS. There was a general agreement that the process would become much smoother when GQS takes the role of providing technical information and acting as a one point of contact to the tactical sourcing team. The detailed changes are described in Section 5.3 below and are also indicated in the new proposal.

Second, as for *the tools and systems*, the stakeholders discussed the strengths and weaknesses of the tools that are currently used. In the discussions, it became clear that both systems had critical flaws and could not be considered for a new global process. The GQS manager of North America first suggested to look into Salesforce, which would align with the other processes at Metso Outotec, since Salesforce is widely used in other departments. Based on some research about the tool and discussions about its functionality, it was accepted as the top selection for the new global process. Additionally, the following thoughts and considerations were taken into account. First, creating an adequate information infrastructure to interface members of a supply chain can be challenging. Based on the conceptual framework, the criteria for selecting the tools and software need to be considered. It was agreed that the criteria for a new technology infrastructure must be able to satisfy simultaneously the following needs:

1. It must be able to accommodate members with varying degrees of IT sophistication
2. It must provide a wide range of functionality ranging from simple data transmission to access to applications on a remote computer
3. It must be able to accommodate a constantly changing pool of suppliers and customers at varying stages of relationship. (It follows the logic suggested by: Harrison et al. 2005:115.)

In addition to these considerations, there are also *costs* related to switching or adopting new IT infrastructure or software. It was discussed that, as Salesforce is already used in other departments and the company has made investments into the software, it needs to be expanded to the Sourcing team, rather than starting a new partnership with a new service provider. A track record already exists in cooperation with Salesforce, and there

is know-how inhouse, which could be useful when training employees in the Sourcing team once it is implemented for the new process.

Third, as for *managing the change*, the stakeholders discussed and suggested a variety of possible measures. Among them, the following thoughts and considerations were taken into account. First, effective change management plays a critical role in either the success or failure of implementing a new process. According to both business practice and research, it is common to face human resistance to change. The key measure here is to be prepared and have tools for managing the organizational change. In the discussions with the managers, they anticipated that there would be resistance to change because both ex-Metso and ex-Outotec side are accustomed to their own way of working. The managers agreed that they had a significant responsibility to lead the team through the changes and help the team member understand the need for change and also support their professional development. Next Section 5.3, the proposal is pulled together as the initial proposal draft.

### 5.3 The Global Process for the Sourcing Team

Based on the findings in CSA, the literature review and Data 2 input, the initial proposal for a global process for the sourcing team is illustrated in Figure 17 below.

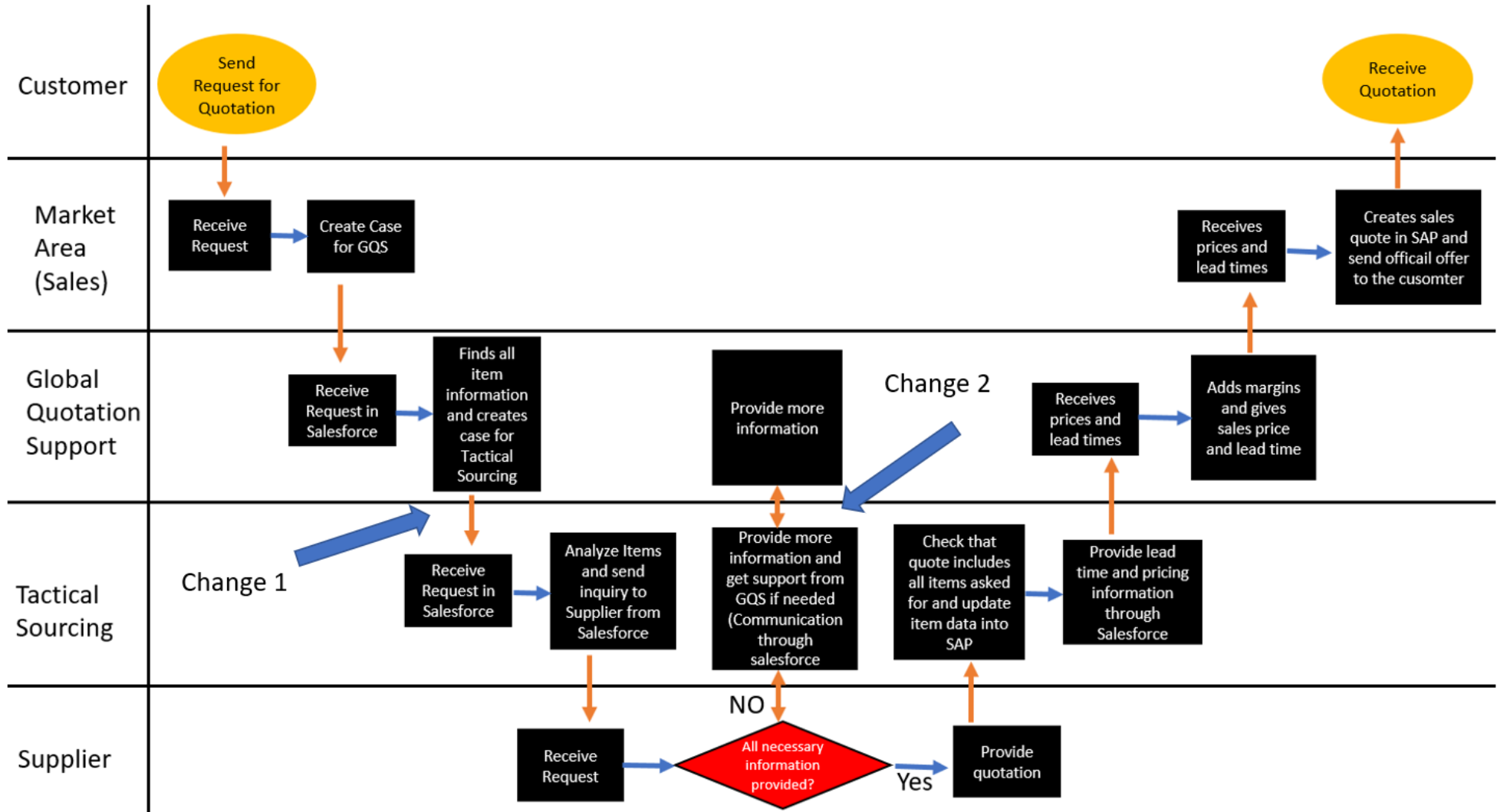


Figure 17. The proposal for the global sourcing team.

The new proposed process follows the same structure as the ex-Outotec process but uses Salesforce as the platform. Thus, the new *unified working process for the Tactical sourcing team* was proposed to include the following steps:

Step 1: The market area (sales team) receives a request for quotation from the customer. Every market area has their own dedicated sales team and the customer reaches out to the market area's local email address which automatically opens up a new case into Salesforce. The new case then pops up to the market area's general case queue where members are able to assign the cases to themselves or team members. The sales team then creates a sub-case to the GQS team providing the information received from the customer, this is also done in Salesforce. After the sub-case has been created, it is routed to the appropriate GQS team.

Step 2: The GQS team finds the newly created case from their own queue and assign the new case to themselves or team members. The requested parts are analyzed by a GQS member, they find all possible information from internal sources like drawings, and technical data specifications. GQS then creates a sub case in Salesforce for the tactical sourcing team. Once the case has been created, all information is added to case and it is then routed to the tactical sourcing teams' general queue.

Step 3: The tactical sourcing team find the new case from their own queue and assign the case to themselves or a team member. This case usually consists of different SAP items that need pricing and lead time information in order for the sales team to provide a quotation to the customer. The tactical sourcing team analyzes the items and information provided to them by the QGS team, and find the best possible suppliers to send request for quotations to. After this, tactical sourcing creates final sub cases for the different suppliers, for example, if the request is sent to three different suppliers, three different sub-cases are created for each supplier.

Step 4: The sub-cases for each supplier are created and supplier information is added to each case making it easier for the team to keep track of everything and to avoid confusion. From this case, the tactical sourcing team then sends an email from Salesforce to the supplier providing all the previous information received from GQS.

Step 5, Option 1: The supplier gets back to the tactical sourcing team asking for more information, usually meaning that the information provided to the supplier lacked

important details not making possible to provide an offer. If the information required by the supplier is simple, tactical sourcing usually will be able to provide this information themselves, but in the majority of cases these questions are extremely technical. If the tactical sourcing team is not able to answer on their own, they send an internal message through Salesforce from their case to GQS's case. Once the message is sent, this creates a notification for the GQS team who then review the message and provide the supplier requested information back to tactical sourcing. This again creates a notification in Salesforce for the tactical sourcing team, and then this information is provided to the supplier. If the provided information is still not sufficient enough for the supplier to prepare a quotation the above-mentioned process is repeated.

Step 5, Option 2: Tactical sourcing receives quotes from the suppliers. The SAP items are then updated with prices and lead time information and the supplier case in Salesforce is resolved. The quotes are then sent to through Salesforce to GQS. This creates a notification for GQS informing that the quotes have been received.

Step 6: The GQS team checks the pricing and lead time information provided by tactical sourcing and then add the appropriate sales margins. An internal message is sent by the GQS team from their Salesforce case to the market area informing the sales price and lead time, which again creates a notification for the sales team.

Step 7: The sales team receive the information provided by GQS and create a sales quote in SAP. A pdf quote is then printed and sent to the customer.

The biggest changes when comparing to the previous Metso Process are marked in Figure 17 in blue arrows.

Change 1: When GQS creates a case for tactical sourcing, complete item information will be provided, including drawings, datasheets and item descriptions. In the old process, item information was lacking and tactical sourcing was in charge of finding all necessary technical information. This was a huge bottleneck which caused delays.

Change 2: When technical queries are raised by the supplier, GQS acts as a one point of contact for support. In the old process, GQS did not act as a one point of contact, and it was up to tactical sourcing to find the correct team and people to approach for different kinds of technical queries.

The new Global process also has revised the roles and responsibilities:

#### Global Quotation Support (GQS)

The roles and responsibilities of Global Quotation Support is to find out the technical information that the customer might not have, such as data sheets and technical drawings. They help open any possible item codes into SAP and pass the customers' request to the Tactical Sourcing team in a clear and simple format which includes the requested product, quantity and necessary data sheets and technical drawings in case of a special product request. The changes in the responsibility area of GQS is that they are now in charge of passing complete item information to tactical sourcing. In the previous model they were not providing everything needed and tactical sourcing was responsible for gathering missing data. In the new role this team also acts as technical support for Tactical Sourcing, in case there are discrepancies or more details needed from a supplier. For ex-Outotec GQS members, there is no change in the responsibility area, since they already had the role of providing complete data and acting as technical support.

#### Tactical Sourcing

Tactical Sourcing receives the request from Global Quotation Support, and they pass it on to the appropriate suppliers. Tactical sourcing oversees getting product pricing and lead time information from suppliers. In most cases, the team asks for offers from at least 3 different suppliers to secure the best price and lead time offer. Terms and conditions negotiations with suppliers is also a big part of this team's daily work. Salesforce is now the main communication and software tool for tactical sourcing. Jaggaer and Microsoft Dynamics are no longer used. The change for tactical sourcing is that they are no longer required to find relevant item information and is now done by GQS. For ex-Outotec tactical sourcing members, there is no change in the responsibility area and will continue receiving complete item information from GQS like they have in the past ex-Outotec model.

#### 5.4 Selection of Tools for the Global Sourcing Team

For the new process, Salesforce was selected as the new main tool, because it meets the criteria described above:

1. Salesforce is simple enough to accommodate team members with varying degrees of IT sophistication, especially since most have been using other similar software before, either Jaggaer or Microsoft Dynamics.
2. Salesforce provides a wide range of functionality for supplier relationship management and increased visibility and communication between internal stakeholders.
3. Salesforce is an ideal tool for accommodating a constantly changing pool of suppliers and customers at varying stages of relationship.

In addition, Salesforce is already widely used in other departments in the organization, so the cost of implementing will be low.

SAP will still be used for updating item information. Order management and purchasing will still be conducted via SAP.

Microsoft Dynamics will no longer be used, and also Jaggaer will no longer be used. Although Jaggaer has many extremely useful features and can be considered an optimal tool for procurement and sourcing, it relies too heavily on suppliers. In order for it to be possible to send out quotes and inquiries to suppliers through Jaggaer, this requires the supplier to create an account in Jaggaer.

The communication channel selected was Salesforce. Salesforce is an American based software company, it provides CRM service and tools for case, task and issue management. One of the benefits of Salesforce, is that it provides internal and external communication services. This means the organization is able to consolidate communications related to cases into one system, instead of using multiple channels, such as Teams, email and other software.

Salesforce gives an email notification when a colleague or supplier has sent new messages, but the communication itself is stored in Salesforce, so it is easy to always find the relevant information. The supplier does not need to be using Salesforce, to get all the benefits of Salesforce. When a supplier replies to an email that the tactical sourcing team has sent out, the reply comes to Salesforce, not only email.

## 5.5 Change Management Commitment for the Team

This change management commitment does not elaborate the details, rather it looks at the bigger picture and key principles to support the change. These commitments include:

1. **Educate the team about the change and have open communication related to the change project.** Managers should communicate the change ideas to employees to help them see the need and logic of the change. Communication and open discussions should happen in team meetings, one-on-one discussions and presentations to groups and reports that are shared internally. This allows the managers to identify early on if there is resistance based on employees having inaccurate or too little information, and the resistance can be turned around with an education and communication program.
2. **Team participation and involvement in the change project.** Putting together a team of employees from various departments can be positive to gain support for the change project and that team can become powerful advocates in their sub-groups to lead the change even further. There is no single answer to how big or small the change management team should be. The managers need to evaluate this based on their own best judgement, so that the team does not grow too big, which can slow down the change process, or too small, which may lead to employees feeling left out and not supportive of the change. The key of this change group is to work together as a team and advocate for the change process within the organization.
3. **Facilitation and support to the team members.** Some employees can be resistant to change, because they fear they lack the skills to deal with the change. Managers need to identify what skills and training employees could need in the future and support the development of those skills. This also means hiring,



promoting and developing people who can implement the change vision, which can actually motivate the more ambitious employees, who see the change as a career development opportunity.

4. **Come to agreement with the team about the change process. Negotiate when necessary.** After taking the steps described previously, managers can usually find out if the team is willing to come to an agreement about the change. If major resistance prevails, managers must be ready to negotiate to reach an agreement.

Following these commitments is a good foundation for sourcing and GQS managers to minimize and resolve possible resistance to change and have tools to tackle the challenges. For a more detailed action plan during the validation/implementation stage, sourcing and GQS managers would need to refer to the eight-stage change management plan by Kotter (2009) that is detailed in Section 4.3.3 Figure 15, and creating such a detailed plan will require a separate effort.

## 6 Validation of the Proposal

The validation of the proposal is presented in this section of the thesis. This section discusses how the proposal was perceived and what kind of feedback was received from the key stakeholders. At the end of this section, the Final proposal is presented.

### 6.1 Overview of the Validation Stage

This section validates the proposal developed in Section 5. In this study, validation refers to the workshop conducted with the stakeholders and their expert opinion is used for validating the initial proposal and making adjustments for the final proposal.

The improvement proposal was developed with internal stakeholders across different departments, such as Tactical Sourcing Director and GQS managers and Key User of Salesforce. After the development workshop, the improvement proposal was presented to the Tactical Sourcing Director who is responsible for the global tactical sourcing process.

### 6.2 Developments to the Proposal (based on Data Collection 3)

Data Collection 3 concentrates on identifying improvements and developments proposed by the validation key stakeholders and experts to the Initial proposal in Section 5. Data Collection 3 focuses on the Proposal contents and seeks to finalize it based on the company feedback. Table 6 below shows the inputs from Validation.

Table 6. Expert suggestions (Data 3) for the Initial proposal.

	<b>CSA Key Focus Areas</b>	<b>Literature Review / Conceptual framework</b>	<b>Data 2 Suggestions</b>	<b>Description of suggestion</b>	<b>Development Data 3</b>
1	Different processes for Metso Legacy and Outotec Legacy	Process development model	-Improve GQS role -Outotec's process has many strengths except for the tool, Microsoft Dynamics	-GQS to start sending all necessary information in cases -The new proposal is built by improving Outotec's process	The stakeholders agreed that this one plan will be implemented globally
2	Too many tools used	Information infrastructure requirements -satisfies the needs of the organization	-Salesforce suggested by North America's GQS manager and EMEA's Sourcing Director -It makes sense to go with Salesforce since the whole supply chain is using it, except for tactical sourcing	-Salesforce is already widely used in the organization except for the tactical sourcing department -Salesforce meets all the criteria for selecting appropriate IT tools according to the conceptual framework	In the discussions it became evident that because all supplier information is in Jaggaer, it will not be possible to stop using it.
3	Need to create a unified process for the whole tactical sourcing organization globally	-Managing Change, dealing with resistance to change. -Change leadership group	-Global process vs many local processes -Some people are used to their way of doing things and don't want to make changes	-It makes sense to implement the new process globally, and not just locally -Big changes require too much effort, not everyone is welcoming change -Involve a group of people from different areas to push the process change forward and make people feel like they are involved	Stakeholders agreed

As seen from Table 6, there was only one change to the initial proposal, which is adding Jaggaer as a tool for the tactical sourcing team. As the Tactical Sourcing Director pointed out:

*“We already have a massive amount of supplier data in Jaggaer, should be decide not to use it anymore, we would have to migrate all the data to Salesforce.” (Stakeholder 1)*

The colleagues from both ex-Metso and Outotec stakeholders gave their feedback to the final proposal.

*“Tactical sourcing moving to salesforce will greatly ease the internal communication and will eliminate other channels like emails.” (Ex Metso Stakeholder 1)*

*“The only downside to the new process is that a new tool will be added to the process for the tactical sourcing team, but it does make sense to have the whole quoting process in salesforce.” (Ex Metso Stakeholder 2)*

*“I’m looking forward to using Jagger for sending inquiries to suppliers because it will be much faster and convenient than what it is currently in Dynamics.” (Ex Outotec Stakeholder 1)*

*“This change will greatly add visibility to the process and collaboration between the tactical sourcing and GQS teams.” (Ex Outotec Stakeholder 2)*

*“This will decrease the amount of work needed to be done by GQS since the Jaggaer ticket no longer needs to be created by GQS.” (Ex Metso Stakeholder 3)*

Currently Metso is using Jaggaer and Outotec is using Dynamics. It was agreed with the stakeholders that in the final proposal, the entire global tactical sourcing team will use Jaggaer to communicate with suppliers. Salesforces is used for internal communication with GQS and other stakeholders and it will add visibility between different internal teams.

Overall, the key stakeholders seemed satisfied with the outcome and had supportive and positive feedback overall. Based on the feedback from the validation workshop, the Final proposal is presented in the next section.

### 6.3 Final Proposal

As a result of the analysis and feedback from the stakeholders, the improvement proposal is finalized in the Final proposal in Figure 18.

Step 1: The market area (sales team) receives a request for quotation from the customer. Every market area has their own dedicated sales team and the customer reaches out to the market area's local email address which automatically opens up a new case into Salesforce. The new case then pops up to the market area's general case queue where members are able to assign the cases to themselves or team members. The sales team then creates a sub-case to the GQS team providing the information received from the customer, this is also done in Salesforce. After the sub-case has been created, it is routed to the appropriate GQS team.

Step 2: The GQS team finds the newly created case from their own queue and assign the new case to themselves or team members. The requested parts are analyzed by a GQS member, they find all possible information from internal sources like drawings, and technical data specifications. GQS then creates a sub case in Salesforce for the tactical sourcing team. Once the case has been created, all information is added to case and it is then routed to the tactical sourcing teams' general queue.

Step 3: The tactical sourcing team find the new case from their own queue and assign the case to themselves or a team member. This case usually consists of different SAP items that need pricing and lead time information in order for the sales team to provide a quotation to the customer. The tactical sourcing team analyzes the items and information provided to them by the QGS team, and find the best possible suppliers to send request for quotations to. After this, tactical sourcing creates a new case in Jaggaer from where the request for quotations is sent.

Step 4: Option 1: The supplier gets back to the tactical sourcing team asking for more information, usually meaning that the information provided to the supplier lacked

important details not making possible to provide an offer. If the information required by the supplier is simple, tactical sourcing usually will be able to provide this information themselves, but in the majority of cases these questions are technical. If the tactical sourcing team is not able to answer on their own, they send an internal message through Salesforce from their case to GQS's case. Once the message is sent, this creates a notification for the GQS team who then review the message and provide the supplier requested information back to tactical sourcing. This again creates a notification in Salesforce for the tactical sourcing team, and then this information is provided to the supplier. If the provided information is still not sufficient enough for the supplier to prepare a quotation the above-mentioned process is repeated.

Step 4, Option 2: Tactical sourcing receives quotes from the suppliers. The SAP items are then updated with prices and lead time information and the Jaggaer case is closed. The quotes are then sent to through Salesforce to GQS. This creates a notification for GQS informing that the quotes have been received.

Step 6: The GQS team checks the pricing and lead time information provided by tactical sourcing and then add the appropriate sales margins. An internal message is sent by the GQS team from their Salesforce case to the market area informing the sales price and lead time, which again creates a notification for the sales team.

Step 7: The sales team receive the information provided by GQS and create a sales quote in SAP. A pdf quote is then printed and sent to the customer.

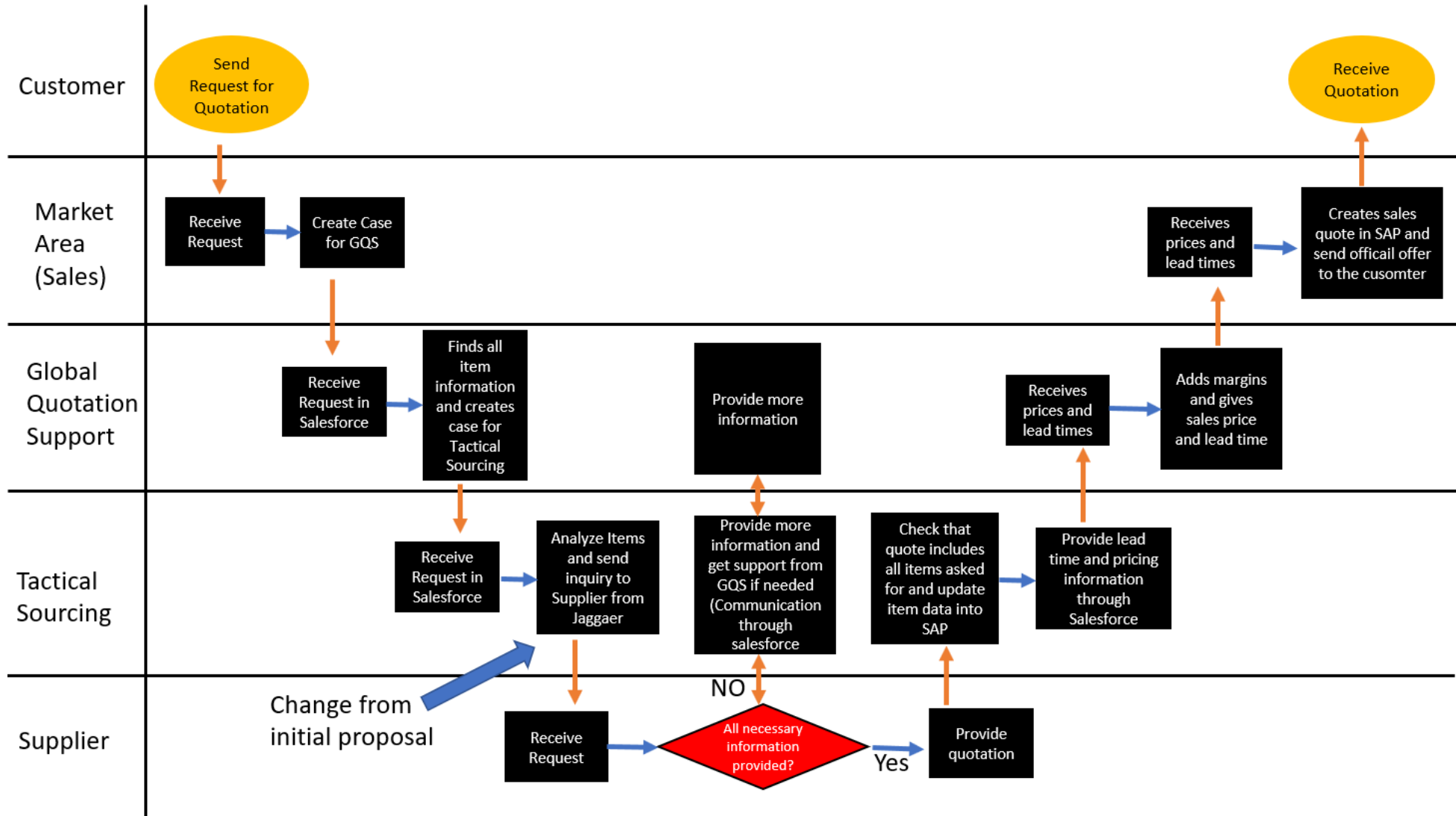


Figure 18. Final Proposal

As seen in Figure 18, the improvement is related Jaggaer, the procurement tool that will be used across the global tactical sourcing organization. The rationale for using Jaggaer is the massive amount of supplier data that already exists in the system, and would be expensive to migrate to Salesforce. Salesforce remains as the tool that is used to create tickets between GQS and will add visibility to the team, who will have a better understanding of outstanding cases that are maintained in Salesforce.

Summing up, the thesis researcher and the key stakeholders are in a common agreement that the tactical sourcing team needs to raise professionalism in the organization by working in a unified way. The proposed new global tactical sourcing process should be implemented as soon as possible.

The Management of the Tactical Sourcing department has agreed that the implementation phase will begin in June 2022. Maintaining the momentum from this process development project and driving change within the organization will require strength and focus from the leaders, but is possible to achieve.



## 7 Conclusion

This section of the thesis summarizes and evaluates the study from the objective definition to the outcome.

### 7.1 Executive Summary

The objective of this thesis was to create a global process for Metso Outotec Tactical Sourcing team after the merge. Metso Outotec is a Finnish publicly traded company that was established in 2020 when Outotec and Metso Mineral merged. The company is a frontrunner in sustainable technologies, end-to-end solutions and services for the minerals processing, aggregates, metals refining and recycling industries globally. The business challenge of the thesis was to harmonize working processes and methods of the two legacy companies.

The study was conducted using applied action research approach and used qualitative research methods, such as interviews, discussions, observations and workshops. The data was collected in three phases, the current state analysis, the review of existing knowledge and best practice, the proposal building and validation of the proposal. The proposal was built by merging the results of the current state analysis and the conceptual framework.

The current state analysis was carried out to compare the existing processes of the two legacy companies and focused on the challenges, roles and responsibilities. The current state analysis included interviews with the stakeholders to determine the strengths and weaknesses of the current processes and to then define focus areas for improvement. The results of the current state analysis brought up challenges in which the two legacy companies were still working in their own way despite having merged into one company over a year ago. The legacy companies were also using two different tools for supplier management and communication internally and externally. The current state analysis revealed that the two companies must start working together post-merger to integrate and become one company and reduce complexities.

After the current state analysis, the conceptual framework was created based on the existing knowledge and best practice around the topics of process development and

improvement, best practice of building a global process, tactical sourcing tools and software, and change management. Best practice and literature were explored to find suitable guidance for the proposal building for an improved global tactical sourcing process for the case company.

The proposal was co-created with the key stakeholders, who provided feedback and suggestions to the initial proposal. Initially both legacy companies had their own processes and tools. Ex-Outotec was using Microsoft Dynamics and Ex-Metso was using Jaggaer. The roles and responsibilities from ex-Metso were not clearly defined, for example, GQS was not necessarily providing all needed information to tactical sourcing in order for them to approach suppliers for quotes. In the new process, the roles and responsibilities are clearly defined and one of the biggest changes will be that GQS will provide all information as well as act as technical support to the tactical sourcing teams. The biggest impact for tactical sourcing specialists will be that the focus will purely be on getting quotes from appropriate suppliers and building the supplier base instead of using extra time seeking for the missing data. In the new process Jaggaer was selected as the tool for external communication with suppliers. Ex-Legacy Metso was already using Jagger and the supplier base was also using this tool, so there was already positive experience with using Jaggaer and that was the rationale to continue using it on a global level. The second tool chosen for the process was Salesforce. This tool will be used for internal communication and will increase the visibility between tactical sourcing and GQS. Salesforce will be a completely new tool for tactical sourcing even though it is widely used across the organization within every team.

The final proposal was validated and approved by the key stakeholders by the end of this study and focused on developing a new and improved process map, selecting the right tools and software and a change management plan for the team.

The outcome of this thesis is the new global unified tactical sourcing process for the case company. The process has been considered by the key stakeholders to be ready to implement as such at the earliest in June 2022. This new global unified working process is needed for the case company, especially after the recent merge, to provide a clear single process across the tactical sourcing organization globally. Having a single unified process globally will bring mutual understanding between teams and managers will be able to oversee and manage their teams better, since there are less complexities and variations between countries and teams. This will also mean that it will be much easier

to set targets and measure KPI's, and the results can be used and compared globally giving top management better data about the performance of each department.

## 7.2 Thesis Evaluation

The objective of the thesis was to create a global process for Metso Outotec Tactical Sourcing team after the merge. The outcome of the thesis was a process map, selected tools and software to manage the new process and a change management commitment for the team. This means that the outcome of the thesis met the objective of the study.

Thesis evaluation includes the main criteria for research quality in qualitative research, which are *credibility*, *dependability*, *transferability*. To ensure the *credibility* of the thesis, several data collection rounds (e.g., triangulation) were conducted from several data sources. *Dependability* of the thesis was strengthened by validating the proposed improvements with the key stakeholders, and *transferability* by focusing on the clarity of the research design analysis. As an additional criterion, *authenticity* was selected to relate to fairness in having both legacy company members be involved in the study.

The study provides the case company a new process that is based on best practice of global sourcing processes and customized especially for the case company's needs. The data collected and information gathered for this study were from reliable sources and stakeholders, which makes this study credible and reliable.

## 7.3 Closing Words

The final section is dedicated to my own reflection on the thesis and the thesis writing process. The problem in this business case was very close to my daily work. I started my career at Outotec in 2017, and was part of various teams such as strategic procurement and later tactical sourcing. After the merge in 2020, it became evident, that the tactical sourcing department would go through a massive change as the two legacy companies had to find ways to work in sync. The need for a new unified global tactical sourcing process was soon identified, and I was glad to take on the challenge to help the company to find a practical solution for their need.

The most rewarding part of the thesis writing was that I got to meet, interview and have meaningful discussions with many colleagues from the organization across various departments. There is so much knowledge and know-how within the organization and I feel privileged to be part of this great team. I hope to have contributed to the organization and the outcome of this thesis will have a long-lasting effect on the daily effectiveness of the global tactical sourcing departments.

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