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SAMMANFATTNING

Titel: The Challenge of Component Purchasing Excellence – a Case Study at Nahoj Nim

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Problem definition: Nahoj Nim har länge varit väldigt framgångsrikt på att utveckla, producera och sälja förpackningslösningar för livsmedelsindustrin. Idag har dock konkurrensen blivit hårdare och Nahoj Nim står inför nya utmaningar när konkurrenterna stjäl marknadsandelar. Inköpsorganisationen Component & Technical Consultant Purchasing (hädanefter benämnt C&TCP), som är involverad i att välja, kontraktera och sköta leverantörsbasen för komponenter och tekniska konsulter, har hittills sällan varit involverad i produktutvecklings- och produktionsprocesserna. I produkt- utvecklingen har konstruktörerna historiskt haft fria händer att välja komponenter och leverantörer enbart på basis av teknisk standard. Då mycket lite fokus har legat på de kommersiella aspekterna, har komplexiteten och antalet komponenter ökat år för år samtidigt som leverantörsbasen växt sig mycket stor.

När Nahoj Nim nu står inför nya utmaningar, måste även C&TCP se över vad som kan göras för att på bästa sätt stödja företaget med en effektivt och strukturerat inköp av komponenter och tekniska konsulter. Det behövs då genomföras en del förändringar.

- Syfte: Syftet med detta examensarbete är att beskriva och analysera inköpsfunktionen C&TCP och att föreslå organisationella förändringar för att uppnå en förstklassig inköpsorganisation.
- Metod: Undersökningen har genomförts som en deskriptiv fallstudie för att kunna göra en djup analys av den nuvarande situationen. Den kvalitativa insamlingen av empirisk data har huvudsakligen gjorts genom flertalet intervjuer, internt på C&TCP samt externt genom utvalda informanter på Nahoj Nim i Lund (Sverige) och Modena (Italien). De sekundära data har samlats från skrivna dokument: litteratur, artiklar och e-källor.
- Slutsatser: Inköpet av komponenter och tekniska konsulter på C&TCP är idag endast 25 procent så effektivt som världens mest framstående inköpsorganisationer. Avdelningen är organisationellt placerad I motsats till dess roll som en global inköpsfunktion för Nahoj Nim.
- Genom att man inte är involverad före eller efter kontrakteringen i värdekedjan, saknar C&TCP inflytande och information som krävs för att kunna sköta leverantörsbasen effektivt. För att kunna uppnå en förstklassig inköpsorganisation krävs både operationella så väl som strategiska förändringar. Dessutom skulle Nahoj Nim tjäna på att C&TCP är mer aktivt involverad i produktutveckling genom att t.ex. sänka totalkostnaden för hela livscykeln, förbättra kvalitet och förse de interna kunderna med en leverantörsbas av hög kvalitet.
- Nyckelord: Komponentinköp, produktutveckling, inköp, organisationella förändringar.

ABSTRACT

Title: The Challenge of Component Purchasing Excellence – a Case Study

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Supervisors: Lotta Intiso, *Manager Component & Technical Consultants Purchasing*, Nahoj Nim Alfa AB
Ingela Elofsson, *Department of Production Management*, Lund Institute of Technology

Problem definition: Nahoj Nim has for a long time been very successful at developing, producing and selling packaging solutions for the food industry. Today, however, Nahoj Nim faces a new challenge as competitors are gaining market shares. The purchasing unit Component & Technical Consultant Purchasing (hereafter referred to as C&TCP), involved in sourcing, contracting and managing the supplier base for components and technical consultants, have until now had no or little involvement in the product development and production processes. In product development the designers have historically had the liberty to choose components and parts as well as suppliers simply by technology standards. No or little attention has been directed towards the commercial aspects, which has led to a proliferation of different components used and the supplier base has grown rapidly.

As Nahoj Nim faces new challenges, so does C&TCP. In order to be able to support the business with an efficient and structured purchasing of components and technical consultants C&TCP needs to make some changes.

- Purpose: The purpose of this thesis is to describe and analyze the purchasing function Component & Technical Consultant Purchasing and to suggest organizational changes in order to achieve purchasing excellence.
- Methodology: The research has been conducted as a descriptive case-study in order to do an in-depth analysis of the present situation. The qualitative collection of the primary empirical data has mainly been made by numerous interviews, internally at C&TCP as well as externally with key informants at Nahoj Nim in Lund, Sweden, and Modena, Italy. The secondary data has been gathered from written sources; literature, articles and e-sources.
- Conclusions: The purchasing of components and technical consultants at C&TCP is today merely 25 percent as efficient as the most prominent purchasing organizations world-wide. The department is organizationally placed in contradiction to the responsibility of being a global purchasing function for Nahoj Nim.
- By not being active before or beyond the contracting part of the supply chain, C&TCP lacks influence and information needed to manage the supplier base efficiently. In order to excel, operational as well as strategic changes are required. In addition, Nahoj Nim would profit from C&TCP being more actively involved in product development by possibly lowering the total life-cycle-costs, improving quality and provide the internal customers with a high quality supplier base.
- Key words: Component purchasing, product development, purchasing excellence, organizational change.

PREFACE

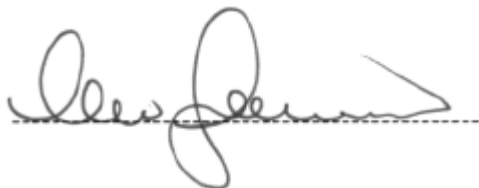
This master thesis has been conducted during the fall and winter of 2005/2006 at Nahoj Nim in Lund, Sweden, and Modena, Italy. The aim of the thesis has been to describe and analyze the purchasing function Component & Technical Consultants in order to lay a foundation for how to further develop the purchasing of components and technical consultants. Still, several aspects need to be enhanced in order to achieve purchasing excellence in this area. This thesis will hopefully serve as a base for management in order to understand the current situation as well as to provide ideas of how to proceed.

Since the start of the study, Nahoj Nim has gone through a couple of changes. Organizationally, the Company Presentation of this thesis reflects Nahoj Nim until the 3rd of April 2006. Today, the organizational build-up of the company has changed and the business areas presented in this thesis no longer exist. However, as it seems today, the Supplier Management department will not change nor be placed organizationally, which means that the situation for C&TCP has not changed substantially.

Before finishing the preface and moving on to the actual thesis, there are a couple of people I would like to thank. First, and foremost, a big Thank You to my tutors, Lotta Intiso (Nahoj Nim) and Ingela Elofsson (Lund Institute of Technology) for making this thesis possible. Lotta, I am most grateful for your support and guidance throughout these past months and for “letting me in” in order to conduct my study. Ingela, I could never have done it without your support, ideas and structure.

Finally, I would like to take the opportunity to thank all of you who contributed to this thesis for taking time to meet with me, without your input this thesis would not exist.

Lund, April 2006

A handwritten signature in black ink, appearing to read 'Klara Jonsson', written over a horizontal dashed line.

Klara Jonsson

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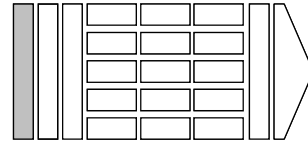
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1 INTRODUCTION

In this chapter the background and problem definition of the thesis is described. Thereafter, the purpose of the thesis will be presented to provide the reader a tangible depiction of the scope of the report. Furthermore, the target group and delimitations, the disposition of the thesis as well as a list of abbreviations used in the report are presented.



1.1 Background and Problem Definition

Nahoj Nim has for a long time been very successful at developing, producing and selling packaging solutions for the food industry. Today, however, Nahoj Nim faces a new challenge as competitors are gaining market shares.

The main source of income for Nahoj Nim has always been the packaging materials. To be able to sell packaging material the company has previously been selling or lending the filling machines at below-cost. In 1991, however, The European Union found that Nahoj Nim misused their competitive advantage according to the Competition Law. Since then the company has restrictions within the EU regarding below-cost sales, discriminatory pricing among customers, “tie-ins” for machines and paper, long rental agreements etc. Other players within the European market, however, do not face the same restrictions and sometimes are able to produce machines at a lower cost. Hence, their machines can be priced lower than Nahoj Nim’s solutions.

These factors contribute to a new competitive challenge for Nahoj Nim and a new focus has been brought on. Since the machine cost formerly had no impact on the selling price and there were no big competitors there has been little focus on the cost of producing the machines. This has lead to sub optimizations as no effort has been taken to reduce the total cost. To ensure that the cost and the pricing of the machines can be reduced to compete with competitors the company is now ongoing some changes.

The purchasing unit Component & Technical Consultant Purchasing (hereafter referred to as C&TCP), involved in sourcing, contracting and managing the

supplier base for components and technical consultants, have until now had no or little involvement in the product development and production processes. Their main focus has been to supply the production plants and the after market with components and spare parts. In product development the designers have historically had the liberty to choose components and parts as well as suppliers simply by technology standards. No or little attention has been directed towards the commercial aspects, which has led to a proliferation of different components used and the supplier base has grown rapidly.

To ensure that the total cost is reduced Nahoj Nim has introduced a new process which involves both supplier- and customer management throughout the product life cycle, from innovation to aftermarket services. The Supplier Management department has also been re-organized to better fit the supply management part of the process. Today, however, there is a great gap between theory and practice at Nahoj Nim. The process has been outlined to make sure that the total cost of producing and distributing machines is reduced. On an operational level however, the implementation of this new way of working has not yet been completely successful.

Since the purchasing unit C&TCP has not been recognized as a partner when developing and designing the machines, it has been difficult to conduct any strategic purchasing activities when it comes to choosing, managing and contracting component suppliers. This has led to a sub optimization of component and technical consultants purchasing since the agreements met by C&TCP have not been complete nor fully utilized.

As Nahoj Nim faces new challenges, so does C&TCP. In order to be able to support the business with an efficient and structured purchasing of components and technical consultants C&TCP needs to make some changes.

1.1.1 Purpose

The purpose of this thesis is to describe and analyze the purchasing function Component & Technical Consultant Purchasing and to suggest organizational changes in order to achieve purchasing excellence.

1.1.2 Target Group and Delimitations

The master thesis report is aimed at two separate target groups; professionals and senior students with a business and engineering background as well as stakeholders involved in, or affected by, component purchasing at Nahoj Nim.

The thesis will be limited to 20 weeks of fulltime work. Hence, the thesis will be restricted to a description and analysis of the present situation as a foundation to generate proposals for future implementation. Full implementation and evaluation will not be possible to execute within the time range.

1.1.3 Disposition of the Thesis

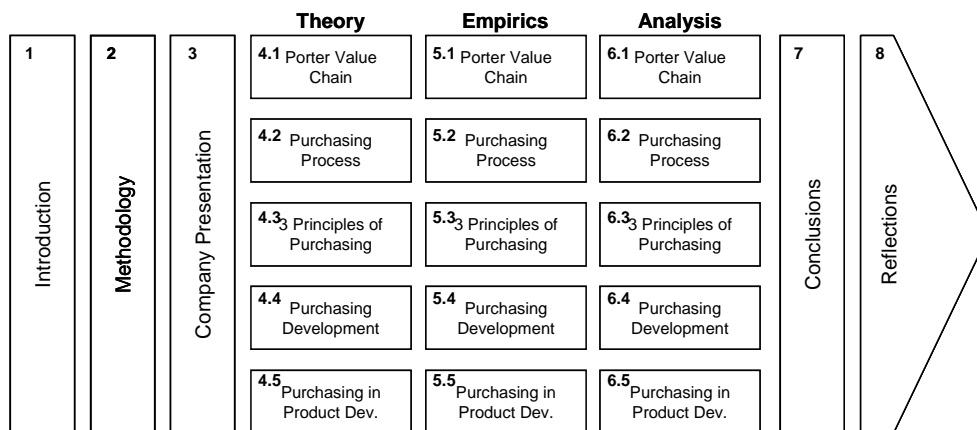


Figure 1.1 – Disposition of the Thesis

Chapter 1 - Introduction

In the introduction the background and problem definition of the thesis are described. Thereafter the purpose of the thesis will be presented to provide the reader a tangible depiction of the scope of the report. Furthermore the target group and delimitations, the disposition of the thesis as well as a list of abbreviations used in the report are presented.

Chapter 2 - Methodology

In the methodology chapter the methods used whilst conducting the research is described. First, the methodological approach is presented then the collection of data and credibility of the thesis is discussed.

Chapter 3 - Company Presentation

The company presentation is an introduction to Nahoj Nim in general and the purchasing unit for components and technical consulting in specific. The aim is to deliver a brief compilation of the company and to graphically show the organizational structure and position of the purchasing unit C&TCP.

Chapter 4 - Theory

In the theory chapter the theories, which are to be used during the analysis of the research data, will be presented to give a frame of reference for the thesis. The Theory is divided into four parts, each representing an individual theoretical frame.

Chapter 5 - Empirics

In the empirics chapter the findings of the survey are presented. The current situation of the purchasing unit C&TCP is described using a framework of chosen theories of purchasing. The Empirics are divided into four parts, correlating with the four individual theoretical frames.

Chapter 6 - Analysis

In the analysis the empirical findings are analysed using theories of purchasing in order to understand the current situation of C&TCP and to provide a basis for development and improvement. The Analysis is also divided into four parts, correlating with the theoretical frames and empirics.

Chapter 7 - Conclusions

The conclusions summarize the findings of the analysis in reference to the purpose stated in chapter one. First, the challenge is presented, then the component and technical consultant purchasing at Nahoj Nim today is described and finally the possibilities for purchasing excellence at C&TCP are demonstrated.

Chapter 8 - Reflections

In this chapter additional personal reflections regarding the purchasing of components and technical consultants at Nahoj Nim are presented. In addition recommendations of how to proceed are presented to guide the purchasing

group C&TCP in order to improve internally as well as being able to communicate the findings throughout Nahoj Nim.

References

In this part the sources of information used whilst conducting the survey and finalizing the thesis are presented. The primary sources consist of interviewed employees at Nahoj Nim in Lund, Sweden and Modena, Italy. The secondary sources are the written sources used to gather information on theories, models and Nahoj Nim in general. They are divided into three main parts; literature, articles and e-sources

Appendices - Interview Guides

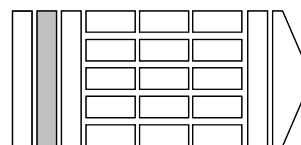
In the appendix the interview guides used for conducting the gathering of primary data during the interviews are presented. There are seven different interview guides depending on the background and nationality of the interviewed.

1.2 Abbreviations

<i>Abbreviation</i>	<i>Full form</i>
C&TCP	Component & Technical Consultant Purchasing
CS	Component Standardization
GTS	Global Technical Support
KSM	Key Supply Manager
OF CE	Order Fulfilment Capital Equipment
OF PM	Order Fulfilment Packaging Material
OF TS	Order Fulfilment Technical Sales and Services
P&CM	Purchasing and Component Management
R&D	Research and Development
SM	Supplier Management/Supply Manager
SM Process	Supplier Management Process
SQA	Supplier Quality Assurance
NNA	Nahoj Nim Alfa
NNB	Nahoj Nim Beta
NNG	Nahoj Nim Gamma
NND	Nahoj Nim Delta
TQM	Total Quality Management

2 METHODOLOGY

In the methodology chapter the methods used whilst conducting the research are described. First, the choice of research strategy is presented. Thereafter, the choice of research method is portrayed. Finally, the credibility of the thesis is discussed by focusing on reliability, replication and validity.



2.1 Research Strategies

When conducting a research there are several different strategies which can be considered. No strategy can be said to be “the right one” but depending on the research problem there are some strategies which are more suitable than others. The definite of good research is that the choices made are *reasonable* and *explicitly presented* in the research report.¹

There are several different strategies to choose from, the most common are presented below:

- *Experiments* are studies where the researcher identifies important factors which are manipulated to be able to observe their effects. By introducing and removing these factors the researcher can pinpoint which factors generate a certain effect. The experiments are dependent on exact and detailed observations and measurements which are in the centre of attention.
- *Surveys* are studies with a broad coverage aimed at achieving an on-the-spot account of how things are at a particular time. The survey is aimed at investigating which means that an empirical research is mandatory where the researcher leaves the office to search for details and concrete, measurable information on the field.

¹ Denscombe, M. (2000) *Forskningshandboken*, p.9-83

- *Case Studies* are studies where the focus is on one research unit only. By concentrating on one case the aim is to achieve insights with broader consequences and applications to highlight the general by illuminating the particular.
- *Action Research* are studies aimed at investigating “real problems” and to be involved in changing things as a cyclic process mainly at a place of work or in organizational environments where the central people in the research process are actively participating.²

2.1.1 Case Studies

According to Yin (1994), what distinguish the strategies presented above are the three order conditions:

1. The type of research question posed
2. The degree of focus on contemporary as opposed to historical events
3. The extent of control the researcher has over actual behavioural events³

When analyzing the three conditions Yin (1994) states that the case study has a distinctive advantage when:

“...a “how” or “why” question is being asked about a contemporary set of events over which the investigator has little or no control”⁴

The purpose of describing and analyzing the purchasing function Component & Technical Consultant Purchasing in reference to the significance for their internal customers can be described as “*how*” C&TCP works today in order to fulfil the requests of their internal customers. Also, the set of the events to be analyzed are *contemporary* and difficult to *control*. These findings proclaim the use of a case study strategy for the research.

² Ibid.

³ Yin, R.K. (1994) *Case Study Research*, p.3-9

⁴ Ibid.

2.1.2 Choosing the Case

The case study presented in this report derives from a general search for an interesting research area in order to apply and further develop my understanding of strategic purchasing in an industrial business environment. The purchasing unit C&TCP at Nahoj Nim was chosen as research area on basis of initial meetings with the head of the department. After a couple of pre-discussions regarding the present situation of the unit and the future demands a couple of research areas were considered.⁵

According to Denscombe (2000) case study is dependant on a conscious and explicit choice of which case to study and this choice needs to be motivated. In order to prove that the case is well adapted to its purpose four different starting positions can be used; the typical, the unique, the theory trial and the least probable research unit.⁶

Even though C&TCP could not be said to provide a sample of the general purchasing at an industrial company the purchasing activities at Nahoj Nim can be said to be a typical research unit when it comes to a complex purchasing function in a large industrial organization. There are several other purchasing functions in industrial organizations ongoing changes today trying to render more effectiveness where the findings from this case study can provide useful inputs. The aim is not to generalize to other case studies but to generalize the findings to theory.

2.1.3 Setting the Case – Design and Method

When designing the case study several different parts needed to be considered. According to Yin (1994) for case studies the five most important components of research design are;

1. A study's question
2. Its propositions, if any
3. Its units of analysis
4. The logic linking of the data to the propositions
5. The criteria for implementing the findings⁷

⁵ Denscombe, M. (2000) *Forskningshandboken*, p.44-45

⁶ Ibid.

⁷ Yin, R.K. (1994) *Case Study Research*, p. 20-27

These five components serve as the framework for the case study. Chapter 1, the *Introduction*, derive from the first four components. The study's question is presented in *Background and Problem Definition*, its propositions are stated in the *Purpose*, its units of analysis is the purchasing unit of C&TCP at Nahoj Nim and in the analysis chapter the logic linking of the data to the propositions is presented. Deriving from the Delimitations of the thesis any criteria for implementing the findings will not be presented.

In order to cover these components Yin (1994) states that the developments of a theoretical framework for the case study is essential. In order to be able to study the case, first the theoretical frame, or blueprint, is needed to determine what data to collect and the strategy for analyzing the data.⁸

Initially, several theories of purchasing, marketing, organization and product development was studied in order to get a broad picture of applicable theories of which to choose the most suitable ones for the analysis of the chosen case study. Most of these theories where organizational theories but some societal theories were also studied in order to cover international behaviour, technological development and marketplace functions.

2.2 Research Methods

There are two main research methods to choose from; Qualitative and Quantitative research. Though, these two methods are not mutually exclusive. The difference between qualitative and quantitative data is rather the distinction between the analytic treatments of the data than the research method itself. The difference between the two methods is highlighted below:

- Qualitative research; has a tendency to acknowledge words as the central analysis base. It is more often linked to descriptions, smaller studies and a holistic perspective. The qualitative study is associated with an interference of the researcher and an open research design.
- Quantitative research; has a tendency to acknowledge numbers as the central analysis base. It is more often linked to analysis and larger studies

⁸ Ibid., p.27-28

and a specific focus. The quantitative study is associated with a neutrality of the researcher and a predisposed research design.⁹

Since the research study of describing the purchasing function C&TCP's relationship with internal customers is difficult to measure by numbers, is of a descriptive nature and is applied to a smaller case-study the qualitative method was chosen.

2.2.1 Qualitative Research

Qualitative methods are first and foremost *research* methods or ways of finding out what people do, know, think and feel by observing, interviewing and analyzing documents. Some studies are more appropriate than others when it comes to qualitative applications; one of them is case studies.¹⁰

One important part of the qualitative research is the interpretation of the qualitative data which means that the researcher's identity, Standards and convictions play a central part in the production and analysis of the data.¹¹

According to Yin (1994) each research strategy can be used for three purposes; exploratory, descriptive or explanatory studies. The first task in qualitative analysis is description by answering basic questions. Description must be carefully separated from interpretation, e.g. asking "why?" and putting patterns into an analytic framework. The descriptive data should be presented in such a way that the reader can understand and draw their own conclusion.¹²

The description part of the study is presented in the chapter Empirics by presenting the unit C&TCP using the theoretical framework presented in Theories.

⁹ Denscombe, M. (2000) *Forskningshandboken*, p.205-207

¹⁰ Quinn Patton, M. (1990) *Qualitative Evaluation and Research Methods*, p.94

¹¹ Denscombe, M. (2000) *Forskningshandboken*, p.244-245

¹² Yin, R.K. (1994) *Case Study Research*, p.374-375

2.3 Data Collection

There are several different methods of research – questionnaires, interviews, observations and written sources – which compete against each other to be chosen by the researcher. They are different and are better suited for certain situations than others but can be combined to generate different but supportive ways of collecting data. When combining different research methods the amount of data increases and the quality of the research is likely to improve. To view things from different perspectives and the possibility to confirm results could also improve the validity of the data. This phenomenon is sometimes referred to as method triangulation.¹³

In order to collect data a couple of different techniques can be used. Qualitative methods consist of three kinds of data collection;

1. In-depth, open-ended interviews
2. Direct observation
3. Written documents¹⁴

Since the research is based on a qualitative approach I have chosen to mainly use interviews for collection of primary empirical data. Though, by being situated at the office of C&TCP during the research, direct observations have also been collected at department meetings and general discussions. In addition some information has been collected from written sources such as guidelines, roles and responsibilities and targets of the researched unit. Other written secondary sources to this thesis have been literature and articles as a basis for the theoretical framework of the thesis.

2.3.1 Interviews

There are three main types of interviews; structured, semi-structured and unstructured interviews:

- A *structured interview* is when an interviewer poses questions to a respondent using a preset interview questionnaire. The aim is that the context of the interview remains the same for every interview, which means that each respondent faces an equal “question stimulus”. By using this method the

¹³ Quinn Patton, M. (1990) *Qualitative Evaluation and Research Methods*, p.10

¹⁴ Ibid.

responses can be compared in a reliable manner. The questionnaire is often made up by closed questions with very specific answers. With structured interviews the validity is improved as the interviewer personality and the surrounding environment will not have a crucial influence on the respondents' answers.¹⁵

- *Semi structured interviews* is when the interviewer has a set of questions prepared but the questions are not necessarily posed in an orderly manner. The questions are more open and general than in a structured interview and the interviewer has the possibility to pose follow-up questions when needed.¹⁶ The respondent is also at liberty to further develop and highlight their viewpoint when answering the questions posed by the interviewer.¹⁷
- When using *unstructured interviewing* techniques the interviewer is often only equipped with a set of themes or general questions at issue covering the area of the interview. The questions are often posed informally and wording as well as the order of the questions is not preset.¹⁸

In qualitative interviews the approach is often substantially less structured than in quantitative interviews, the focus is directed towards the respondent's point of view and it is favourable to let the respondent elaborate and move in different directions. The interviewer can more easily deviate from the interview guide or questionnaire and be more flexible to be able to get full and detailed answers. The respondents can also be interviewed more than once.¹⁹

In the beginning of the study *unstructured interviews* were used in order to grasp the situation and to collect as much data as possible to set the context of the case and to begin structuring the purpose of the thesis. The respondents were interviewed several times as the findings continuously raise new questions and the scope was not yet set to delimit the case study.

When the background and the context of the case was collected the task of structuring the case begun. By the initial findings in collaboration with the design of the theoretical framework a limited scope could be identified.

¹⁵ Denscombe, M. (2000) *Forskningshandboken*, p.134-135

¹⁶ Ibid.

¹⁷ Quinn Patton, M. (1990) *Qualitative Evaluation and Research Methods*, p.10

¹⁸ Denscombe, M. (2000) *Forskningshandboken*, p.134-135

¹⁹ Bryman, A. & Bell, E. (2005) *Företagsekonomiska forskningsmetoder*, p.361-368

Thereafter, a more *structured interview technique* could be applied in order to find answers to more detailed questions.

Conducting the Interviews

When conducting the interviews a couple of things have to be considered. First, an interview guide has to be designed. An interview guide is a set of questions or issues that are to be explored during the interview. It is prepared in order to make sure that basically the same type of information is obtained from a number of people by covering the same material. The interview guide provides topics or subject areas within which the interviewer is free to explore, probe and ask questions that will explain and illuminate that particular object.²⁰

The respondents were chosen as key informants in collaboration with my tutor at Nahoj Nim. The aim was to attain a wide range of information from different parts of the organization in order to assure a wide scope and to receive data from all internal customers. The respondents were chosen to represent the business units' purchasing, product development and industrialization organizations as well as the after sales services at Delta:

- Nahoj Nim Alfa
- Nahoj Nim Beta
- Nahoj Nim Processing
- Nahoj Nim Delta

The interview guides used in this case study are presented as an appendix to the research thesis. Seven different interview guides have been used during this study in order to cover all internal customers. The questions covered are similar, but adapted to the location of the responders.

Prior to the interviews the respondents were handed or emailed the interview guide along with an explanation of the purpose of the study and the input needed. All interviews have been conducted at the "home office" of the respondent, in order to provide a secure environment for the interviewed persons. Most of the interviews were conducted in Lund apart from those situated in Italy, who were interviewed during one week of visiting Modena. Each interview started by a presentation of the aim of the interview, my personal background and an introduction of the interviewed person's professional and personal background. By the end of the interview the

²⁰ Quinn Patton, M. (1990) *Qualitative Evaluation and Research Methods*, p.283

respondents were all asked if there were any additional useful information which had not been discussed during the interview in order to capture additional useful information.

Each interview was strictly confidential, therefore any taping of the interviews were not made. Instead I took notes during the interview, which were composed and sent to the respondent for review within two days of the interview. All respondents have either acknowledged the accuracy of the meeting notes or made changes to the documents prior to the consolidation of the data. The empiric chapter is based upon these interview notes, which for confidentiality reasons are not specifically referenced to the interview source.

The Role of the Interviewer

The role of the interviewer is to interfere as little as possible, enabling the responder to use their own words and develop their own ideas. This method is recommended when researching a complex case. It contributes to a deeper research that explores personal experiences and emotions. The effect on the interview is dependent on several outside factors such as the personal identity of the interviewer, self-presentation of interviewer and personal commitment.

- **The Personal Identity.** Whilst performing an interview it is important to keep in mind that the identity of the interviewer could influence the response. It is particularly the sex, age and ethnical background that could result in the amount of information the respondent is willing to give and how accurate this information is. The influence is based on personal preferences and prejudices from both interviewer and respondent. These influences are especially important when the matter discussed is of a sensitive nature.²¹
- **Self Presentation.** It is of importance that the researcher presents him/her self passively and neutrally by adjusting behaviours and clothes to the respondent environment. The interviewer should also be aware of the risk of rejecting the respondent or end up in a discussion.²²
- **Personal Commitment.** Involvement and personal commitment in the case could be positive by making it easier to understand the context and could

²¹ Denscombe, M. (2000) *Forskningshandboken*, p.138-141

²² Ibid

facilitate the dialogue with respondents. The interviewer has to be aware of that the method could be controversial and has to make sure that the readers of the report will understand and appreciate the commitment and not simply write it off as bad research practices.²³

My personal identity could have influenced the response of the interviewed in particular when the respondent's sex, age and/or ethnical background differ from mine. In particular the interview effect could have influenced the accuracy of the information when it comes to sensitive information. For example, the results of the interviews conducted in Italy with exclusively older male respondents with another ethnical background could differ from interviews conducted in Sweden with female respondents of similar age and background.

By being present at the C&TCP office and the Italian site during the research period, I have been able to adjust easily to the environment and being able to understand the context in order to blend in and further commit to the case.

2.3.2 Direct Observations

By spending most of my time conducting the thesis at the office of C&TCP in Lund, direct observations have also been a part of my data collection. By being present at department meetings, discussions many observations of the atmosphere, informal comments etc. have contributed to the empirical findings.

2.3.3 Written Documents

Apart from the interviews and direct observations a large amount of written sources has been researched in order to collect accurate data. For example, earlier works with a focus on purchasing excellence have been studied to be able to find common problems and solutions. In addition, theories of purchasing have been collected in order to describe the unit of C&TCP in comparison to general findings.

²³ Ibid.

Literature

Several different types of literature were studied in order to find a suitable framework for the problem and purpose of the thesis. First, communication and marketing literature was scanned in order to find theories of internal marketing and communication for the department C&TCP. In parallel, theories of purchasing and strategic purchasing were investigated in order to provide a framework for what purchasing is and how it can be classified. After a while, as the problem evolved and became more evident the focus on purchasing strategies increased. Since C&TCP had recently gone through a re-organization, theories of organizational psychology were also studied but later discharged in order to limit the research study.

Finally, a couple of suitable theories were chosen in order to answer the purpose of the thesis. The literature chosen is presented throughout the theory chapter as well as presented in the reference list. The purchasing and marketing literature used in the thesis is well known and used as education material for university studies.

Articles

Since there are not an overwhelming number of recent literatures on purchasing strategies, articles were a big contributor to the framework of the thesis. In order to find suitable articles I searched the databases of well known and reliable journals and several interesting articles matched my enquiry. In order to pick the best, I studied the articles and chose those which matched the purpose of the study the best. The articles used for the thesis are presented in the reference list.

E-sources

In order to find out more about Nahoj Nim, internal and external e-sources have been used, as presented in the reference list. These sources can be considered as very reliable for providing accurate information on the company organization, product portfolio etc. as they are managed by Nahoj Nim.

2.4 Sources of Criticism

2.4.1 Reliability

If the research instruments are neutral by cause and affect and replicable the research is said to be Reliable. When using qualitative research however the researcher is an integrated part of the research. Reliability is then when another researcher gets the same result and conclusions when conducting the research, repeatability. Whilst this is hard to prove there are different ways of tackling the problem. There must be an explicit statement of grounding premises such as purpose and theory, a detailed description of the method of the research is needed and the *reasoning* of the decisions made during the research is crucial.²⁴

The reliability of the thesis is dependent on a couple of factors. First, and foremost, I need to be aware of that my personality and actions may have influenced the findings of my research. Secondly, the data is somewhat unique due to the specific context and individuals participating in the interviews. In order to control my interpretation of the interviews an important step to secure that the accuracy of the data has been to insist on feedback from all respondents in written form and additional interviews or questions posed when necessary. Also, in order for the research to be replicable the interview guides are similar for all responders and presented in the appendix for future applications.

Another aspect of the reliability is secured by the structure and disposition of the thesis with a purpose, theory and a methodology chapter – providing the reasoning behind the choices made during the research.

2.4.2 Validity

Validity can be said to be to what extent the research data and methods to collect the data are exact, accurate and to-the-point. In more general terms validity is the correctness of the data and methods, whether the data reflects the truth, the reality and covers the important questions. In order to prove the validity of the study the conclusions need to give justice to the complexity of the researched problem, the researcher must be acknowledge as an *influence* in the results. In addition the choice of research unit needs to be reasonable and

²⁴ Denscombe, M. (2000) *Forskningshandboken*, p.249-250

clearly accounted for. Other factors that can improve the validity are method triangulation, feedback from informants, the correlation with existing knowledge in the field of research and examining to what extent they findings can be transferred to comparable situations.²⁵

In order to achieve validity of the thesis a couple of steps have been taken. By choosing interviews the validity could be secured by being able to control the data whilst gathering it. The conclusions are quite general and do not exclude other possible influences to the researched problem. My personal influence on the findings has been discussed earlier on in the methodology chapter. The data used in this research is mainly primary data from interviews and secondary data from written sources. In order to achieve full method triangulation however the findings from interviews have been compared to written documents and observations when available. The written sources have provided a theoretical frame from literature and articles to compare the findings with existing knowledge of purchasing.

The reliability vs. validity can be seen in figure 2.1 below. High validity is shown by all the arrows placed near the “bulls eye” (assuring the accuracy) and high reliability is shown by all arrows in one place (repeatability).

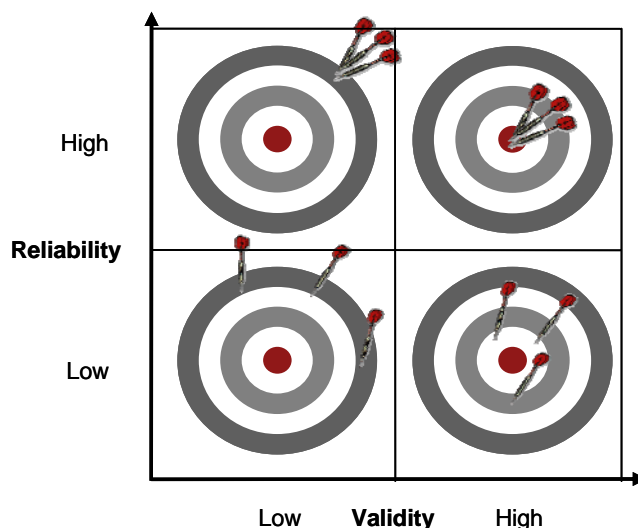
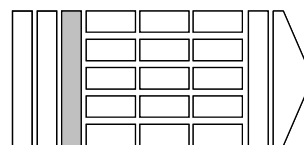


Figure 2.1 –Reliability versus Validity

²⁵ Denscombe, M. (2000) *Forskningshandboken*, p.251, 283

3 COMPANY PRESENTATION

This part is an introduction to Nahoj Nim in general and the purchasing unit for components and technical consulting in specific. The aim is to deliver a brief compilation of the company and to graphically show the organizational structure and position of the purchasing unit Component and Technical Consultant Purchasing.



3.1 Background

3.1.1 History of Nahoj Nim

Nahoj Nim was founded 1951 in Lund, Sweden, by Ruben Rausing and Erik Wallenberg. The company was originally a subsidiary to Åkerlund & Rausing and was founded on the idea that a package should save more than it costs. In 1952 the first Nahoj Nim machine for tetrahedron-shaped carton was delivered to a Lund dairy.

In the 1960's, the first aseptic filling machine for bacteria-free milk was presented along with several new carton shapes. During this decade the Åkerlund & Rausing was sold whilst Ruben Rausing retained its subsidiary, AB Nahoj Nim. The following years Nahoj Nim grew continuously, establishing the company on the global market. The cooperation has since been associated with production of packaging solutions for liquid food products. In later years, though, the company develop, produce and market systems for processing, packaging and distribution of both liquid and solid foods.

In 1991, Nahoj Nim and Le Meton formed the corporate group Nahoj Nim Meton. During the following year the group went through some changes and in 1993 the company took the name Nahoj Meton. Nahoj Meton originally consisted of four industrial groups; Nahoj Nim, Nahoj Meton Food, Le Meton and Le Meton Agri. In 1994 Nahoj Nim created a new plastic packaging division and nine years later Simon, one of the world's leading manufacturers of machines for PET plastic bottle production was acquired to the group.

3.1.2 History of Component Purchasing at Nahoj Nim

In the past the component purchasing at Nahoj Nim has been divided into two separate groups; Nahoj Nim ComTec AB and Nahoj Nim Parts AB. The ComTec team was a global purchasing function which was responsible of conducting agreements with the top 100 global suppliers. The team was situated in Lund as a separate support function and reported directly to Nahoj Nim Management. The other group - Parts - was responsible for making agreements and assuring the supply of spare parts. In addition several decentralized purchasing functions for module supplier interactions were spread within Nahoj Nim.

The ComTec team had a high strategic focus with a portfolio of the 100 largest suppliers, which accounted for approximately 80% of the purchased Standard for Nahoj Nim. But as the group was separated from the rest of the business, the function somewhat lost touch with the operational side. As a result the group increasingly became an “island” and had little contact with the operational business. Parts, on the other hand, was only focused on spare parts and worked “ad hoc” with suppliers without any strategic control of coordinating supply activities with the other parts of Nahoj Nim. Most importantly, there was no coordination between the different units of component purchasing at Nahoj Nim.

In 2002 the two groups was merged to one purchasing function; Global Technical Support Purchasing. The new focus was to coordinate the purchasing of spare parts and was situated under the spare parts and after-market function Global Technical Support. The same year a council was started called Purchasing Council Equipment which was a council for those responsible for purchasing in the different parts of Nahoj Nim. The purpose of the council was to coordinate and improve all of the purchasing activities.

In 2003 the group was renamed Purchasing & Component Management, P&CM, and the process design for Supplier Management was initiated. The year after, in 2004, the group was moved to the business area Nahoj Nim Alfa and the focus was to negotiate prices and make agreements with suppliers of components which were to be used by both module suppliers in manufacturing modules for Nahoj Nim and by Delta for usage as spare parts. The group was divided into two main parts with the responsibility for drawn and standard components. During this time the process was continuously designed and P&CM was merged with Supplier Management.

In 2005 the P&CM group was renamed Component & Technical Consultant Purchasing (C&TCP). Today the group handles more than 800 suppliers of components and technical consultants. In late September the entire purchasing of Nahoj Nim Alfa was reorganized and the previously decentralized purchasing activities of module purchasing and component purchasing are now gathered within one organization; Supplier Management.

In figure 3.1 below the overall picture of the organizational placement of C&TCP today is shown.

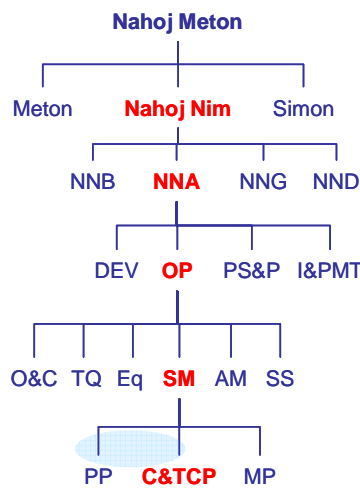


Figure 3.1 – Overall Picture of the Organizational Placement of C&TCP

3.2 The Nahoj Meton Group

The Nahoj Meton Group Board, as shown in figure 3.2, has the overall responsibility for the strategic development of Nahoj Meton. The Group is head of the three industry groups Meton, Simon and Nahoj Nim. Nahoj Meton International has the responsibility to finance the Nahoj Meton Group, monitor its overall legal structure and executing all mergers and acquisitions.

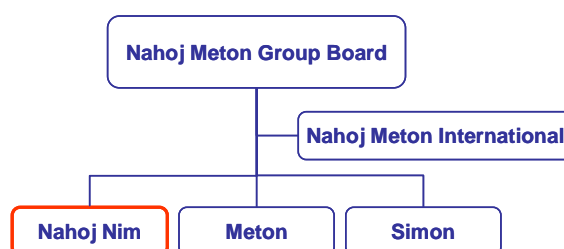


Figure 3.2 – Organizational Chart of the Nahoj Meton Group²⁶

Meton manufactures and markets complete systems for milk production and animal husbandry. Simon develop, produce and market complete packaging lines for production of plastic bottles for liquid food products. Nahoj Nim is focused on developing, producing and marketing of complete processing, packaging and distribution systems for both liquid and solid food products.²⁷

3.3 Nahoj Nim Today

Today, Nahoj Nim is a global actor operating in more than 165 markets with over 20,000 employees around the world. The company is divided into three groups; Nahoj Nim Alfa, Nahoj Nim Beta and Nahoj Nim Gamma, as shown in figure 3.3 below. To support these groups there are functions such as Nahoj Nim Market Operations as well as Human Resources, Business Development, Finance and Control, Chief Technology Officer, Communications, Legal Affairs and Competitiveness Office. Within the Market Operations the 58 Market Companies are situated which act on all 165 markets. In this part the Deltas unit (NND) is also situated, which supplies the after market with spare parts and Delta.

²⁶ Nahoj Meton, *About Nahoj Meton*, <http://www.nahojmeton.com> 2005-09-29

²⁷ Ibid.

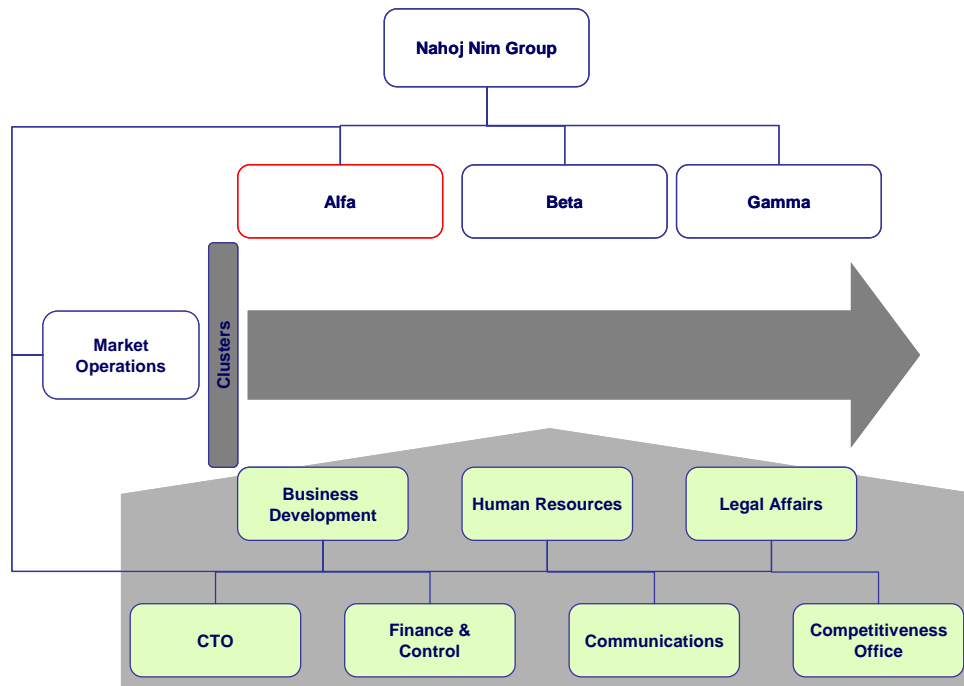


Figure 3.2 – Organizational Chart of the Nahoj Nim Group²⁸

Nahoj Nim Gamma handles total Gamma for processing of foods at dairies, cheese-manufacturers as well as fruit beverages- and ice-cream makers. These processes include pasteurising machines, separators and homogenization equipment. Nahoj Nim Beta is mainly focused on packaging systems for liquid and solid foods which need to be chilled e.g. pasteurized dairy products. And finally, filling machines for products which does not need be kept chilled since they are produced in an aseptic manner are produced by Nahoj Nim Alfa.²⁹

²⁸ Nahoj Nim, *About Nahoj Nim*, <http://www.nahojnim.com> 2005-09-08

²⁹ Ibid.

3.4 Nahoj Nim Alfa

Nahoj Nim Alfa, later referred to as NNA, is the largest business unit at Nahoj Nim which stands for more than 80% of the Nahoj Nim financial turnover. As shown in figure 3.4, it is a Matrix organization which is divided into four core functions; Product Strategy and Planning, Development, Industrialization & Packaging Materials Technology and Operations which support the three product segments Deluxe, Standard and Base. Product Strategy and planning is involved in developing and managing the product portfolio for Alfa the group works closely with Development, which is responsible for product development, and Industrialisation, which converts the design into manufacturing. Operations provide equipment, materials and services to NNA by managing sales, supply and inventing. Other support functions such as Finance & Control, Human Resources and Communications are involved in all the other areas of NNA.

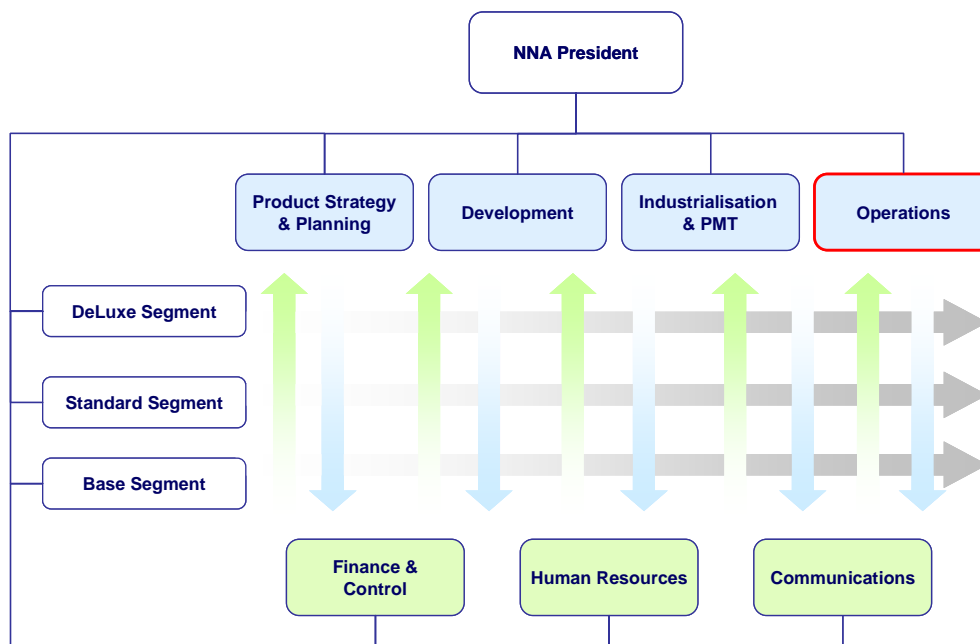


Figure 3.4 – Organizational Chart of Nahoj Nim Alfa³⁰

³⁰ Nahoj Nim Alfa (intranet), <http://alfa.nahojnim.com>, 2005-09-08

3.4.1 Nahoj Nim Alfa Product Portfolio

Nahoj Nim Alfa has three major product segments; Deluxe, Standard and Base, as shown in figure 3.4 and 3.5.



Figure 3.5 – Examples from the Nahoj Nim Product Portfolio³¹

The product segment Deluxe is defined by flexibility and high differentiation, and focuses on developing and delivering products that target Deluxe segments and specific application requirements. The Standard segment focuses on lowest possible cost and highest possible operational efficiency for protection and growth of the core business. The Base segment, on the other hand, is targeting the Standard segment in emerging markets and the lower end of developing markets. The Base products are primarily based on low entry costs, low cost operations and machine as well as system simplicity.³²

3.4.2 The Nahoj Nim Alfa Process

In 2004 the Global Nahoj Nim Process was introduced, as can be seen in figure 3.6 below. The process is separated from the organizational structure of Nahoj Nim Alfa as presented above. Instead of an organizational hierarchy where each part of the company handles situation differently and has different work methods the Process is meant to guide and promote a common work progress in all areas. The Global Nahoj Nim Process consists of five base blocks; Innovation, Industrialization, Order Fulfilment Capital Equipment (OF CE), Order Fulfilment Packaging Material (OF PM) and Order Fulfilment Technical Sales and Service (OF TS).³³

³¹ Ibid.

³² Ibid.

³³ Nahoj Nim Orbis (intranet), <http://neworbis.nahojnim.com/>, 2005-11-22

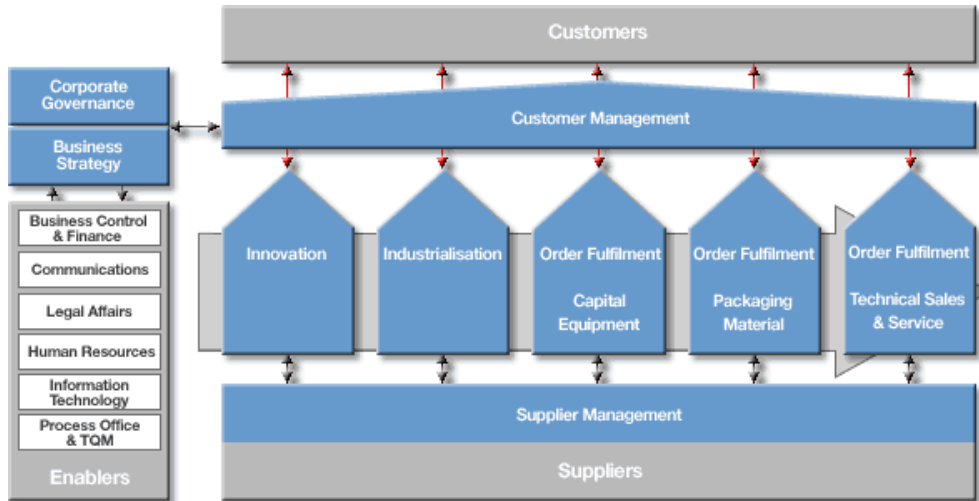


Figure 3.6 – The NNA Process³⁴

Each block has an “owner” which is responsible for the implementation and up-dating of their block as well as the interactions with other functions. The blocks or functions work separately and hand over to the following step when their process is done, e.g. Industrialization receives a development project from Innovation and adapts it for production by securing master data etc. and then it is handed over to OF CE which is responsible for order management, production and shipping of the capital equipment i.e. machines. Thereafter OF PM process kicks in by ordering, production and shipping of packaging materials, i.e. paper for the machines. Finally, the process for OF TS handles the aftermarket service and management of spare parts etc.

Apart from these five base blocks there are two process functions which work with all five blocks; Customer Management and Supplier Management. There are also additional functions such as Corporate Governance, Business Strategy and a couple of Enablers.³⁵

³⁴ Ibid.

³⁵ Ibid.

3.5 NNA Operations

The core function Operations includes functions such as Total Quality, Equipment Group, Openings & Closures, Additional Materials, Sales Support and Supplier Management, as can be seen in figure 3.7. The Total Quality group handles quality issues for the entire NNA, the Equipment Group supplies specific components and machine solutions, Openings & Closures manages the opening and closing mechanisms of the package (e.g. tops), Additional Materials handles extra packaging materials such as straws, Sales Support is the Sales department for NNA and finally the Supplier Management Group manages, contracts and evaluates suppliers of equipments and parts.³⁶

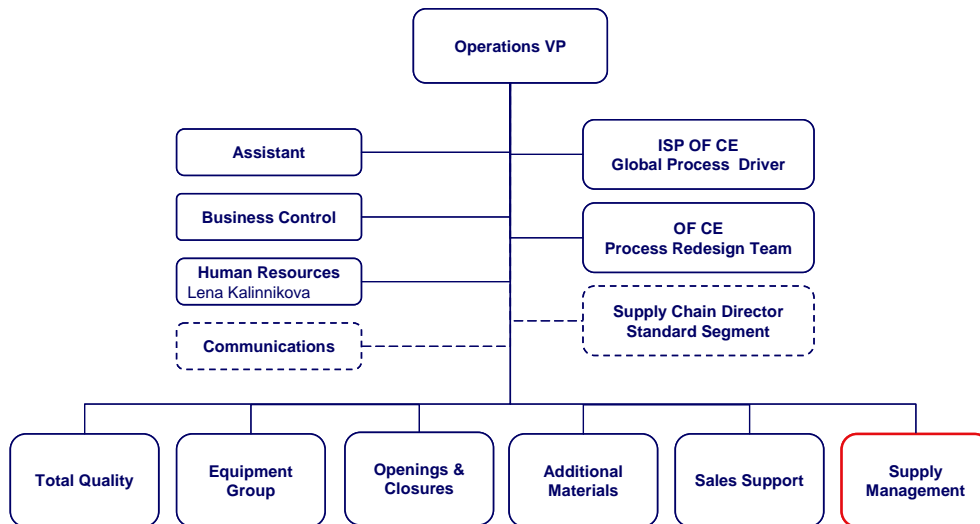


Figure 3.7 – Organizational Chart of Operations³⁷

³⁶ Nahoj Nim Alfa (intranet), <http://alfa.nahojnim.com>, 2005-09-08

³⁷ Ibid.

3.6 Supplier Management

The department of Supplier Management is responsible for managing, developing and maintaining the supplier base for equipment and parts as well as openings and closures purchasing at Nahoj Nim Alfa. The group has recently been reorganized, as presented in figure 3.8, and is now made up by three main commercial Purchasing areas; Program Purchasing, Component & Technical Consultant Purchasing and Module Purchasing & China Sourcing. Apart from these groups there are the Component Standardization and the Converting Equipment teams. All areas are responsible for purchasing of equipment and parts for NNA, in addition C&TCP work across the entire Nahoj Nim securing the purchasing of components and technical consultants.

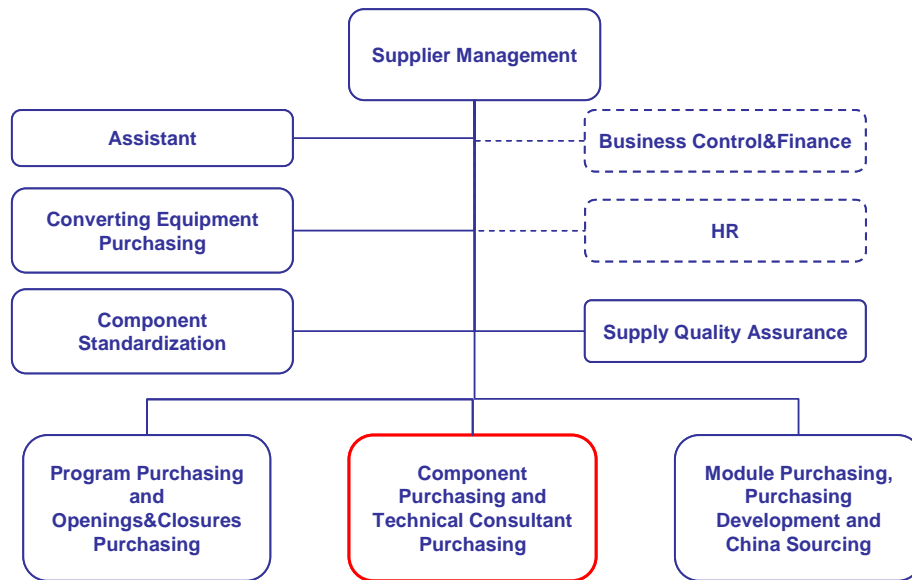


Figure 3.8 – Organizational Chart of the Supplier Management³⁸

The Program Purchasing group is made up of the functions; Openings & Closures Purchasing, Prototype Purchasing and Spare Parts Introduction Purchasing. These functions are closely linked, by a matrix organization, to the three segments and to Common Development. The Program Purchaser's focus will be to source and contract supplier for the product- and technology

³⁸ Nahoj Nim Alfa (intranet), <http://alfa.nahojnim.com> , 2006-05-10

development programs. The unit will be involved early in the product life-cycle and has the responsibility for involving Module and Component Purchasing as well as Component Standardization and Supplier Quality Assurance when needed.

The Module Purchasing group is responsible for managing and developing the suppliers of modules and filling- and distribution equipment. Another responsibility of the group is to provide tools, methods and analysis for the entire Supplier Management organization as well as supplier quality assurance. Furthermore, the group is responsible for sourcing activities in China.

The Component Purchasing group's (C&TCP) responsibility is to provide competitive component agreements, secure supplier performance (quality, cost and delivery) and manage and develop the component supplier base. This group serves as a central support unit for the entire Nahoj Nim in the development, production and aftermarket areas.

The Component Standardization team provides a standardized component assortment for Nahoj Nim within mechanical and electrical product groups by guiding and monitoring the implementation of the assortments and driving the development of procedures and guidelines within the area of responsibility.

Finally, the Converting Equipment team supports Packaging Manufacturing Technology with special focus on the equipment and equipment suppliers being part of the Converting Standard Lines.³⁹

3.6.1 The NNA Supplier Management Process

The Supplier Management Process is a part of the overall Nahoj Nim Alfa Process, presented in a more detailed manner in figure 3.9, with a scope which consists of:

- Making sure that selected and qualified suppliers contribute to products and services provided by Nahoj Nim Alfa, not only with their production capacity but also – and mainly – with their specific competences.

³⁹ Meeting notes from department meeting, 2005-09-21

- Aligning all those areas in the company that cooperate and interact daily with the supply chain⁴⁰

The Supply Management Process describes the responsibilities of the Supplier Management at Nahoj Nim Alfa and consists of a couple of different areas, as described below.

The *Sourcing* of suppliers is how to search for and qualify suppliers for the business requirements. The *Contracting* part outlines how to request and evaluate quotations, negotiate contracts, verify supplier production and implement contracts. The *Ordering* is not a great deal of Supplier Management as it is mostly conducted in the OF blocks but when it occurs this part describes how requisitioning, ordering and delivery management is to be conducted. Finally the *Supplier Base Management* handles how to assess and evaluate as well as improve and develop the supplier performance. It also addresses optimizing and managing as well as pruning of the supplier base.⁴¹

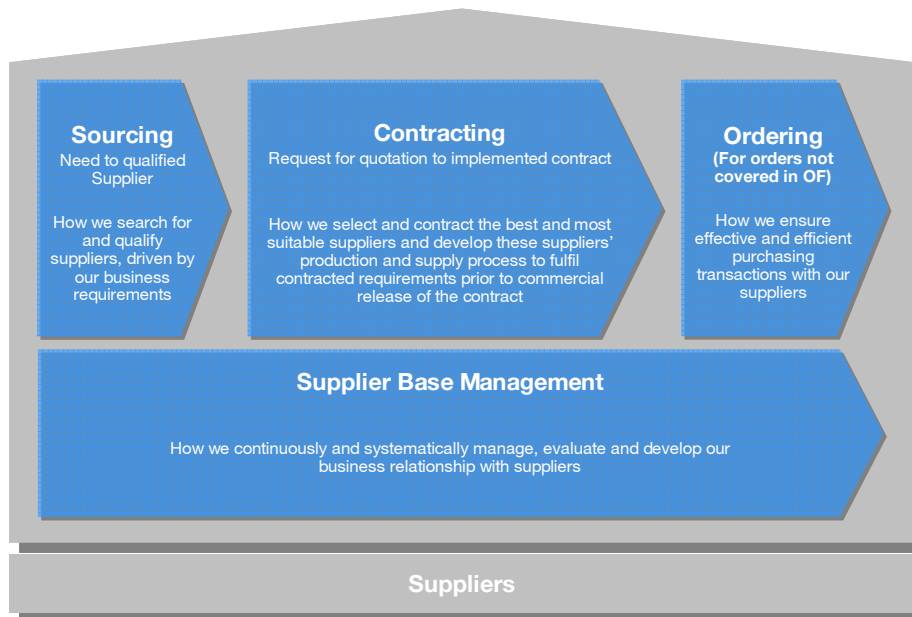


Figure 3.9 – The NNA Supply Management Process⁴²

⁴⁰ Nahoj Nim Alfa (intranet), <http://alfa.nahojnim.com>, 2005-11-22

⁴¹ Nahoj Nim Orbis (intranet), <http://neworbis.nahojnim.com/>, 2005-11-22

⁴² Ibid. 2005-11-22

3.6.2 Supplier Management Responsibilities and Tasks

The reorganization of Supplier Management in September 2005 was partly made to better fit the new process. Now the three main Supplier Management groups – Program Purchasing, Module Purchasing and Component and Technical Consultant Purchasing – have defined roles in the Supply Management Process.

When it comes to *Sourcing* of new suppliers, the program purchasers are responsible for being involved in development projects and to ensure that the commercial aspects are being weighed in when choosing a design and a supplier. To their help, the Component and Module Purchaser teams are to support when choosing a component or module supplier. When a supplier has been chosen the Component or Module Purchasing team is responsible for *Contracting*, i.e. setting up and signing agreements with the suppliers for the chosen components or modules. The *Ordering* function is used by Prototype Purchasing, a special unit of Program Purchasing which purchases the components and parts for the prototypes, and Spare Parts Introduction Purchasing who are responsible for purchasing parts and components for testing and finding suitable suppliers for the aftermarket. Finally, the *Supplier Base Management* is handled by Module and Component Purchasing in cooperation with data gathering of supplier performance etc. by the ordering parts of the business.⁴³

Today, these roles have not yet been presented to the entire organization, nor has it been fully communicated within the Supplier Management group. During the end of 2005 one person has been appointed the task of mapping the purchasing activities at NNA today in order to manage the transition in 2006. By the end of February 2006 the roles and responsibilities for the Supplier Management group are still not fixed and there are continuous modifications of what is to be done by whom resulting in constant orders and contra orders for the C&TCP group.

⁴³ Peter Carlsson, 2005-10-19

3.7 Component and Technical Consultant Purchasing

The Component and Technical Consultant Purchasing group has the commercial responsibility for Component Suppliers. A Component Supplier delivers individual components, which can either be standard components, i.e. developed by the suppliers and sold as a standard assortment, or drawn components, specified or modified by Nahoj Nim.⁴⁴ The group's main purpose is to negotiate skeleton agreements with these suppliers to ensure that there are deals to be used by all Nahoj Nim business units as well as by the module suppliers, which supply assembled components (modules) to Nahoj Nim. The C&TCP group is divided into two subgroups focusing on two different product groups; El & Automation Component Purchasing and Mechanical Components & Technical Consultant Purchasing⁴⁵

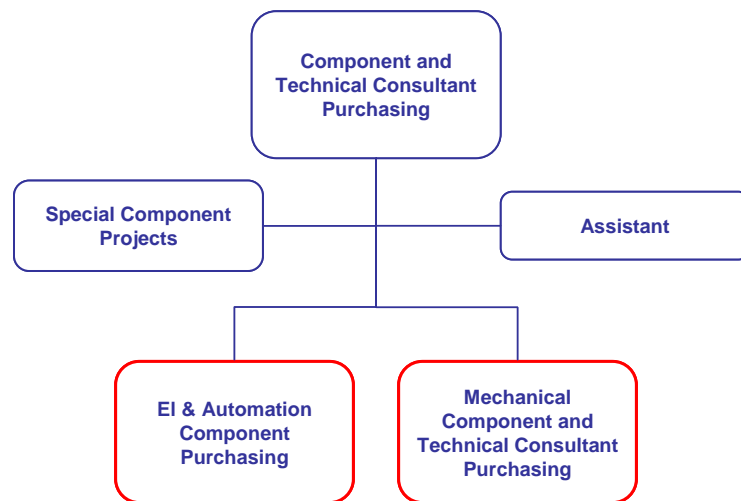


Figure 3.9 – Organizational Chart of C&TCP⁴⁶

The El & Automation group consists of a Purchasing Manager and several Supply Managers focusing on supplying deals for electric, electronic and automation solutions, involving e.g. electronics, mechatronics and automation software. The Mechanical Component & Technical Consultant Purchasing group consists of a Purchasing Manager and several Supply Managers

⁴⁴ Nahoj Nim Alfa (intranet), <http://alfa.nahojnim.com>, 2005-12-09

⁴⁵ Internal document, *MOM Department Meeting*, 2005-09-21

⁴⁶ Nahoj Nim Alfa (intranet), <http://alfa.nahojnim.com>, 2005-12-09

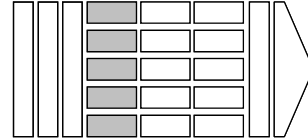
concentrating on handling mechanical- and sealing components, as well as contracting of technical consultants.

Each Supply Manager works with specific areas negotiating agreements with suppliers regarding purchasing of components for spare parts, in-house production throughout all business areas at Nahoj Nim and production/assembly of modules at module suppliers.⁴⁷

⁴⁷ Interview with Lotta Intiso, Nahoj Nim, 2005-09-15

4 THEORY

In this chapter the theories, which are to be used during the analysis of the research data, will be presented to give a frame of reference for the thesis. The Theory is divided into four parts, each representing an individual theoretical frame.



4.1 The Porter Standard Chain

One way of understanding the role of purchasing is to use the Porter Standard Chain. The support function *Procurement*, as used by Porter, is a broad term which includes all activities required in order to get the product from the supplier to its final destination. It involves the purchasing function as well as stores, transportation, incoming inspection and quality control.⁴⁸

The Standard chain is described as the various steps a good or service goes through from raw material to final consumption. According to Michael Porter (1985) every firm is divided into primary and supporting Standard activities. The Standard chain in figure 4.1 is composed of Standard activities and a margin which is achieved by these activities.

⁴⁸ Van Weele, A. (2002) Purchasing and Supply Chain Management: Analysis, Planning and Practice, pp.14

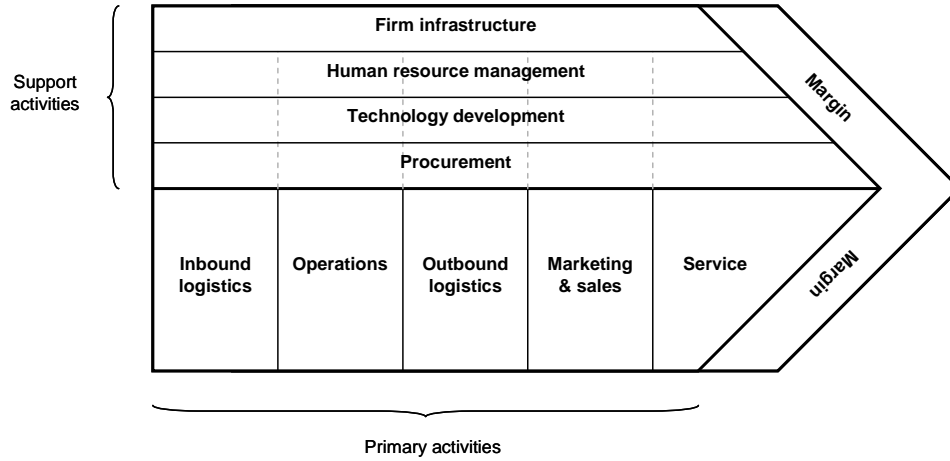


Figure 4.1 – The Porter Standard Chain (Redrawn from Porter, 1985)

Primary activities are those which are directed at the physical transformation and handling of the final products, which are delivered to the customer. Porter differentiates between five categories of primary activities; inbound logistics, operations, outbound logistics, marketing & sales and services. Support activities enable and support the primary activities individually as well as supporting the whole primary process. These support activities are grouped into four categories; procurement, technology development, human resource management and firm infrastructure.

The Procurement activity relates to the function of purchasing inputs used in the firm's Standard chain. These may include raw materials, supplies and other consumable items as well as assets such as machinery, office equipment and buildings which illustrate that purchased inputs may be related to primary as well as support activities.

All activities, both primary and support, need to be performed in such a way that the total Standard generated to the company exceeds the sum of its costs.

⁴⁹

⁴⁹ Porter, M.E. (1985) *Competitive Advantage*, pp. 39-41

4.2 The Purchasing Process

The definition of *Purchasing*, according to van Weele (2002) is:

“Obtaining from external sources all goods, services, capabilities and knowledge which are necessary for running, maintaining and managing the company’s primary and support activities at the most favourable conditions.”⁵⁰

The purchasing function should obtain the proper equipment, material, supplies and services of the right quality, in the right quantity at the right price and from the right cost. It does not include the responsibility for material requirements planning, materials scheduling, inventory management, incoming inspection and quality control. However, in order to be effective – purchasing should be closely linked to these materials activities.⁵¹

To illustrate the purchasing main activities the purchasing process model can be used, as shown in figure 4.2. The purchasing function covers the activities from determining specification to follow-up and evaluation.

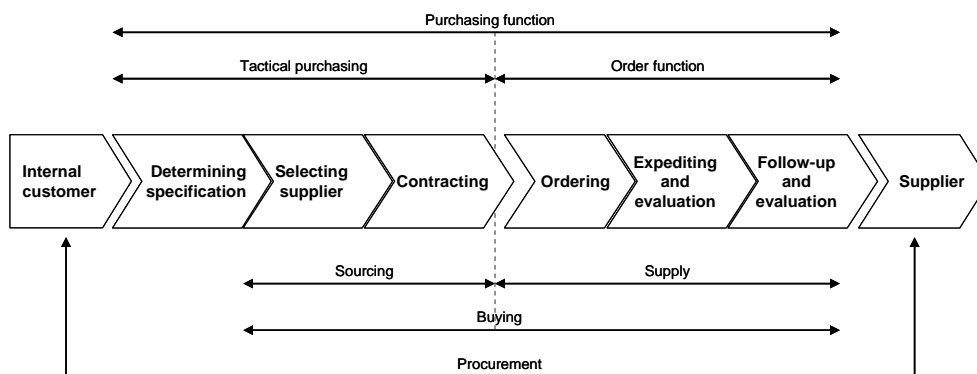


Figure 4.2 – Purchasing process model and related concepts (Redrawn from van Weele, 2002)⁵²

⁵⁰ Van Weele, A. (2002) Purchasing and Supply Chain Management: Analysis, Planning and Practice, pp. 14-16

⁵¹ Ibid.

⁵² Ibid.

First, the specifications are determined in terms of required quality and quantities then the most suitable supplier is selected. Next is preparing for and conducting negotiations with the supplier in order to establish an agreement. The order is then placed with the selected supplier and subsequently monitoring and control of the order is conducted. Finally, the follow-up and evaluation is made by settling claims, up-dating product and supplier files as well as supplier rating and ranking.⁵³

4.3 The Three Principles of Purchasing

There are three basic policy principles for purchasing according to van Weele (2002).

1. Business Orientation

First, the *business orientation* of the company must be understood to be able to support the company in meeting its goals and objectives. This can be done by evaluating the end-user market, changes in product, production or information technologies and future investments.

2. Integrated, Cross-Functional Approach

Secondly, purchasing decisions should be made using an *integrated, cross-functional approach* focusing on total cost of ownership. It can only be developed effectively in close cooperation with all affected disciplines and managers.

3. Bottom-Line Orientation

Finally, by *bottom-line orientation* purchasing should provide a commercial opposition vis-à-vis internal customers by suggesting alternatives to existing product designs, components to be used and alternative suppliers in order to improve the price/Standard ratio.⁵⁴

⁵³ Ibid.

⁵⁴ Ibid. pp.98-99

4.4 Purchasing Development

4.4.1 The Integrated Purchasing Development Model

In order to evaluate the development of purchasing over time and to understand the current stage of evolution of the purchasing function, in 1993 Mark Keough identified five evolutionary stages of purchasing; Serve the factory, Lowest unit cost, Coordinated purchasing, Cross-functional purchasing and World-class Supplier Management. By moving from one stage of development to another Keough has found that companies have realized savings of around five to ten percent of spend per step.⁵⁵

In 2002, van Weele had expanded the five-stage model presented by Keough by adding a sixth step and integrating some valuable insights from other contributors. The result is the integrated purchasing developmental model, as shown in figure 4.3.

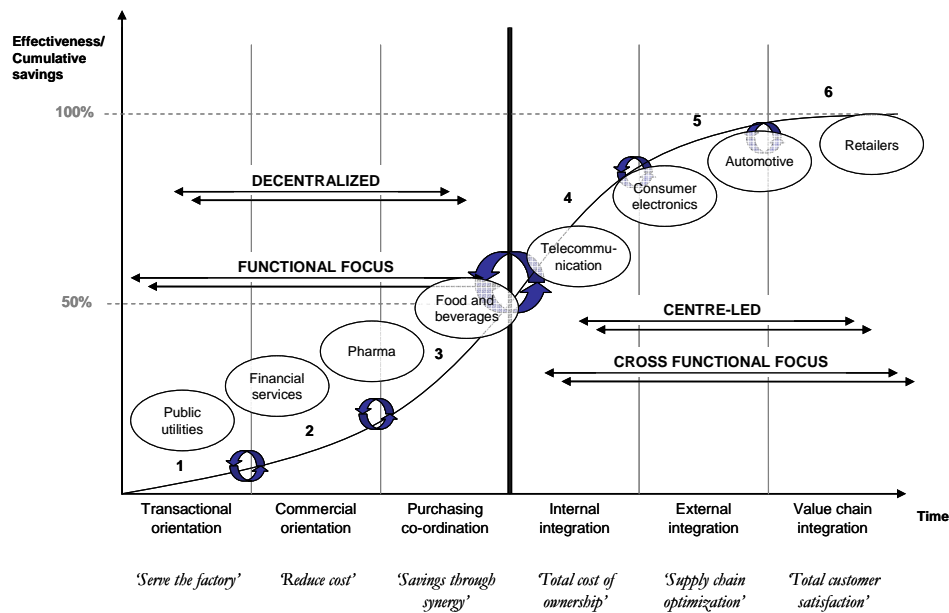


Figure 4.3 – The Integrated Purchasing Development Model (Redrawn from van Weele, 2002)

⁵⁵ Keough, M. (1993) Buying Your Way to the Top, *McKinsey Quarterly*, September

The six stages of the integrated purchasing development model are:

1. Transaction orientation; *Serve the factory*
In this first stage the primary task of purchasing is to find appropriate suppliers and ensure that the plant does not run out of raw materials and components. There is no explicit purchasing strategy at hand and goals are rudimentary and intuitive. The department is decentralized at plant level under supervision by a production or logistics manager. The purchasing staff consists of operational and administrative buyers, strongly task-oriented, and with little education for the job.
2. Commercial orientation; *Lowest unit price*
At this stage the strategy is characterized by a sharp focus on low prices. The purchasing function now has its own department at plant-level, reporting directly to the plant manager. It is becoming more and more a specialist function and special buyers are organized around different product groups. Buyers are concentrating on negotiating and contracting 'good deals' since the department is measured by price variance (cost savings) and delivery performance of the suppliers. The purchasing staff consists of operational and initial buyers with 'hands on' experience and important skills are negotiating ability and price comparison skills.
3. Purchasing coordination; *Savings through synergy*
In the third step the coordinated purchasing is led by a strong central purchasing department and the emphasis lies on cross-unit coordination and compliance with nationally negotiated contracts. Supplier management is central and the aim is to achieve synergy effects by bundling purchasing power of the different divisions and adopting different supplier strategies to different product groups. Apart from price and costs the purchasing unit is now seen as having an important influence on the quality level of purchased products. Slowly the purchasing function is getting recognition from top management but the rest of the organization is not yet convinced of the Standard adding potential of the purchasing function.

Organizationally the purchasing function is centralized on a divisional level and the formalization of purchasing process and procedures is at full speed. The purchasing unit is still strongly product oriented and a great amount of attention is directed to communication and the intention to cooperate more internally between business units. Though computerized business systems are at hand they are still not linked to each other apart from on a divisional level. The purchasing staff has a specific purchasing

background and there are several different jobs at hand. Training is aimed at analytical skills, total quality management (TQM) and communication skills.

4. Internal integration; *Total cost of ownership*

At this stage the main focus is to reduce the total systems cost and not just unit price of purchased components. Often, key suppliers are included as problem solvers instead of rivals in negotiations. The purchasing unit is organized around internal customers and it is becoming much more process-oriented. Purchasing is involved in strategic issues as core questions and make-or-buy decisions and it is centre-led. Purchasing processes are integrated in the different divisions through cross-functional teams.

5. External integration; *Supply chain optimization*

The fifth step is characterized by outsourcing strategy combined with extra attention to cooperation with supply partners on product development and preproduction planning. Advanced computer systems are used to order against corporate contracts from some major suppliers. Purchasing works hard to simplify for internal customers by using systems contracting, purchasing cards, e-business catalogues and/or EDI. At this stage supplier management becomes supply chain management as investments are made to involve suppliers in different business processes instead of just buying goods and services as efficiently and effectively as possible. Internal purchasing is now done by cross-functional teams instead of through a separate department. The information systems are integrated with both internal customers and partner suppliers. Important skills here are knowledge of total-cost-ownership, strategic supply chain management and leadership qualities.

6. Standard chain integration; *Total customer satisfaction*

In the final step the focus is on delivering Standard to the end customer. Suppliers are integrated by consistently supporting their product and designing the most favourable Standard chain possible for the end user. Purchasing strategies are a part of the business strategy in this stage and the functioning is based on a shared vision by all organizational members.⁵⁶

⁵⁶ Van Weele, A. (2002), Purchasing and Supply Chain Management: Analysis, Planning and Practice, pp.108-113

4.4.2 Five Common Barriers on an Operational Level

According to Keough (1993) there are five common barriers to be overcome in order to successfully adopt a successful approach to purchasing; *poor information, weak administration, missing skills, no performance measures and low status*.

1. Poor information is the most common barrier to a more effective management of the purchasing function. It is crucial to understand what is spent on what item and usage trends.
2. A weak administration is characterized by purchasing groups being overwhelmed by managing the day-to-day functions of the purchasing process.
3. Another problem is missing skills as traditional purchasing is simply negotiating with suppliers to get a good contract. According to Keough negotiation tactics have an influence of one to five percent of the outcome. Instead, by purchaser involvement in product design and specifications and supplier/customer linkage purchasing can have a 30-50 percent impact on cost. Without relevant skills, though, it can be difficult to convince colleagues in other functions to let them in.
4. Purchasing needs good performance measures in order to verify the Standard added to the corporation.
5. And finally, low status of the purchasing function is reflected by low placement in organizational hierarchy, reporting to key order functions such as operations, slow career progression, and purchasing managers being paid less than their counterparts in other functions.⁵⁷

⁵⁷ Keough, M. (1993) Buying Your Way to the Top, *McKinsey Quarterly*, September

4.4.3 Ten Procurement Pitfalls on a Strategic Level

In April, 2005, an article by Nelson, Moody and Stegner presented a similar set of barriers to an effective purchasing; *the 10 procurement pitfalls*. According to the writers:

“There are ten clear pitfalls that limit a supply chain’s contribution to profit and growth. These problem areas also mark the difference between mature organizations that are working on the right issues and bringing along the best resources and those operations that are stuck in day-to-day grind.”⁵⁸

The ten barriers or pitfalls are:

1. Low expectations, make the challenge difficult. If expectations for the purchasing role in the business are low, chances are results will be the same. Low expectations can be especially damaging in the supply base if quality and on-time performance is not appreciated and saluted.
2. Decentralized purchasing, is the biggest barrier to improved spend management. In a decentralized purchasing structure operations have a tendency to put one plant or function in competition with another. Maverick buying is common in decentralized organizations and there is usually a problem with showing the “same face” to suppliers when buying and communicating.
3. Purchasing reporting into operations or marketing, is an old production model which enables limited reach and responsibility. When purchasing reports to production or operations, spend management and strategic procurement planning is neglected in favour of tactical short-term activities. When non-purchasing professionals get to make purchasing decisions, as for example outsourcing of a critical component, supply chain spend and technology objectives are often overlooked.
4. Lack of good analytical tools, makes it difficult to gather, consolidate, manipulate and analyze procurement information from many sources. For a single commodity data search an analysis can be worth while without

⁵⁸ Nelson D., Moody P.E. & Stegner J.R. (2005) The 10 Procurement Pitfalls, *Supply Chain Management Review*, April

analytical tools but in order to capture savings on all commodities, all the time, consistent and fully centrally integrated data is required.

5. Supplier proliferation, limits the number of high level partnerships that good relationship builders can develop. A large number of suppliers also make it expensive to undertake a supplier development on a large scale. Decentralized purchasing unfortunately builds supplier abundance and when organizations want to bring all buying end negotiating activities together into one central point the supplier base will have to be reduced or rationalized.
6. Short-term, low-level tactical focus, makes it difficult to achieve payback without beating up suppliers as the department will only be involved when production is in jeopardy or a hot order appears. To facilitate the strategic focus, emergency procurement issues should be dealt by a central purchasing unit which monitors and reviews the overall performance on contract level.
7. Bad press, can be avoided by speaking the language of management (financials, expenses and contributions) instead of focusing on costs. By turning the image of purchasing or procurement around to reflect profit and Standard creation the bad reputation of purchasing can be reversed.
8. Product variety and complexity, is often a result of a long line of unnecessary parts selected by individual buyers or engineers generations ago – and complexity costs. If producers want to find immediate cost relief and change the way buyers and engineers work together, reduction of variety and complexity is necessary.
9. Purchasing separate from new-product development, makes it hard to optimize the supply chain. By being involved earlier in the product life cycle, having a bill-of-materials database accessible to parties and all design, pricing and supplier performance information available purchasing can excel. See also 4.5 Involving Purchasing in Product Development.
10. No supplier development, means missing out on big savings and performance opportunities. By assisting suppliers with quality and performance it has been proven that supplier development payback could be three to four times its cost.⁵⁹

⁵⁹ Ibid.

4.5 Involving Purchasing in Product Development

A growing number of companies today have engineers who report to purchasing. These engineers have an in-depth understanding of the technology, and influence component and supplier selection during design. Companies that involve purchasing in design seem to have similar results; they use standard low-cost components rather than costly custom components. They also more frequently re-use parts that are designed into other company products. Thereby, the number of suppliers is reduced as business is awarded to existing suppliers which have already been approved. All of this reduces costs and boosts profit margins.⁶⁰

Blascovich and Markham states the importance of purchasing involvement in product development by pointing out the impact of product design to the life-cycle cost:

“Product design is the single most important driver of cost [...]. By the end of the early, creative design phase, about 70 percent of the product’s life cycle cost has been established and two-thirds of the cost reduction opportunities have vanished.”⁶¹

According to Teague (2005) there are three elements of excellence when it comes to involving purchasing in product development:

1. Work side by side with engineering
2. Early involvement
3. Identify preferred sources

Purchasing involvement usually begins early at the bill-of-materials identification/development. With procurement as a part of commodity teams purchasing can provide information and guidance to preferred technologies and the supplier supporting those technologies. Purchasing staff can also help in prototype development and in reducing cycle time through use of service agreements, procurement cards and other tactics. As a result companies adopting this method find improved results in source and component

⁶⁰ Carbone, J. (2002) Involve Buyers!, *Purchasing*, March 21

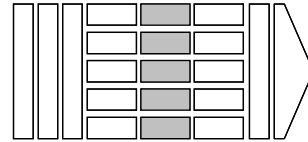
⁶¹ Blascovich J.D. & Markham, W.J. (2005) How Procurement Excellence CREATES STANDARD, *Supply Chain Management Review*, July/August

selection, reduced engineering change orders and better pricing through leveraged spend with fewer suppliers.⁶²

⁶² Teague, P.E. (2005) Material and supply joins design teams, *Purchasing*, September 1

5 EMPIRICS

In this chapter the findings of the survey are presented. The Empirics derives from several interviews presented in the References, each respondent will not be pinpointed in this section due to the sensitivity of the matter. The current situation of the purchasing unit C&TCP is described using a framework of chosen theories of purchasing. The chapter is divided into four parts, correlating with the four individual theoretical frames.



5.1 The Porter Standard Chain

Today the Supplier Management group, including C&TCP, is situated organizationally within the function *Operations*, a core function of Nahoj Nim's business unit Alfa. The Supplier Management function C&TCP is responsible for purchasing of components and technical consultants services which relates to the support activity *Procurement*, as shown in figure 5.1, below.

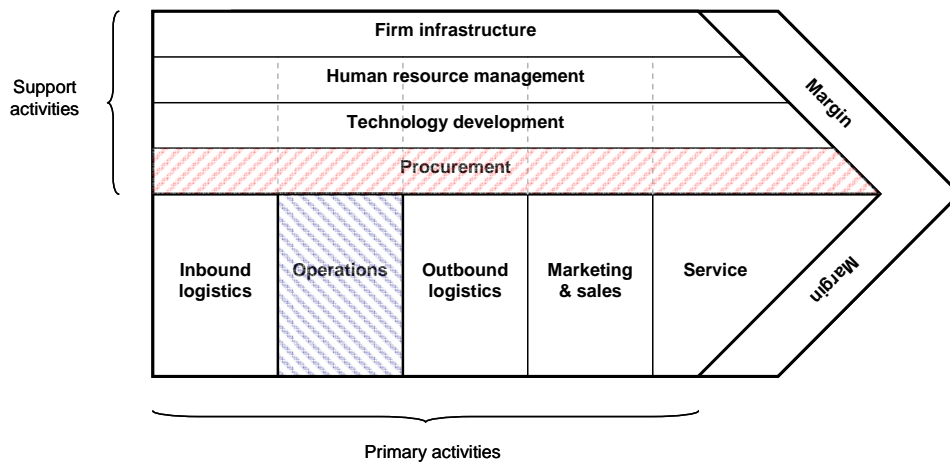


Figure 5.1 – C&TCP according to the Porter Standard Chain⁶³

⁶³ Van Weele, A. (2002) Purchasing and Supply Chain Management: Analysis, Planning and Practice, pp.14

5.2 The Purchasing Process

The Purchasing Process at Nahoj Nim and the activities covered by C&TCP can be illustrated using the Purchasing Process Model, as shown in figure 5.2. Each block of the process is described in detailed below.

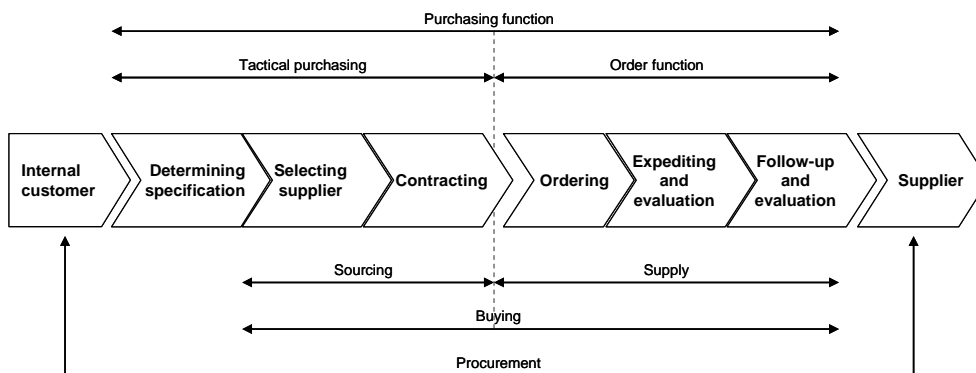


Figure 5.2 – The Purchasing Process Model⁶⁴

The *determination of specifications* has indirectly been made by product development or product designers as they are the ones choosing which components are put into the machines. In several cases the components have been chosen simply by technical standards. As a result commercial aspects such as total cost analyses, lock-ins with suppliers or a standardized component assortment have been neglected. Now, the Program Purchasing team will act as a support for the product development teams in the NNA business area projects.

The component *supplier selection* has for a long time been carried out in the product development teams by purchasers within the teams or by project managers when there has not been a purchaser at hand. When purchasing knowledge has not been present within the team sometimes the system suppliers has been involved whilst choosing suppliers. In any case the supplier base has grown due to lack of purchasing involvement early on in the product

⁶⁴ Van Weele, A. (2002) Purchasing and Supply Chain Management: Analysis, Planning and Practice, pp. 14-16

development and commercial factors such as financial stability, environmental focus and technology development abilities of the suppliers has rarely been considered.

The C&TCP group is today involved mainly in the *contracting* part of the purchasing process model. The group has for some time worked very reactively with signing and handling contracts and agreements with previously selected suppliers and parts.

The *ordering and expediting & evaluation* of component suppliers has been difficult to control and measure since the great part of components ordered from Nahoj Nim's component suppliers are going directly to the module suppliers. The only part which can be measured and controlled directly is the spare parts ordering. Also, there is a low degree of transparency with the system suppliers on which parts they use. This means that Nahoj Nim does not know if they in fact use the assigned component suppliers at all. Consequently there is a great gap of information on how much is in fact purchased, or ordered, on the agreements made by C&TCP.

The *follow-up and evaluation* material is today only collected at Nahoj Nim when assembling the machines and for spare parts as claims which are later put together as trends and analyzed by the Supplier Quality Assurance team. In assembly, approximately 35% of the non-conformities, or faults, are related to component failures. This makes it the second largest non-conformity group. However, the number of component failures from the component suppliers is likely to be much higher but they are often dealt with at the system supplier without any involvement of or information sent to Nahoj Nim. This makes it difficult to analyze the performance of a component supplier and the question of assessing information on component supplier performance from system suppliers has been addressed but not solved.

5.3 The Three Principles of Purchasing

1. Business Orientation

The *business orientation* understanding at C&TCP is today low. For a long time the focus of component purchasing has been on the suppliers. One indicator of this is the grouping of the Supply Managers which has previously focused on having individual responsibility for a couple of suppliers. As a result the big picture was often forgotten and the internal

customers or stakeholders had to involve several different supply managers in order to be able to compare suppliers to each other and no one had the responsibility or possibility to optimize the total supplier utilisation.

Today, the groups are currently being reorganized to focus on commodities, i.e. product groups, in order to be able to compare supplier alternatives to choose best-in-class suppliers for each commodity. The Supply Manager responsible for one product group, i.e. hydraulics, is also responsible of knowing in what Nahoj Nim products the components are used and what impact the component has on the final product. In collaboration with Component Standardization it could then be possible to standardize the assortment used of each component group not only on a component level but also on a supplier level.

Also, since the focus of the component purchasing group has been spare parts for the last couple of years the involvement, communication and alignment with the rest of the business has been minimal. Another problem has been to gather information on how much is bought using the agreements met by C&TCP. Apart from NND ordering of spare parts, which can be easily traced, the module suppliers also use the agreements and Nahoj Nim often does not know to what extent they use the component agreements met by C&TCP or if they use another source to buy the components.

Another aspect concerning business orientation is that C&TCP has been, and still is, a reactive unit that is involved late or not at all in the process of innovation, changes in products and new R&D projects. The evaluation of the aftermarket, through the market-companies, is basically non-existing. This means that there is little knowledge of what is going on in the business, unless there is an emergency that has to be addressed immediately.

2. Integrated Cross-Functional Approach

The *integrated, cross-functional approach* to purchasing decisions has not been optimal in the past but is now improving. By collecting all purchasing activities under one umbrella; the Supplier Management, total cost analysis can more easily be assessed. In the past, the module purchasers where supply managers located decentralized on product level with a team surrounding one product or product group. In addition each Supply Manager had a responsibility for a few module suppliers as Key Supply

Manager (KSM). By this organizational build-up the closeness to the projects was very good, but the overall picture was suffering. The problem was that the KSM's did not have the ability or time to coordinate the purchasing activities, which led to sub-optimizations where each unit made the best deal to fit their own needs. As a result deals were made with module suppliers on basis of the needs of that specific product group instead of coordinating the needs of the entire Nahoj Nim and securing the total cost of ownership.

A problem for C&TCP is that the team is responsible for component purchasing on a Global Nahoj Nim level, while the unit is situated in one business area; NNA. The communication with the other parts of the firm is sometimes difficult, as the visibility into the different business areas is sometimes not good enough and the areas have quite different organizational structures and ways of working.

3. Bottom-Line Orientation

The *bottom-line orientation* purchasing of providing a commercial opposition to internal customers by providing alternatives of product design, components and suppliers to improve the price/Standard ratio has not been a focus for C&TCP during the last couple of years. As mentioned earlier the focus has previously been on the after market, with occasional involvement in production or innovation projects. Now a new strategy has been set to change the focus and to increasingly be involved early on in the projects, as shown in figure 5.3. The reason for this change is partly that the proliferation of suppliers and components due to no or little purchasing involvement or guidelines in design and product development need to be handled. By being involved earlier, before the components and suppliers are designed into the machines, the aim is to decrease the influx of new suppliers and components in order to be able to handle the supplier base and possibly decrease the number of suppliers.

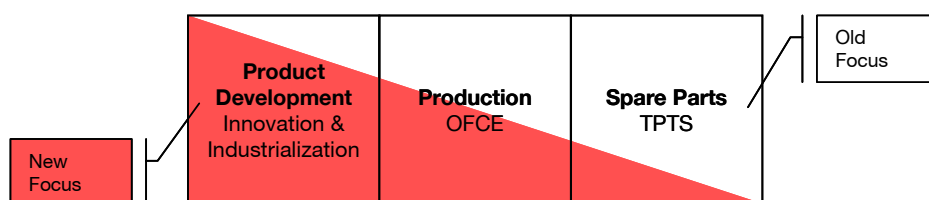


Figure 5.3 – New vs. old focus for C&TCP

5.4 Purchasing Development

5.4.1 The Integrated Purchasing Development Model

The Nahoj Nim component purchasing process can be applied to several steps of the Integrated Purchasing Process Model. In order to be able to classify in which step C&TCP is most likely to be situated, each step will be evaluated.

1. Transaction orientation; *Serve the factory*

The primary task of purchasing is not to make sure that the plant does not run out of raw material and components. There are strategies at hand and the goals are not to be described as rudimentary. The department is decentralized but not at plant level and there are no operational or administrative buyers within the group. The purchasing staff has different levels of education, but no one could be said to have little education for the job.

2. Commercial orientation; *Lowest unit price*

The main focus of C&TCP is, and has been for a couple of years, to negotiate “good deals”, i.e. low prices, with suppliers chosen by other parts of the company. The department is situated organizationally within Operations which is sort of at plant level even though Nahoj Nim has outsourced most of the production to module suppliers. C&TCP is measured primarily by price variance and agreement coverage, the delivery performance though is secondary. The staff does not consist of operational buyers but parts of the group has “hands-on-experience” from other parts of the organization. The most important skill is still negotiating ability and price comparison skills.

3. Purchasing coordination; *Savings through synergy*

The C&TCP group has a history of being a central function at Nahoj Nim. Even though the department is not centrally placed organizationally and is limited in its central role, the group is meant to have the overall responsibility for component purchasing at Nahoj Nim. The contracts are mostly globally negotiated but often somewhat local suppliers have been chosen in product design and are hard to replace. Still, the emphasis lays on cross-unit coordination with the aim to achieve synergy effects by applying economies of scale. Still, however, there are no differentiated

strategies for different product groups or commodities but by the end of 2006 at least three different commodity strategies are to be in place.

When it comes to the quality level of the product the C&TCP group is still not seen as having an important influence on the quality. Since the technical side of constructors is still in charge of what is put into the machines they tend to choose a component by technical standards. On the other hand, by purchasing being focused on price there is a risk of compromising the quality for a lower price. The purchasing function could be said to be getting more recognition from top management but the attention is so far only displayed in more difficult price reduction targets, not by promoting and understanding the Standard adding potential of purchasing.

Organizationally, the unit could be said to be centralized on a divisional level. The formalization of the purchasing process is at full speed with the roll out of the new Supply Management Process, as the group is trying to find ways of incorporating the operational work to fit with the overall process. The orientation of C&TCP has recently been reorganized to focus on product groups, i.e. commodities, instead of just being focused on the suppliers. With these new ways of working there is an intention to focus more on the internal customers in order to communicate and cooperate more.

The business system used at Nahoj Nim, SAP R/3, exists in two different versions which are not linked today but the transition into the newer version is going to take place during 2006. Still, there are no tools at hand for efficiently extracting data from the system useful to the purchasing group. In order to try to keep track on what is bought, which designs are being remade, supplier performance etc. data is gathered in static excel files and manually updated when new information is found.

Most of the newly employed staff has a business and purchasing background, however the department is a mixture of people from technical backgrounds, operational purchasing, business and engineering education and experienced purchasers. The educational development of the C&TCP group has for a long time focused on negotiation skills and the focus for the future is not yet set. Primarily the aim will be to lift the group's competences to a basic level. Apart from that, there will be an individual training plan for each supply manager set in cooperation with the team

managers for more advanced educations, depending on the individual wants and needs of each Supply Manager.

4. Internal integration; *Total cost of ownership*

The total systems cost is often considered but rarely implemented when it comes to purchasing at C&TCP today. Still, the goals and targets for the group is to focus on product prices which is difficult to combine with a low systems cost, as there is often a trade-off between quality and performance to cost. Even though the focus was to change, there are not any systems in place today for follow-up on the impact on total systems cost, and no one is responsible for the total cost today which means that no one is driving the question. The organization is not organized around internal customers and does not even have a spokesperson internally for each system, which means that an internal customer would need to contact virtually everyone within C&TCP to get the big picture of the impact on his particular part. Today there is no involvement in strategic issues as core questions and make-or-buy decisions nor is the purchasing function centred and there are no cross-functional teams to integrate purchasing into the different divisions.

5. External integration; *Supply chain optimization*

Nahoj Nim has a strong outsourcing strategy when it comes to equipment for packaging machines. The module suppliers are often involved in product development and production planning. However, this does not apply to component purchasing, apart from occasional projects of great magnitude to the Nahoj Nim business. One information system, the Supplier Portal, is available to both suppliers and internal customers. Through the system the supplier has access to their own agreements, pricelists, contact information and in some cases delivery performance, supplier evaluations and additional data. The internal customers have access to supplier information and restricted access to agreements and pricelists depending on the level of security. Apart from this forum no information systems are linked. The focus and skill level of the group is not yet on total-cost-ownership, strategic supply chain management or leadership qualities.

6. Standard chain integration; *Total customer satisfaction*

Today there is basically no connection to the end-customer when it comes to purchasing activities. The suppliers are not integrated and give no support to optimize the Standard chain. When it comes to component purchasing strategies, they are not seen as a part of the business strategy.

5.4.2 Five Common Barriers on an Operational Level

When it comes to the common barriers to a successful approach of purchasing as applied to Nahoj Nim and the C&TCP group we see several similarities.

1. Poor information

The knowledge of what is spent on what component by cost/price and volume is very low at C&TCP today. The purchasing unit has previously worked very reactively; making agreements with those suppliers they were asked to contract. Therefore the interactions with the internal customers have been random. The component purchasing group has been considered an island and the interactions with other parts of the company are still occasional and not as frequent as they would like.

Another factor that makes it difficult to control the purchasing activities is that the operational ordering is in fact mainly taking place at module suppliers. Without alignment and communication with the rest of the business this information has not been available and as a result the Supply Managers have been forced to ask their component suppliers for information on what is bought using the Nahoj Nim agreements. Now, there is an increased focus on this issue and the groups are, as a part of the commodity strategies, starting to put together information on:

- Which components are used at the different machine platforms?
- In what modules are the components used?
- Which module suppliers produce these modules, i.e. buy the components?
- Which were the volumes produced of those modules during the last year?
- What is the forecast for 2006?
- What impact does the component cost have on the module and machine cost?

2. Weak administration

The operational tasks of managing negotiations and handling day-to-day problems and tasks consumes most of the work day for the Supply Managers at C&TCP. However, recently there has been an improved focus on taking time to set up strategies and frameworks for how to follow the new strategic direction of the department.

3. Missing skills

As mentioned earlier, the C&TCP group is made up by a mix of people with different backgrounds and skills when it comes to purchasing. As the negotiation part of purchasing is still the main task of the Supply Managers it is also the most developed skill in the team. Otherwise the group has a quite inhomogeneous competence level with a few Supply Managers with experience from the commercial side, and some with a more technical background and a greater knowledge of Nahoj Nim. The question of competence has been mentioned by almost every person interviewed, but the answers differ quite a bit.

The product development teams need a speaking partner with preferably both technical and commercial knowledge to be involved in the projects. This person needs to be able to weigh the commercial benefits against the technical, to ultimately choose the best solution that supports the Nahoj Nim business. If this combination cannot be found, at least the commercial skill of the supply manager involved has to be substantial since this is what is lacked in projects today. The product development teams crave involvement from supply managers with knowledge of purchasing to be present in the project supporting and assisting when sourcing and choosing suppliers. The question of whether the Program Purchasing staff has this kind of competence and resources today, is addressed by many.

When it comes to Delta (NND) the need from purchasing involvement is different as the business unit is only responsible for operational purchasing by ordering, expediting and measuring the supplier performance. When the collaborations with component purchasing have not worked, the operational buyers at NND have been forced to source and contract suppliers on their own, even though they lack knowledge and resources for doing so. One problem has been that component purchasing previously has been cutting the tail of small suppliers. This has meant that many of the spare parts suppliers, which were used rarely, have been deleted even though they are needed by NND to maintain the service to customers. The unit also has quite specialized needs of lead-times, packaging, freight payments and logistics that has to be addressed by C&TCP. This means that there is a need of logistic competences and knowledge of the NND business to be able to make optimal deals with the suppliers for spare parts.

The component purchasing function of NNG needs the C&TCP group to have a greater awareness of their responsibilities and work processes in order to align the component purchasing for Nahoj Nim. The experience

of working with component purchasing has to be exchanged between the groups to better make use of the individual competences and strengths. NNG also states that there is a need of more cooperation when purchasing standard components and a better usage of the available tools for transferring supplier information; e.g. the Supplier Portal.

Within Supplier Management some people believe that the competences can be found in the group, but that they have not been fully utilized yet. Others say that there are knowledge gaps today that can be a weakness when trying to change to a more proactive, strategic way of approaching purchasing. Other parts of the business areas have problems evaluating the competence of the C&TCP group as they have not interacted much with the group and therefore simply does not know who the supply managers are and which their skills are.

4. Performance measures

Since there is no awareness of what impact the components have on the final product it is impossible to have any good measurements to evaluate if their work has any effect on the business. So far, the measurements for the component purchasing group have basically been agreement coverage and price development. As a result the component deals have sometimes started out on a high price level as the suppliers know that they will be forced to decrease prices by approximately two percent per year. The price measurement that is in place today and the lack of information on what is bought is sometimes used by suppliers to lower the price of several low-volume components whilst components of high-volume have become more expensive. This is making the total cost for Nahoj Nim higher, whilst the C&TCP shows a reduction in price development and meets its targets.

Another problem is that as Nahoj Nim does not know what impact a, say 50% reduction of a certain component will have on the module and the final machine cost. The Module suppliers buy components and assemble them to a module but Nahoj Nim often does not know the build-up of the module cost. In some cases the module suppliers show an increase of 5-6% on the purchasing cost which impossibly can cover their expenses. Today, the job of getting a grip of the cost structure for the modules and the entire machines is ongoing to understand how the labour costs, raw material costs as well as component costs should affect the total cost of the machines. Without this kind of information, it is today impossible to trace savings back to Nahoj Nim and the risk is that the only one profiting from the cost reduction is the module supplier.

5. Low status

The status of purchasing is low at Nahoj Nim today. This can be shown by the low organizational placement of Supplier Management and C&TCP reporting to Operations, a slow career progression and purchasing managers being paid less than counterparts in other parts of the organization.

Organizationally, C&TCP is placed far down in one business area, Nahoj Nim Alfa. However, the role of C&TCP is to support all business areas with technical consultants and with component agreements for:

- Nahoj Nim Alfa (development & production)
- Nahoj Nim Beta (development & production)
- Nahoj Nim Delta (spare parts for NNA & NNB)
- Nahoj Nim Gamma (primarily for beverage & ice-cream)
- Nahoj Nim Research & Development

The structural placement of C&TCP is shown in figure 5.4. The arrows indicate where the group has the responsibility for supplying component agreements today; the entire Nahoj Nim.

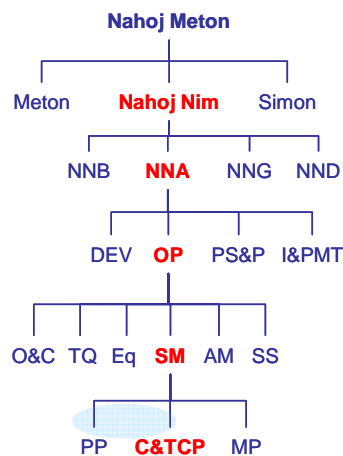


Figure 5.4 – Organizational chart illustrating structural placement of C&TCP

Today, the C&TCP is financed by NNA only - even though the group is used by, and has the role of supporting, the entire Nahoj Nim group. There are plans of allocating these expenses to the entire Nahoj Nim, but it is still not set.

5.4.3 Ten Procurement Pitfalls on a Strategic Level

1. Low expectations

The expectations of purchasing and C&TCP today are quite low. Since the cost of the machines has not previously been an issue, the purchasing of parts for these machines have only been considered a matter of securing the inflow of parts for production and after-market sales. Today however there has been a change in strategy by Nahoj Nim due to the new EU directives. Since 2003 there are three corner stones of Nahoj Nim which has to be profitable; Packaging Materials, Filling Equipment and Technical Sales, as illustrated in figure 5.5.

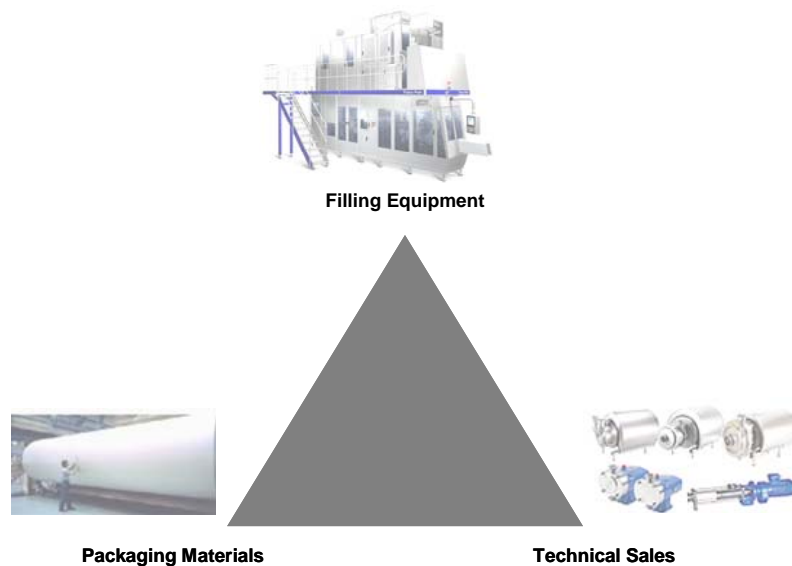


Figure 5.5 – Three cornerstones of profitability at Nahoj Nim

This has brought on a new focus of cost for the filling equipment, and therefore the pressure to reduce cost of components has increased. Still there is no one responsible in top management of Nahoj Nim for

purchasing of equipment and parts and the component purchasing is not considered to be a strategic issue for Nahoj Nim today. Even though purchasing has not been recognized at top management level, many of the persons interviewed believe that the impact of Supplier Management would be improved if it had a bigger mandate. Purchasing is still a function with responsibility for making the products bought as cheap as possible by negotiating contracts, and using the volumes bought as a basis for Base-of-scale solutions. There are no indications on management wanting more from purchasing involvement regarding Standard adding activities.

2. Decentralized purchasing

Previously the component purchasing was centralized and handled the top 100 suppliers of components which were used for several parts of Nahoj Nim. Then the group was merged with the supply of parts and placed within the NND business area focusing mainly on spare parts. Today the component purchasing group has been taken out of the Delta area and placed within Alfa, on a decentralized level.

Since the C&TCP group is now trying to regain control of the component purchasing on a Nahoj Nim level the main focus is to manage the situation by collecting all purchasing activities within the group to show the same face towards the component suppliers. Previously, there have been several different agreements and demands on one single supplier, which has led to confusion and un-optimized deals.

There are also ongoing discussions with Meton, another member of the Nahoj Meton group, for the possibility of consolidating the component purchasing activities. The idea is to evaluate the possibility of gathering and aligning component purchasing of standard components throughout the entire Nahoj Meton group in the future.

3. Purchasing reporting into operations or marketing

The Supplier Management is situated organizationally beneath Operations. This means that purchasing of equipment and parts is not involved in make-or-buy decisions and has no view of the entire supply chain spend. Today there is no responsibility for managing the entire life-cycle of a product. According to the new Nahoj Nim process the Supply Management process and the Customer Management are the only processes to be involved throughout the entire life-cycle.

4. Lack of good analytical tools

Today the C&TCP group uses a business object tool in order to gather and extract data from the business system SAP R/3. In major parts of Nahoj Nim a new version of R/3 is being used and in May 2006 C&TCP will move from the old version 3.1 to the new version 4.7. This has brought on a couple of difficulties. The new version does not support several of the specific needs of C&TCP and the decision to upgrade the version was taken not long ago. This means that the mapping of which information gaps will appear is not yet complete. As a reference point, NND will be the last unit to enter 4.7 in May 2006. They have for a long time prepared for the transition and they have found several risks of losing, or having difficulties extracting, information using the new version.

The main difficulties for C&TCP will be that when using 4.7 it will not be possible to extract gathered data from R/3. All information will be received in single lines of information which will later have to be put together using copy-paste in excel. This work will require many man hours for gathering the information needed and the risk of getting it wrong when consolidating and analysing the data is evident.

There is an ongoing discussion of solving this problem using a business warehouse, where single pieces of data could be extracted from R/3 and then grouped and made assessable through the warehouse. The problem can be solved quite easily by involving an external partner for building a warehouse that will facilitate and support the C&TCP objectives. However, the policy of Nahoj Nim is that all business systems have to be developed in-house and the queue to the internal IT department for getting such a warehouse system is long. It could take years before there will be a solution to the problem.

5. Supplier proliferation

The supplier base of C&TCP is today extensive as the group has not been involved when choosing the suppliers to begin with and there has not been any standardization or coordination of the supplier base. The standardization that exists today is on a component level. This work is prepared by the Component Standardization group, a part of the Supplier Management which presents 1st, 2nd, and local solutions for each component group, e.g. motors or hydraulics. This data is presented in a tool called the PC Finder (Purchased Component Finder) which is used by the constructors when designing a product. However, if a suitable component is not to be found in the standard assortment the designers are

somewhat free to choose a component, and supplier, as long as the choice can be motivated to the project manager. A standardized portfolio of preferred suppliers to choose from before turning to an external source is not available today.

Another factor to the extensive number of suppliers is that the Nahoj Nim machines have a lifetime of up to 30 years. These machines still need spare parts every now and then which mean that the component supplier list involves several suppliers which are used very seldom and for a low Standard each time. As mentioned earlier, one aim for the component purchasing group has been to reduce the number of suppliers resulting in NND having to source these suppliers once again to maintain their service level.

Now, a new solution is being discussed and evaluated where these small, non significant suppliers could be sourced through a 3rd party. The idea is supported by NND but a couple of questions have been addressed. First, the 3rd party supplier has to be contracted and owned by C&TCP. Secondly, the commercial components, which are of a standard assortment, could be easier to collect through one source than the drawn components, which are specifically made for Nahoj Nim using specific drawings. Some of these drawn components are very old and there is a lack of information on specifications etc. which can make it difficult to choose another supplier. Finally, the rules of pricing have to be evaluated so that the solution will be financially favourable making an analysis of how much such a solution could cost in comparison to handling it internally.

6. Short-term, low-level tactical focus

As mentioned before, C&TCP has not been active and properly involved in the business. Therefore it has been impossible to focus on strategic issues as the day-to-day work of negotiating contracts and dealing with critical supply problems leaves no time to work proactively. By not being involved early in the projects trying to avoid commercial pitfalls, such as choosing a financially unstable supplier or suppliers with low capacity for large orders, problems appear and C&TCP are held accountable for dealing with the situation. In some cases though, other parts of the business handle the problems with component suppliers, without involving C&TCP at all, which mean that the basis for prolonging agreements and negotiating prices is not accurate.

There is no risk management in place for assuring the supply of components to Nahoj Nim on a tactical or strategic level. Today there are no back-up plans if a supplier of critical components for some reason will not be able to supply Nahoj Nim with products anymore. Since the focus has been on handling the present supplier base there is little knowledge of alternatives and market knowledge of which commercial directions, laws and regulations are taking place on the supplier markets.

7. Bad press

Today the purchasing unit equipment and parts is focusing on lowering prices. The Supplier Management is gradually trying to focus more on Standard adding activities, such as supporting the development projects and trying to understand the impact of purchasing on the filling machines. C&TCP is structuring and trying to control the business to be able to focus on the important, Standard-adding activities. In the past the group has tried to do everything at once, resulting in nothing being done properly.

Management has yet to show interest in the purchasing activities and, as stated by many, the recent attempts to structure the purchasing activities for equipment and parts could be the last chance to show any results. The risk is that purchasing once again will be diversified and all efforts of reorganization and changes within Supplier Management will be for nothing.

8. Product variety and complexity

Since engineers and designers have had free hands of choosing components during the last half century, the variety and complexity of the component portfolio is extensive. In many cases the idea of in-house design or production being superior to standard parts has been widespread among designers. This means that there are a great number of drawn or Nahoj Nim modified products in the portfolio, which are hard to replace and sometimes not even as good as supplier alternatives. Once a component is designed into a machine, however, it is hard to replace it without following complications.

A great number of parts also mean that there is an increasing base of suppliers that has to be managed. Sometimes the modification or specialization of the chosen component results in single-sourcing; with only one supplier able to choose from. C&TCP then finds themselves in a difficult situation when negotiating prices or if the supplier performance is weak.

The standardization of components is one way of tackling the problem but there have been difficulties as, according to product development and parts of supplier management, not everything can or should be standardized. At times, the product development teams have felt that the innovation and quality has been compromised as they have been run over by the component standardization team. From product development, however, the standardization of a great part of the assortment is applauded but a more flexible approach is sought-after. There is a need for standardizing on a functional or supplier level, instead of on a specific article number.

The problem for standardizing at Nahoj Nim is that the machines are quite customer specified and the most important feature is performance and robustness, making cost per thousand packages at customer the most important measurement. The machines are not the main source of income, the packaging material accounts for more than 80% of the profit, which means that the machines has to be as fast and efficient as possible.

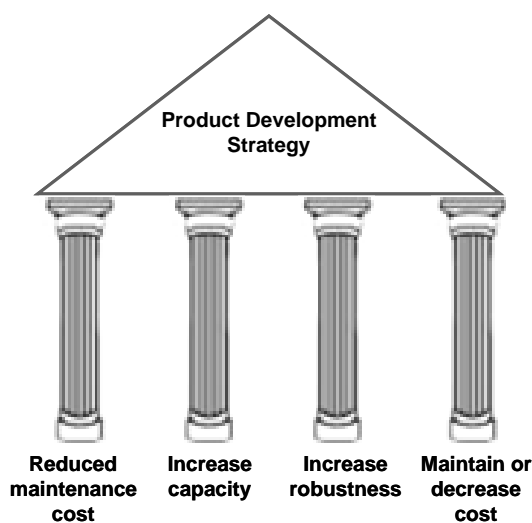


Figure 5.6 – Strategic targets for Product Development

The strategic targets for product development, as shown in figure 5.6, are:

- Reduce maintenance cost
- Increase capacity

- Increase robustness
- ...whilst cost of a packaging line must be equal to or lower than today

As of 2005 the product development teams are measured not only by time, estimated cost and performance but also percentage of new and reused components. These new targets have been set by the individual teams and have not yet been evaluated.

9. Purchasing separate from new-product development

Previously, purchasing has not been involved in the new-product development which has led to a couple of difficult situations. Today however, with the arrival of Supplier Management the collected approach to early involvement of purchasing has begun. The Program Purchasing group is now responsible for being an active part in the projects, being a commercial speaking partner for the development teams when choosing components, sourcing suppliers and involving suppliers in design issues. This transition will start in the beginning of 2006. The program purchasers will be situated in both Lund and Modena in order to be close to the NNA development projects, of which most are situated in Modena, Italy. During the concept and prototype stages the project managers will be responsible for optimizing the commercial aspects of the project. The program purchasers, however, will only be responsible for the business area NNA and C&TCP's role as a global supply manager for components need to find other collaboration partners in the other business areas.

The project managers need and want help with commercial aspects of the projects with purchasing skilled team members, supporting and driving sourcing and utilisation of suppliers. The program purchasers need to be in constant contact with the projects, sitting in on meeting and having a constant dialogue with the designers making sure that the commercial and technical aspects are considered in every decision. Simultaneously there is a need to collect and coordinate the purchasing staff within one organization. There is also a need for a stronger and better functioning supplier quality organization.

The project managers want the C&TCP group to be involved early on in the project since the component design is set near the beginning, in order to be able to make trade-offs for finding the ultimate solution both technically and commercially. As many development projects are situated

in Modena the communications between C&TCP, situated in Lund, and Modena has to improve quite a bit. Some people mean that the component purchasing group need to be situated or have representatives locally in Modena, in order to be an active partner in the development projects. Others say that the physical placement is not as important and that closer collaborations and interactions by visiting or by mail and telephone contact would be enough for a fruitful collaboration between Lund and Modena. What is clear though is that the understanding of what happens in Modena needs to be improved in C&TCP.

Another skill that is needed in the project teams is the ability to set up estimates for worst, best and estimated cost of components. The team also need to have a supplier base ready with alternatives, being able to use bid conferences and finding the best solution. The project managers also wish for purchasing strategies per machine group in order to optimize the platforms. An important factor when it comes to product development is time. This means that discussion of technological specifications until component selection, i.e. sourcing, supplier selection and contracting, has to be done in less than two months. Finally, the targets for product development and Supplier Management, as well as for the rest of the organization, need to be aligned. See also 4.5 Involving Purchasing in Product Development.

According to a project development manager, if purchasing is not involved in product development the risk is that:

- The best suppliers are not chosen, from a commercial point of view
- The number of different chosen solutions of both components and suppliers will increase
- There will be a risk of lock-ins with suppliers leading to a forced single-sourcing
- The project managers will be over-loaded with additional responsibility

10. No supplier development

Development activities with component suppliers are quite unusual today. There is however an ongoing project trying to reduce lead-time at a couple of important suppliers, among them a couple of component suppliers. The aim is to reduce lead-time for entire modules in order to improve

(decrease) the lead-time to Nahoj Nim's customers. There has also been a pilot project with the Supplier Quality Assurance team, a part of the Supplier Management group, where a team was formed by people from Nahoj Nim and a supplier's workforce in order to solve a quality problem at the supplier company. The team's focus was to identify the root of the problem with one very pricy component that accounted for 40% of the non-conformities, i.e. defect products. The team has today identified and solved the problem at the supplier site and are working on the final documentations for assuring a full implementation and follow-up. Similar audits and quality improvement projects are planned to take place with other suppliers during the next year.

Apart from these projects the Supplier Quality Assurance group (SQA), is responsible for assessments of 50-60 module suppliers and 15-20 important component suppliers (only for mechanical parts). The suppliers are evaluated in three main areas; *Pre requisition*, *Performance* and *Process audit*. The pre requisition of the company profile assesses basic demands including ISO-certificates, Key Account Manager available etc. The Performance data is collected on a global Nahoj Nim level and is measured by number of non-conformities and delivery precision. Finally, the Process audit is an evaluation of the suppliers' processes in three steps; Improvement systems, Production systems and Design & engineering. During the last couple of years both the performance and process audit results of the component suppliers have improved.

The SQA is a group consisting of three persons with the responsibility for two main areas; *External quality* for C&TCP and NND and *Supplier assessments* for NNA and NNB. Their main focus is today on components and they have one area of responsibility each – Commercial components, i.e. standard components, Mechanical components, i.e. drawn components, and Supplier assessments.

The relationship between SQA and C&TCP is quite good. The groups are situated in the same facility and interact often. However, regular follow-up forums are only in place for the Mechanical Component Purchasing group. The interactions with the other group, El & Automation Component Purchasing are far less frequent and only when problems occur. In the future it has been decided that these quality forums will be held with the entire C&TCP group along with Component Standardization.

SQA addresses the need for greater transparency when structuring and moving suppliers. The group also needs more information of the supplier quality assessments to be conveyed to the suppliers by the Supply Managers within C&TCP. The quality improvement teams need to involve the responsible SM and there is a need for more visualization. SQA is also dependent on the quality of communication with C&TCP in order to understand what has to be done and what to focus on. The resources for the SQA department are limited today and the group wants to improve the competence by learning modern quality assurance.

5.5 Involving Purchasing in Product Development

At Nahoj Nim the engineers have historically been able to choose components and design machines without involving any purchasing responsible, hence simply choosing design by technology standards. As a result of not having the support by knowledge of the supplier market, components have at times been unnecessarily constructed or modified in-house even though a supplier already had the solution in its standard assortment. At other times a supplier near by has been chosen to supply a part which is then designed in without evaluating whether the supplier is suitable or even able to produce the required volumes and distributing them globally. Unfortunately, once a component is designed in often the manufacturer or supplier is also specified on the drawing making it difficult to choose another source if needed.

Today, the product development teams face strict regulations in cost of the machines, though the cost is only based on production cost. What is often *not* evaluated is the total cost of producing *and* supporting the machines with service and spare parts throughout the product life-cycle of sometimes more than 30 years.

Since the different product development teams are separated, it has been difficult to coordinate the components to be able to re-use previous designs and create a standard assortment. However, Component Standardization is responsible for standardizing some of the components and to provide support in proposing which components to use. Still there are no standards or suggestions available to the designers of which suppliers to use and which to avoid.

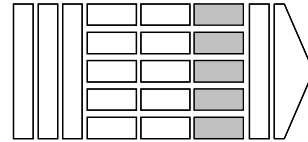
When it comes to the three elements of excellence when involving purchasing in product development, Nahoj Nim and the component purchasing can be described as follows:

1. The new organization of Supplier Management has identified one part, Program Purchasing, to *work closely with engineering* as a partner for the product development teams. When necessary the program purchasers will involve C&TCP to get additional information of component suppliers.
2. The Program Purchasing group is to be *involved early* on in the process. This group, however, is only responsible for the business unit NNA. In NNB the development teams are focused on each module and works as a cross-functional team with responsibility for the entire life-cycle of the module.
3. The components chosen by these teams are from the assortment provided by C&TCP and Component Standardization or - if not available - from another source. Today this is only applied at a component level and not by *identifying preferred sources*. The chosen component suppliers are then contracted by C&TCP. The communication and alignment between C&TCP and NNB has previously worked well, but since a few years the cooperation has failed due to re-organizations etc. and there has not been any interactions between the groups for a long time. Now, the task of setting aligned targets for 2006 need to be dealt with to ensure cooperation in the future. The other business areas have little contact with C&TCP other than when a contract needs to be set up, or when there are problems with a component supplier.

The cooperation with Component Standardization is not optimal. The groups do not share similar targets and today the resources for taking on common projects are insufficient. The recent re-structuring of C&TCP to focus on commodities instead of suppliers has lead to some confusion in Component Standardization of who is responsible for what and whom to contact. The Component Standardization has the responsibility for approximately 55'000 articles which are divided into product groups similar to the commodity grouping of C&TCP, but not identical. By using a tool, the PC Finder, it should be possible to find a suitable supplier through a link to the Supplier Portal but this feature is far from fully implemented today. Still, there are no standardizations on a supplier level.

6 ANALYSIS

In the analysis chapter the empirical findings are analysed using theories of purchasing in order to understand the current situation of C&TCP and to provide a basis for development and improvement. The Analysis is also divided into four parts, correlating with the theoretical frames and empirics.



6.1 The Porter Standard Chain

Organizationally, C&TCP is situated within the unit *Operations* which is also the name of one Primary activity according to Porter, as seen in figure 6.1. These primary activities are linked with the physical transformation and handling of a product indicating that purchasing activities of C&TCP are considered to be a single step in finalizing the product; supplying the operations with material.

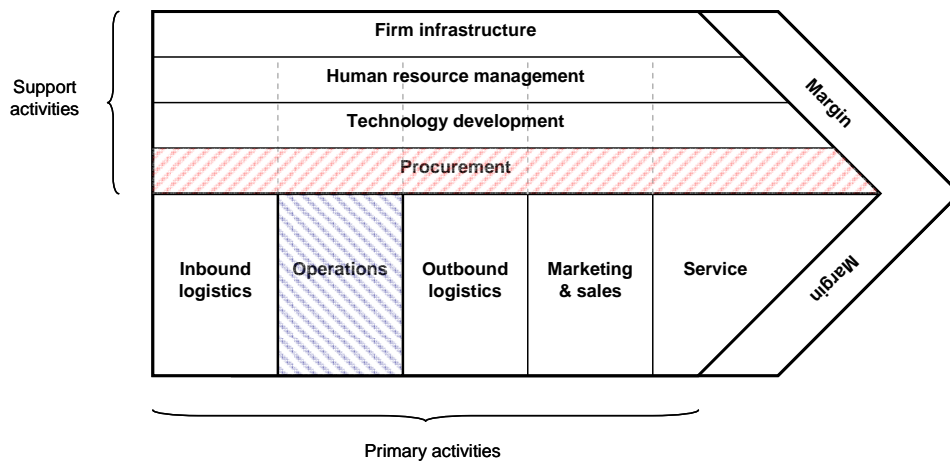


Figure 6.1 – C&TCP according to the Porter Standard Chain⁶⁵

⁶⁵ Van Weele, A. (2002) Purchasing and Supply Chain Management: Analysis, Planning and Practice, pp.14

Porter's definition of *Procurement* as an enabling support function includes purchasing of raw materials, supplies and consumables which relates to the business of C&TCP. The support activities are not only involved in individual primary activities but are also responsible for supporting the entire primary process. This relates well to the purchasing process which is to be involved throughout the entire life-cycle.

By being organizationally situated in one primary activity and operationally active within a support activity C&TCP finds itself in a contradicting situation.

6.2 The Purchasing Process

The purchasing activities for machine parts and components at Nahoj Nim are spread among different parts of the organization. The *determination of specifications* is mainly made by product development teams and designers. The *selection of supplier* has often also been made by the design teams as there has not been anyone responsible for purchasing present in the teams. Now, the Program Purchasing is appointed the role of supporting the NNA teams with purchasing expertise.

When it comes to *contracting*, C&TCP and Module Purchasing are responsible for signing and handling contracts and agreements with the chosen suppliers, as illustrated in figure 6.2 below. The *ordering, expediting and evaluation* of components is made partly by NND, for spare parts, and partly by module suppliers. Finally, the *follow-up and evaluation* is mainly being executed by the Supplier Quality Assurance team of Supplier Management and somewhat reported back to C&TCP and Module Purchasing.

By not being involved earlier on in the purchasing process C&TCP lacks the influence on what to buy and from whom. This results in an abundance of suppliers and numerous different parts to contract. Whilst not being involved in selecting the suppliers C&TCP end up with having to contract suppliers which are not always eligible by financial, environmental or commercial standards.

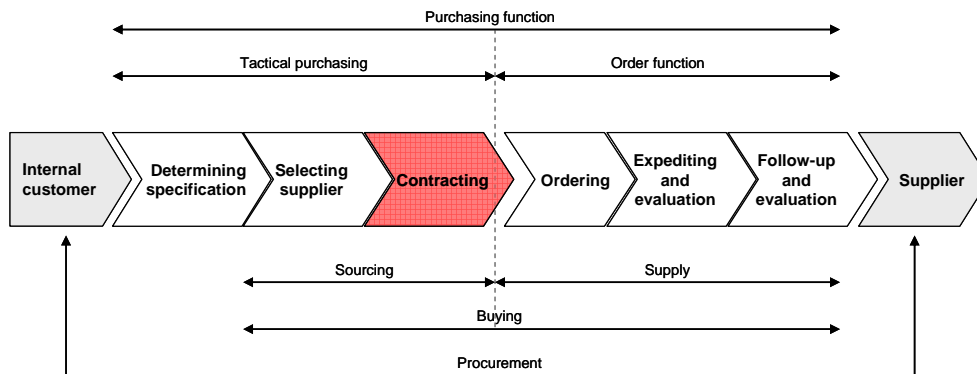


Figure 6.2 – C&TCP according to the Purchasing Process Model⁶⁶

As C&TCP is not responsible beyond contracting they miss out on a lot of useable information of purchased quantities, supplier performance and quality of the products. Without these bits of information, managing the supplier portfolio is easier said than done.

6.3 The Three Principles of Purchasing

The three basic policy principles for purchasing; business orientation, integrated cross-functional approach and bottom-line orientation are not performed optimally by Supplier Management and C&TCP today.

1. Business Orientation

The *business orientation* is low as a result of having a focus of attention on suppliers and single parts of the organization. Since Nahoj Nim is a global and immense company the interactions with the rest of the business does not always come naturally. However, in order for C&TCP to optimize the deals met with suppliers it is crucial that the group knows the effects of their work for Nahoj Nim and for Nahoj Nim's customers. By simply focusing on cutting prices instead of lowering costs or improving product quality it is impossible to create an added Standard for the customers

⁶⁶ Van Weele, A. (2002) Purchasing and Supply Chain Management: Analysis, Planning and Practice, pp. 14-16

buying Nahoj Nim's filling machines and for the end customers buying Nahoj Nim's packages.

2. Integrated Cross Functional Approach

The *integrated cross functional approach* is still far from optimal for C&TCP and the supplier management, but there have been improvements during the last year. By collecting purchasing of parts and modules for the Alfa filling machines in one place – Supplier Management – the possibilities for interactions and a common agenda has improved. However, the group is still only responsible for NNA and the ways of interacting with other parts of the business has still not been solved. The grasp of the total cost of ownership is basically non-existing today since there is not enough interactions and close cooperation with all effected disciplines and managers. For C&TCP it is especially difficult to get the big picture and to control the actions when being placed far down organizationally.

3. Bottom-Line Orientation

The *bottom-line orientation* of component purchasing is today seen as a strategic issue and the C&TCP management is increasingly focusing on being present as a commercial partner to the internal customers, being more proactively involved in the development projects. However, this kind of work is not yet present and the roles for who is doing what in the new Supplier Management structure when being involved with projects in NNA and structures for cooperating with the other business areas are not set today.

6.4 Purchasing Development

6.4.1 The Integrated Purchasing Development Model

For a long time the department of C&TCP has focused on low prices and still the targets for the department is price reductions and contracting coverage. The C&TCP supply managers, or buyers, are concentrating on negotiating 'good deals' and they are organized around different product groups or commodities. The most important skills are still negotiating abilities and price comparison and the purchasing staff partly consists of initial buyers with 'hands on' experience. These factors correlate well to the second step of the Integrated Purchasing Development Model; *Commercial orientation*.

Today, Supplier Management is emerging and the aim for C&TCP is to achieve synergy effects by bundling purchasing power of the entire Nahoj Nim. The role of component purchasing is a central function coordinating the global supply of components but organizationally the department could be said to be centralized on a divisional level. The structuring of the purchasing activities and the introduction of the Supplier Management Process is an ongoing project and the commodity strategies for C&TCP indicate a strong focus on products. The importance of communicating and coordinating more with the internal customers is stressed and the problem of linking the computerized business systems is evident. Also, newly employed co-workers have a specific purchasing background. These factors, on the other hand, indicate that the C&TCP is entering the third step of the Integrated Purchasing Development Model; *Purchasing Coordination*.

However, there are a couple of factors that are still not met when it comes to fully adopting the third step. First, C&TCP or Supplier Management can still not be said to be a “strong central purchasing department” at the mandate for doing what is necessary and being able to drive the change is not present. Secondly, the department is not seen as adding any Standard when it comes to influence on the quality level of purchased products. When it comes to recognition from top management and the rest of the organization, no such indicators have been found during the survey. Finally, the group still primarily consists of initial buyers with not enough skills of strategic purchasing and the training is more aimed at lifting the basic competence level than focusing on analytical and communicational skills and TQM. By not having different jobs at hand, the staff is forced to leave the group in order to move on from being Supply Managers.

The purchasing activities of C&TCP therefore indicate that the department is in a transition phase going from stage two to stage three, from ‘*reducing costs*’ to ‘*savings through synergy*’, as seen in figure 6.3 below.

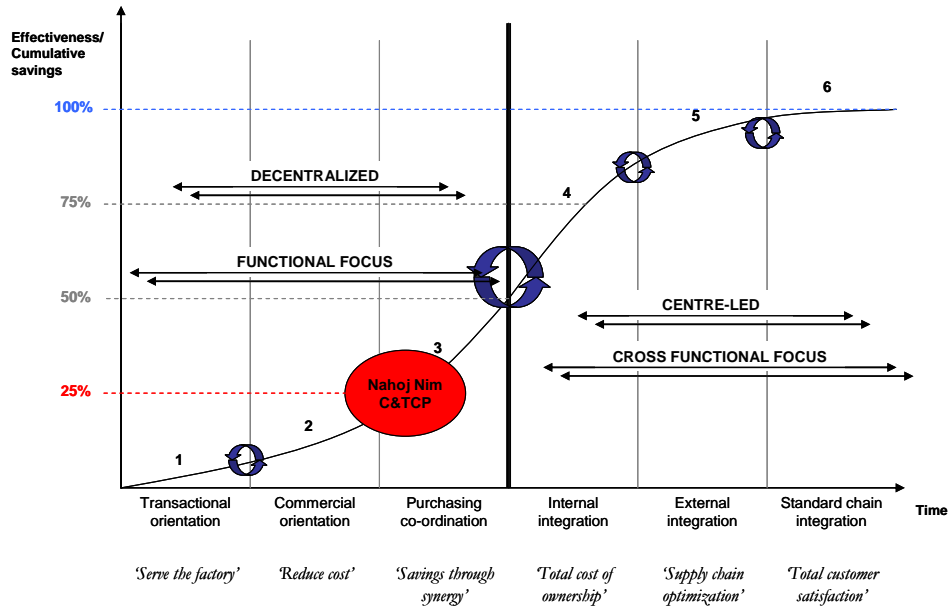


Figure 6.3 – C&TCP according to the Integrated Purchasing Development Model

When trying to find ways to improve the purchasing activities of C&TCP in the future the following three steps can be considered. As indicated in figure 6.3, the component purchasing at Nahoj Nim today is merely 25 percent as effective, producing only a section of the possible total cumulative savings, as it would be if C&TCP was a contender in the sixth and final step.

In order to transition into the fourth step of *internal integration*, reducing the total systems cost, the purchasing function is becoming centre-led and is organized around internal customers being integrated through cross-functional teams. The key suppliers are included as problem solvers instead of rivals in negotiations and purchasing is involved in strategic issues such as make-or-buy decisions and core questions. This is the biggest leap when it comes to being effective as a purchasing function resulting in going from 25 to 75 percent of the total possible cumulative savings.

In order to move on to the next and fifth step of *external integration*, supply chain optimizations a couple of additional activities need to be in place. The outsourcing strategy of Nahoj Nim needs to be combined with attention to cooperate with supply partners on product development and preproduction planning. Information also needs to be shared with suppliers and internal

customers through advanced information systems such as e-business catalogues and EDI. Internal purchasing should be done by centre-led cross-functional teams instead of through a separate department and the important skills are total-cost-of-ownership, strategic supply chain management and leadership qualities.

The sixth and final step, *Standard chain integration*, is the ultimate goal of delivering Standard to the end customer. Suppliers are then integrated by consistently supporting the product and designing the most favourable Standard chain for the end user. Also the purchasing strategies are a part of the business strategy shared throughout the organization.

6.4.2 Five Common Barriers on an Operational Level

The five barriers to strategic purchasing according to Keough all need to be addressed in order for C&TCP to be able to conduct any strategic purchasing and adding Standard to the organization. Unfortunately, C&TCP needs to address all five issues to be able to fully support their internal customers at Nahoj Nim.

1. First, the *information* gap is immense when it comes to keeping track of what is spent on what component and how the agreements met by C&TCP are in fact used. The C&TCP group is now trying to consolidate the data from parts of the organization and from system suppliers in order to find out what is bought by whom and what the impact is for the upcoming years.
2. Secondly, the C&TCP group is swamped with operational day-to-day problems due to *weak administration*, making it impossible to be able to conduct any tactical or pro-active purchasing activities. The team is struggling to take time to set up strategies, but little time is set aside for aligning the group and implementing change.
3. Third, the *skills and competences* of the purchasing staff is not enough in order to lift the group and focus on strategic issues. The group needs to be an expert partner to contact in order to fulfil the needs of the internal customers providing a holistic view of cost-management and being able to support product development in trade-offs.

4. Fourth, the *performance measures* need to be aligned with the rest of the organization and the difficulty of acquiring accurate information needs to be addressed in order to be able to measure the impact of the purchasing activities of C&TCP.
5. Finally, the *low status* of component and module purchasing need to be addressed. The organizational placement in one business area, beneath Operations, makes it difficult to carry out the role of supporting the entire Nahoj Nim as there is a lack of mandate to make any strategic decisions. Furthermore the career progression possibilities for the Supply Managers are low and the salaries do not match their counterparts in other functions.

6.4.3 Ten Procurement Pitfalls on a Strategic Level

When it comes to Nelson, Moody and Stegner’s ten procurement pitfalls the component purchasing at Nahoj Nim today finds itself in all ten problem areas, as seen in figure 6.4, making it virtually impossible to conduct any strategic purchasing or adding Standard to Nahoj Nim and the end customers.

Ten Procurement Pitfalls Checklist	True	False	Comment
1. Low expectations	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Decentralized purchasing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Central role but organizationally decentralized placement
3. Reporting to operations	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. Lack of good analytical tools	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Huge information gap
5. Supplier proliferation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
6. Short-term, low-level tactical focus	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Focus is being redirected but not yet implemented
7. Bad press	<input checked="" type="checkbox"/>	<input type="checkbox"/>	New approach still not recognized by top management
8. Product variety and complexity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
9. Purchasing separate from new-product development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Supply Management recently re-organized but not yet implemented
10. No supplier development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Unusual

Figure 6.4 – Ten procurement pitfalls checklist for C&TCP

Even though many of these ten problems have been identified on a divisional level there is no or little support from the rest of the organization when it comes to lifting and handling the issues. Component purchasing and the entire supply of machine parts has not been considered to be important for the Nahoj Nim business which is reflected in *Low expectations, Low organizational placement by Purchasing reporting to operations, Lack of analytical tools* and no mandate to influence the *Supplier proliferation* or *Product variety and complexity*.

When it comes to the *Short-term, low-level tactical focus* of C&TCP there is a great will to improve the work methods and to fully utilise the resources of the suppliers. The focus is changing and the group is working hard to bring on a new proactive approach but the *Bad press* holds them back. Without the proper support from top management the task is difficult as the day-to-day work still remains and the means for improving the strategic focus are not sufficient.

When it comes to *Purchasing separate from new-product development*, the need for purchasing involvement in development projects is huge. The new organization of Supplier Management addresses the issue of involving purchasing in product development, but it is still not implemented. Overall the roles of who is responsible for what are unclear and there are no routines for interactions and coordination of the purchasing activities. Apart from that there is basically *No supplier development* actions taking place with component suppliers today and the supplier quality assurance team has not enough resources and limited access to performance data to properly evaluate the component suppliers.

These ten strategic pitfalls are difficult to address at C&TCP or Supplier Management level since they are more or less dependant on the rest of the organization making room for and sponsoring purchasing of components and machine parts. Most importantly, top management need to acknowledge the impact of purchasing activities to the financial and commercial result of the company and act to support the purchasing functions.

6.5 Involving Purchasing in Product Development

As Nahoj Nim has historically not involved purchasing in product development the result has been a proliferating supplier base with a vast assortment of different components. According to Carbone's studies (2002) companies which involve purchasing seem to use standard low-cost components rather than costly custom components, more frequently re-use parts ensuring a reduction of the supplier base thereby resulting in reduced costs and boosted profit margins. This indicates that by involving C&TCP in the product development process, Nahoj Nim could not only improve the actual choice of components and suppliers in relation to the entire life-cycle cost but also save money for Nahoj Nim by avoiding costly administrative work of coordinating and handling an immense number of different suppliers and components.

About 70% of the product's life-cycle cost is established and two thirds of the cost reduction opportunities have vanished by the end of the early design phase, according to Blascovich and Markham. Therefore, it is crucial to have a commercial responsible available to evaluate and coordinate the impact of the design on the total cost and quality of the product. By doing so, C&TCP could possibly make a huge impact on the machine cost as well as quality aspects, assuring the supply for production and aftermarket and being able to choose suppliers with high financial, environmental, ethical and commercial standards as well as technological competence.

When analyzing the three elements of excellence when involving purchasing in product development according to Nahoj Nim, a couple of areas stand out:

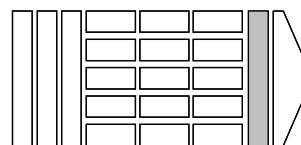
1. By the reorganization of Supplier Management an important step has been taken in identifying a partner to *work side-by-side with engineering* in NNA product development teams; Program Purchasing. However, the C&TCP group has today very few interactions with the product development teams in other parts of the organization and no defined collaborations with team purchasers.
2. The new focus for C&TCP to be more pro-active and being involved early on in the projects aligns well with the findings of Teague (2005) that *early involvement* is a factor of success. The strategy is not yet implemented and the roles are not yet defined for when C&TCP will be involved, but there is a will and aim to do so within the group.

Today, however the only interactions with purchasing are being implemented through Program Purchasing.

3. In order to *identify preferred sources* there is a need for a better cooperation with Component Standardization. Instead of focusing only on standardization on an article level there is a need for having preferred suppliers to choose from if the standard assortment is not sufficient. The commercial responsibility of C&TCP combined with the technical responsibility of Component Standardization need to collaborate more on a commodity level, defining ideal supply partners and products.

7 CONCLUSIONS

The conclusions summarize the findings of the analysis in reference to the purpose stated in chapter one. First, the challenge is presented, then the component and technical consultant purchasing at Nahoj Nim today is described and finally the possibilities for purchasing excellence at C&TCP are demonstrated.



7.1 The Challenge

Since the total cost of the packaging machines produced by Nahoj Nim has historically not been an issue, neither has the total cost of the components been in focus. Purchasing of components and machine parts have therefore not been considered to be of greater importance for the business of Nahoj Nim. Today, however the table has turned and Nahoj Nim faces new challenges which suddenly put the cost of the filling machines in the limelight. Therefore, the purchasing function responsible for contracting and managing the supplier base for the component and technical consultant suppliers need to face up to the new challenge.

7.2 Component and Technical Consultant Purchasing

Today, the Supplier Management, including C&TCP is situated organizationally within Operations, a core function of the business area Nahoj Nim Alfa. However, the unit's responsibilities extend further throughout Nahoj Nim with the task of coordinating and supporting the business' supply of components and technical consultants in all business areas. By being organizationally placed within the primary activity *operations*, of Porter's Standard Chain, whilst being responsible for purchasing, a part of the support function *procurement*, C&TCP finds itself in a contradicting situation. Whilst situated within Operations C&TCP can not fully support the entire chain from inbound logistics to service.

When it comes to the purchasing process C&TCP is today mainly involved in the third activity of the Purchasing Process Model; *contracting*, handling contracts and signing agreements with previously chosen articles and suppliers. By not being active in determining the specifications or selecting the suppliers C&TCP lacks control of what to buy and from whom to buy it. As a result C&TCP has an abundance of suppliers and different parts to contract and a supplier base consisting of some suppliers with low financial, environmental or commercial standards. In addition, by not being responsible for or close to ordering, expediting and evaluation or follow-up and evaluation C&TCP lacks important information of purchased quantities, supplier performance and quality of the products, needed to be able to manage the supplier base and take actions when necessary.

The understanding of the *business orientation* at Nahoj Nim is quite low at C&TCP as the focus has for a long time been directed towards the suppliers and single parts of the organization. In addition, about two thirds of the actual usage of the contracts signed by C&TCP takes place at the module suppliers, which makes it difficult to get proper information. This is also one of the issues when it comes to focusing on total cost of ownership according to the *integrated, cross-functional approach*, as purchasing needs to be in close contact with all affected disciplines and managers. The *bottom line orientation* of providing a commercial opposition vis-à-vis internal customers has not previously been a focus for C&TCP. However, with the arrival of Supplier Management the possibility to coordinate and integrate the purchasing activities has improved. Also the restructuring and change of focus for C&TCP has led to an improved ability to further understand the business and to be involved earlier on in the bottom-line product design.

7.3 Purchasing Excellence

The purchasing of components and technical consultants at C&TCP is today merely 25% as efficient when it comes to cumulative savings as the most prominent purchasing organizations world-wide. C&TCP is currently in a transition stage, going from a commercial orientation of reducing costs to purchasing coordination and savings through synergy, as seen in grey in figure 7.1.

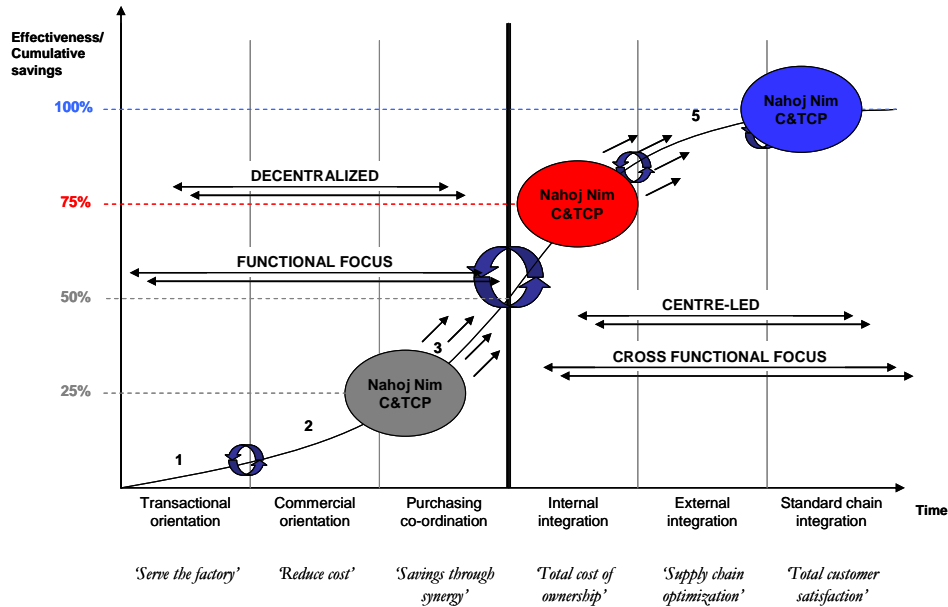


Figure 7.1 – Nahoj Nim C&TCP development and the Integrated Purchasing Development Model

In order to proceed with developing the purchasing activities at C&TCP, first there are a couple of aspects not yet adopted of *purchasing coordination*;

- A strong central purchasing department
- Influence on product quality
- Recognition from top management
- Several different jobs at hand
- Competence training in analytical and communication skills

By further proceeding to the next step, *internal integration* and total cost of ownership, C&TCP can increase the effectiveness from 25 to 75 percent of the possible cumulative savings, which is visually presented in red in figure 7.1. C&TCP then needs to implement; a centre-led purchasing function organized around internal customers through cross-functional teams, involvement of key suppliers as problem solvers and involvement in strategic issues, e.g. make-or-buy.

When these steps have been fully implemented and completed purchasing can advance, as seen in blue in figure 7.1, by further *external integration*, cooperating closely and sharing information with the suppliers where internal purchasing is made through cross-functional teams. Then, the last step of *Standard chain integration* can be finalized by focusing on the end customer, integrating suppliers throughout the Standard chain to provide the most Standard possible for the customer and purchasing being an important part of the business strategy.

Operationally, the barriers to overcome in order to be able to move on to purchasing excellence are; filling the *information* gap by collecting and organizing data, focusing and prioritizing to avoid the operational day-to-day problems caused by a *weak administration*, lifting the *skills and competences* of the group, aligning *performance measures* with the rest of the organization and finally improving the *low status* by offering career progression possibilities and aiming for a organizational repositioning.

Strategically, the pitfalls to get out of in order to be able to conduct any superior, Standard adding purchasing activities are dependent on top management's *low expectations*, organizational placement as a *decentralized purchasing unit reporting to operations*, lack of *good analytical tools* and no mandate or possibility to influence the *supplier proliferation and complexity*. Though C&TCP is trying to adopt a *long-term strategic focus* the operational day-to-day work is still extensive and the *bad press* keep holding them back. Furthermore, C&TCP needs to become more present in *product development* projects and *supplier development* action plans need to be set up to be able to evaluate and help the suppliers to do better.

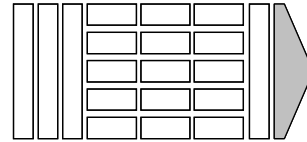
By *involving purchasing in product development* Nahoj Nim could not only improve the actual choice of components and suppliers in relation to the entire life-cycle cost but also save money for Nahoj Nim by avoiding costly administrative work of coordinating and handling an immense number of different suppliers and components. In addition, as about 70% of the product's life-cycle cost is fixed and two thirds of the cost reduction opportunities have disappeared by the end of the early design phase, Nahoj Nim needs to establish purchasing involvement as soon as possible in the product development.

If C&TCP were to be included in these projects, they could possibly reduce the total life-cycle cost of the machines as well provide input on component quality aspects, assuring supply for the production and after market service and

be able to choose and maintain a high quality supplier base of financially stable, environmentally focused, commercially suitable companies with high technological competences for their internal customers at Nahoj Nim.

8 REFLECTIONS

In this chapter additional personal reflections regarding the purchasing of components and technical consultants at Nahoj Nim are presented. In addition recommendations of how to proceed are presented to guide the purchasing group C&TCP in order to improve the internal effectiveness.



8.1 Additional Reflections

The situation at C&TCP today is difficult to handle as there are not enough resources and attention at hand, to instantly lift the organization and be able to conduct any first-class strategic purchasing activities. However, there are some steps which can be implemented on an operational level, in order to use the resources more efficiently.

To be able to begin focusing on the strategic issues a couple of basic functions need to be in place. First, the structuring and full implementation of the new organization Supplier Management needs to be up and running, roles and responsibilities must become clear and the targets for the groups fully understood and aligned. Secondly, a structuring of the work and work methods is needed in order to grasp what needs to be done.

Thereafter, the information organizational needs, what is bought and where the components are used, is to be collected, managed and analysed to define the prioritization of what to focus on. Thereafter, communication of the findings internally is needed, to be able to avoid the overwhelming everyday operational work. In addition, the competence level of the group, when it comes to strategic purchasing, analytical skills, total quality management, total-cost management etc. needs to be lifted in order to be able to further develop and align the group for change. By developing the individual skills, the understanding of what needs to be done comes natural and the result might even exceed the primary expectations. In order to provide more differentiated job opportunities, expert functions such as logistics, raw material, tools and contact persons for each machine system could be implemented. Thereby, people could develop within the group instead of leaving.

To better communicate how C&TCP contribute to the Nahoj Nim business and improve the status of the component purchasing the first thing to improve are the measurements. Knowledge of financial and commercial impacts for the results to internal customers at Nahoj Nim need to be measured and followed in order to know where to focus and report to get recognition for what is done. If the only thing measured is price development, no awards will be handed out for i.e. reducing lead-times or finding a supplier with extensively higher standards or products that last three times as long.

Apart from these actions, a great gap is evident when it comes to component purchasing at Nahoj Nim today. The follow-up, evaluation and development of the component suppliers need to be improved in order to attain a portfolio of first-class suppliers.

8.2 How to Proceed

In order to proceed to better support the internal customers at Nahoj Nim, C&TCP needs to find a way to be more effective when using the resources at hand. The term effectiveness is defined by Johnson & Scholes (1999) as follows:

“Effectiveness is a measure of the level of Standard which can be created from a given level of resources. The assessment of effectiveness is essentially related to how well the organization is matching the products or services to the identified needs of its chosen customers and the competences which underpin the effectiveness (or vice versa).”⁶⁷

In order to achieve effectiveness and generate an added Standard, C&TCP needs to find out the needs of the internal customers. Thereafter, it is possible to adapt the service provided to these needs in order to attain effectiveness.

8.2.1 Nahoj Nim Needs vs. C&TCP Product

The needs stated by internal customers during the survey for this thesis where solid agreements, excellent pricelists, a structured supplier base, quick and

⁶⁷ Johnson, G. & Scholes, K. (1999) *Exploring Corporate Strategy* pp. 169

assessable service, risk management, preferred suppliers, support to product development, a best-in-class portfolio of suppliers, excellent market knowledge by technical and commercial standards and an active supplier development.

According to Armstrong and Kotler (2003) the definition of a product is:

“Anything that can be offered to a market for attention acquisition, use or consumption that might satisfy a want or need.”⁶⁸

The term product is used broadly to include physical objects, services, events, persons, places, organizations, ideas, or mixes of these entities. The product can be described using three levels; the *Core Product*, the *Actual Product* and the *Augmented Product*, as presented in figure 8.1.

The most basic level is the core product, which addresses the question: What is the buyer actually buying? The actual product is then built around the core product. Finally the augmented product is built around the core and actual product by offering additional consumer services to create a bundle of benefits to provide the most added Standard and customer experience.⁶⁹

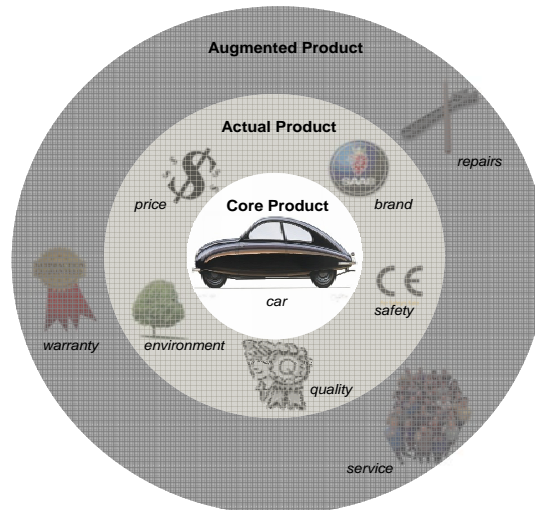


Figure 8.1 – Three levels of a product

⁶⁸ Armstrong, G. & Kotler, P. (2003) *Marketing: an Introduction* pp. 278

⁶⁹ Armstrong, G. & Kotler, P. (2003) *Marketing: an Introduction* pp. 278-282

Today, C&TCP provides the *core product* of supplying components and technical consultants for developing, producing and maintaining Nahoj Nim's machines. The *actual product* is made up by agreements, pricelists and a somewhat structured supplier base. The *augmented product* is not yet fully covered by C&TCP as there are some needs which are not met.

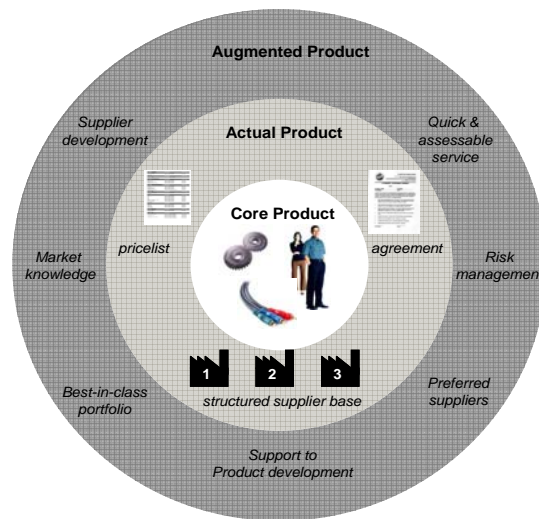


Figure 8.2 – The Three Levels of a Product applied to C&TCP and the internal needs

In figure 8.2, the needs by the internal customers are structured by the three levels of a product. As the augmented product is what generates the most added-Standard for the customers, by improving these areas of the product, or service, could increase the effectiveness of the purchasing unit. What is needed but not yet in place at C&TCP is quick and assessable service, Risk Management, preferred suppliers, support to product development, a portfolio of Best-in-class suppliers, good market knowledge and supplier development.

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APPENDIX

Interview Guide Product Development

Background

- What is your background?
 - o Education?
 - o Prior work experiences?
- For how long have you been an employee at Nahoj Nim?
- For how long have you been involved in product development and construction?
 - o At Nahoj Nim?
 - o With other employers?
- How did you end up in product development at Nahoj Nim?
- How have your duties and day-to-day work changed during your time at TP?

The Product Development Process

From a time-change perspective of *yesterday* (1-5 years ago), *today* and *tomorrow* (5 years ahead)

- How has the organizational structure changed for you as a product developer?
 - o Operative tasks and responsibilities?
 - o Focus and targets for product development?
 - o Staff turnover?
- What mandate do constructors have to choose components and suppliers?
- Which are your collaboration parties at different stages of construction?
 - o Fewer or more?
 - o Which parties are the most important?
 - o How has these collaborations changed – to what extent?
- Specifically, how has the collaboration with purchasing (foremost C&TCP) developed?
 - o Purchasing involvement in product development?
- What collaborations exist with other product developers and constructors?

- In Modena?
- In Lund?
- In other business units? (NNA, NNB, NNG, NND.....)
- Which collaborations do you have with Industrialization?
- Which collaborations do you have with key suppliers/component suppliers?
 - Joint development?
 - Other integrations?
- Do you work according to the new Process?
 - What is good?
 - What can be improved?
 - Are you familiar with the Supply Management part of the process?
 - Are the interaction points between SM and Innovation clear?

Personal Reflections on Product Development and Purchasing

- What does purchasing mean to you?
 - What does a purchaser do?
 - What is the goal/meaning of purchasing?
- What Standard do you as a constructor contribute to Nahoj Nim?
 - Yesterday, today and tomorrow?
- What Standard does purchasing add to your work environment and Nahoj Nim?
 - Yesterday, today and tomorrow?
 - Out-spoken and indirect?
- When and where would you prefer that purchasing is involved in the product development process?
 - What is done today – what is needed tomorrow?
- In your opinion: what should be the main priority of the product development process today?
 - Problem areas?
 - Cause of problems?
 - What to strive for?
- How would you describe the collaboration with purchasing today?
 - Does it exist?
 - Does it work?
 - Why? / Why not?
- SWOT; strengths, weaknesses, opportunities & threats for purchasing collaborations today?

- In 5 years: Best case scenario / worst case scenario?

- **Which are your main needs from C&TCP?**

- **In what way can the purchasing unit C&TCP provide an added Standard for you and for Nahoj Nim as an organization?**
 - What is required of you?
 - What is required of C&TCP and other functions?

Interview Guide Module Purchasing

Background

- What is your background?
 - o Education?
 - o Prior work experiences?
- For how long have you been an employee at Nahoj Nim?
- For how long have you been involved in purchasing?
 - o At Nahoj Nim?
 - o With other employers?
- How did you end up in your position at Nahoj Nim?
- How have your duties and day-to-day work changed during your time at Nahoj Nim?

The Purchasing Process

From a time-change perspective of *yesterday* (1-5 years ago), *today* and *tomorrow* (5 years ahead)

- How has the organizational structure changed for you as a purchaser?
 - o Operative tasks and responsibilities?
 - o Focus and targets for purchasing?
- Which are your collaboration parties at different stages of the product life cycle?
 - o Product development/industrialization/component purchasing/system suppliers/component suppliers etc.
 - o No of collaboration parties?
 - o Which parties are the most important?
 - o How has these collaborations changed – to what extent?
- Specifically, how has the collaboration with product development developed?
- What collaborations exist with other Nahoj Nim functions?
 - o In Modena? Lund?
 - o In other business units? (NNB, NNG, NND.....)
- Which collaborations do you have with Industrialization?
- What is your specified role in the new purchasing process?

Personal Reflections on Product Development and Purchasing

- What does purchasing mean to you?

- What is the goal/meaning of purchasing?
 - What Standard do you as a purchaser contribute to Nahoj Nim?
 - Yesterday, today and tomorrow?
 - What Standard does the purchasing unit C&TCP add to Nahoj Nim?
 - Yesterday, today and tomorrow?
 - Out-spoken and indirect?
 - When and where would you prefer to be involved in the product development process?
 - What is done today – what is needed tomorrow?
 - In your opinion: what should be the main priority of system and component purchasing today?
 - Problem areas?
 - Cause of problems?
 - What to strive for?
 - How would you describe the collaboration with suppliers and product development today?
 - Does it exist?
 - Does it work?
 - Why? / Why not?
 - SWOT; strengths, weaknesses, opportunities & threats for purchasing collaborations today?
 - In 5 years: Best case scenario / worst case scenario?
- **Which are your main needs from C&TCP?**
- **In what way can the purchasing unit C&TCP provide an added Standard for you and for Nahoj Nim as an organization?**
- What is required of you?
 - What is required of C&TCP and other functions?

Interview Guide Industrialization (Swe)

Bakgrund

- Vilken bakgrund har du?
 - o Utbildning?
 - o Tidigare arbetslivserfarenheter?
- Hur länge har du varit på Nahoj Nim?
- Hur länge har du arbetat med denna roll?
 - o På Nahoj Nim?
 - o På andra företag?
- Hur hamnade du på den position du har idag?
- Hur har dina arbetsuppgifter förändrats under din tid på Nahoj Nim?

Industrialiseringsprocessen

Ur ett tidsperspektiv av *igår* (1-5 år sedan), *idag* och *imorgon* (5 år fram i tiden)

- Hur har organisationsstrukturen förändrats för NNG och dess produktutveckling/industrialisering?
 - o Vilken roll spelar din funktion i organisationen TP under tidsspännet?
 - o Hur har de operativa arbetsuppgifterna förändrats?
 - o Hur har fokus och mål förändrats?
- Vilka samarbetspartners har varit/är viktiga vid olika tidpunkter?
 - o Produktutveckling, systemleverantörer, komponentleverantörer, inköp...
 - o Hur har samarbetet förändrats – i vilken omfattning?
 - o Fler eller färre partners?
 - o Vilka ses som viktigast?
- Hur har specifikt samarbetet med produktutvecklingen och konstruktörerna samt inköp (moduler & komponenter) utvecklats?
- Vilken är din roll specificerat i den nya processen?
- Är det tydligt när och hur inköp ska involveras?
- Saknar ni något i processen/ är något överflödigt?

- Vilken organisationsstruktur gäller? (ORBIS)?
- Vad är målet för er avdelning?
- Vilka kriterier är de viktigaste för er när en ny design väljs?

- Vilka krav har ni på leverantörerna? Vad behöver uppfyllas för att produktionen ska fungera?
- Hur fungerar ert samarbete med inköp idag?
- Relationen med C&TCP
 - o SWOT; styrkor, svagheter, möjligheter och hot?
- Hur arbetar ni med leverantörerna/ produktutveckling/ andra interna avdelningar?
- Vad ser du för Best/Worst case scenario om 5 år för NNA och ert samarbete med inköpare av komponenter och moduler?

Personliga reflektioner om inköp

- Vad är inköp för dig?
- Vad tillför inköpsorganisationen Component & Technical Consultant Purchasing som grupp till Industrialisering (och Nahoj Nim)?
 - o Historiskt, idag och i framtiden?
 - o Uttalat och indirekt?
- Vad tillför du för värde till Nahoj Nim?
 - o Historiskt, idag och i framtiden?
- Vad har ni för kontakt med C&TCP och vad tillför de till ert dagliga arbete?
- Var och när är/vill du vara delaktig i inköpsprocessen?
 - o Vad görs idag – vad behövs imorgon?
 - o När vill ni ha kontakt med /support av C&TCP?
- Vilket område anser du bör prioriteras vad gäller inköpsarbetet av komponenter idag?
 - o Vad ser du för problemområden?
 - o Vad beror dessa på?
 - o Åt vilket håll bör det utvecklas?
- SWOT; strengths, weaknesses, opportunities & threats för inköpsarbetet idag?
- Om 5 år: Best case scenario / worst case scenario?

➤ **Vilka är dina huvudsakliga behov från C&TCP?**

- **Hur kan C&TCP skapa ett mervärde för dig och för Nahoj Nim som organisation?**
 - o Vad krävs av C&TCP?

The Challenge of Component Purchasing Excellence – a Case Study at Nahoj Nim

- Vad krävs av dig?
- Vad krävs av andra?
- Vilka värden är de viktigaste?!

Interview Guide C&TCP (Swe)

Bakgrund

- Vilken bakgrund har du?
 - o Utbildning?
 - o Tidigare arbetslivserfarenheter?
- Hur länge har du varit på Nahoj Nim?
- Hur länge har du arbetat som inköpare?
 - o På Nahoj Nim?
 - o På andra företag?
- Hur hamnade du på den position du har idag?
- Hur har dina arbetsuppgifter förändrats under din tid på Nahoj Nim/inköpsavdelningen?
- Vad intresserar dig med inköp?

Inköpsprocessen

Ur ett tidsperspektiv av *igår* (1-5 år sedan), *idag* och *imorgon* (5 år fram i tiden)

- Hur har organisationsstrukturen förändrats för NNA och inköpsfunktionen?
 - o Vilken roll spelar inköpsfunktionen i organisationen TP under tidsspannet?
 - o Hur har de operativa arbetsuppgifterna förändrats?
 - o Hur har fokus och mål förändrats för avdelningen?
 - o Personalomsättning?
 - o Vilka kriterier ses som viktiga vid val av leverantör?
- Vilka samarbetspartners har varit/är viktiga vid olika tidpunkter?
 - o Hur har samarbetet förändrats – i vilken omfattning?
 - o Fler eller färre?
 - o Vilka ses som viktigast?
- Hur har specifikt samarbetet med leverantörerna samt produktutvecklingen och konstruktörerna utvecklats?
- Hur fungerar implementeringen av nya SM-processen?
 - o Vad finns det för styrkor/ brister?

Componant Purchasing

- Vilken är din roll specificerat i den nya SM-processen?
- Hur har avdelningen omorganiserats för att passa processen?
- Hur många leverantörer har du hand om idag?

- Vad är målet?
- När?
- Vilka samarbetspartners?
 - Produktutveckling / Leverantörer / KSM / Andra??
- Hur ser du på component standardization? Hur fungerar det? Finns det ngt samarbete?
- SWOT? Styrkor, svagheter, hot, möjligheter för C&TCP?
- Hur vill du se C&TCP organisatoriskt (struktur)?
 - Bra idag? Vilka steg? Vad krävs?
- Om vi ser fram 5 år i tiden vad har hänt med C&TCP?
 - Best case /worst case scenario?

Personliga reflektioner om inköpsarbetet

- Vad tillför inköpsorganisationen C&TCP som grupp till Nahoj Nim?
 - Historiskt, idag och i framtiden?
 - Uttalat och indirekt?
- Vad tillför du för värde till Nahoj Nim?
 - Historiskt, idag och i framtiden?
- Var och när vill du vara delaktig i inköpsprocessen?
 - Vad görs idag – vad behövs imorgon?
- Vilket område anser du bör prioriteras vad gäller inköpsarbetet idag?
 - Vad ser du för problemområden?
 - Vad beror dessa på?
 - Åt vilket håll bör det utvecklas?
- SWOT; strengths, weaknesses, opportunities & threats för inköpssamarbetet idag?
- Om 5 år: Best case scenario / worst case scenario?

➤ **Hur skapar man ett mervärde för Nahoj Nim och de ”interna kunderna” NNA, NNB, NNG och NND?**

- Vilka kunder är viktigast att knyta till sig?
- Vad krävs internt på C&TCP / Supplier Management?
- Vad krävs av andra?
- Vilka är de viktigaste behoven att uppfylla?

Interview Guide NNB (Swe)

Bakgrund

- Vilken bakgrund har du?
 - o Utbildning?
 - o Tidigare arbetslivserfarenheter?
- Hur länge har du varit på Nahoj Nim?
- Hur länge har du arbetat som inköpare?
 - o På Nahoj Nim?
 - o På andra företag?
- Hur hamnade du på den position du har idag?
- Hur har dina arbetsuppgifter förändrats under din tid på Nahoj Nim/som inköpare?
- Vad intresserar dig med inköp?

Inköpsprocessen

Ur ett tidsperspektiv av *igår* (1-5 år sedan), *idag* och *imorgon* (5 år fram i tiden)

- Hur har organisationsstrukturen förändrats för NNB och dess inköp?
 - o Vilken roll spelar din inköpsfunktion i organisationen TP under tidsspännat?
 - o Hur har de operativa arbetsuppgifterna förändrats?
 - o Hur har fokus och mål förändrats?
 - o Personalomsättning?
- Vilka samarbetspartners har varit/är viktiga vid olika tidpunkter?
 - o Produktutveckling, systemleverantörer, komponentleverantörer, industrialisering ...
 - o Hur har samarbetet förändrats – i vilken omfattning?
 - o Fler eller färre partners?
 - o Vilka ses som viktigast?
- Hur har specifikt samarbetet med produktutvecklingen och konstruktörerna utvecklats?
- Vilken är din roll specificerat i den nya inköpsprocessen?

NNB

- Vad är målet för er inköpsavdelning?
- Vad kan C&TCP lära sig av er?
- SWOT; era styrkor, svagheter, möjligheter och hot?

- Hur många leverantörer har ni idag?
 - o Hur många av dem är desamma som för C&TCP?
 - o Hur hanterar ni gemensamma leverantörer?
- Har ni någon tydlig indelning av leverantörs- / produktgrupper?
- Hur arbetar ni med leverantörerna/ produktutveckling/ andra interna avdelningar?
- Var ligger ert fokus? (Innovation, Production eller Spare Parts)
- Vad ser du för best/worse case scenario när det gäller inköp av komponenter för NNB om 5 år?

Personliga reflektioner om inköpsarbetet

- Vad är inköp för dig?
 - Vad tillför inköpsorganisationen på NNB som grupp till NNB (och Nahoj Nim)?
 - o Historiskt, idag och i framtiden?
 - o Uttalat och indirekt?
 - Vad tillför du som inköpare för värde till Nahoj Nim?
 - o Historiskt, idag och i framtiden?
 - Vad har ni för kontakt med C&TCP och vad tillför de till ert dagliga arbete?
 - Var och när är/vill du vara delaktig i inköpsprocessen?
 - o Vad görs idag – vad behövs imorgon?
 - o När vill ni ha kontakt med /support av C&TCP?
 - Vilket område anser du bör prioriteras vad gäller inköpsarbetet av komponenter idag?
 - o Vad ser du för problemområden?
 - o Vad beror dessa på?
 - o Åt vilket håll bör det utvecklas?
 - SWOT; strengths, weaknesses, opportunities & threats för inköpsarbetet idag?
 - Om 5 år: Best case scenario / worst case scenario?
- **Vilka är dina huvudsakliga behov från C&TCP?**
- **Hur kan C&TCP skapa ett mervärde för dig och för Nahoj Nim som organisation?**
- o Vad krävs av C&TCP?
 - o Vad krävs av dig?
 - o Vad krävs av andra?

- Vilka värden är de viktigaste?!

Interview Guide NNG (Swe)

Bakgrund

- Vilken bakgrund har du?
 - o Utbildning?
 - o Tidigare arbetslivserfarenheter?
- Hur länge har du varit på Nahoj Nim?
- Hur länge har du arbetat som inköpare?
 - o På Nahoj Nim?
 - o På andra företag?
- Hur hamnade du på den position du har idag?
- Hur har dina arbetsuppgifter förändrats under din tid på Nahoj Nim/som inköpare?
- Vad intresserar dig med inköp?

Inköpsprocessen

Ur ett tidsperspektiv av *igår* (1-5 år sedan), *idag* och *imorgon* (5 år fram i tiden)

- Hur har organisationsstrukturen förändrats för NNG och dess inköp?
 - o Vilken roll spelar din inköpsfunktion i organisationen TP under tidsspännet?
 - o Hur har de operativa arbetsuppgifterna förändrats?
 - o Hur har fokus och mål förändrats?
 - o Personalomsättning?
- Vilka samarbetspartners har varit/är viktiga vid olika tidpunkter?
 - o Produktutveckling, systemleverantörer, komponentleverantörer, industrialisering ...
 - o Hur har samarbetet förändrats – i vilken omfattning?
 - o Fler eller färre partners?
 - o Vilka ses som viktigast?
- Hur har specifikt samarbetet med produktutvecklingen och konstruktörerna utvecklats?
- Vilken är din roll specificerat i den nya inköpsprocessen?

Processing Components

- Vad är målet för er avdelning?
- Vad kan C&TCP lära sig av er?
- SWOT; era styrkor, svagheter, möjligheter och hot?

- Hur många leverantörer har ni idag?
 - o Hur många av dem är desamma som för C&TCP?
 - o Hur hanterar ni gemensamma leverantörer?
- Har ni någon tydlig indelning av leverantörs- / produktgrupper?
- Hur arbetar ni med leverantörerna/ produktutveckling/ andra interna avdelningar?
- Var ligger ert fokus? (Innovation, Production eller Spare Parts)

Personliga reflektioner om inköpsarbetet

- Vad är inköp för dig?
- Vad tillför inköpsorganisationen Processing Components som grupp till NNG (och Nahoj Nim)?
 - o Historiskt, idag och i framtiden?
 - o Uttalat och indirekt?
- Vad tillför du som inköpare för värde till Nahoj Nim?
 - o Historiskt, idag och i framtiden?
- Vad har ni för kontakt med C&TCP och vad tillför de till ert dagliga arbete?
- Var och när är/vill du vara delaktig i inköpsprocessen?
 - o Vad görs idag – vad behövs imorgon?
 - o När vill ni ha kontakt med /support av C&TCP?
- Vilket område anser du bör prioriteras vad gäller inköpsarbetet av komponenter idag?
 - o Vad ser du för problemområden?
 - o Vad beror dessa på?
 - o Åt vilket håll bör det utvecklas?
- SWOT; strengths, weaknesses, opportunities & threats för inköpsarbetet idag?
- Om 5 år: Best case scenario / worst case scenario?
- **Vilka är dina huvudsakliga behov från C&TCP?**
- **Hur kan C&TCP skapa ett mervärde för dig och för Nahoj Nim som organisation?**
 - o Vad krävs av C&TCP?
 - o Vad krävs av dig?
 - o Vad krävs av andra?
 - o Vilka värden är de viktigaste?!

Interview Guide NND (Swe)

Bakgrund

- Vilken bakgrund har du?
 - o Utbildning?
 - o Tidigare arbetslivserfarenheter?
- Hur länge har du varit på Nahoj Nim?
- Hur länge har du arbetat på NND?
- Hur hamnade du på den position du har idag?
- Hur har dina arbetsuppgifter förändrats under din tid på Nahoj Nim?

Nahoj Nim

Ur ett tidsperspektiv av *igår* (1-5 år sedan), *idag* och *imorgon* (5 år fram i tiden)

- Vad är avdelningens fokus?
- Hur har organisationsstrukturen förändrats för NND?
 - o Roll inom TP?
 - o Operativa arbetsuppgifter?
 - o Fokus & Mål?
 - o Bakgrund/kompetens på avdelningen?
- Vilka samarbetspartners har varit/är viktiga vid olika tidpunkter?
 - o Hur har samarbetet förändrats – i vilken omfattning?
 - o Fler eller färre?
 - o Vilka ses som viktigast?
- Hur har specifikt samarbetet med C&TCP / inköp av komponenter påverkats?

Gruppspecifika frågor

- Vad gör NND? Vilka är ni?
- Vilken är din roll specificerat i den nya processen?
- Hur har avdelningen omorganiserats för att passa processen?
- Hur många leverantörer har ni idag?
 - o Vad är målet?
 - o När?
- Hur ofta har ni att göra med C&TCP eller andra inköpsavdelningar/ -ansvariga?
- Vilka samarbetspartners?

- Leverantörer/ Produktutveckling / SM:are / KSM:are / Andra??
- Hur ser du på ”component standardization”? Hur fungerar det? Finns det ngt samarbete?
- SWOT? Styrkor, svagheter, hot, möjligheter?
- Hur skulle du vilja att samarbetet med C&TCP förändrades?

Personliga reflektioner om inköpsarbetet

- Vad är inköp för dig?
 - Vad tillför inköpsorganisationen C&TCP som grupp till NNA (Nahoj Nim)?
 - Historiskt, idag och i framtiden?
 - Uttalat och indirekt?
 - Vad tillför NND för värde till Nahoj Nim?
 - Historiskt, idag och i framtiden?
 - Var och när vill du samarbeta med inköp?
 - Vad görs idag – vad behövs imorgon?
 - Vilket område anser du bör prioriteras vad gäller inköpsarbetet och ert samarbete idag?
 - Vad ser du för problemområden?
 - Vad beror dessa på?
 - Åt vilket håll bör det utvecklas?
 - SWOT; strengths, weaknesses, opportunities & threats för inköpssamarbetet idag?
 - Om 5 år: Best case scenario / worst case scenario?
- **Vilka är dina huvudsakliga behov från C&TCP?**
- **Hur kan C&TCP skapa ett mervärde för dig och för Nahoj Nim som organisation?**
- Vad krävs av C&TCP?
 - Vad krävs av dig?
 - Vad krävs av andra?
 - Vilka värden är de viktigaste?!