Ordering System at Sandvik Information Technology

Survey and Proposal of Improvement

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Preface

This master’s thesis has been carried out at department DCP at Sandvik Information Technology in Sandviken during autumn 2002 and spring 2003. This is our final assignment of the Master of Science Program in Industrial Engineering at Luleå University of Technology.

To work with this master’s thesis has been very interesting and instructive for us and we have learned a lot that we can bring into our future careers. We would like to thank Kjell Höddelius, who gave us this assignment and our supervisors Torbjörn Wiberg at Luleå University of Technology and Per Hälsingdal at Sandvik IT.

We would especially thank all the employees at Sandvik IT on the seventh floor in the so-called Coromant building. Without their support, participation and patience with our questions, this would not have been possible. Also thanks to all employees in other companies within Sandvik AB that we have talked to, for their compliance and for telling us their opinions and suggestions about the ordering procedure.

Sandviken, 21 March 2003

____________________                     ______________________
Anna Olsson    Thomas Jonsson
Abstract

Sandvik AB is a high technology company with a world leading position in selected areas. The group is organized into three business areas: Sandvik Mining and Construction, Sandvik Tooling and Sandvik Materials Technology. Sandvik IT is a service company that supplies Sandvik AB with IT-related products and services mainly in Sweden.

The purpose of this master’s thesis is to evaluate the administrational environment and to make a survey of the ordering procedure at Sandvik IT. This to analyze the requirements of changes and to find suggestions for improvements.

The research method and procedure is based on qualitative interviews with persons using the systems as administrators and customers respectively. Literature studies and the ordering systems have also been used to find the problem areas.

To rationalize in a process a documentation of the present situation is needed and the survey of the ordering procedure is a start to simplify the process. If it is possible to reduce the number of ways to place an order and only use the portal IT-Requisition for IT-related products and services the handling of orders will be easier for both the customers and the administrators.

Our conclusion is that to be able to simplify the work for the administrators, the customers need to fill in the information right and use the system properly. It is important to focus on the customer and make it easier for them. This can be done if Sandvik IT evolves the page on the Intranet with detailed and comprehensive information about products, services and instructions to help the customers through the ordering process. If the contents of the orders were correct from start, the work for the administrators would automatically be reduced. It is also important to measure the administrators’ work to be able to make it more effective.

Most of the problems discussed would be solved if the customers had more knowledge and were better informed.
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1 Introduction

This section will present the background, purpose and limitations and is intended to give an introduction to the problems discussed and analyzed in this master’s thesis.

1.1 Background

During the latest decade there has been a quick development in companies’ use of information technology. This creates a great demand to centralize and to have a well-developed internal organization to handle the administration, support/service and to provide the organization with computer related products. A centralization of these services creates a demand toward the organization to continuously improve its service level, flexibility and expertise to meet or exceed the customers’ expectations.

Sandvik IT is the organization which provides Sandvik AB with these services. Today there are four primary systems for ordering hardware, software, user ids and accesses. The systems are Orderdatabase, Notes/Domino Service Orders and the two portals PC-Acquisition and IT-Requisition.

There is a lack of information to the customers about the ordering process and the different items possible to order from Sandvik IT. This lack of information combined with several alternatives to use when ordering, creates a confused situation for the internal customer. It is hard to know which system to use and to know who is allowed to order and who is responsible for executing the orders. This creates extra work for the administrators and the customers.

This situation has created a demand for a survey of the systems to get a better view of the logistic flows at Sandvik IT. This will form a basis for suggestions for improvements that make the ordering process more effective and simpler for the customer and administrator to use.
1.2 Purpose

- Evaluate the administrational environment at Sandvik Information Technology.
- Analyze requirements of changes.
- Establishment of the process.
- Suggestions about future improvements.

1.3 Limitations

In the research and the survey of internal and external systems the information is based on facts from persons using the systems as administrators and customers ordering through the systems. The investigation and analysis of the systems are aligned to business area Sandvik IT in Sweden, where the main interest is the internal process for hardware, software, user id and access rights. The suggestion for improvements is mainly directed toward the internal processes. Economical factors are not taken in consideration, neither in the survey nor in the suggestions for improvements.

1.4 Reading direction

This master’s thesis is divided into eight chapters; introduction, methods, description of the company, theory, present situation, analysis, improvements and discussion. In attachment 1 can difficult words be found with an explanation.

Chapter 1, An introduction to the background, purpose and limitations will be presented.

Chapter 2, Methods used will be present and the working process described.

Chapter 3, The history of the company Sandvik will be present and the company Sandvik IT is more deeply described and its organization explained.

Chapter 4, Relevant theories for the study will be described.

Chapter 5, In the present situation will the survey of the system be described and the different ordering processes explained.
Chapter 6, The analysis is a presentation of the conclusion of the system and the ordering processes, analyzed in the present situation, the future and compared to the theories.

Chapter 7, The suggestions for improvements will present the consideration the company can take to improve the system customers and administrators are working with.

Chapter 8, The realization and accomplishment of the suggestions for improvements, problems and suggestions for further work will be discussed.
2 Methods

2.1.1 Research method

The research method and procedure are based on interviews with persons using the systems as administrators and customers ordering through the systems. They have long experience of existing systems and know the pros and cons.

A qualitative interview method is used, Starrin and Svensson (1996) described it as; “A method to establish, discover, understand and find out character and qualities of something for research that has the goal to discover occurrences, qualities or meanings. The purpose is the interest to ‘discover’ what is happening, what is going on, rather than decide the range of something in advance decided”.

Our purpose is to identify the present situation of the ordering procedure and give suggestions for improvements, this will be done by using qualitative interviews with different people involved in the orderflow.

The best way to get information about the use of the systems is to ask and interview the persons using them. This is the reason to why we have chosen to use a qualitative interview method. This will be further described and discussed in chapter 2.1.3.1.

2.1.2 Working process

The working process used in this master’s thesis is described in figure 2.1.

First we interviewed the administrators at the DCP-department to understand the problem and reason for this thesis. When the task was to follow the flow of an order we had to find the people dealing with the order through the flow and gradually interviewed them.

We also had the possibility of using the different databases dealing with the orders and used the opportunity to understand more about them by using them. During this time period we search relevant literature, both in books and on the Internet. Sandvik Intranet was also used to find information about the systems, the company itself and its organization.
In the beginning of the survey, we searched and contacted customers in other Sandvik companies using the order databases and asked them about their opinions.

With help of the opinions of the persons interviewed and observations made, the flow through the systems was analyzed and changes and improvements discussed.

![Flowchart](image_url)

**Figure 2.1. Working process**
2.1.3 Data collection

The primary data is from interviews and observations made directly by the researcher and facts collected to accomplish the research. The secondary data consists of earlier collected documented material analyzed such as literature and information from the Internet. (Egnell, 1999)

2.1.3.1 Interview

With the aim of increasing the value and understanding of the information a qualitative interview method was used to create a deep and more complete general view of the problem.

A qualitative interview not standardized starts from an assumption that you from the beginning do not know, which questions are of significance or importance. The interviewer develops, adapts and follows up what can be appropriate for the situation and for the central purpose of the research. (Starrin & Svensson, 1996)

The first interviews were made as an introduction and to achieve a comprehension of the problem to be able to make a survey of the orderflow in the different systems. The selection of the person to interview is based on suggestions from the person previously interviewed.

Before the interviews took place, different questions were discussed and prepared and knowledge about the subject was collected, although the researcher expected new questions to appear during the interview.

Starrin and Svensson (1996) further describe the qualitative interview to develop questions and answers partly as a consequence of earlier questions and answers, the interview is a guided conversation. Qualitative interviews are in a way unpredictable and during the interview will many surprises come up and the background knowledge is very important. It is up to the interviewer to be attentive, alert and imaginative.

The procedure during the interviews with the purpose to analyze the existing systems and to find changes and improvement was based on almost the same questions for all persons interviewed. These persons were selected from the users/customers of the ordering system IT-Requisition and PC-Acquisition to give us their opinion of the use and where improvements are needed.
2.1.3.2 Observations

The benefit of having access to existing systems to follow the flow of an order and the possibility of using a test program for one of the ordering systems (IT-Requisition) achieved a higher level of comprehension of the program structure. The possibility of following an order through the system from when the user places the order until he/she receives the product increased the insight of the systems.

During coffee breaks at DCP-department where observations made and sometimes we participate in discussions with the administrators about how to solve problems that had occurred during the day in the ordering process. From these discussions we learned, observed and received information that we later used in our analysis of the system and the different flows through them.

2.1.3.3 Literature study

In the search of theories and other useful information about the ordering process were facts collected from secondary sources such as literature studies, search on the Internet and theses related to the subject. The literature studies were accomplished to achieve a higher knowledge of the areas related to the research. The literature studies took place parallel to all other work during most of the research. The words we have used to find information are; processes, orders, flows, process management, logistics, systems etc. The books and the theses were mainly borrowed from the library at Luleå University of Technology and the library at Gävle Högskola. The Internet was used to find related information. The Intranet at Sandvik was also used to find information about the company, the different department and to understand the organization.

2.1.4 Method discussion

Two important concepts to consider when conducting research are reliability and validity of the work. These concepts describe the degree, the result correspond to the reality and if it is trustworthy.

2.1.4.1 Validity

The validity can be defined as the absence of systematic measure error i.e. is the measured thing really the thing measured. (Lundahl & Skärvd, 1999)
Methods

To increase the validity all the interviews were accomplished by both researcher and several of the interviews were recorded to be able to control information.

The knowledge the researchers have about the subject increases the validity of the interview. The researchers tried to have as much knowledge as possible before meeting the persons interviewed. They also tried to interview more than one person at the different Sandvik companies to be sure of their point of view and get a wider perspective of their opinions.

A constant follow-up was made of the relevance of the collected material and its comprehension of the purpose to achieve a higher validity.

2.1.4.2 Reliability

The reliability can be defined as the absence of a random systematic measure error, meaning that the measurement is not affected of the person performing the measurement or the circumstances. (Lundahl & Skärvad, 1999)

The reliability also increased when the interviews were made by both researchers and recorded. Most of the interview took place in conference- or office rooms with only the persons involved present to avoid disturbance during the interview to increase the reliability.

In all interviews were a qualitative method used and when using a qualitative method it is possible that questions and answers had not been the same if the interview took place on another occasion and this could decreased the reliability of the interviews. There is no guarantee that the answers are not biased, but on the other hand are the interviews made to increase the customers’ satisfaction and to simplify for the user and administrator. This can almost let the researchers expect that the persons interviewed are trustworthy.
3 About Sandvik AB

This chapter presents the history of the company Sandvik and its organization. The company Sandvik IT is more deeply described and its organization explained.

3.1 History

The company Högbo Stål & Jernwerks AB was founded in 1862 by Göran Fredrik Göransson, who was first in the world to succeed in using the Bessemer method for steel production on an industrial scale. As early as in the 1860s the product range included drill steel for rock drilling. The company’s listing on the Stockholm Stock Exchange took place in 1901, the manufacturing of stainless steel began in 1921 and cemented carbide in 1942. The production of cemented carbide tools begun in the 1950s in Gimo, Sweden, during the 1960s a comprehensive investment program was carried out at the main plant in Sandviken. In 1972, the company name was changed to Sandvik AB and in 1984 a decentralized organization was introduced, with a parent company, separate business areas, regional companies and service companies. Today, 140 years after the company was founded it has facilities in 130 countries and 37,000 employees, with annual sales of approximately SEK 55 billion. The head office is located in Sandviken, Sweden.

3.2 Organization

Sandvik AB is a high technology company with a world leading position in selected areas and the group has 37,000 employees in 130 countries. The group is organized into three business areas: Sandvik Mining and Construction, Sandvik Tooling and Sandvik Materials Technology, see figure 3.1. There are three support divisions working directly toward Sandvik:s three business areas: Separate Business Units, Regional Companies and Service Companies.

Sandvik has today a world leading position in three core areas, which is based on a unique competence in materials technology.

- The Tooling business area focuses mainly on tools and tooling systems for metalworking applications. Cemented carbide and high-speed steel tools for metalworking applications, blanks and components made of cemented carbide and other hard materials. Major customers include companies in the automotive and aerospace industries.
About Sandvik AB

- Mining and Construction specializes in rock working equipment and tools used in mining and civil engineering worldwide.

- Materials Technology develops mainly products in stainless steel, special alloys and resistance heating materials as well as process systems. Customers are to be found in most industrial segments.

(http://www.sandvik.com)

Figure 3.1. The organization of Sandvik AB (http://home.sandvik.se)
3.3 Sandvik IT

Sandvik IT is a service organization supporting the three business areas; Sandvik Mining and Construction, Sandvik Tooling and Sandvik Materials Technology and the other service companies. Sandvik IT is Sandvik AB:s partner of IT infrastructure in terms of data processing, information technology and user support. An overview of Sandvik IT:s organization is presented in figure 3.2. The master’s thesis was performed at the department DCP.

![Organization Chart of Sandvik IT](http://home.sandvik.com)

**Figure 3.2. The organization of Sandvik IT** (http://home.sandvik.com)

Sandvik IT is divided into eight subdivisions where four is abroad, see figure 3.3., the subdivisions abroad are helpdesks with the mission to support users with IT-related problems in their own countries. There are a few functions such
as secretary, finance & administration, human resource and a risk manager in the organization. The risk manager is responsible for information-, physical- and personnel security which is integrated in each other and form the basis of the IT-security level.  

(http://home.sandvik.com)

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<td>SIT -Australia/NZ, Australia/NZ</td>
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**Figure 3.3. Subdivisions in Sweden and abroad**

The company has four divisions in Sweden; DS -the IT-security, DA -the application technology, DB -the base technology and DC -the customer support center. These divisions are divided in different departments where DC will be more deeply described.

*DS –IT-Security* has the operating responsibility for coordination of IT-security, a prescribing and controlling function in IT-security related matters within Sandvik AB. IT-security is clearly an enterprise matter and each question/problem must be handled with a global aspect in mind. This indicates that IT-security can not be an area where only local considerations can be valid.

*DA -Application Technology* delivers a general infrastructure service in the field of communication and integration as well as support within special areas, to support Sandvik IT and Sandvik Development with specialized competence in the fields of database technology and Microsoft technology.

*DB -Base Technology* is divided into general services & base applications, Windows and other platforms where Windows and other platforms are operating system dependent. Their responsibilities are to provide Sandvik AB with method oriented technique within the scope of server related services defined by Sandvik IT.
**DC - Customer Support Center** has the responsibility to offer services within data production such as operations including support in all established environments, operations of data communication and add services connected to the operation. The production guidance includes administration, technique and to build a global support organization with the responsibility to support Sandvik AB, 24 hours a day, 7 days a week. DC is divided in four departments:

- **DCP** is the production department and has three separate groups; service management, production technique and production administration.

  - **Service management** has the function as production handover process with the purpose to guarantee that new tasks will be implemented in the production environment in a qualitative way.

  - **Production technique** handles Notes-, Notes server- and WEB administration and has the responsibility of batch jobs in the mainframe environment. Output administration including planning of conceptual changes, EDI and SQL production. They are responsible for daily operating security in all environments.

  - **Production administration** handles Windows NT-, order-, rental-, user- and security administration. Their main tasks of particularly importance are the establishing of an effective process organization within DCP and the implementation of tools for production planning, their participation in the process will give a consolidated environment for both Windows and AS/400. One group of these administrators is the one working with the assignment related to IT-related product and services and will be referred to as the DCP admingroup.

- **DCS** responsibility is to be "single point of contact" for their customers in IT environment and works as frontline support during swedish office hours. They supply functional equipment and support, regarding software, hardware, services to Sandvik IT:s customers and problem solving in the IT environment. Their main tasks are password management (reset, resume, unlock etc.) in Sandvik:s different IT environments, hardware service and support of equipment in the central operating environment, configuration/installation/service of client hardware, software and auxiliary equipment. General installation services on demand and user support including remote support, field support and phone support.
DCO is the operation department and has four areas: operation, systems management, capacity planning and change management. The main task for operation is supervision of agreed parts of Sandvik:s networks, computers, software, generally problem solving in the IT environment and firstline support outside swedish office hours. Systems management is coordination and implementation of alert tools, co-ordination and implementation of alerts and events from all our established environments. Capacity planning’s main tasks are collecting data for statistics, follow-ups and planning of the production environment. Change management secures all changes in the production environment.

DCV is responsibility for client support and server administration locally in Västberga.
4 Theory

In this chapter will the different theories relevant to the thesis be explained and further be the bases of the analysis and suggestions for improvements.

4.1 Processes

In all organizations it occurs series of activities repeated in time and room, with a start and a finish, for example the handling of orders. Every order is unique, but the handling of each order is practically identical. The flow of activities repeating itself time after time is called a process. (Egnell, 1994)

The purpose of the process is to produce products or services that satisfy the customer with the final result of the product and at the same time use a minimum of resources. The process is supported by an organization that consists of people, their relation to each other and different type of means, for example energy, information and working hours. (Bergman & Klefsjö, 1995)

4.1.1 Definition

There exist different definitions of the process, Egnell (1994) defines it: “A process contains of a series of activities with a precise start and end, assistance of an organizations resources, frequent ennable of measurable object from a supplier to an in advance definitely measurable result to a customer”, see figure 4.1.

![Diagram of a process with supplier, object, process, ennable, result, resources, and customer.]

*Figure 4.1. A process ennobles an object to a result for the customer with help of resources in the organization (Egnell, 1994)*
The Swedish Institute for Quality (SIQ) has another completing definition of the process: “A process is a series of activities that ennoble a product or service. It has a well defined beginning and a well defined end. There have to be a clear definition of what the process will receive, create and the expectation of the result.”

4.1.1.1 Structure of the processes

One way to separate different processes are to structure them after their task. The processes are often separated between the following three types; operative process, support process and management process, see figure 4.2.

In the operative process, the task is to fulfill the external customers need and refine the products that the organization offers. Examples of this type of processes are product development, production processes and distribution processes. In the support process, the task is to supply resources to the operative processes, examples of this type of processes are recruiting processes, maintenance processes and information processes. In the management process, the task is to decide the goal and strategy of the organization and carry out improvements of the remaining processes of the organization. Examples of this type of processes are strategic planning, revision processes and objective processes. (Bergman & Klefsjö, 1995)

**Figure 4.2. Illustration over different organizational processes depending on the task of the process (Bergman & Klefsjö, 1995)**
4.1.1.2 Different kinds of processes

There are mainly three kinds of processes in an organization. An individual process carried out by an individual. A functional process or vertical process where activities are bound to a certain unit or division. A business process or horizontal process, to cut through an organization and its final result provides the organization with its income, see figure 4.3. (Bergman & Klefsjö, 1995)

![Diagram of different kinds of processes](image)

**Figure 4.3.** A business process, for example an ordering process that cuts through the organization (Bergman & Klefsjö, 1995)

4.1.2 Process orientation

Process orientation is the identification and documentation of the business’s different workflow according to the Swedish Institute for Quality (SIQ). A picture of how the different activities are connected and will be known, this will be the base for further management and improvement of the business. Through focus on workflows, the activities creating value for the customers, can the energy of the organization concentrate on important improvements for the customers.

Most business has bottlenecks and disconnection in the workflow. This leads to divergence that demands reworks and creates bad confidence from customer and leads to guarantee undertakings. If the processes are not identified, these bottlenecks and disconnection will be invisible. Both management and co-worker have difficulties finding the reasons for the symptom. These divergence can cause costs up to 10-20% of total sales. These costs can be reduced if the company process orientates. ([http://www.siq.se](http://www.siq.se))
With the concept “processes” nothing new is introduced to the organization, the processes are already there. All business contains of processes where activities are put to activities and create a chain, so-called valuechain or workflow. (ibid.)

The thing that might be new when the business chooses to process orientate is the ability to identify the earlier described “invisible” processes. It is first when the processes are described, they can be the bases for improvement in the way the business is run. These documented work procedures reflect the present situation and are the starting point for an alternative better way of working. (ibid.)

4.1.3 Process management

Process management is a systematic method to organize, lead and continuously improve the processes of the organization. Process management is built to see and lead the organization as a system of cross-functional processes instead of vertical functions. Process management could be applied in approximately 80 % of all processes in an organization. In process management it is significant to start from a general perspective of the organization and to improve the processes. (Egnell, 1994)

Process management could be summarized in the following step:

- Organize the improvements, define the ownership and appoint a process improvement group.

- Understand the process, investigate the supplier and customer, define interfaces and document the workflow.

- Control the process, decide the point of measure and perform measurement on a regular basis.

- Continuously improve the process, use information from the measurement and control system to improve the process. (ibid.)
4.1.4 Process mapping

To describe a process in a process map is an invaluable technique to understand the process, its functions, starting point for the analysis, the improvement of the process and the use of decision making where the measuring points should be in the process. (Egnell, 1994)

To draw a process map gives many advantages, often it is first when the process co-workers see or draw the process map they understand the function of the process.

There exist a few mapping techniques that can be used to describe processes, for example block chart and flow chart. Irrespective of technique used, it is important that the final process map apart from the flow of activities describes the process relation between the customer and the supplier at the interfaces. A block chart can be used to roughly describe the process, see figure 4.4.

Figure 4.4. The principle of a block chart, the square is the activities, the arrow shows the flow and the interface is between the departments (Egnell, 1994)

If the process should be described more defined a flow chart is more suitable to use, see figure 4.5. The symbols are explained in attachment 2. The flow chart can be used to simulate the process and it is useful to see how changes in the process effect its function.
4.1.5 Survey and analysis to rationalize the process

When rationalizing it is significant to start with that of most importance for the business and most effective in proportion to the financial resources needed for efficiency. This is the same when redesigning processes. When choosing which processes to rationalize can for example be based on the possibilities of increasing customers’ satisfaction, the result of potential improvement or consumption of resources of importance for realization of the rationalization. (Mattsson, 2002)

The next step when trying to rationalize processes are the survey and presentation of the existing process in the present situation. This step is often questioned with the motivation, if the processes are about to be changed, why explain and document the existing process if the employees already know the structure of the processes. In most cases there are good reasons to do so, one reason is the limited knowledge of the comprehensive view of the entire process.

In a functional organization can every individual be expected to have good knowledge and a comprehensive view of the activities within the department. On the other hand is a process characterized for crossing the function- and department borders and often does no one have a complete view of all the different processes. (ibid.)

**Figure 4.5.** The principle of flow chart, the arrow shows the flow (Egnell, 1994)
Other reason why existing process should be surveyed is related to the possibilities of realizing the changes. The purpose of the analysis and to redesign work is to find a more effective process. This change over from an existing to a new process is obviously making it easier if the starting point is known. Not at least for the employees affected by changed responsibilities and assignments. (Mattsson, 2002)

### 4.1.6 Process improvement

To improve an individual process the organization could choose to improve the existing process or design a new process. The way to tackle the process is decided on the analysis of risks, costs, customer satisfaction and the demand of the organization. (Egnell, 1994)

**Improvement of existing process**

First analyze the problem of the process then study the possibilities of solving the problems in order to improve the existing process. After an existing process has been improved, the potential to fulfill the demand on quality, affectivity and adaptability are higher. (Egnell, 1994)

**Starting points for improvement:**

- Minimize unnecessary administration routines, many administrative routines in an organization do not fulfill any purpose.

- Minimize non-valuable activities, the process could be improved by stake on value rising activities and at the same time minimize or remove non-valuable activities, such as transports, controls and approvals.

- Remove repeating activities, see if there exist similar activities that occur in more than one place in the process and if possibly consolidate or remove the activities.

- Simplify the process and make the activities easier to perform, learn and understand.

- Minimize the process lead-time, long lead-times could mean higher costs, delays for customers and loss of customers. Always work to improve activities with long lead-time, if possibly perform parallel activities and alter the activity course.
Standardize the work operation as activities, this is important for the workers so they perform their activities as effective as possible. Hard to improve in the process if the workers perform the same activities differently.

Increase the collaboration with the supplier, process vision means focus on the satisfaction to the customers in the process. It is although important to focus on the supplier of the process so they know the needs and expectations to deliver necessary objects to the process.

Automates and/or mechanize, by using computer and information technology makes it possible to improve many processes and activities, but should be introduced with consideration.

Build a reliable process, fault can occur. It is important to design the different activities in the process so the possibility of making mistakes are minimized.

Simplify the language, simplified and standardized document and the use of an understandable language, to increase the chance that the co-workers assimilate the information.

Maintain and increase the use of equipment in the process, make sure that the equipment is in good condition and will increase the reliability in the process. A broken computer can mean that the process does not work properly.

(Egnell, 1994)

New processes
To design a new process means that the organization disregard from the existing processes and design a completely new process with a new structure. The organization should strive to design the process as effective as possible in line with the business concept. Designing a new process leads to a bigger improvement potential than an improvement of an existing process, with higher costs and demand more time to accomplish. The risk to failure is much higher because the approach creates larger changes in the structure of the organization. (Egnell, 1994)
Implementation
The main purpose with the implementation phase is that the owners of the process and the process improvement group transfer the new or the modified process into the current activity. (Egnell, 1994)

Analyzing difficulties at implementation
Before the owners of the process and the process improvement group can implement the new or modified process, they need to identify the problems occurred at the implementation of the process. The reasons to the problems must be analyzed and decision must be taken about suitable action. (Egnell, 1994)

Planning the implementation
When a problem is analyzed there is four important questions to consider:

- How should the execution of decided action be carried out.
- How to secure the assist needed resources of the organization, for example time to educate employees working in the process.
- How the responsibility for the different parts should be divided first in the implementation process and later in the new or modified process.
- Milestones for the different part moments in the implementation.

(Egnell, 1994)

Carry out the implementation
Implementation of a process is time demanding and the time to carry out an implementation depends on complexity, the size of changes and resources given to carry out the implementation. If the modification is in an existing process that should be implemented, it will be carried out in a few weeks or months. If it is a new process that is going to be implemented it usually takes months or years to carry out. (Egnell, 1994)

4.1.7 Measurement
Measurement is fundamental for all improvement work, since the result of the measurement works as an improvement tool to describe the development, the speed of the improvement and to increase the understanding of the process’s goal. If nothing can be measured, it can not be controlled, if it can not be
controlled, it can not be managed, if it can not be managed, it can not be improved.

It is important for the company to look into the processes, part processes and activities when deciding measure points. They may not be able to reach customers demand if vital information is disregarded. It is often best to limit the measure point to a few and relevant. The most common characteristic measured in the process is lead-time, costs, delivery precision, fault quantity, customer’s satisfaction and lack of quality cost. (Egnell, 1994)

4.2 Customer satisfaction

When doing an improvement the first question to start with must answer the question ”Who are our customers?” or “Who are we creating value for?” . Sometime this is an easy question to answer, in other situations can the work to find a common view of customers of an organization create conflicts.

In many cases there are different categories of customers with an interest that not coincide. It is important to put eventual conflicts concerning the desire of the customers to the surface to be able to do priorities. Always achieve to find creative solutions to make all part winners, so-called win-win-solutions. (Bergman & Klefsjö, 1995)

Put the customer in the center. The quality must be based on the customer and be related to their needs and expectations. (ibid.)

4.3 Lead-time

From the customer’s point of view there is only one lead-time, the time from placed order to delivery. From the supplier’s perspective, it is the time it takes to convert an order into cash and, indeed, the total time that working capital is committed from when materials are first procured through to the customer’s payment is received. Every step in an ordering cycle consumes time, causing bottlenecks, inefficient process and fluctuations in the volume orders. This will often cause considerable variation in the time taken for these various activities to be completed. (Martin, 1998)
4.4 Bottleneck

A bottleneck is the operation with the lowest effective capacity of any operation in the facility and thus limits the system’s output. (Krajewski & Ritzman, 1999)

A bottleneck:
If the time required for work elements at a station exceeds the line’s cycle-time, the station will be a bottleneck, preventing the line from reaching its desired output rate.

An operation that has the lowest effective capacity of any operation in the facility and thus limits the system’s output. The facility can only produce as fast as the slowest operation, see figure 4.6 a.

If all stations have the same capacity then they all restrict the output as a bottleneck, see figure 4.6 b. (Krajewski & Ritzman, 1999)

**Figure 4.6 a.** Station 2 is a bottleneck  *(Krajewski & Ritzman, 1999)*

**Figure 4.6 b.** All stations are bottlenecks *(Krajewski & Ritzman, 1999)*

Variability in workload also creates floating bottlenecks, One week the mix of work may make station 1 a bottleneck then the next weeks workload may make the operation 3 constraint. This type of variability increases the complexity of day to day scheduling. In this situation, management prefers lower utilization rates, which allow greater slack to absorb unexpected surges in demand. (ibid.)
5 Present situation

This chapter describes the different ordering system at Sandvik IT and explains the ways an order can be placed. It is possible to follow the orderflows from the customer placing the order until receiving the product or service ordered. Some products and services are also explained.

5.1 Processes

To be able to evaluate the administrational environments and analyze requirements of changes to find proposal of changes or improvements, a survey and establishment of the existing processes is needed.

The chapter Present situation is a process survey divided into part processes. The survey comprises the activities from the customer placing the order until the customer receives the product or gets the service required. The part processes will be described separately more as parts than part of processes.

**Figure 5.1.** The different ways to place an order and the different flow the order can take through the different processes

There are different ways to place the order depending on the person placing the order and the content of the order. Depending on the way the order is placed, the order enters different processes. The content of the order also decides which
process the order continues and which databases the order enters to be handled. Further is the order delegated to different persons, depending on assignment needed the ordering process can differ, *see figure 5.1*. The option will be described more detailed and divided in smaller parts further in this chapter.

Bergman and Klefsjö (1995) talk about three main types of processes in an organization. An individual process, carried out by an individual. A functional process, where activities are bound to a certain unit or division. A business process, in this case the ordering process, to cut through an organization and its final result provides the organization with its income, *see figure 5.2*.

Every person taking part of the ordering process is an individual and a part of the process. The person ordering is one part of the process and the administrator another, but together are they the one that make the process possible. The order passes through many different departments and companies taking care of different assignments of the order. The different divisions deal with specified assignment. Their assignment provides the customer with equipment and all the customers receiving IT-related products or services do this to be able to provide Sandvik AB with its income. Thereby is the process passing through the entire company.

*Figure 5.2. The ordering process and the main types of process that effect the business (Bergman & Klefsjö, 1995)*
5.2 Internal systems

5.2.1 Orderdatabase

This is a database application that handles IT-related orders, approximately 67,000 orders per year. It is a Notes application and the different types of products possible to order in the Orderdatabase are:

- Hardware.
- Software.
- User identification in all IT environment.
- Other services.

In Sweden there are two ways to order products and services that are handled by this database. Either the customer need to have authority to order or as a non-authority user order through one of the portals IT-Requisition or PC-Acquisition and the order must be attested by the manager. Abroad there is only one way to order in this database and that is through mail by an authorized customer such the IT Security Officer (ITSO), see attachment 3.

Each company, within Sandvik AB, should have a named person covering the role of an ITSO dealing with security matters related to the IT-area. The task of the ITSO is to identify the IT risks of the company with both the company and Sandvik AB:s aspects in mind and to take the right step in reducing these risks. (http://home.sandvik.com)

One way to place the order is to send a mail with an order request to helpdesk, who pass it forward to the admingroup at DCP-department, see figure 5.3. The administrators in this department are the one receiving all orders for the Orderdatabase.

When receiving an order request the administrators have to check if the persons have authority to place the order. The database “contact person” contains the persons with authority to place an order. If the authority is correct an order is created in the Orderdatabase by using the information from the mail and the information the administrator need to add about the customer and the order.
Figure 5.3. The flows of the order and information through the Order database
The other way to order is to place the order request through the new portal IT-Requisition or PC-Acquisition, see figure 5.4. When an order request is placed the order is automatically created in the Orderdatabase when the manager has attested the order. At the same time as the order is created in the Orderdatabase a mail is sent to helpdesk to aware that an order is created. The administrator at helpdesk forwards this mail to the administrators at DCP and they open the order in the Orderdatabase.

**Figure 5.4. Flow of an order placed through IT-Requisition or PC-Acquisition**

When the administrators open the order in the Orderdatabase they have to check and decide which activities that are needed. One order can need activities and involvement from many persons. Different “departments” have different responsibility and assignments. When the activities needed is decided, the responsibility is delegated to another administrator or a whole group depending
on the contents of the order. This administrator decides whom responsible for each part of the order and distributes the different activities on different persons. First when the activities needed are decided the responsibility is assigned.

The person responsible for the order is responsible until all parts are done. There are different views to follow the order and to check if the order is complete or still in progress. The DCP-administrators can send out a reminder to the person responsible for the order and this person can remind the persons working with the order.

When customers place orders in the Orderdatabase they receive a confirmation that the order has entered the database. The order is “not started” until the administrators open the order and decide a planning date, this is the final date of the order and the status of the order is now “in progress”. The customers receive a mail when the order is “in progress” and one when the order is “completed”. If an order is not correct or if some essential information is missing the order is set “on hold”. This will result in a new confirmation with a new planning date for the order to be completed. When an order is completed for the customer, but still need administration complements, the orders can be “completed against customer” and no more confirmations are sent.

The administrators also receive a confirmation every time there is a status change of an order. This even if they are the one making the change.

5.2.1.1 Hardware

All hardware related orders such laptop, stationary computers, servers, printers and screens are ordered through the Orderdatabase, either by mail, phone calls, IT-Requisition or PC-Acquisition. Hardware available for the internal customer at Sandvik AB is listed in IT-Requisition (Sweden only). When the order arrives to the administrators at DCP-department they delegate the order to the administrators who handle all orders related to hardware.

If the administrators need to do a purchase they use the system Wink, see chapter 5.4.1, to register the order, to receive an order number and to get the order approved by an authorized person. The order number is needed so right account is charged for the hardware. When the administrator receives the order number from Wink the order is placed at the supplier’s website (Atea), this is today the fastest way to purchase hardware related products.
Present situation

When new hardware arrives at the Centralstorage for marking and registration of the serial number, the administrators there use the order number to follow the flow of the hardware through the workstations until the products arrive to the customer. When the hardware has been marked and registered at the Centralstorage, the DCP-administrators register the hardware in Salut, see below, which is a debit- and equipment register connected to InvoiceIS, see below.

There is a small storage of new hardware at the Centralstorage, approximately 1-3 computers are always available and the storage is controlled by the administrators’ prognosis, which is based on statistics. Prognoses are sent to the supplier one month ahead. Approximately 10 laptops and 10 stationary computers are ordered each time and the consumption every month is approximately 40 stationary, 25 laptops and 40 screens. There is one meeting with IBM and Atea every month to control the product list for new and outgoing hardware.

New hardware has an economical lifetime of three years and all contracts have the length of three years and the customer is charged by the month. Used hardware has its own storage located at DC-80, if possible the used hardware is rented out again. The administrator sends an instruction to the workstation to collect hardware from this storage and carry out required installations. Used hardware has different scrap levels based on its economical lifetime, if the used hardware exceeds its scrap level (depends on the hardware) it could be dismounted in the department at Sandvik that handle that.

Salut
Salut is an administration system for hardware, software and a debit- and equipment register, which serves Sandvik IT with charging of rented equipment from Sandvik IT. Salut provide InvoiceIS with debit support for equipment that Sandvik IT has for hire, for example personal computers, printers and software.

InvoiceIS is the invoice system and is divided in two parts. One part is a specification for the customers, used by the customers to follow-up cost that has been charge from Sandvik IT or Sandvik Systems Development. The other part is for internal use only, for the administrators working with debit and it is possible to follow-up income.

Salut consists of two parts, a price-register with the assortment and product information such as supplier, rental price and the economical lifetime. Salut also contains of a product register where every unique object is described with
information about placing, users, debit- and investment account. (http://home.sandvik.com)

5.2.1.2 Software

All software related orders such license and new is ordered through the Orderdatabase, either by mail, IT-Requisition or PC-Acquisition. When the order arrives to the administrators at DCP-department, they delegate the order to the administrators who handles all purchase related to software and licenses.

Software available for the internal customer is listed in IT-Requisition, but it is also possible to order not listed software. It is the software administrator who finds and decides a suitable supplier. If the software is similar to already existed and listed software at Sandvik AB, the administrators recommend the customer to choose from the listed software. Toward standard PC there exist a scripted software package as standard. Software used by more than five persons is worth scripting, this means that all users get the same program package. For example are the Microsoft Windows and the Office package with a standard setup, the same for all users.

If the administrators need to do a purchase they use the system Wink, to register the order, to receive the order number and to get the order approved by an authorized person. The order number is needed so right account is charged for the software. When the administrators receive the order number from Wink, they address toward the supplier directly instead of continue placing the order through Wink, this is a much faster way to purchase software related products.

Sandvik AB tries to work with as few software suppliers as possible. Product deliveries are often made directly from the supplier to the customers, the purchaser verifies that correct product has arrived and that the invoice is correct. If the installation is performed manually the CD-disk and manual are sent to the customer or the PC-coordinator at the company. The software is scripted there is no need for the PC-coordinators involvement, if required the manual is sent.

Licenses are often bought without maintenance and are valid until change, upgrade or removed from the computer. If the maintenance is not included there will be a yearly fee. Licenses are often locked against a computer, a person or toward Sandvik AB. When locked toward Sandvik AB it means that it is free for Sandvik AB to distribute the software inside the company. The license can be free of charge for the customers or be offered as a service with a
fee. At some departments 10 persons use one computer, but only one license is required, although not all software suppliers approve this. If one person uses three computers only one license is needed.

Sandvik AB can order software that all users are supposed to use, for example antivirus software, they offer it as a service no one can reject, a central decision. It is possible to have volume agreement against a software owner, this means that Sandvik AB is allowed to install the software on several computers with only one product key. For every new user of the software, Sandvik AB reports in the number of new users to the software owner. Some software are possible to collect from the Internet as an evaluation copy, then they only need to buy the product key (license) to get a full registered version of the software.

Sandvik AB does not always want to update when a new version of the software is released, because the new software has parts that not are used at Sandvik AB. The problem is that the software owner stops doing patches to the old software which force Sandvik AB to update to the new software, because of security reasons and not for functionality reasons.

It is possible to remove software from a computer if the user not uses it anymore. The customer is the one responsible for reporting that they do not use the software and if the administrators are notified they can move the license to another user. It is also possible to let the license be in standby mode without extra costs. This is not possible if the software is connected to another software with fee responsibility.

It is the customer’s obligation to follow the license agreement and not the administrators’ work to follow-up that the customer follows the agreements.

5.2.1.3 Users

Sandvik has a number of platforms and a number of systems that often need a separate login i.e. the users have to login with different ids and passwords in different environments. The periods of validity of the password vary from 30-90 days depending on system.

The IT environments for the different systems are separate from each other and have their own user register. This result in that all changes regarding users have to be done in all environments separately.
There are applications such as Business Objects, Gula Sidorna, SQL Hotel and Visual Source Safe that need a user id registration to be able to use. To be registered in any IT environments a RACF id is needed, see below. To use Windows or the Internet separate registration is needed and different user id, but only one password login is needed. To be able to work on your computer outside your office, a VPN secure remote user must be ordered. VPN is a tunnel to pass through the firewall to be able to get access into Intranet from outside Sandvik.

The responsibility for the different user environment is divided between the administrators and when the order is created in the Orderdatabase they are assigned the part within their responsibility. They register the user in the system and confirm the order by sending their part of the order to the customer with the passwords and ids, if needed. When there is a new employee this result in quite many different user ids and the user will receive one mail from each of the administrators.

The user ids can be ordered through IT-Requisition and that is a useful help for the administrators. When a user is ordering through IT-Requisition the order is attested by the manager and the administrators know that the order is approved, when receiving it. User ids are ordered from all companies around the world, but it is only the companies in Sweden that can use IT-Requisition, all other companies order through orderforms.

If the order is not placed through IT-Requisition, the administrator has to check if the person placing the order can be found in the database “contact person”.

**RACF**

Resource Access Control Facility (RACF) is the main security system in the mainframe environment and protects all type of resources there. RACF is found in an operating system called MVS where the environment is built on the fact that every resource for example program and data have one owner.

RACF can be described as storage (security level) in the operating system to verify the user id and allow acceptance for accesses to resources. RACF use a user id to identify the person that is trying to enter the system and a password is confirming the identity. The user id in RACF is the user id in all IT environments at Sandvik.
To order a new or a removal of a RACF id, a person need one of these authorities;

- ITSO - IT Security Officer has total authority to place an order at companies around the world.

- RACF - coordinator, person selected by the ITSO with the responsibility for who has right and authority to place an order. Responsible for the list of persons with authority to place orders.

- RACF - authority, a person with authority to place an order according new user/change of user/removal of RACF id user.

A person with one of these authorities use an orderform to place the order and the administrators have to control the authority. If it is a company in Sweden it is also possible to order through IT-Requisition, the order is approved before the administrators receive it and they do not have to check the authority and roles.

In RACF can the user be placed into different groups depending on their functions. A consultant or a student only gets access for six months and will automatically be closed out after these six months, as a safety reason. These persons will belong to a certain group. A programmer in mainframe environment can belong to a certain group and have the possibility of working in more than one window at a time, or if the user needs administrative rights the user need to belong to a special group. All RACF id must be connected to an account number for the department or company where the license for the user can be charged. (Dahlqvist & Lundberg, 2002)

**EA**

Window NT is standard as an operating system on all PC:s at Sandvik since 1997, except laptops, where Windows 2000 is standard. This to make it possible to have one central administration unit for users account and authority, Sandvik use domains.

Sandvik use a Single Master Domain Model, this mean that all servers, workstations and printers are placed in a resource domain, one for each company and location. The domain consists of many different application groups that the user can belong to depending on the applications the user need.
Companies those are not part of the master domain take care of their own administration and have their own rules. For companies those are members of the master domain, the administration of users and resources in Windows run by the administrator tool Enterprise Administrator, EA. This makes the administration more flexible and safer. This tool will be replaced with DRA (Directory and Resource Administrator), but will fulfill the same purpose.

EA consist of both a Graphic User Interface and Command. The graphic user interface is easy to use while command is more advanced and use DOS-command, but is useful when big changes take place in large groups, such as moving many accounts from one server to another. ([http://www.winnetmag.com/Articles/Index.cfm?ArticleID=174](http://www.winnetmag.com/Articles/Index.cfm?ArticleID=174))

To avoid that a person can change in the entire domain when having authority to make changes in the domain, the domain is divided into territories. This controls and limits the possibilities of making mistakes. A territory can be everything from a whole domain to a group of 10 users or machines to just one user. Sandvik has chosen to have one territory per company and location.

Every territory within the master domain Sandvik has three roles:

- **EA Territory Administrator (ITSO) or appointed person** - select the other EA roles.
- **EA Territory Account Operator** - create groups and users.
- **EA Territory Helpdesk** - unlock account and passwords.

A Windows NT user is ordered by a person with the same authority and roles as the person ordering RACF id. The order can also be placed through IT-Requisition and the administrators do not have to check authority and roles.

Before a user can be registered as a Windows NT user in the Sandvik domain the user needs a RACF user id. When the user has a RACF id the registration of the user is done through EA. It is the Account Operator that is responsible for the creation of groups, users and all the necessary information needed about the user. An account needs to be connected to the user where the license can be charged. This account is connected to the RACF id of the user.
5.2.1.4 Other services

There are other services that can be ordered by mail sent to helpdesk or through IT-Requisition, this is often a service related to the product ordered. Many products ordered require an installation then will this installation automatically be added to this product. The company/department can on the other hand decide if they need help with installation or if they do their own installation. Reinstallation of the computer can also be ordered.

If a customer orders a new program an education can be ordered to get help to understand and work with the new program. Also when servers are ordered can an education be needed.

5.2.2 Notes/Domino Service Orders

Notes/Domino Service Orders is a database handling order for all kinds of orders related to Notes, such as new users, databases etc.

A user needs a ground access to be able to enter the Notes/Domino server, to receive access to other databases the user needs to be registered in a group that allows access to a specific database. To place an order for services in the Notes environment the user needs read and write access to Notes/Domino Service Orders database. Before a user gets access to the database is the ITSO inquired to be sure that the user has the rights to have access. Domino Directory is a database used to administrate Notes/Domino.

When an authorized person has access to the Notes/Domino Service Orders database and places an order a special orderform depending on the order is used. The orderform consists of different information about the user that has to be filled in. There is a form for each type of order, totally 21 different folders, see attachment 4. Some order types can be placed through IT-Requisition and are then automatically forwarded to the database. When the order is placed, the database is automatically updated and the order is placed in its specific folder. The administrators collect the order in a specific folder within their area of responsibility and process the order. After processing the order, they finishing the order by letting the “Java-slaves” run the order and send it to the right workstation for further installations. Some order can also be placed through helpdesk or by phone, but only in exceptional cases. The orderflows for the different types of orders are described in attachment 5.
When a customer places an order in Notes a confirmation is sent back to the customer to verify that the order is received. The customer also has the possibility of choosing when placing the order if he/she wants a confirmation by mail when the status of the order is changed. On the other hand, have the users ordering in Service Orders the possibility of following the order in the database and see if the order is completed or not.

### 5.2.3 Sandvik N/D Database Library

The Sandvik Notes/Domino Database Library is the central point for finding Notes/Domino databases within Sandvik AB. The library is available in the root directory on all Domino servers within the Sandvik Domino network so everyone is able to use the database to find information about all databases.

Every database has an owner and the owners can use the library to view the current database users and their access levels and roles. If the owner wants to change any accesses into their database this can be done directly in this database.

Database users can use the library to find and open databases. They can find information about all existing databases and their function etc. If a database is found and the user is granted access to the database, it will be opened and an icon will be added to the desktop.

If a user wants access to a database with limited access, a request is sent to the database administrator or owner with a justification of the reasons for the access. If the database administrator or the owner grants the request it is forwarded to Access Control Admin (an automated administration console application) and a copy is sent to the user asking for access. The database can not be opened until a confirmation from Access Control Admin is received. When the Access Control Admin has processed the granted request the new user will receive a confirmation message with buttons to access the database. If the database administrator or the owner denies the request it is returned with information about the denial.

### 5.2.4 IT-Requisition

IT-Requisition is the new portal that Sandvik IT introduced to make it easier for the user to order. The portal is a database that works over the two systems Orderdatabase and Notes/Domino Service Orders. It was introduced to Sandvik IT in November 2002 and is supposed to be the only system for ordering IT-
related products, such as hardware, software and users in Sweden. IT-Requisition is developed from the PC-Acquisition used by Material Technology for a couple of years. A project is started to introduce a light version of IT-Requisition for the possibilities of ordering user ids globally.

The portal gives information about the different products possible to order. There are three menus of products each connected to the databases for Software Product, Hardware Product and ID Product with all the information about the products.

The portal is very easy to use, the users only have to fill in the employment number and the system automatically fills in all other necessarily information such as department code, account number etc. With the different menus it is easy to find available products and there is also a possibility of ordering products not in list. When the order request is placed through IT-Requisition, the system sends a mail to the nearest manager or person with right authority to approve the order. After his/her approval the order is confirmed and created in the Orderdatabase. At the same time a mail is sent to helpdesk to aware that an order is created. The administrator at helpdesk forwards this mail to the administrator at DCP and they open the order in the Orderdatabase.

Different department and company have different rules about access to the database. The thought was that everyone should be able to place an order, since the manager attests all orders, no inappropriate order can enter the Orderdatabase without being approved. In the present situation have the companies their own rules, some companies have a coordinator using IT-Requisition to order.

There are three levels of persons with authority to confirm; account manager, function manager or special function manager. An account manager is the first level and will always attest an order, but only up to a certain amount. If the order exceeds this amount a function manager also has to attest the order before the order enters the Orderdatabase. When a company asks for access to the database, they can decide and create their own rules about the manager’s attest level. They can decide the amount of money an account manager can attest and when a special function manager needs to be involved. They can also choose to have a security officer to attest when some selected products are ordered. There are different views in the IT-Requisition where the orders can be found, by company, date, status or manager, see attachment 6.
5.2.4.1 PC-Acquisition

IT-Requisition is evolved and created to replace PC-Acquisition. Sandvik Material Technology is the division using PC-Acquisition and will replace it within a while and use IT-Requisition instead.

5.3 Helpdesk

Helpdesk is a part of DCS and work as a service division handling IT-related support for all companies.

A customer can call helpdesk when having problems with data routines; mainframe, servers, applications, passwords and other user administration matters, printouts, accessibility, line disturbances, office, client, virus etc. If the problems are related to products that have been in use, it is a support problem. If it is a new product it is an order and sent to the ordering system. Helpdesk is receiving 1600 “cases/problems” every week by mail or phone calls and thereby approximately 200 mails a day. When they receive a call or mail, they have to decide the priority of the errand, see chapter 5.3.3.

The station receiving calls/mails is divided in two groups, firstline and secondline with different responsibilities, see figure 5.5.

![Diagram](Figure 5.5. The rotation of phone calls to helpdesk)
Firstline are four persons receiving calls and one person receiving mail. A phone call rotates on the four persons in firstline and if no one answers, two calls can be put in line, if two calls are in line the next call will be sent to the next level, the secondline. There are four persons in secondline where the calls can rotate before being answered. The four persons in firstline are mainly receiving phone calls and trying to solve the problems. Depending on the intensity of calls, they decide if they can solve the problem immediately or create a ticket of the errand in IT-Support, the database for support errands. About 90% of the phone calls are support errands.

Secondline acts as a backup to firstline and can spend more time with a problem. They are more flexible and can be sent away to check an installation or help a person on location. When helpdesk receives an order by phone, a form is sent to the user to fill in and the order is received as mail instead. There are standard forms for almost all orders and many problems as well. When the order is sent in by mail, the order is taken care of in the inbox – “The rabbitbox”.

5.3.1 The inbox – “The Rabbitbox”

The administrator taking care of the incoming mail to helpdesk is the person in charge of the “Rabbitbox”. This is the inbox for all incoming mail to helpdesk, see figure 5.6.

The administrators in first- and secondline at helpdesk and the administrators at DCP have their own personal maps and DCP also have one in common. Before the administrator can open a mail, the mail has to be moved to the personal map so no more than one person opens the mail. If it is an order the administrator put the mail directly into the admingroup map or directly in one of the administrators at DCP’s maps and they can create an order in the Orderdatabase.

If it is a support problem the mail is placed in one of the helpdesk administrators’ maps. If they not can solve the problem the mail can be replaced into the inbox or moved to someone else’s map. Otherwise can a support ticket of the errand be created in the database IT-Support.

The name “Rabbitbox” comes from the mails similarity to rabbits high ability to increase in number.
Figure 5.6. *The orderflow at helpdesks inbox the “Rabbitbox”*

### 5.3.2 IT-Support

IT-Support is the database for support errands. This database will be replaced by the new database Service Desk in a near future. When the administrator receiving a problem he/she can not solve immediately a support ticket is created. The ticket is a form in IT-Support with information about the user and the problem. The receiver decides the priority of the errand and delegates the errand to a person or a group. When an errand is created it has the status “not started”. When the administrator opens the errand and starts to deal with it, it sets to ”in Process”. If the problem is delegated to a group, it is not in process until it is delegated to one person in this group. There is a database with groups...
and persons that are dealing with a certain kind of errands. For example:
SED_USERS, SED_SECONDLINE, SED_Workstation, SED_COROMANT etc., see figure 5.5.

There are some basic rules the administrators have to consider when an errand
is delegated to him/her:

- See if you can solve the support ticket, if not send it back to helpdesk.
- Assign the support ticket to another receiver, but only after personal contact. Otherwise send it back to helpdesk.
- During problem solving, all customer contact is the receiver’s responsibility.
- Good customer contact!

A problem can be sent back and forward to different persons before being completed. In the support ticket there is a “menu” where it is possible to see who has been making changes, looked at the problem and who is in charge of the problem at the moment, see attachment 7. The process can be “on hold”, for example when waiting for components, otherwise will it be “in process” until “completed”.

When a user has reported a problem, he/she will receive a mail saying that the problem is taken care of and this mail includes a support ticket number to make it possible for the user to follow the errand through the procedure. The user will also receive a mail when the problem is solved.

5.3.3 Priority

They have a scale of five different grades for the support errands, where priority 1 is the most important one, see figure 5.7. A priority one call is started immediately. If not solve within 2 hours, the board of directors is informed. Priority 5 is the most commends and is almost everything related to PC.
Present situation

<table>
<thead>
<tr>
<th>Priority 1</th>
<th>Startingtime</th>
<th>Escalationtime</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Immediate access</td>
<td>Maximum 2 hour</td>
<td>Is used for critical interruptions for the business activity where a considerable part of the system or function is out of order. Sandvik IS executive group should be informed after two hours.</td>
</tr>
<tr>
<td>Priority 2</td>
<td>Immediate access</td>
<td>Maximum 1 day</td>
<td>Is used when a limited part of a system or function is out of order. The disruption is critical for the business but Sandvik IS executive group will not automatically be informed of the interruption.</td>
</tr>
<tr>
<td>Priority 3</td>
<td>Maximum 2 hour</td>
<td>Maximum 5 days</td>
<td>Is used when a limited part of the system or function is out of order. The disruption is not critical for the business activity.</td>
</tr>
<tr>
<td>Priority 4</td>
<td>Maximum 4 hour</td>
<td>Maximum 10 days</td>
<td>Is used when a limited part of a system or function is out of order. The disruption for the business activity is very limited.</td>
</tr>
<tr>
<td>Priority 5</td>
<td>Maximum 8 hour</td>
<td>Maximum 20 days</td>
<td>Is used for client disruption.</td>
</tr>
</tbody>
</table>

Figure 5.7. Priority scale

5.4 External systems

5.4.1 The purchasing portal Wink

Wink is a purchasing portal on the Intranet and works over Sandink, see chapter 5.4.2 which is located in the mainframe environment. The purpose with the portal is to create a common entry to order goods, services, internal and external. The thought with the portal is that every employee at Sandvik AB should be able to order through Wink toward internal and external supplier. The users of the portal have different characters such as, customer, authorized person and purchasers. Customer refers to every user using Wink and orders placed by a customer must be attested by a manager. An authorized person is an account manager with the rights to attest orders placed by a customer.
Present situation

Purchasers are responsible for purchasing and have all rights such as authority to order and to attest an order.

There are six applications connected to the portal today:

- **External orders**, makes it possible to order toward external suppliers. If the customer does not know which supplier to order from, the customer makes a request of the order and a purchaser selects a suitable supplier.

- **Centralstorage**, possible to order from and everybody can view the assortment at Centralstorage. But to order the customer need to be register as a user in the system Sandför.

- **Ordering of glasses**, (only in Sandviken), possible to order glasses and eye examination.

- **Cell- and fixed phones**, (only the companies in Västberga), possible to order cell-, fixed phones and accessories.

- **Car rental**, possible to rent a car.

- **Goods reception**, possibility of reporting when goods have arrived or when a service is done.

To be able to place an order in Wink the customer needs to be registered in the portal. If not having access to Wink it is possible to receive access from helpdesk.

The customers register desired products or services needed in the portal and send the order for approval, *see attachment 8*. There are help functions such as tables containing price unit, category and quantity unit in Wink to help the customer to order. The customers do not need to fill in all information in the form, for example supplier or account number. The control toward Sarek, Servus, Sandlev and Sandatt controls only the information that is filled in by the customer.
The four applications the control is made toward:

- **Sarek**, Sandvik AB:s internal account system, control which accounts to charge.

- **Servus**, account system, service departments’ follow-up system and controls the work order number.

- **Sandlev**, suppliers register, verify that the supplier exist in Sandlev.

- **Sandatt**, attestations register. Account manager is collected depending on the chosen account in the form.

The information in the order must be approved by these systems before the order is sent to the manager for attest, otherwise the order returns to the customer for corrections.

After the order has been sent to the manager a control toward the system Sarek, Sandlev and Servus is performed to see if something is changed or missing in the order. If nothing is missing and the changes are approved, the manager sends the order to update Sandink and the order is sent to the supplier. If something still is missing in the order such as suppliers’ number or suppliers article number a request is sent to a purchaser whom complete or/and divide the request into several orders and choose a suitable supplier to each order. The purchaser sends the order and the system updates Sandink with the completed order information and the order is sent to the supplier by EDI, paper or fax. Centralstorage will receive the incoming goods.

### 5.4.2 Sandink

Sandink is a purchasing system owned and administrated by Sandvik Service and is used by other divisions among them Sandvik IT. To be able to access to Sandink, personal authority is required. In Sandink an inquiry is made, the order is registered and the information about suppliers for example addresses, terms of delivery and terms of payment are collected from Sandlev. The portal Wink is a web application based on Sandink.
Present situation

Sandink contains of the following main functions:

- Register for purchase requests and orders.
- Printout copies of orders and order copies.
- Printout copies and registration of goods receiving reports.
- Invoice control.
- Serve as a basis for delivery control.
- Purchase statistic.
- Search system to find a supplier.
- Search system to find placed orders toward supplier.

(http://home.sandvik.com)

5.5 Projects in progress

5.5.1 Sandvik User Directory (SUD)

The Sandvik User Directory is a register database in Notes about the employees different accesses in Sandvik AB. SUD is still under construction and is planned to start in spring 2003. The thought with the register is to collect information about the users and all accesses they have in one place, this to help the administrators and the ITSO:s to receive a higher control of the users. They also receive a general view over all users in Sandvik AB and the system is always updated with the latest information about the employees status from PAX for example change company, name (married) or retired. PAX is the personnel office database, which contains the latest updated information over all employees at Sandvik AB.

The first release of SUD is going to contain the following six systems RACF, VPN, NT, DB2, LN and SQL-hotel, see figure 5.8. This database will create a higher quality of the data in the security systems, which means higher accuracy of the data in the database.

In the future the SUD database will be extended with automatically updating of changes in the security systems. Creating a connection between SUD and applications, such as IT-Requisition to get faster and simpler requisitions from ITSO. Also a connection between SUD and the database Service Desk can be possible and increase information about a user for the administrator dealing with the support errand. A connection to the global Human Resources-catalog in order to have a global register can also be possible in the future.
**5.5.2 ÄLA - Change of Announcement**

ÄLA is a database in Notes where it is possible to make changes such as if a person change company, retire or leave Sandvik of other reasons. It is also possible to make a request about personal requirement and to fill in information about new employees. Coromant have an existing system of ÄLA and a new common ÄLA for all companies in Sweden is under construction and is planned to start in spring 2003. The persons authorized to make changes are the managers and the personnel office which report changes in employees status and send this to PAX, post- and phone department in Sandvik AB. Selected information in the database will be sent to DCP and to other departments affected of the information. The thought is that information received at DCP is automatically created as an errand in the Orderdatabase. This will automatically give DCP information about the changes and the administrator can make the changes in the different systems.
6 Analysis

In this chapter the present situation of the system and ordering processes will be analyzed and compared to the future demands and relevant theories.

6.1 Processes

The analysis of the existing processes is based on the documentation of the orderflows and the opinion from the customers ordering IT-related products and services and the administrators handling the orders. The analysis of their opinion combined with the knowledge of the systems is the base to find improvements and suggestions about a future structure.

Mattsson (2002) talks about choice of processes to rationalize and gives the possibilities of increasing customer satisfaction as an alternative base for the rationalization. We try to see the improvement from the customers’ point of view and by making it simple for them to order, the handling of the order for the administrators will automatically be easier.

The Swedish Institute for Quality (SIQ) describes the importance of the identification and documentation of the business different workflow. They say it gives a picture of how the different activities are connected and will be known and this will be the base for further management and improvements of the business. Through focus on workflow, the activities creating value for the customers, can the energy of the organization concentrate on improvement with the greatest importance for the customer. We can again see the importance of the customers’ point of view and the identification of the existing workflow.

Most business has bottlenecks and disconnection in the workflow according to SIQ. This leads to divergence that demands reworks and creates bad confidences from customer and leads to guarantee undertakings. If the processes are not identified these bottlenecks and disconnection will be invisible. Both management and co-worker have difficulties finding the reasons for the symptom. This is the important part when analyzing the orderflow, the identification of the invisible processes and the reasons for bottlenecks during the processes.

When trying to rationalize processes, the survey and presentation of the existing process in the present situation are an important step according to Mattsson (2002). He says that this step is often questioned with the motivation that if the processes are about to be changed, why explain and document the
existing process if the employees already know the structure of the processes. He continues and explains that in most cases there are good reasons to do so, because there is often a limited knowledge of the entire processes. We try to do an as good as possible survey of the existing processes and analyze them to be able to do changes to simplify the flow through the ordering processes.

### 6.2 General problems

Today there are several ways to place an order in the ordering system, by phone calls and mails directly to the administrators or to helpdesk, forms in the Notes environment, or through one of the two portals IT-Requisition and PC-Acquisition. To have several ways to place an order creates a great demand on the provider of the systems to have well documented information about the ordering process different parts.

The lack of information is obvious when the customer is ordering for the first time. The information available on Sandvik Intranet is very hard to find and not detailed enough to help the customer in the ordering process. The customers need to know if he/she is allowed to order. There is a variation among the companies and their rules concerning the ordering procedure. Most companies have a selected person who does the ordering toward Sandvik IT and this person is not always well informed or used to order computer related products. Many of the customers rely on the information that is available in the systems and if the information can not help them, they call helpdesk or DCP.

When the customer is ordering through one of the two portals PC-Acquisition, IT-Requisition or in the Notes environment they fill in the information in orderforms with controlled fields. These controlled fields help the customer to fill in correct information that is demanded by the administrators and no control is needed. When the orders are placed in one of these three systems and the order arrives at the administrators it is already approved. From the portal the order goes automatically into the Orderdatabase and the order in the Notes environment goes into Notes/Domino server. This helps the administrators in their work, they do not need to control the employees’ authority to order and do not need to create the order.

Bergman and Klefsjö (1995) discuss the importance of the customer and request companies to put their customers in center. In the ordering process all persons placing orders in the system are the customers. These are the people that need to be considered. If it is possible to see it from the customers’ perspective and make it easier for them to order, this result in a reduced work
for the administrators. Create a relation between the customer and the administrators so they understand how they can make it easier for each other. If the customers understand the importance of planning in advance and how this affect the work for the administrators, maybe the customers will put some effort in doing it.

### 6.3 Internal systems

#### 6.3.1 Orderdatabase

**Responsibility of the order**

Administrators using the Orderdatabase have a problem to see if an order is processed or not. Today there is only a little star that shows if the administrators have opened the order or not, but nothing shows the status of the order such as not started, completed, reminder or on hold. The star is there only when there has been a change, so each time a person responsible for an assignment makes a change, the status for all other persons involved in the order change. Even if you make a change, you get a confirmation that there has been a change.

The persons responsible for the order have problems with the orders when persons with delegated assignments do not do their assignments and the order will remain in the view of the responsible person. It is difficult to take care of and control all the orders, especially when the orders are hard to separate from each other. When the assignment can not be done before other parts are completed, the installers/administrators do not need to receive the order before they can do their parts.

**Detect delays**

The only way to detect delays are when the administrator runs a program that runs through the orders and sends a reminder to the person in charge of the order. This is often not the person causing the delay. The person responsible often has a large number of orders he/she is in charge of and if many of the orders are delayed this person receives many reminders. In these cases can it happen he/she misses forwarding the reminder to the person responsible for the delay, but the persons in charge have the responsibility to inform the person that is late. It is an extra task for the administrators to remember running the program when they do not have an automatically system and it is not always sure that they remember to frequently run the program. Need to find a system, locating the persons responsible for the delays.
New structure of the system
The structure of the system is not totally satisfying and the design needs a renewal. This is the plan with the introduction of the new database Service Desk.

Order number
When the administrator creates a new order in the Orderdatabase an order number is created connected to the order and in the Orderdatabase view the administrator is not able to see the order number in the description over the order. This makes it more difficult for them to follow the order and search for it. Also the person placing the order has problem to follow the order confirmation and need a better connection to the order. If it is possible to see the order number in the description, it is easier to find the order, for example when someone is calling helpdesk to ask about an order.

Bottleneck
Krajewski & Ritzman (1999) talk about bottleneck and that the facility can only produce as fast as the slowest operation. The order is always dependent on the slowest operation. To be able to shorten the lead-time to make the customer receive the order faster, we have to find the slowest operation—the bottleneck. This can be difficult because the slowest operation can vary from week to week depending on the intensity of the contents of orders.

Confirmation for customers
The Orderdatabase sends confirmations to the person who placed the order about the status changes of the order. Most of the customer thinks it is better with too many confirmations than too few, they become worried if they do not hear anything. On the other hand, if the customer gets too many confirmations it is difficult to know which order the confirmation is related to. If the order consists of many parts, it is good to know which parts that are missing when they receive a confirmation when one part is finished.

It is also very difficult to understand and to know which order the confirmation is connected to. There is dissatisfaction with the contents of the confirmations and they want a clearer and more detailed connection to the order. All the confirmations give an enormous increase of incoming mail for the person placing orders. The only confirmation the person who often orders need is one when the order is placed and one when the order is completed. In-between it is the user that needs information about the order. The person ordering is often a selected person whose only responsibility is to order. It is not possible for the
person placing the order to fill in that the user is the one that wants the confirmations.

**Confirmation for administrators**
The numbers of confirmation for the administrators when they do a change need to decrease. It is not necessary for them to receive a confirmation every time an order is change, especially not when themselves change the order. All the confirmations only create disorder and confusions in their mailboxes.

**Connection of order consisting of different parts**
The customers miss a connection to the order and the user. If the order consists of different parts maybe the customer could receive a link to the Orderdatabase to be able to follow the order and more clearly see which part they have received. It is not possible for the administrators to gather all confirmations in one mail because different administrators often process the different part. The lead-time might be too long if they have to wait for all parts, but it will be clearer for the customer which order it concern.

**IT-Requisition sends link to helpdesk**
Today systems like IT-Requisition help the DCP-administrators by creating the order directly into the Orderdatabase, but the Orderdatabase is still sending a mail/link to the “Rabbitbox” to confirm that the order is created. This creates unnecessary work for the helpdesk administrators who need to move the mail/link to the DCP-administrators map. Helpdesk is supposed not to handle orders and IT-Requisition will help them not receiving any orders, except global orders about users that can not be ordered through IT-Requisition yet.

**Statistics**
The administrator would like to use the statistic that is available in the system, but they do not have any tool to collect the statistic. It is important to have some kind of measurement to be able to measure the work. Otherwise it is not possible to evaluate the work.

6.3.1.1 Hardware

**Information about hardware products**
Most of all hardware products available at Sandvik IT can be found and the in the database “Hardware Product List”. The database is connected to IT-Requisition, but it is easier to read from a list of products and to have a picture of the range. Not all companies have a person with a very good knowledge of the products, responsible for the orders. This increases the need of reliable and
detailed information and makes this information valuable for them. Thereby is an Intranet website with information about the products and the prices important for them.

Used computers
When renting a computer the price is based on the total cost of the computer with an economical lifetime of three years. The rental price is the total cost divided into a monthly fee for three years. What happens after these three years? They do not know if there is an economical lifetime on used hardware, is it the same as rental time and if not the same, how long is the rental period? What is the price if the customers keep the hardware longer than the rental time. They are of the opinion that they have paid for the hardware, but could accept to pay a smaller amount for the Sandvik IT administration such as support and helpdesk. The customers are missing the information about the prices after three years.

When a person is ordering used computer the only information available is the price range. The customer is interested in information about the price toward the performance of the computer. How much do they get for this amount of money? They want to know before ordering.

No routines about used hardware when the customer orders new hardware and the customer do not always report that they replace the used hardware with a new one. The registration can be connected to the wrong account or they can pay rent for a computer they not even use. If they not report that the computer change user it is not possible for the administrator to deregistrate the connection between the computer and the account.

Inventory of the computers
The customers do not have access to the system Salut and are not able to check their hardware and debits toward this register. It is only possible if they call the administrator and ask for a register and debit list. They constantly get inventory list, but it can be difficult when they do not have any correct list to compare to. The customers are missing a register that shows the connection between computer toward person and account. There is a bad control and registration of computers and software at some companies/departments. They rely on Sandvik IT, but there has to be a collaboration between Sandvik IT and the other companies.

Salut is working in the mainframe environment and it would be easier if it was possible to move this system to another environment. If it had been more
accessible for the customer, they had been able to control their possession of computers.

**Identification of the computers**
All hardware is marked with an identification number at Centralstorage, these numbers are worn out after a while and cause problems for the person who does the inventory or if the computer is reused.

### 6.3.1.2 Software

**Information about the software products**
There is a database concerning software ”Software Product List” with information about the different software products and licenses. The information in this database feels incomplete. The information on the Intranet is also incomplete and the information there must be more directed to the customer and their needs of information. The customer will know what they need to order, if they want to install a program, they need to know how to order access or license and the price.

**Software in start menu**
There are many software programs shown in start menu in Windows in the submenu Sandvik Standard PC. There does not exist any information about how to order this software and where to order it, the prices or if the license automatically follows when ordering the software. IT-Requisition make it possible to ”Add software not in list”, but it is always easier if you can choose in the menu and to know the prices of the licenses or at least an approximate price. The prices for different licenses can vary from day to day depending on the exchange rates.

**Licenses**
The customers want to be able to match the license toward the users to see if there is license they do not use but are paying for. They also want to see if there is an old license they can use for a new employee.

If a person is fired or retired the department gets a license no one use. The person in charge at that department does not know if it is possible to let the license rest, then if possible reuse the license when a new person is hired.

Many departments leave the responsibility to the administrator responsible for software to control the software license in their companies.
Analysis

Responsibility of the special software
If the user has any special program/software it is their responsibility to control the license. This can cause problems if this person quit and no longer is an employee. Their responsibility is gone and when there is no connection between the license and the user, can it be difficult to deregister this user.

6.3.1.3 Users

Information of the id products
There are many different user ids the employees need to get access to different systems like the Internet, Notes etc. Today there is no information helping the customer on the Intranet or elsewhere informing the customer about the different user ids when ordering from Sandvik IT. Nothing is written about the different connections between the users and the systems. There is a database “ID Product List” with information about the different ids. This database is incomplete, the customers know very little about user ids and this increase the importance of giving them the possibility of achieving a higher level of knowledge and understanding.

Customers have problems to understand the meaning of the different user ids and what groups they should belong to. RACF is one example, which contains of several groups to get authority or access to different systems the customer need to be connected to. This creates a demand from the customer and the administrators to have routines and a documented structure over the different user ids and their subgroups possible to order through Sandvik IT.

The orders
Some customers try to order without having authority, they can always just send a mail or an orderform. This creates extra work for the administrators to check if the person has authority to order or not. Some customers who are using orderforms are not satisfied with them. They make changes in the orderforms and create their own fields. This makes it difficult for the administrators to handle the order and it creates confusion.

The administrators dealing with users are working with global customers, they can not take advantage of IT-Requisition and the control of the persons placing the orders through it. This problem will hopefully disappear or at least decrease when the new light version of IT-Requisition is introduced. There will be a stricter control of the persons placing the orders. Until this version is introduced, the administrators will still receive mails and need to let the mails be sorted through helpdesk. Some users try to send the order directly by mail to
the administrators and this cause problem for the administrators and they have to get hold of this problem. The person screaming highest gets help first.

Compilation of users
The administrators need to be able to do a compilation of the user and the different accesses he/she needs. When they have created an access, it had been good to register the changes and documenting everything about the user in one place. Sandvik User Directory can make this happen.

6.3.1.4 Other services

It can be difficult for the customer to know when an order requires an installation or if it is included when ordering the product or service.

6.3.1.5 Priorities and routines

Priorities and routines need an update and there are at the moment no documentation of this. The DCP-department does not have any priority list they follow when choosing orders and there are no documented routines about their work. If there are documented routines to fall back to it creates a more secure environment for the administrators.

6.3.2 Notes/Domino Service Orders

Most company has a person with knowledge of Lotus Notes or turn to a person who take care of this part. They are satisfied and find the forms easy to use and are able to follow the orders in the database and see when all the orders they have placed are completed.

6.3.3 Sandvik N/D Database Library

There is no frequently control of the databases in the library if they are used at the moment or if they have been used recently.

6.3.4 IT-Requisition

Customer using IT-Requisition
Persons that have ordered IT-related products before and are used to the old system, with mail and orderforms sent to helpdesk, are very satisfied with the new system. They notice all the time they save by using IT-Requisition compared to the old system. The new users with limited knowledge and
experience about ordering IT-related products are not as satisfied as old customers. Have to consider that we are dealing with two kinds of users.

New customer of IT-Requisition
When new users order for the first time in the system they have problems to find information that helps them through the ordering process. Today there is no place providing the necessary information about how to order and the products and services available to order. There is some information in the help menu about the procedure, but it is not complete. Major part of the form is filled in automatically but the two fields: office location and RACF are not and there is no information about what to fill in these fields. The inexperienced users who order IT-related products call helpdesk and DCP-department and demands help from them to be able to order and this occupies valuable time for the administrators.

New employee
If an order concern a new employee, who not exists in the system it is difficult to order IT-related products to him/her or a person changing company and is still registered in the old company. The person who orders does not know which information that is required. It is also hard to know what products the new employee need to get started such as software and accesses. This can result in several orders instead of one because the person ordering is missing parts that are needed. This creates extra unnecessary work for the administrators, who receive phone calls for completing the orders and question about it. Another problem for the administrators is orders regarding a new employee or consultant, they are not informed of the starting date for the person the order concern.

The menus with information
The users have a good help to find the different products available to order in the three menus in the bottom of the form connected to the product databases. In these databases are the products not in detailed described and if they are described the users need to have a good knowledge of the products to understand them. The databases are also missing information about the connections between the different products and some products need different accessories or some kind of installation or access. This is information the user needs to be able to order, otherwise it is difficult for them to know.
**Products not in menu**
The user can order products that not exist in the basic assortment, the problem then is the price. It is not always possible to know the price and the customer is supposed to fill in a price in a forced field. There is no information about what to do or what to fill in when not knowing the price. This can cause problems with the attest when the price the customers choose for the products can be lower than the actual price of the products and this result in a to low attest level.

**Regulation of attest**
The different department can decide the attest regulations and decide when a functional manager is needed or when a special security manager need to attest, for example an Internet accesses at some company.

**Webification**
Some departments have a wish to put this system on the web, but it is not a good idea because of security reasons. It is higher security in Lotus Notes and the customers using the system see no need for that, they are satisfied using the database in a Lotus Notes environment.

### 6.4 Helpdesk

**Priority scale**
Helpdesk is a service that is provided by the DCS-department and is not a department like many people in Sandvik AB believe. The customers pay a general yearly fee to get access to this service. The administrators receive incoming problems from customers through mail or phone calls. They judge and decide the customers’ problem after a priority scale based on the company’s need. The problem today is that there does not exist any priority scale considering the customers’ opinion of the priority of the problem. All PC related problems have the same priority, but there is no consideration if the customer needs a new computer immediately or can wait for a couple of days.

**Standard forms**
When an administrator receives a phone call from a customer about an order, the administrator does not create an order instead he/she sends back a standard form to the customer. There are standard forms for almost all orders and many “problem forms” as well. Probably are many of the standard forms irrelevant and not up to date. Because there is no continuously control of the validity of the order and problem forms performed today. This can be one of the reasons why some customers change in the orderform.
Support errand, not orders
The administrators handle a large number of orders through the “Rabbitbox” and phone calls. The helpdesk administrators do not want to have anything to do with the handling of orders, instead they want to focus their work on support errands. IT-Requisition will reduce the number of orders passing through helpdesk.

Information about the user
The administrators who handling the support errands need to find information about the user so they can solve the customers’ problem quickly. Today they have problems to find information about the person reporting the problem. They do not have one place gathering all the information about what is connected to the user such as accesses, hardware, software etc. This could help them when they solve problems.

Statistics
All activities in helpdesk are registered in statistics, but it is hard to get a correct statistic view of the entire problems the administrators are solving. Only when a problem becomes a support errand is it registered, some problems are solved directly in the phone and these calls are not registered in the statistics.

6.4.1 IT-Support
Service Desk will soon replace IT-Support and possible changes in this database will not be analyzed.

6.5 External systems

6.5.1 Wink

When a customer is ordering toward a supplier the supplier must be in the register over suppliers, otherwise is it not possible to order. This can cause problems when a special product needs to be ordered from a not approved supplier.

Wink is a purchasing portal using the mainframe environment, with an interface based on the web, this means it is many fields to fill in for the customer and this makes it difficult and time demanding for the customer to order. We see dissatisfaction against all the different field that need to be filled in before being able to use and order in the portal.
6.6 Projects in Progress

6.6.1 Sandvik User Directory (SUD)

*Connection about the user*
This database will make it easier to find users’ accesses. Collecting all accesses belonging to a certain person in one database will make it much easier for the administrators in their work to find the connection between the user and his/her accesses.

A higher security level is reached by gathering all information about user accesses in one place and the accuracy of the data in the database is much higher. This because it is much easier for the administrators to control the users’ accesses and the risk that old accesses that have expire is still in the system decrease.

It is also possible to connect several different applications toward SUD and this makes the control over the accesses higher and the administrators who are working with this receive more information about the user.

*Service Desk-SUD*
For example the helpdesk administrators are able to work more effectively if the new support system Service Desk is connected to SUD. The administrators will receive the information about the user much quicker and it is easier for them to help the user with his/her problem.

6.6.2 ÄLA - Change of Announcement.

This database is created to help the department manager and the personnel office to report if there has been a change of the employees’ status, if they have for example left the company, changed company or retired. The accuracy in the information about the user will be higher in all system connected to ÄLA and the change of announcement from ÄLA is updating other system, for example PAX, which updates the SUD database.

*Responsibility*
If not the people responsible updating the information about the user properly, the use of the system will be worthless. The important part is to report and document every little change.
7 Suggestions for Improvements

This chapter presents the suggestions for improvements and the consideration the company can take to improve the system for the customers and administrators.

7.1 Processes

Egnell (1994) discuss process management as a systematic method to organize, lead and continuously improve the organization processes.

The process is summarized in different steps and these steps include; the understanding of the process, defining interfaces and investigation of the supplier and customer documentation of the flow. Again can we see the importance of documentation.

Other important steps are; the control of the processes to decide a point of measure and to perform measurement on a regular basis. In the processes of handling the order can the measurement be a difficult part, but Egnell (1994) means that measurement is fundamental for all improvement work.

Further steps are the importance of continuously improve the process, use information from the measurement and control system to improve the process. It is easier to continuously make small changes and improvements of existing processes than create totally new processes.

7.1.1 Improvement of existing process

Egnell (1994) talks first about analyzing the problem of the process then study the possibilities of solving the problems to improve the existing process. After an existing process has been improved, the potential to fulfill the demand on quality, affectivity and adaptability is higher.

When you want to improve the existing processes there are different starting points to follow to make the realization of the improvement easier;

The first one is to minimize unnecessary administration routines, many administrative routines in an organization do not fulfill any purpose, but on the other hand is it important to have routines.
Suggestions for Improvements

Minimize or remove non-valuable activities such as transports, controls and approvals. We can see the improvement of the ordering procedure when using IT-Requisition and the order is approved when it enters the Orderdatabase.

Remove repeating activities and simplify the process and make the activities easier to perform, learn and understand. More information about the systems, services and products will make it easier for the customer to order and they can learn and understand more about the services and products. If it is easier for the customer it will be easier for the administrator.

Minimize the process lead-time, long lead-time could mean higher costs, delays for customers, perform parallel activities and alter the activity course. The customers need their products fast and it cost money if the customer can not perform his/her job because of delayed deliveries.

Standardize work operation as activities. Hard to improve the process if the workers perform the same activities differently. The administrators need to create routines and have instruction to follow to know who is doing what and how they do it.

Increase the collaboration with the supplier. When using as few suppliers as possible the collaboration increases and they can have a more mutual relation.

Design the different activities in the process so the possibility of making mistakes will be minimized. IT-Requisition makes it easier for the customers to fill in the products and services they need and with forced fields it is more difficult to fill in wrong information. This also makes it easier for the administrator to handle the orders.

Simplify and standardize document and use an understandable language. This increases the possibilities that the information is assimilated and the work is performed properly.

7.1.2 New processes

To design a new process means that the organization disregard from the existing processes and design a completely new process with a new structure. Egnell (1994) explains that designing a new process leads to bigger improvement potential then improvement of an existing process, with higher costs and demand more time to accomplish. The risk to failure is much higher because the approach creates larger changes in the structure of the organization.
Suggestions for Improvements

It is easier and safer to improve the existing processes and can achieve large changes for the organization. We try to find better ways to use the existing processes and improve them.

7.2 Internal systems

7.2.1 Orderdatabase

*Introduce a linear and a parallel flow of the order*
To reduce the customers’ lead-time it should be possible to have a linear- and parallel workflow of the order through this database. To improve this for the administrators a redesign of the database is needed so it is possible to send the order to the administrator who is next in line. It should also be possible to send the order to several administrators at the same time so they could perform their work on the order parallel to each other. This would reduce the lead-time for the orders flow through the Orderdatabase.

*Mark the status of the order with a color*
There is a problem for the administrators working in this database to see the status of the order. To make it easier for the administrator to see the status of the order an improvement is to create a system that marks the status of the order with a color. For example red for delay, yellow on hold, green for completed and blue for not started.

*Create a system that automatically and frequently search for delays*
The administrators at DCP run a program that is searching for delayed orders, they do not have an automatically system for this and it is not always sure that they remember to frequently run the program. An improvement can be an automatically and frequently search for delays without the administrators’ involvement. This program will not only send a reminder to the person in charge of the order it also sends a reminder to the person responsible for the delay.

*Creating the order number in the description field*
The administrators have problems to follow the order because they are not able to see the order number in the description over the order in the Orderdatabase view. To simplify for the administrator to follow their orders in the Orderdatabase view an improvement is to create the order number in the description field when a new order is created.
Suggestions for Improvements

**Improvement group**
In this system there exist bottlenecks and they have to be found and measured to be able to be improved. One suggestion is to create an improvement group to find and measure the bottlenecks and to frequently improve the orderflow.

**Develop a Statistic tool**
The administrators do not have any tools to help them to collect the statistic information in this system. Develop a tool that helps the administrators to collect the statistics and presents the information in a simple way so they can measure their work in order to improve. Can not really improve if it is not possible to measure.

**Confirmations for the customer**
To make it possible for the customer to reduce the number of confirmations they need to choose if they want to have confirmation or not. For more information see chapter 7.2.4. Makes it possible to choose how many confirmations wanted.

The customers have problems to follow their orders when it consists of different parts. The improvement for the customers is to make the confirmations clearer so the customers know if a part is missing.

**Confirmations for the administrator**
Decrease the number of confirmation for the administrator when they make changes in the orders.

**Remove the mail/link IT-Requisition sends to helpdesk**
An improvement for the administrator at helpdesk is to remove the function that sends the mail/link to the “Rabbitbox” when an order is automatically created in the Orderdatabase. This will reduce their work with orders.

**7.2.1.1 Hardware**

**Create a page on the Intranet and improve the existing database**
The information to the customers about the different hardware is not satisfied. An improvement for the customers is that Sandvik IT creates a page on the Intranet to improve the information about all hardware possible to rent. The information should be more directed to the customer to help them through the ordering process and detailed information about the different hardware and their connections to other products and services.
Another improvement needed is a completion and better descriptions of the products in the database “Hardware Product List”. This information is connected to the portal IT-Requisition. Not all information needs to be linked to the portal, some more detailed information only need to be found directly in the database.

Create a section about used hardware on the Sandvik IT Intranet page
The customers can not find any detailed information about used hardware. To improve the information to customers about used hardware a section should be created on the Sandvik IT page on the Intranet. The customer need to be informed about used hardware so they could see for example price toward performance, age on screens etc. This will reduce the calls about used hardware at DCP-department and helpdesk.

Routines about replacing used hardware with new hardware
When the customers order new hardware they do not always report that they replace the old hardware and will thereby pay for both. Create new routines that force the customers to fill in what they are supposed to do with the old hardware. See chapter 7.2.4. Create better control over used computers for more information.

Create a new inventory and debit register for the hardware
The customers do not have access to any system so they could check their hardware and debits, only possible if they call the administrator and ask for a register and debit list. To give the customer access to Salut is not a good idea, because Salut is in the mainframe environment and thereby difficult to understand. One way to improve the customer’s inventories procedure is to create Salut in a different environment that is easier to support or replace Salut. If the new register is more accessible it helps the customers to control their hardware possessions.

Bar code to identify the hardware
The identification numbers the administrators at the Centralstorage mark the hardware with can be worn out and cause problem for the person who does the inventory or if the computer is reused. This can be improved by marking the hardware with a bar code.
7.2.1.2 Software

*Improve the information about software products on the Intranet*
There is a lack of information to the customer about the different software possible to rent from Sandvik IT. An improvement of the information and a completion in the database “Software Product List” is needed.

An improvement for the customer is that Sandvik IT creates a page on the Intranet to improve the information about all software possible to rent. The information should be more directed to the customer to help them through the ordering process and to find detailed information about connections between software, licenses, installations and prices.

*Information about the software in start menu*
There is no information for the customer about the software found in start menu in Windows in the submenu Sandvik Standard PC. If the customer could find information about these programs and order them through IT-Requisition it would be easier for them.

*Create a register over the connection user toward software licenses*
The customers would like to be able to see if there is a license they do not use but are paying for. An improvement for the customer is to create a register over the connection between the user and the software licenses. It is not possible to create this register with this connection today, but in the future can Sandvik User Directory be a help for a step in that direction.

*The administrator is responsible of the software license*
If the users have special programs/software it is their responsibility to control the licenses. This is not a good idea and to receive a higher control over the licenses a connection between the user and the licenses are needed. The responsibility for all software licenses is the administrators and it should not be possible for a single person to have this responsibility.

7.2.1.3 Users

*Improve the information about user ids on the Intranet*
There is not enough information for the customer to understand the meaning of the different user ids. An improvement for the customers is that Sandvik IT creates a page on the Intranet to improve the information about all user ids possible to order and the “ID Product List” connected to IT-Requisition needs to be completed. The information should be more directed to the customer to
help them through the ordering process, this improved information helps the customers to understand what kind of user ids they need.

*Create order routines to remove users without authority to order*
There is some customer who tries to order even if they do not have the authority to do so. The improvement is to create routines about how to order and make the administrator stricter about how the customers place their orders. No orders will be received from phone calls or by mail and the only way to order should be through IT-Requisition.

*Compilation of users*
An improvement for the customers is to create a register that gathers all the accesses toward the user. This would help the administrators in their work to find information about a customer and this can be possible with Sandvik User Directory.

7.2.1.4 Other services

When the customers order they do not know if they have to order the installation of the products or if it is included. The improvement for the customers is to complete the information on the Sandvik IT page on the Intranet and the three different “Product list” with information about the installations and education needed.

7.2.1.5 Priorities and routines

The DCP-department does not have any priority to follow when choosing which order to perform. It is easier to select which order to administrate if they divide the orders into different priority groups and it would eliminate that orders which demand less work effort will be chosen before a more complicated order.

It is necessary to have documented routines otherwise it is impossible to improve their work assignments. It is also important to have routines to fall back to and for other people to know what you are dealing with and to evaluate your work to be able to improve it.

7.2.2 *Notes/Domino Service Orders*

To make it easier for the customer all the different ordering systems are gathered and connected to the portal IT-Requisition. When ordering in IT-
Suggestions for Improvements

Requisition there will be a link to the database Notes/Domino Service Orders for the customer with authority to the database. There is no need for attest when ordering in this database because the customer needs authority to use it.

7.2.3 Sandvik N/D Database Library

Develop a tool that automatically and frequently control if a database has not been used recently. The confirmation is sent to the database owner with a question if he/she wants to remove the database. This control is made to save space on the server and to sort out old databases not in use.

7.2.4 IT-Requisition

Create a page on the Intranet with information about the ordering process

The information to the customers about the ordering process in this portal is incomplete. An improvement for the customers is to have a section on the Sandvik IT page on the Intranet with information about all products possible to order and how to order them. Also to inform them that all orders have to be placed through this portal. The information on this site should be more directed to the customer so they get as much help as possible through the ordering process.

When ordering for the first time in this portal the customers have problems to find information to help them through the ordering process. To improve the information to the customers about how to order the help menu needs to be extended and give the customer detailed information about the different fields. This result in more correct orders and will also reduce the phone calls to the administrators at DCP-department and helpdesk about the ordering process.

Information to clarify the products and their connections to each other

In the different menus the customer can find the products possible to order. The information about these products is not enough to help the customer to understand the different products and services. Information about the connections between the different products is missing, some products need different accessories or some kind of license/access. An improvement for the customers is to explain so the inexperienced users understand.

New employee/consultant information

When an order concern a new employee/consultant not existing in the system or a person changing company who is still registered in the old company then it can be difficult to order IT-related products. It is also difficult to fill in the
Suggestions for Improvements

different fields in IT-Requisition when order to a person not existing in the systems and to know what products the new employee needs to get started. An improvement is to create a section on the Intranet page with information about how to order IT-related products to a new employee/consultant.

There is a wish to be able to order the same IT-related product and accesses as a colleague. To do this it must be possible to gather all the information about the users’ possessions. Sandvik User Directory can be a help to make it possible.

It is also important to inform the customer how important it is to place the order in advance and to fill in the start date for the new employee.

Create IT-product packages
The customers often have problems to know which IT-related products they need to start working in the Sandvik environment. To make it easier to order there should be standard packages which contain the products a new employee/consultant needs in form of hardware, software and user ids. These packages could be customized for the different company for example if Internet access is included in the standard package.

Products not in list
When ordering products not listed in the portal there is no information for the customers how to order them. New routines need to be created about this procedure and the information in the help menu extended so the customers know what to do with the forced field, which demands a price to make it possible to send the order. If the product has no price in the portal IT-Requisition an improvement is to fill in a symbol to show there is no price on the product, this to make the manager observe that the order may need a higher attest level.

Makes it possible to choose how many confirmations wanted
There are many confirmations sent to the customer about status changes of an order and not all customers want these confirmations. An improvement is to create a function that makes it possible for the customer to choose if an order confirmation is needed. The alternatives the customers should be able to choose in the portal IT-Requisition are:

- Only start and stop confirmations to the person in charge of the order and in between to the person the order concern.
Suggestions for Improvements

- No confirmations to the person in charge of the order only to the person the order concern.

- All confirmations to the person in charge of the order.

Create better control over used computers

There are used computers that disappear when the customers order a new computer. To get better control over these changes there should be forced fields to fill in when ordering a new computer so no used computers disappear or are charging wrong account. This system should also be able to use when a computer is replaced or moved to another person. This is a design suggestion for IT-Requisition where the function itself is created in the Orderdatabase, see figure 7.1.

![Diagram](image)

**Figure 7.1. New computer design**
Suggestions for Improvements

**Education for the customer**
To increase the understanding of the system an education for the persons placing the orders through IT-Requisition is needed. The education needs to be customized for the different company about their routine concerning forced field and attests within the company. This can decrease mistakes in orderforms and the administrators do not need to call them to control the contents of the order. If they are informed the work for the administrator will be simplified.

7.3 **Helpdesk**

**Priority scale based on the customers’ need**
The administrators judge and decide the customers’ problem after a priority scale based on the company’s need and nothing considers the customers’ need. An improvement for the customer is to create a priority scale (routine) to consider the customers’ need.

**Search routine for standard forms**
The standard forms the administrators send the customers need to be frequently controlled in order to remove irrelevant orderforms, create a routine how to perform this task. In the future remove all standard forms and make all customers order through the portal IT-Requisition, this reduces the work for the DCP- and helpdesk administrators. The helpdesk administrators are not supposed to have anything to do with orders.

**Separate orders and support errands**
It can cause confusions for the administrators at DCP-department if the helpdesk administrators are dealing with the orders, it is important to separate orders and support errands.

**Create a statistic routine**
Only when a problem becomes a support errand it is registered in the statistic, some problems are solved directly in the phone and these calls are not registered in the statistics. An improvement to receive correct statistic information about the errands is to create a routine to register the support errands solved directly in the phone by the administrators.
7.4 Conclusions

The relation customer-administrator
To make it easier for the customers will result in reduced work for the administrators. If the information is correct and the persons placing the order fill in exactly what he/she needs, the work will be easier for the administrators. This can happen if the customers use the system properly and if Sandvik IT supplies the customer with comprehensive and detailed information about the ordering process, its products and services.
8 Discussion

In this chapter will the realization and accomplishment of the suggestions for improvements, problems that have occurred during the study and suggestions for further work to be discussed.

This master’s thesis considers logistics in the perspectives of information flows, the ordering procedure and customer services. This has been very interesting and instructive for us and we have learned a lot about information technology, the structure at an IT-department and that logistics can enter all areas and continuously need to be improved. We hope that this master’s thesis will help Sandvik IT to achieve rationalizations that affect their work for both the administrators and their customers.

Problems during the work of this thesis are all the parallel development of events and projects related to our work and we could not consider all aspects of all projects in progress. In some projects it is hard to estimate their value for further work, they can affect and simplify the work more than expected or not affect as much as predicted.

Another problems we had were the time limitation and the survey was complicated and difficult to understand in the beginning and time demanding before it could be put together. We would like to have further discussions with the administrators to hear more about their opinions about the systems and their works. Now have we concentrated the aspects on the opinion from the customers’ point of view, but if we can make it easier for the customers and inform them what they can do for the administrators, the administrators’ work will decrease. If we can get the customers aware of that they need to order some days in advance, this will simplify the work for the administrators enormously.

We had an aim to do a benchmark, but time flew and it came to nothing. To compensate we searched for investigations to find related information, but did not find anything of interest.

Further work is to get the company to introduce routines and documentation of the work to enable rationalization. It is important to document the procedure to find out where improvements are required. It is also important that the administrators are continually updated about projects and are aware of what is going on that can affect their work. They have started to evaluate their work
and discuss what they are doing and can do to improve their work and that is a significant step in the right direction.

The suggestions can be done in a different interval of time. Some of the proposal can be realized by relatively simple means, for example the documentation of the work and the information available on the Intranet and the information in the product databases. Other proposals take much longer time and are more complicated to accomplish as improvement that need changes involving the entire system and an introduction of a new program in new IT environment. To find a connection for the employees and their accesses, hardware and software are a large project, but maybe Sandvik User Directory can make it possible.

Important to all the suggestions for improvements is that they should not be seen as one time event but as continuously activities, that need a follow-up and can cause need for further improvement not yet discovered.
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<tr>
<th>Sandvik Coromant</th>
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<tbody>
<tr>
<td>Davik, Katarina</td>
<td>CI</td>
</tr>
<tr>
<td>Jönsson, Carina</td>
<td>CPP</td>
</tr>
<tr>
<td>Sandh, Kerstin</td>
<td>CB</td>
</tr>
<tr>
<td>Organization</td>
<td>Name</td>
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<tr>
<td>Sandvik System Development</td>
<td>Jansson, Hans</td>
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<td></td>
<td>Lund, Bengt</td>
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<td></td>
<td>Persson, Kjell</td>
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<td></td>
<td>Thorvaldsson, Birgitta</td>
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<td>Strandberg, Jon-Ivar</td>
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<td>Sandvik Material Technology</td>
<td>Eriksson, Bert</td>
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<td>Hammarberg, Niklas</td>
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<td>Humling, Göran</td>
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<td>Ljunggren, Kjell</td>
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<td>Nyström, Ann</td>
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<td>Sandvik Tamrock</td>
<td>Petersson, Lars</td>
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</tbody>
</table>
### Attachment 1, Dictionary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td>A computer program that is applied to a certain function and used in practical work such as word processing and bookkeeping.</td>
</tr>
<tr>
<td>Cycle time</td>
<td>Maximum time allowed to work on a unit at each station.</td>
</tr>
<tr>
<td>Databases</td>
<td>Number of data arranged in one or several data directories.</td>
</tr>
<tr>
<td>DC-80</td>
<td>A building.</td>
</tr>
<tr>
<td>DCP</td>
<td>A production department in Sandvik IT.</td>
</tr>
<tr>
<td>DCS</td>
<td>Department that is responsibility for client support and server administration.</td>
</tr>
<tr>
<td>EDI</td>
<td>Electronic Data Interchange, information exchange through computer systems.</td>
</tr>
<tr>
<td>IT-Requisition</td>
<td>A purchasing portal.</td>
</tr>
<tr>
<td>ITSO</td>
<td>Information Technology Security Officer, dealing with security matters related to the IT-area.</td>
</tr>
<tr>
<td>Mainframe</td>
<td>Computer environment that works with OS (operating system) MVS.</td>
</tr>
<tr>
<td>Notes/ Domino Service Orders</td>
<td>A database handling all kind of orders related to Notes.</td>
</tr>
<tr>
<td>Orderdatabase</td>
<td>Database application that handles IT-related orders.</td>
</tr>
</tbody>
</table>
### Attachment 1, *Dictionary*

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC-Acquisition</td>
<td>A purchasing portal that is used by Sandvik Material Technology.</td>
</tr>
<tr>
<td>RACF</td>
<td>Resource Access Control Facility, is the main security system in the mainframe environment and protects all type of resources there.</td>
</tr>
<tr>
<td>Server</td>
<td>A program or a computer that carry out a delimit task or service in a network of computers.</td>
</tr>
<tr>
<td>SIT</td>
<td>Sandvik Information Technology is a service company to Sandvik AB.</td>
</tr>
<tr>
<td>SQL-Hotel</td>
<td>Store all the SQL-applications in one place.</td>
</tr>
<tr>
<td>Website</td>
<td>Page with information on the Internet</td>
</tr>
<tr>
<td>Wink</td>
<td>A purchasing portal on the Intranet to order goods, services, internal and external.</td>
</tr>
</tbody>
</table>
Attachment 2, *Flowchart figures*

- Process start and stop (Terminator)
- Process, activity
- Multidocument
- Decision
- Arrows that shows the flow
**Attachment 3, The flow of an order placed by an ITSO**

- User
- ITSO
  - Collecting order
  - Authority control
  - Create an order in the Order database
  - Delegate
- No, ITSO reject order
- Order by mail
- Helpdesk
- Sort the mail
- Admingroup map
- User receive confirmation
Attachment 4, *Explanation of the different order types found in Notes/Domino Service Orders*

1. **Add /Modify users mobile directory**
   A compressed version of Sandvik Domino Directory and Sandvik Notes Users Directory, which contains entries for users, groups and Mail-in databases. An extremely compressed address book used to reply quickly locally and smooth for the person who has a laptop.

2. **Change client type**
   Notes Desktop is the standard client, but is possible to change to one of the other three; Web User, Design or Administrator.

3. **Change users homeserver**
   Change to a new homeserver, for example if a person change corporation, it is always better to work toward a local server.

4. **Delete all replicas**
   Delete all existing replicas and not only one replica at a time.

5. **Group cancellation**
   A cancellation of a group.

6. **Group Change**
   Add or remove name or members to/from a group.

7. **New application request**
   Develop a new database after your needs.

8. **New CD request**
   To receive a CD to the cost 250 SEK but if you take the program from the ftp-server is it free.

9. **New change organization**
   Change of corporation in the Sandvik concern.

10. **New Internet Address book entry**
    A external address book for customer that needs information (limited information) in a external database outside the firewall, a login access.
through an Internet browser to receive information about for example deliveries.

11. **New mail-in database request**
   A database where the user can view the received information but can not send any information or replay. Mail-in is used when the mail address does not belong to a specific person. The most common use is information request mailboxes for external use or similar cases where you for some reason can not point out a person.

12. **New group request**
   Create a new group, for example an access group for an application or a mailing group.

13. **New other application**
   Databases with no standard templates (not evolved). Special designed applications, which are attached in the order.

14. **New Passthru request**
   A passthru through the firewall makes it possible to read mail in Notes outside Sandvik.

15. **New replica**
   Create a replica of an already existing server or a database application. Continually updating of the replica.

16. **New sametime access**
   Sametime, a software for realtime collaboration, with possibilities of arranging meeting by using video or sound and can be used as a phone. Sametime can help you communicate efficiently to save time and money.

17. **New user request**
   There are four types of users in N/D Services Orders:
   - Lotus Notes Desktop is the standard client for a Sandvik Notes User and installed by default. The fee is split into two parts, one global and one local. The global fee is default for everyone that runs Notes within the Sandvik Group. The local fee is for those who have their Home/Mail Server on one of Sandvik Information Technology servers.
- A web user is a client license for authenticated access to a Domino Mail/Application server via a web browser.

- Lotus Notes Designer is a client for designing applications in the Notes environment.

- Lotus Notes Administrator is the client that gives you the possibilities of administrating the Domino server.

### 18. Recertify user
The user needs to update, but if he/she does not do this within three months, the user has to be recertified.

### 19. Rename user
When there is something wrong with a person’s username for example wrong spelling or new surname when married.

### 20. User cancellation
A cancellation of a user in Notes.
Attachment 5, *The flow in Notes/Domino Service Orders*

- Change users homeserver
- New mail-in database request
- New Internet address book entry

Form, only for authorized personal

Administrator, manually process

Link/mail for confirmation

New samtime access

IT-Requisition

To approval

Administrator

Automatic process

Add/modify users mobile directory

Form, only for authorized personal

Link/mail for confirmation
Attachment 5, *The flow in Notes/Domino Service Orders*

- New application request
- Delete all replicas
- New other application
- New replica

It is possible to call the administrators, but it is not recommended.

Form, only for authorized personal

Administrator

Automatic process

Link/mail for confirmation

New domain search

Calling

New CD request

Form, only for authorized personal

Administrator makes the CD

Send CD to person who order it
**Attachment 5**, *The flow in Notes/Domino Service Orders*

- **User cancellation**
  - Call helpdesk to create a support errand
  - Administrator
  - Automatic process

- **New user**
  - Call to helpdesk only in emergency
  - IT-Requisition PC-Acquisition
  - To approval
  - Administrator, if a RACF id is missing, a new is created
  - Form, only for authorized personal
  - Automatic process
  - Id-file
  - Local installer
**Attachment 5, The flow in Notes/Domino Service Orders**
Attachment 6, View over IT-Requisition

- Sent back for revision
  - Fernando Holmström
  - Ulla Engberg

- For review (account manager)
  - Arne Lund
  - Carl E. Nilsson
  - Helge Sundén
  - Johan Jenison
  - Johnny Kostadinov
  - Per Strömstedt
  - Per Ahlman
  - Per Thorell
  - Rolf Grahn
  - Stefan Persson
  - Sigfrid Jonsson
  - Tony Johansson

- For review (special function manager)
- For review (function manager)
- Approved
- For review (security officer)
- New requisition
Attachment 7, View over IT-Support

Support Ticket - 018040093
Completed

- Ticket Number: 018040093
- Reported: 2003-02-18 09:51:05
- User: Joakim Karlsson@IT-4809@BNDYK
- Completed: 2003-02-18 12:39:04
- Assigned to: Per Olsson/Etmax@IT-4809@BNDYK
- CC: O.G.
- Status: Completed
- Priority: 5
- Title: problem mcat replicating

Log

1. 2003-02-18 09:51:12: Agneta Larsson@IT-4809@BNDYK:
   Assigned to Peter Wanger

2. 2003-02-18 10:16:04: Per Olsson/Etmax@IT-4809@BNDYK:
   Forward to Per Olsson

3. 2002-02-18 11:05:08: Per Olsson/Etmax@IT-4809@BNDYK:
   The status is changed to Not Started to In Progress

4. 2003-02-18 11:02:58: Per Olsson/Etmax@IT-4809@BNDYK:
   SAN_intomobserverSatnam i act

5. 2003-02-18 11:02:58: Per Olsson/Etmax@IT-4809@BNDYK:
   Done

6. The status is changed from In Progress to Completed

2003-02-18 12:39:04: Per Olsson/Etmax@IT-4809@BNDYK:
   Done
**Attachment 8, *Orderflow in Wink***

- **Customer**: Customer register desired object
- **Wink**: 
- **Not ok**: Controll toward; Sandlev, Sarek, Servus, Sandatt
  - **Attested by manager**: OK
    - **Not ok**: Controll toward; Sarek, Sandlev, Servus
      - **Purchaser**: OK
        - **Sandink**: EDI, paper or fax
          - **Supplier**

**Handling the request and completing the order**

**Updating Sandink with completed order**