INTRODUCTION

This article is written as a summary of a Master Thesis conducted at Elanders Beijing during the summer and fall of 2008. The goal of the Master Thesis has been to create a process mapping of Elanders Beijing and based on the process map identify and document the functional requirements that Elanders Beijing can placed on a future information system.

BACKGROUND AND PROBLEM DEFINITION

Elanders Beijing was established 2005 to supply Sony Ericsson’s mobile phone factory, Beijing Sony Ericsson Putian Mobile Communications (BMC), with printed information media such as manuals, leaflets and boxes. This is the information media that accompanies the mobile phones to the customer. The establishing of Elanders Beijing is aligned with Elanders AB’s overall strategy to join larger Swedish companies in their globalisation and with a local presence act as a supplier of information media.

The establishment of Elanders Beijing was made at a fast pace and with a focus on getting set to deliver the contracted quantities. Because of this and the fact that Elanders AB didn’t have a corporate strategy for the implementation of information systems, Elanders Beijing started using Microsoft Excel to support their business processes.

Since the start 2005 Elanders Beijing has increased their turnover from 30 to 170 million Swedish kronor. As a consequence it has become more complex to manage the business supported only by Excel. All deliveries to BMC are Just In Time. This demands great flexibility and short lead times. Even more so when considering that Elanders Beijing has 1500 active articles for BMC alone that they deliver 10 times a day with an average of 2.5 million units per week.

BMC is Elanders Beijing’s largest customer but there are also other customers with individual demands and article structures that further add to the complexity of running the business. Such companies are Sanyo, ABB and Sandvik Coromat to name a few.

Running Elanders Beijing supported only by Excel has put a big strain on key personnel and made the company vulnerable against incorrect input into the Excel sheets. The fact that the business is handled by Excel also leads to efficiency problems because of the lack of possibility to easily get a general view of the current orders, production capacities and delivery status etc. It also effects communication between departments that creates unnecessary extra work. There is also a lot of unnecessary labour with manually entering basic data into the Excel sheets.

Elanders Beijing no longer found the situation durable in order to keep the current rate of expansion. They therefore decided to start the process of finding a new information system. The goal was to find a system that fits the company and as much as possible integrates and automates the business.

In order to find an information system that fits Elanders Beijing there must be an understanding of the company. This understanding must then be documented and conveyed to the future supplier of the information system. This is done through a requirements specification. Elanders Beijing is a functionally oriented company and does therefore not have a good enough description of its business processes that is needed in order to find a suitable information system. It is difficult to identify all the connection points between departments and the support they need from the future information system without mapping what is done in the company and why.

This study is based on the idea that through the creation of a process map of Elanders Beijing the authors will have gain the needed understanding of the company and its requirements in order to place functional requirements on the future information system. The background given and problem discussion has lead to the following problem definition for the Thesis:

- To create the description of Elanders Beijing from the process perspective that is needed in order to create an image of what type of information system that fit the business.
- To formulate the functional requirements needed at Elanders Beijing that is the part of the requirements specification that clarifies what functions the future system should be able to handle.
PURPOSE

The purpose of the Thesis has been to describe Elanders Beijing’s present business in a process perspective and based on this description identify the functional requirements that Elanders Beijing can place on an information system.

METHODOLOGY

The study has been carried out with a positivistic approach and an abductive research policy. The study is best described as a case study of Elanders Beijing generated through a systems view. The study is based on both qualitative and quantitative data. The main source for information has been interviews with department heads at Elanders. The conducted interviews have been verified for both content and rendering. The theory is based on literature studies whereas other data is based on previously collected data from the company. The sources have thoroughly been scrutinised to achieve credibility. The credibility of the study has been strengthened and inspected through validation of validity, reliability and objectivity.

The methodological procedure of the process mapping is based on Ljungberg et al’s (2001) eight step method where the walk through procedure has been the main course of action.

THEORY

The theoretical framework of the study is based on Ljungberg et al’s book Processbaserad verksamhetsutveckling (2001) (Process based business development) and the doctor thesis Mötet mellan process och komponent (The meeting between process and component) by Christiansson et al. (2006).

Ljungberg et al’s book provides the study with the basic concepts of process mapping and its advantages. It also gives guidelines of how to conduct a process mapping and furthermore it describes methods of illustrating and naming processes.

Christiansson et al provides the link between the process mapping and the requirements specification. It also clarifies the difference between different types of demands and what to consider before, during and after the modelling and creation of a requirements specification.

The theoretical framework of this Thesis is methodical. This means that the theory is very closely linked with the methods used. The theory stipulates how to do things and the methodology describes how we have approached the problem based on the reality at Elanders Beijing in respect to the theory.

PROCESS MAPPING

The business at Elanders Beijing is today supported only by Excel. The consequences of this are that a large part of the business is handled manually. To create a higher efficiency in the business processes and to handle the ever growing amount of information there is a big demand to acquire and implement an information system.

The result of this study is a description of Elanders Beijing’s functionally oriented business in a process map. Furthermore the study presents the functional requirements that the future system should be able to handle. In the study, five main processes have been identified within Elanders Beijing.

The first process is Develop new articles. Elanders Beijing’s customers have a high frequency of creating new articles. BMC alone create on average three new articles per day. To handle the process of developing new articles in an efficient and thorough way is important in order to achieve a high quality end product. In this process it is decided what suppliers should be used and whether or not the article needs to go through test production, to ensure quality. The most important requirements on the information system in this process are to in an efficient way manage the development process and handle the large amount of new articles.

In Analyse demand the large amount of forecasts and customer orders are handled. The goal of this process is to, based on the demand, decide what articles needs to be produced and in what quantities. This includes the handling of Rush Orders (late orders with short delivery time) and the forecasting of future demands to ensure as long batch runs as possible. It is more economical to produce longer runs, but also a larger risk of over stocking articles. The amount of daily orders are around 800 just for BMC and therefore one of the large tasks for the information system to handle is to automatically enter these orders and present the demand in a lucid way. This is important because there is a need for an easy way to decide what articles are to be produced and what quantity are reasonable.

In the subsequent process Enable efficient production of high quality products the production orders are scheduled, the demand for raw material is satisfied and if any subcontractors are needed these are prepared for production. The scheduling of production orders is a complex task that today is performed by an experienced production planner. With the lack of support from an information system this is almost an impossible task and the objective is more to fit all orders then to actually optimise the schedule. Therefore the most important requirement on the information system in this process is to support the optimization of the production scheduling give a set of parameters that create the boundaries for the schedule.
The process called *Produce high quality products* describe the process of refining raw material to finished products. A special emphasis is put on the quality control since this is very important for Elanders Beijing and its customers. In each production step the quality is monitored and controlled and once the production order is finalised there is a final quality control. Every order and machine is logged to create the basic data for efficiency, post production calculations, productivity reports and the performance based salaries for the workers. In this process the information system should enable traceability of each production order, storing data regarding when it was produced, which batches of raw material was used and who was responsible for the production. This to ensure the traceability of quality problems and finding the cause for the problem whether it is related to raw material, production speeds or other production settings.

The last of the main processes is *Perform JIT services*. In this process the finished products are delivered to the customer. This is done more than ten times per day and therefore Elanders Beijing is in need of a system to handle the warehouse and the deliveries. This includes the generation of pick lists and delivery notes that facilitates quick deliveries.
SUMMARY

Through the creation of this process oriented business description, the opportunity to identify the functional requirements that can be placed on a future system is made possible. During the study over 120 functional requirements were placed on the future information system. To give an overview of what types of functional requirements there are, they are sorted into different main areas based on the business characteristics at Elanders Beijing that will have the largest affect on the future system.

The main areas of functional requirements that have been identified during this study are the following:

- Easy way of handling the creation of new articles.
- Handling of the large amount of articles.
- Lucid presentation of the demand.
- Optimisation of the production sequence.
- Warnings of potential material shortage.
- Creation of traceability.
- Automatically save production parameters.
- Warehouse management system with high user friendliness.

The description of Elanders Beijing’s functionally oriented business in a process map has given the company a new perspective on the company and its processes. The process map gives a good overview of the links between departments and what exchange of information there are within the processes.

The fact that the functional requirements are presented in its context together with the description of the process gives the authors reason to think that they have created a fertile and solid platform for communications between Elanders Beijing and the future supplier of the information system. The ambition is also that the future supplier, through the thorough descriptions of the processes, understands the underlying demands for the functional requirements and thus better understand what is required of them in order to satisfy Elanders Beijing. With this study performed the author’s hope that Elanders Beijing is better prepared for the selection and implementation of a new information system.

REFERENCES
