Mapping and Evaluation of the Production Planning Process at HARDI International A/S
The Production Plant in Nørre Alslev, Denmark
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This article is based on a study conducted at HARDI International A/S in Nørre Alslev on Falster, Denmark. The purpose of the thesis was to map, describe analyze and evaluate the current production planning process in order to identify potential areas of improvement.

Company presentation
HARDI is an international company, owned by the French conglomerate Exel Industries, which develops, produces and sells sprayers that are being used mainly within agriculture. The headquarters is located in Taastrup, outside Copenhagen, Denmark and the main production unit is located in Nørre Alslev on Falster, Denmark. HARDI is represented internationally through production units in Australia, USA, France and Spain. In excess of that HARDI has sales companies and dealers in most parts of the world. HARDI employs 950 people, 50% in Denmark and 50% in subsidiary companies.¹ The turnover, which was 1100 million DKK in 2010, has increased steadily over the years through acquisitions of other companies as well as organic growth.

Background
When HARDI was acquired by Excel industries a restructuring of the production process from push driven to pull driven manufacturing began. A new internal demand and supply concept was developed and different projects towards a common goal of updating their production process was executed. Today, a few years later, HARDI is in the process of implementing a new ERP-system. The implementation requires mapping of their current internal processes in order to identify the requirements of the new ERP-system and future process development potentials.

Problem discussion
As HARDI faces an implementation of a new ERP-system and since their current ERP-system is over ten years old, they are lacking proper documentation of how their internal processes are executed and who carries the responsibility for specific production planning activities. The current production planning process in HARDI requires a high level of manual work and the internal routines are not documented or well defined.

¹ June 2010
Purpose

The purpose of the thesis is to map, describe and analyze the production planning process in HARId. This is to be performed both on a strategic/tactical level and on an operational level as an input to the implementation of a new ERP-system in the company. Secondly, guidelines and recommendations are to be presented in order to obtain an improved level of overall efficiency and productivity.

Focus and scope

The focus of the thesis lies on HARId’s main production facility in Nørre Alslev. The thesis is focused on fully and partly assembled sprayers but components, spare parts and purchased items have also been taken into consideration. Due to the ongoing implementation of the new ERP-system the thesis focuses on giving recommendations and suggestions to solutions that should be taken into consideration during the implementation. In addition to this, the thesis also concentrates on giving general recommendations connected to the strategic, tactical and operational production planning process.

Methodology

Primarily the thesis was written with a descriptive and normative methodology approach in order to explain and examine how the production planning processes are currently performed, and secondarily to analyze and evaluate these processes in order to suggest future recommendations. The empirical data used for the thesis was mainly collected through interviews and participation in meetings.

Current production planning process

The mapping of the current production planning process is illustrated through two figures:

1. **Customer order placement**
   - Scandinavian customer
   - Global customer

2. **Planning**
   - Dealer
   - Importer

3. **Production**
   - Production planning by the planning department

4. **Shipping**
   - Production & Assembly of Trailersprayers
   - Production & Assembly of LKproyers

The figures clearly show the steps involved in the production planning process at HARId.
processes was divided into a strategic/tactical production planning process, illustrated in Figure 1, and one operational production planning process which is illustrated in Figure 2. The process of handling customer orders in HARDI involves a lot of manual work with responsibility being handed over from one department to another. Order placement, execution, control and final shipping to the customer are all processes connected to the operational production planning process. In the operational production planning process we have focused on part 3 in Figure 2, the production process. This process is illustrated in Figure 3.

**Analysis and conclusions**

We have chosen to focus our analysis on the development potentials HARDI will face when replacing their existing ERP-system, BaaN. Our basic idea is to visualize the existing non-value adding processes and to clarify the importance of integration between operations and departments within the company. In the strategic/tactical planning process, no major changes of the process structure have been proposed. The changes mainly concern internal changes in the process blocks. The new proposed operational production planning process is illustrated in Figure 4.
This thesis has shown that there are many areas that can be improved in the current production planning process at HARDI International A/S. The introduction of the new ERP-system enables HARDI International A/S to reduce the number of internal processes in the main production planning process and consequently increase the overall performance. Besides the ERP-system a number of improvements have been suggested.

Figure 4, New production processes in HARDI