INFORMATION INFRASTRUCTURE IN THE MEATPRODUCTS INDUSTRY

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Background
In the food industry the need for information is increasing, due to a more critical and more demanding consumer who wants to know more about the composition of food products regarding safety, allergens, nutritional aspects, etc. and processing conditions (animal welfare, environmental issues, etc.). Also, the industry has to meet the requirements of the different authorities regarding food safety, animal welfare and environmental issues. Tracking and tracing systems, logistics and planning systems require fast and detailed information about products, recipes and base material. A dynamic market for base material, market segmentation for meat products and faster 'time-to-market' requires dynamic recipes and flexible and more complex production methods. This all means that the information infrastructure has developed over the years towards a more and more complex and dense network. Important management decisions, production processes, quality systems, logistics, etc. are dependant of this network. The complexity of decisions is increasing. Decisions must be made fast and based on the right interpretation of a broad variety of information. These developments demand an integral approach of the information infrastructure.

Objective
To provide manufacturers of meat products with a reference model for fairing and optimising their information infrastructure and to equip them with a decision support system for investments in the information infrastructure.

Methods
Employees from several manufacturers, different in size and market, are interviewed. These results are generalized and company specific information is removed. The results are analysed and visualised in diagrams in different detail levels.

Results
The reference model consists of 22 diagrams. For every function there are three diagrams : detail level, activity flow chart with a detailed description of every activity, a process sequence with in- and outgoing information with sources and destinations for every process.
It is important to distinguish between *functions* and *departments*. The *function* purchasing can be divided amongst several *departments* and for every company this can be organised differently. Ordering, agreements with suppliers, contracting, receipt of goods, processing invoices, are all activities of the *function* purchasing. Mostly these functions are divided amongst the departments purchasing, accounting, stock-room, administrative department and management. At a small company one person can be active in more functions. Software systems are based upon functional descriptions. To improve readability some of the functions are divided in parts that are in agreement with the common organisation of a meat product company. In figure 1 an outline is given of the information infrastructure, in relation to the physical production process. Also the connections and the direction of the information is indicated. Every function in figure 1 is detailed like the example in figure 2. Also a detailed listing of the information processing has been made for every function, as well as a sequential overview of the different procedures within every function with incoming and outgoing information.

Conclusions
1. The information infrastructure of the (meat product) companies is rather similar. In particular at the QC (Quality Control) function the infrastructure is mainly determined by regulations and legislation. Real differences are found in the way functions are divided amongst people, the kind of software and the degree of automation.
2. Efficiency improvement can be achieved by:
   a. Automated collection, analysis and storage of process data and data of raw material.
   b. Integrated approach of sales, planning and purchase with the aid of a relational database to speed-up order processing, to reduce administrative work and to improve support of related functions.
   c. Vertical integration of the production process with administrative and logistic systems.
3. In general there seem to be extensive possibilities to increase the return on investment in software by integration of systems and standardisation of the information infrastructure on sector level. In this way compatibility problems between links in the production chain can be solved and sub-optimisation can be prevented. This will lead to reduction of costs and a shorter time-to-market.

Figure 1. Outline information infrastructure

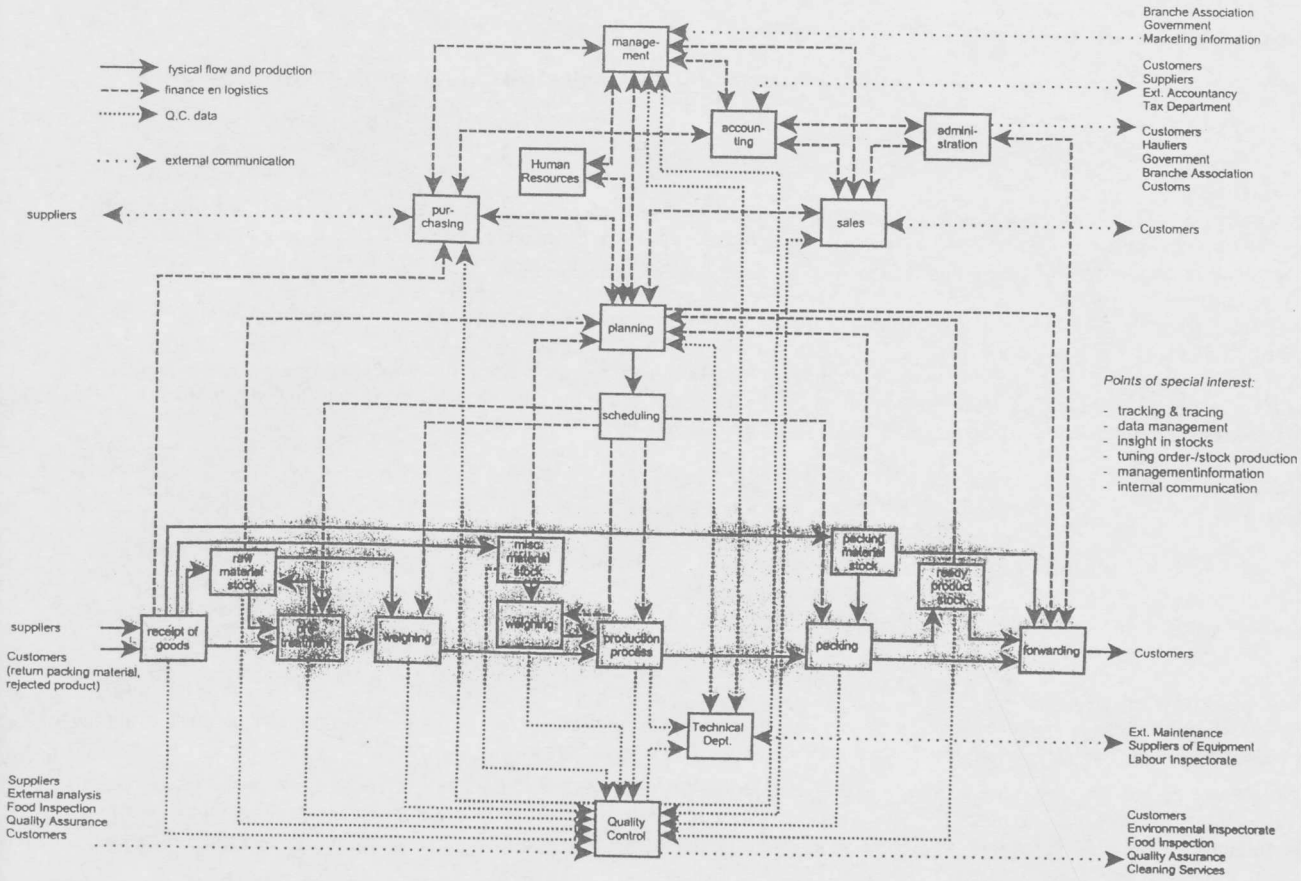

Figure 2. Detail level Quality Control