IDEA GROUP PUBLISHING

1331 E. Chocolate Avenue, Hershey PA 17033-1117, USA
Tel: 717/533-8845; Fax 717/533-8661; URL-http://www.idea-group.com

Implementation of Information Technology in a Job Shop Manufacturing Company: A Focus On ManuSoft

Purnendu Mandal
Marshall University, USA

EXECUTIVE SUMMARY

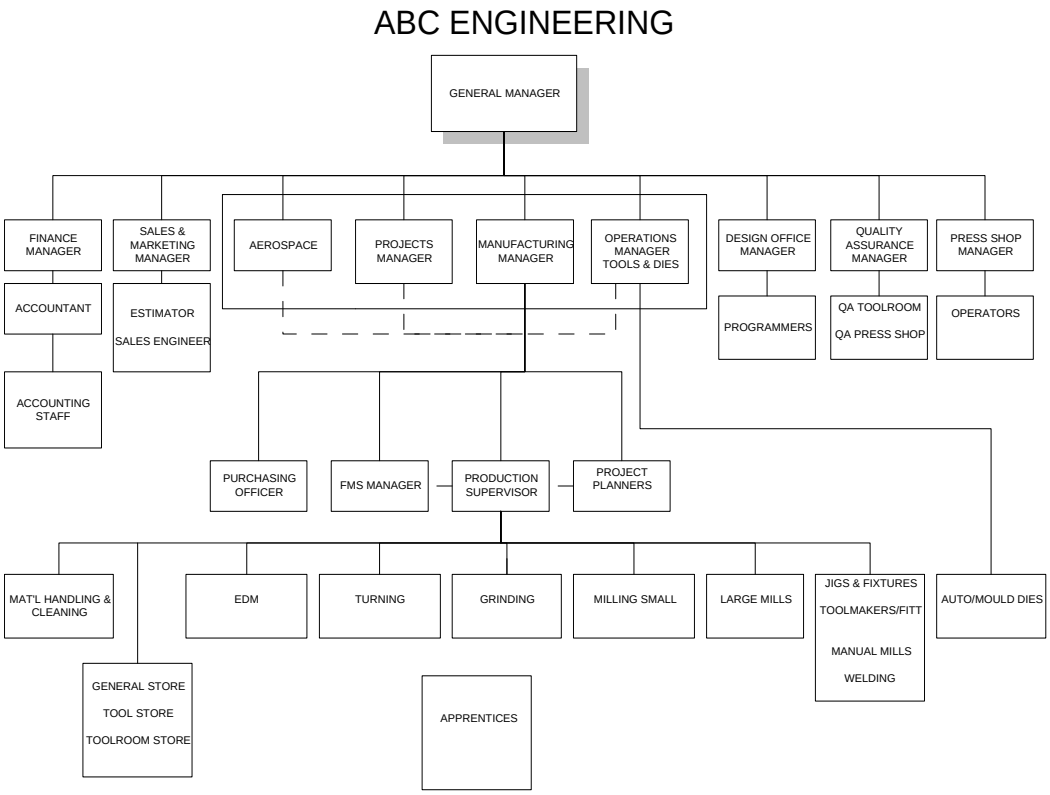
A.B.C. Engineering is a Melbourne-based job shop manufacturing company. The company attempted a major improvement in the information technology area by implementing and enhancing the capability of a MIS software package called 'ManuSoft'. The General Manager of A.B.C Engineering felt that the implementation of this commercially available package would enhance the productivity and help managers in the planning process. The company carried out a detailed study on various IT tools and information systems softwares that are applicable to the job shop manufacturing situation. Considering the prevailing company situations, it was decided that 'ManuSoft' would satisfy the information requirements. A project team was set up to study the scope of IT improvements and implement the required IT/IS system.

BACKGROUND

A.B.C. Engineering Limited is a precision engineering jobbing company, which provides precision machining, fabrication, toolmaking and assembly services to a wide range of industries. The company began as a two-person business in 1971 and since then expanded to become one of Australia's largest precision engineering companies. A.B.C. Engineering employs over 250 personnel with a turnover of A$78 million in 1999. All machine operators are skilled tradesmen, or trades apprentices, fully capable of manufacture from drawings with a minimum of supervision.

As can be seen from the company organizational structure, shown in Figure 1, the management structure is flat and product orientated. The General Manager reports to the board of directors and the manager of each functional section reports directly the General Manager. The production managers (Aerospace, Projects, Manufacturing and Operations) are responsible for customer liaison as well as general project and work management.

Figure 1: Organizational Chart



The main operation at A.B.C Engineering centres around two units: the Tool Room and the Press Shop. This study is concerned with the Tool Room, as it represents the job shop environment in its most dynamic form. The Press Shop is also a job shop but is far more batch orientated, providing a relatively simple manufacturing environment. A schematic view of the factory layout is shown in Figure 2.

The A.B.C. Engineering Tool Room makes parts to customer-designed order. The company provides a machining service to many types of industry. The parts made have been loosely categorised into eleven major 'product streams' by management. The categories are defined primarily for business control and reporting purposes. Every part made by A.B.C. Engineering is pre-required by its customers, none are made for stock.

The eleven product streams, as defined by A.B.C. Engineering management, are: Canning and Packaging, Wire Cut, Large Machining, Small Machining, Jigs and Fixtures, Large Press Tools, Small Press Tools, Mould Tools, Refurbishments and Repairs, Design Only and Major Projects. The definitions of the products attempt to provide management with a picture of the demand on shopfloor resources made by a particular job, or group of jobs. A.B.C. Engineering's customer profile is also reflected in the product stream definitions.

The Canning and Packaging product stream provides the canning and packaging industries with high precision tools for repetitive manufacture of containers such as beverage cans and food tins. This is a highly evolutionary market. The demand of the large food and beverage organizations for innovative packaging, along with wear on existing equipment, provides a steady demand on A.B.C. Engineering for high precision tooling. The tooling for this product stream makes use of leading-edge materials technology to produce the properties required of parts for repetitive manufacture. The