Chapter 1.5
The Evolution of ERP and its Relationship with E-Business

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ABSTRACT

Every technical invention is initially designed and eventually applied to solve a real-world problem. The evolution of Enterprise Resource Planning (ERP) is no exception. Owing to its well-organised success to effectively integrate isolated multiple and its ability to significantly improve businesses efficiencies, ERP systems have emerged as the core of successful accounting information systems.

INTRODUCTION

The rapid change in technology and other skills added to customers requiring highly specific and customised products has led to the need for far greater cooperation within and between firms. This increasing pressure requires companies to explore a reliable mechanism that makes it easier to save, store, and share useful information. Consequently, accounting information system (AIS) was developed to offer a good foundation for control information and knowledge to contribute to a company's success (Wilkinson, 2000).

AIS can be, according to Romney and Steinbart (1999), referred to as a transaction processing system because it only dealt with financial data and accounting transactions. It was mainly used as a reporting tool to perform functions such as payroll and invoicing. As the power and sophistication of information technology (IT) continue to grow up, the coverage potentials of AIS have become gradually more inadequate and not sufficient for business needs (Romney & Steinbart, 1999). With the growing requirements for information

the existence of multiple systems creates various struggles and inadequacies (Romney & Steinbart, 1999). Very often, the same data, for instance a sale record, must be stored by more than one system. Therefore, the term ERP (enterprise resource planning) emerged, which extends AIS to cover areas like product planning, logistics, accounting and financial services, human resources, and sales distribution.

ERP or information systems integration in general are doubtlessly among the most central topics arising at the interface of information systems (IS) and accounting within the past 20 years. Bhatt (1995) states that, "By accessing enterprise-wide information from databases, IS integration is providing numerous opportunities to coordinate organisational activities by facilitating communication and information exchange across departments without the need to go up and down the vertical chain of command. The access to timely, accurate and consistent information is crucial in business process improvement and accounting. IS integration, through communication networks and database systems, enables organisations to create and sustain process improvement through timely retrieval of consistent and accurate information."

ERP initiated from the large packaged application software that had been widespread since the 1960's. Among the first packaged business applications available was material requirement planning (MRP), introduced in the 1960's and proposed by Joseph Orlicky, who was regarded as the father of MRP in 1960 in the U.S. (Vollmann, Berry, & Whybark, 1992). During the 1970's, the MRP packages were extended, and further applications were added (Chung & Snyder, 2000). The extended resulted in the introduction of manufacturing resource planning (MRP II) systems; this development has been continued (Koh, Jones, Saad, Arunachalam, & Gunasekaran, 2000). Moreover, these systems later evolved to enterprise resource planning (ERP) systems, a term coined by the Gartner Research Group in 1992 and the name can probably be derived from the MRP and MRPII systems (Klaus, Rosemann, & Gable, 2000). ERP systems are highly-integrated software packages (Holland. Light, & Kawalek, 1999). However, ERP systems, like all information technology, are rapidly changing. During the 1980's, this was abandoned and replaced by the client-server architectures, and now newly-released Web-enabled versions have become more and more widespread (Markus & Tanis, 2000). This paper will mainly focus on the evolution of ERP in its historical context. This will be clarified by first explaining MRP and MRPII systems as a first and second phase of ERP systems. Moreover, reasons why MRP and MRPII implementation fail as well as their functions and hierarchy will be investigated to get a clear overview of ERP evolution. Second, ERP's feature, advantages, and disadvantages as well as reasons why ERP implementation fails will be discussed. Last, the relationship between ERP and e-business will be presented.

MATERIALS REQUIREMENT PLANNING (MRP) SYSTEMS

Materials Requirements Planning (MRP, or MRP-I) system was launched in the mid-1960s and quickly became popular for providing a logical, easily understood method for determining the number of parts, components, and materials needed for the assembly of each end item in production. As computer power grew and demands for software applications increased, MRP systems evolved to consider other resources besides materials. Software modules were added to include functions such as scheduling, inventory control, finance, accounting, and accounts payable.

MRP-I system is a computer-based system for managing inventory and production schedules. This approach to materials management applies to large job-shop situations in which many products are manufactured in periodic lots in several