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## **Editorial: Internet and enterprise management**

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**Biographical notes:** Dr. Eldon Y. Li is Professor and Coordinator of MIS Program at the Orfalea College of Business, California Polytechnic State University, San Luis Obispo, California, U.S.A. He holds M.S. and Ph.D. degrees from Texas Tech University. He has published over 100 papers in the areas of human factors in information technology (IT), strategic IT planning, software engineering, quality assurance, information management, and business management. His papers have appeared in *Communications of the ACM*, *Information & Management*, *Information Resources Management Journal*, *Journal of Computer Information Systems*, *Journal of Management Information Systems*, *Journal of Marketing Theory and Practice*, *Journal of Quality Assurance Institute*, *Journal of Systems Management*, among others. He is the Founding Editor for the *International Journal of Electronic Business*, the *International Journal of Internet and Enterprise Management*, and the *International Journal of Internet Marketing and Advertising*. He is currently the President for the Western Decision Sciences Institute (WDSI), the Secretary General for the Asia Pacific Decision Sciences Institute (APDSI), and the Founding Executive Director of the International Consortium for Electronic Business (ICEB).

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Information systems in the real world typically are the integration of cross-functional business systems that support business processes such as product development, fabrication, order management, distribution, customer support, and so on. These types of system are known as the enterprise systems. The information flows among the business processes in a typical organisation are extremely complex. The complexity of the flows is beyond human processing capability. Many organisations are using information technology to develop integrated cross-functional enterprise systems that take down the boundaries of traditional business functions in order to reengineer and improve vital business processes. These organisations typically view cross-functional enterprise systems as the best way of using IT to share information resources and improve the efficiency and effectiveness of business processes, thus helping a business attain its strategic objectives.

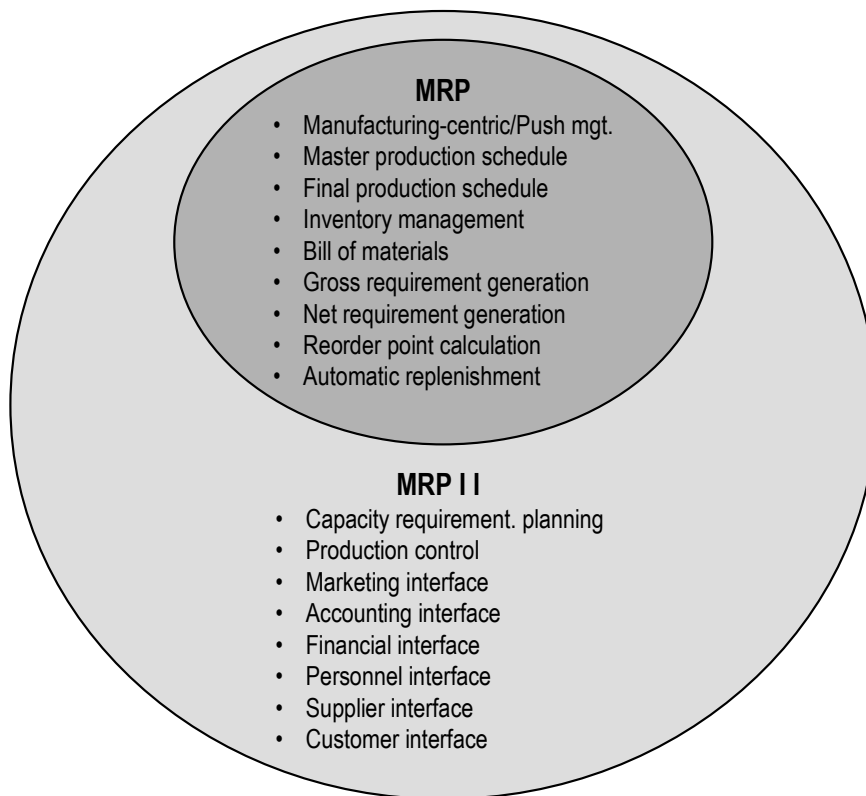
As early as the mid-1960s, material requirement planning (MRP) was adopted by manufacturers to deal with the complex issues of inventory control. Scheduling, locating materials in a warehouse, and similar issues seem trivial when you think in terms of small-scale operations, such as the variety of office supplies in an office storeroom. But, when the problem is 30,000 different part items in an inventory warehouse to support manufacturing, it becomes apparent that the problem is not simple at all. As the success of MRP software became known, organisations wished to apply the concepts to the entire manufacturing process. This gave rise to a new type of system, the MRP II (manufacturing resources planning) system, which was a natural extension to MRP systems.

Popular in the late 1970s, MRP II was the label given to information systems that encompassed the flow of material from suppliers, through the manufacturing process (and all of its subprocesses), to the firm's customers in the form of finished goods. A key strength of MRP II over MRP was not that MRP II used more sophisticated computer programs but that it tied together business functions previously being viewed as separate processes. A separate process implies a separate information system for the process. Tying the processes together means that the information systems must be integrated into a single system. MRP II represents a change in the mind-set of management to treat separate but tightly related processes as a whole. Figure 1 summarises the characteristics of MRP and MRP II.

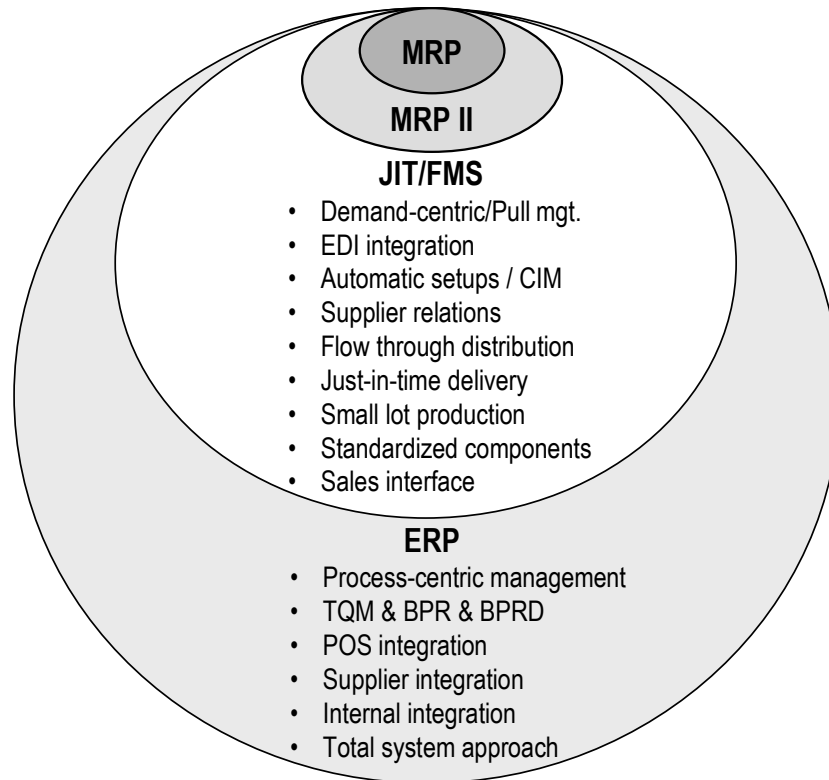
Both MRP and MRP II had been the bedrock of manufacturing companies before the mid-1980s. During that era, the manufacturing-centric push-management method was prevalent worldwide, targeting the economy of scale by producing an unnecessarily large quantity (lot size) of identical products in order to reduce the set-up cost and the unit cost. Such a method also strives for a higher service level by introducing safety stock to prevent stockout from happening. The end result is that unwanted inventories have been stockpiled in warehouses tying up large amounts of cash flow and diminishing the profitability of many firms. This method was proven wrong by Japanese automakers such as Toyota and Nissan who introduced to the world the Just in Time (JIT) and flexible manufacturing system (FMS) in the mid-1980s. This latter system is customer centric and demand driven. It produces small quantities of products based on real-time customer demands. This system strives for zero safety stock and zero inventory by pulling in the raw materials and parts just in time to produce the quantities prescribed by short-term forecasts of demands. It relies heavily on sales interface and a closely connected supplier network that is based on long-term relationships and satisfactory track records. As the competition intensified in the late 1980s, companies around the world began to shape up

and streamline their operations in order to meet their customers' demands. For this purpose, enterprise resource planning (ERP) systems were the next logical step. All information about processes within the boundaries of the company is consolidated. This requires a commitment to computer hardware and software resources, sophisticated user interface, database management systems, and well-trained users. It also requires a commitment from those managers who use the ERP system.

**Figure 1** Characteristics of MRP and MRP II



During the early 1990s, ERP vendors were creating system components based on the best practices of business processes. Implementing an ERP system usually requires a company to perform business process reengineering (BPR) or business process re-design (BPRD). The changes introduced to the company by the ERP system usually affect many internal business units. In order to have a successful implementation, substantial support of top management and devoted involvement of every employee must occur. This is exactly the essence of total quality management (TQM) culture. Without such TQM culture and its methods, the chance for an ERP system to succeed is very slim. A list of JIT/FMS and ERP characteristics is exhibited in Figure 2.

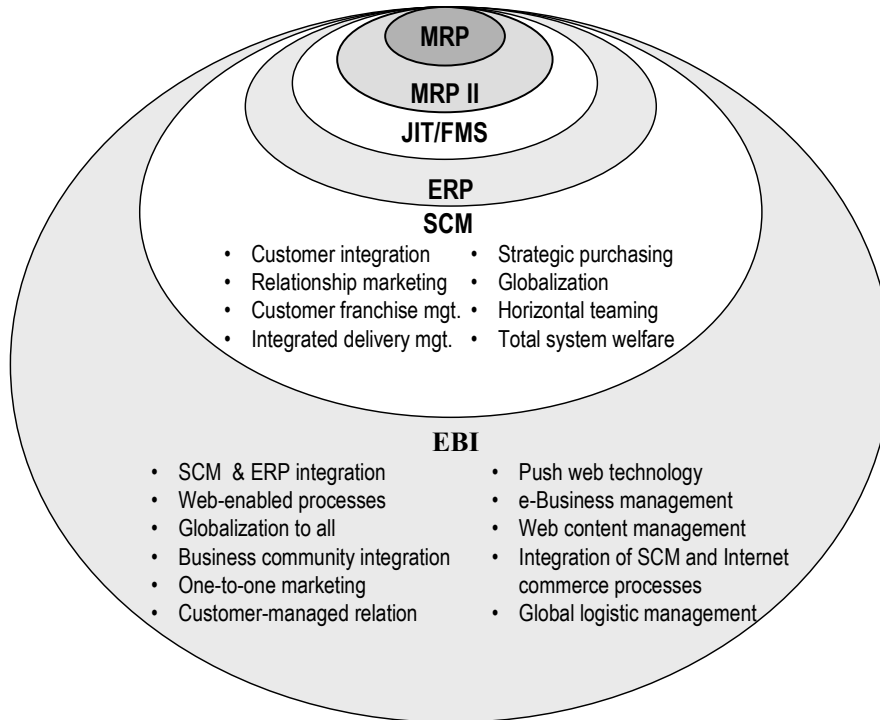
**Figure 2** Characteristics of JIT/FMS and ERP

As more and more companies experienced sluggish profit gain after streamlining their internal operations and integrating with suppliers, they finally realised that external inter-organisational efficiency and effectiveness are equally important to the intra-organisational ones. Unreliable products and deliveries from the suppliers or to the customers will offset the profitability of a company. In today's business world, the profit of a company relies heavily on its long-term business relationships with its suppliers, carriers, and customers. What counts is the welfare of the entire supplier-firm-carrier-customer network (commonly called the supply chain or the value chain). Therefore, a firm should integrate not only with its suppliers but also with its carriers and customers. With this in mind, almost every major ERP vendor has developed software modules for supply chain management (SCM) since the mid-1990s.

Soon after the hypertext markup language (HTML) and Mosaic browser were introduced to the world, coupled with commercialisation of the internet in the early 1990s, the business war game changed its rules dramatically. Suddenly the entire world is right before you. Whilst the domestic players continue to profit from their local market share, the global players feel much threatened by the easy entrance of new players into the global marketplace. Large firms are mostly global players; they are usually the ERP

users. Today they are competing with their rivals over the internet. Most of them are integrating their ERP and SCM systems with the web-enabled storefronts and moving towards the new era of e-business integration (EBI). The characteristics EBI are listed in Figure 3, along with those of SCM.

**Figure 3** Characteristics of SCM and EBI



Since the late 1990s, many firms have been conducting one-to-one marketing with their customers through web technology and allowing their customers to choose the types of services they want to receive. Some firms even created intranets that link all business partners together; each established a virtual community of its own. Such a community has enabled partners to share information securely and has provided more opportunities from which they can profit. Therefore, rather than competing against each other for the same pie, it actually created a bigger pie for the members of the community to share. As the years go by, we expect that more and more virtual communities will be formed over the net. The integration of internet with enterprise management will be more and more critical to a firm's profitability.

The launching of *International Journal of Internet and Enterprise Management (IJIEM)* comes at the right moment. The mission of the *IJIEM* is to provide an intermediary for professionals and academicians to share thoughts and knowledge regarding the advances of internet and enterprise management. It focuses on the emerging changes in enterprise management, its organisational structure, competitive strategies and management methods, brought about by the internet and information technology

applications, and their implications for the associated processes, products, and services. The Journal publishes original and review papers, technical reports, case studies, conference reports, management reports, book reviews, notes, commentaries and news related to social, political and economic issues as well as emerging issues of interest to professionals and academicians.

In closing, we would like to express our gratitude to the Inderscience staff for their high-quality professional assistance during the pre-publication process and to our editorial team and board members for their continuous support during the journal planning phase. Our most sincere thanks go to all the authors who share their knowledge and research outcomes with the readers in this inaugural issue. Without them, the debut of this Journal would not be possible. And finally, to our readers around the world, we thank you very much for using this journal as your source of information and hope you enjoy reading the articles in this issue as much as we did.