Preface

To an increasing extent, corporations are recognizing that successful management is based on three basic functionalities; and these organizations are discovering that a focus on customer needs is effective only if these functionalities are designed and managed to meet those needs. The operations function extends from acquiring raw materials to fabricating parts, to assembling products, and to making sure that the right products, in the right quantities, are ready at the right time for delivery to the customer. A systems perspective can enable us, in ideal circumstances, to fashion an operations function like the inner workings of a finely tuned machine. The service function extends from acquiring customer orders to monitoring progress, to delivering the product to the customer, to providing in-house or field service for maintaining the product, and to providing advice and help to the customer on how to use the product. A systems perspective can enable us, in ideal circumstances, to ensure that our product will be used by the customer in the best way to help him achieve his goals. The enterprise or business process function visualizes the organization as a set of business processes representing the working and flow of goods, services, information, decisions and control throughout the enterprise. A systems perspective can enable us, in ideal circumstances, to ensure that these processes cooperate effectively to deliver results or deliverables, and thus achieve the goals of the enterprise.

Life would be uninteresting without change, however; so we can be thankful that the functioning of the organization is dynamic in nature. We alter one element – to improve or upgrade it – and others are affected. The customer or the outside environment introduces variability into one or more points; and we watch the ripple effects spread across the organization over time. These system behaviors can be difficult to grasp – and even more difficult to predict or manage.

In addition to understanding the dynamic, interactive and integrated nature of the operations, service and process systems, it is important to understand and to practice using the tools supporting the management of these systems. Teaching the concepts of modern information systems and the processes they support, and their ability to serve the customer in order to enhance competitiveness, constitute an important challenge to any IE or MBA program.

Modern information systems combine models (production processes, service processes) in a model base, data (resources, products, schedules, orders) in a data base and knowledge (methodologies, decision processes) in a knowledge base. They support the perspective of an enterprise-wide approach to organizational activity, be it focused inwards on the provision of a product or service, or interfaced outwards with suppliers and customers. Enterprise Resource Planning software
systems provide comprehensive management of financial, manufacturing, sales, distribution, service and human resources across the enterprise. The ability of ERP systems to support data “drill down,” to eliminate the need to reconcile across functions, and to integrate the working of the operations, service and process functions is intended to enable organizations to compete on the performance along the entire supply chain. To utilize these capabilities, managers have to learn how to manage processes using the model, data and knowledge bases in the ERP environment. Recognizing this need, modern schools have installed commercial systems for production process simulation, business process design, and ERP. The amount of time required to teach and learn all the screens and functions of these tools is enormous as they are not designed a priori as teaching media.

Until now, there has not been an effective mechanism for teaching students and professionals to understand the dynamics of operation systems by illustrating how production, service and business processes are designed and how ERP systems are used. This book and the accompanying software will fill this need. The book has been written with an emphasis on manufacturing firms, but the principles it demonstrates are transferable to more service-oriented environments. With this in mind, both manufacturing and service operations issues have been included in the problems at the end of each chapter. The book and the accompanying software have been designed for use in academic and executive programs aimed at teaching students, and professionals to understand how integrated operational systems work.

In terms of the book’s use as a course book, a course on planning, operations and control systems would probably be the ideal place in business school settings. Some basic understanding of operating systems is needed by the reader. In an industrial engineering school, in addition to these, the book may give students their first, and perhaps only, introduction to business issues such as market demand and relationships with customers and suppliers.
ERP
The Dynamics of Supply Chain and Process Management
Shtub, A.; Karni, R.
2010, XIV, 281 p., Hardcover