

## Chapter XII

# Putting Enterprise Systems in a Larger ICT Context: A Pedagogical Framework

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## ABSTRACT

*Many business schools are attempting to integrate their curricula with enterprise software, particularly enterprise resource planning (ERP) software. Although the introduction of ERP into the undergraduate academic curriculum offers students a potentially deeper understanding of business processes, it cannot by itself provide for students a connection between the adoption of robust information systems and a paradigm shift in the way that business organizations operate in a global, information-centric environment. Connecting a new global economy with enterprise systems requires a course much broader than ERP that places enterprise systems in a much larger information-communication technology (ICT) context. This chapter presents a teaching model that provides that context, emphasizing the critical role of systems components and relationships, the central function of information in problem solving, and business perspectives of information from infrastructure to applications.*

## INTRODUCTION

Technology has consistently been applied to the education process, with differing levels of success. In many areas, real-world technology applications are being used in teaching, including applications like CAD/CAM software, simulation languages, and enterprise resource planning (ERP) software packages. Industrial trends in IT have been moving from traditional models with disconnected applications to complex integrated models involving enterprise systems (ES). Changes in industrial practice have prompted changes in business information technology education resulting in a potpourri of teaching and learning methods, but academic institutions are increasingly focusing on enterprise software as a means of integrating curricula (Hejazi, Halpin, & Biggs, 2003; Johnson, Lorents, Morgan, & Ozmun, 2004; Markulis, Howe, & Strang, 2005; Michaelsen, Hobbs, & Stead, 2000). Joseph and George (2002, p. 51) suggest that ERP software can bring about more effective pedagogy in higher education enabling deeper understanding of course materials and a clearer vision of interlinked aspects of business activity. Practical experience with ERP software may help students appreciate related business processes, but the effects of the global information infrastructure extends far beyond integrated business software. Training with ERP and customer relationship management (CRM) systems do not communicate the economic, political, and social revolutions spawned by world-wide telecommunications, robust wide area networks, prolific and effectual hardware and software, and the incredible power of the Internet to connect everything to everything. Students should appreciate the paradigm shifts occurring in the way people live and work, which are every bit as liberating and tumultuous as the shifts that were initiated by the invention of printing in the 15th century and the industrial revolution in the 18th century. In this chapter, a high-level framework is presented to incorporate enterprise systems in a larger picture of evolving and adaptive organizational structures, and the business processes that enable them. The authors present a pedagogical model that links enterprise systems to information and communication tools, an understanding of systems, and the role of information in problem solving.

## CONNECTING BUSINESS PROCESSES

Businesses judge their performance by outcomes produced by entire business systems, not individual components. While control and optimization of integrated business processes have been goals of business managers since the Industrial Revolution, tools *capable* of complex control and optimization of diverse business functions developed only recently. Prior to about 1990, little attempt was made to integrate large scope business activities because:

- Computer processing capabilities were limited.
- Computer hardware and software were costly.
- Specialized business activities needed customized software code created from scratch.
- Robust computer networks did not exist.

The 1990s was a watershed decade. It produced:

- Robust computer networks
- Greatly enhanced computing power

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