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Chapter IV

The Business Process-Driven Undergraduate IS Curriculum: A Transition from Classical CIS to Emerging BIT

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ABSTRACT

This chapter introduces a concept of the re-engineered CIS (computer information systems) curriculum accomplished at the beginning of the 21st century through a few initiatives taken by the Department of Business Information Systems at Western Michigan University's Haworth Business College, over the time period of 2000-2005. These initiatives led to the shift from teaching universal/generic computer information systems' knowledge and skills to more integrational knowledge and skills about how to develop complex systems such as ERP (enterprise resource planning) and e-enterprise. This curriculum shift is a response to the industries' information infrastructure's shift from information islands to the gradually integrated online (Web-driven) infrastructure of systems and services. The revised CIS

program at WMU is supported by the use of ERP-like SAP R/3 and MS Great Plains software. The authors hope that the presented curriculum re-engineering concept facilitates the understanding of how the business process-driven CIS/BIT program can be implemented in academic practice.

INTRODUCTION

The purpose of this chapter is to present the re-engineered CIS (computer information systems) curriculum accomplished at the beginning of the 21st century through a few initiatives taken by the Department of Business Information System at Western Michigan University's Haworth Business College,[1] over the time period of 2000-2005. These initiatives led to the shift from teaching universal/generic computer information systems' knowledge and skills to more integrational knowledge and skills about how to develop complex systems such as ERP (enterprise resource planning) and e-enterprise. This curriculum shift is a response to the industries' information infrastructure' shift; from information islands, to the gradually integrated online (Web-driven) infrastructure of systems and services. The revised CIS program at WMU is supported by the use of ERP-like SAP R/3 and MS Great Plains software. The whole transformation process was gradual. In 2000, all CIS courses were restructured to focus on IT knowledge and skills that were essential for the development of an enterprise-wide information system. Soon after the revision, a new curriculum — E-Business Design was developed to meet the e-business needs. In the same time, another interdisciplinary major—Telecommunication & Information Management (TIM) was also developed to meet the emerging industry demand for graduates who can manage the convergence of digital and telephony networks. The sluggish economy recovery, coupled with the continuous offshore outsourcing, motivated our CIS faculty to visit the CIO/CTO of six major corporations in the Southwest Michigan to identify the company needs and, in particular, the expectation of knowledge and skills for future CIS graduates before they enter the real world. Our findings were finally transformed into a new initiative — reengineering the CIS curriculum with a paradigm shift from a technology-based program to a new one focused on using IT for business process integration (BPI). All these transformations have happened at a very fast pace, especially, in the manufacturing-rich state of Michigan which has lost its core competency and cut its higher education budget every year over 2001-2005. Because of this, additional burdens were laid upon the CIS faculty,[1] who made fast changes in the CIS curriculum but were criticized by other departments and the administration for moving too fast.

THE EVOLUTION OF IT EDUCATION

The modern electronic stored-program computers were first developed in Germany (Konrad Zuse's Z3 was operational in 1941) and at U.S. universities in the 1940s, mainly in response to military needs during World War II. Among those computers was the "large systems of linear algebraic equations" solver at Iowa State College (1937-1942), the Mark I or IBM Automatic Sequence Controlled Calculator at Harvard (1939-1944), the ENIAC (Electronic Numerical Integrator and Computer) at the University of Pennsylvania (1945-1950), the ORDVAC (Ordnance Variable Automatic Computer), the ILLIAC (Illinois Automatic Computer) at the University of Illinois (1948-1952), the MSUDC (Michigan