



Chapter XIII

Enterprise Architecture and Information Architecture: What is It and How to Teach It

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ABSTRACT

Companies around the world are using enterprise systems. Universities are following the trend by integrating enterprise systems into their curricula. The main role of enterprise systems is to support business operations efficiently and effectively and to create competitive advantage. Nevertheless, to reap the benefits of using enterprise systems, it is essential to align the information technology goals with business goals and to establish appropriate enterprise architecture (EA) and enterprise information architecture (EIA) support. For students to understand the linkage between the EA and EIA and to learn the subject, a hybrid academic and industrial approach to teach EA and EIA is proposed. This proposed hybrid approach covers theory, framework, principles, and best practices of the EA and EIA in the beginning, evolving to a practical and comprehensive approach in delivering the subject matter — EA and EIA. A real world EA and EIA project is used to illustrate the efficacy of these architectures.

INTRODUCTION

The initial publication of the Zachman framework in 1987 has generated great interest for educators, researchers, and practitioners in the subject of enterprise architecture, enterprise information architecture, and enterprise systems (ES) (Brancheau, Janz, & Wetherbe, 1996; Zachman, 1987). Companies around the world have implemented and/or are continuously implementing enterprise systems. Universities are following the trend by integrating enterprise systems into their curricula. Among various topics related to enterprise architecture, enterprise information architecture and enterprise systems, the need to align information systems (IS) and information technology (IT) with business goals is among the top key issues in organizations as ranked by information systems executives over the last decade (Luftman, 2005). The challenge sounds simple yet it is seemingly difficult to achieve given the dynamic nature of the competitive environment. This also has been evidenced by the much debated productivity paradox, resulting from inconclusive findings in research on information technology investment and organizational productivity (Broadbent & Weill, 1997; Ross & Beath, 2002).

Enterprise information architecture is built with the intention of supporting business goals and objectives. Alignment of information technology and business strategy requires sound enterprise architecture (Buchanan & Soley, 2002; Crossan, 2000; Laartz, Monnoyer, & Scherдин, 2003; Nolan, 2002). In the commercial world, many large corporations around the world such as Intel, Texaco, Best Buy, Delta, Hewlett-Packard, General Motors, DHL, Land O' Lakes, CAN Insurance, Vertex, and so forth, have developed and implemented their enterprise architectures and enterprise information architectures to support their operations in this world of "extreme competition." Even non-profit organizations such as the U.S. Internal Revenue Service, the U.S. Department of Veterans Affairs, the Coast Guard, the U.S. Department of Agriculture, the U.S. Forest Service, the Kansas Department of Transportation, the U.S. Air Force, and the U.S. Federal Aviation Administration are involved in enterprise architecture. Accordingly, it is apparent that enterprise architecture is a pertinent linking component of enterprise systems education in the 21st century.

Research has shown that strategic alignment theory and practice are in synchronization and there is little conventional academic wisdom to challenge, except for the need to document IS strategy and plans (Chan, 2002). Such a need calls for an adoption of an enterprise architecture software tool to document the IS strategy and plans. Popular frameworks such as the Zachman framework, DoDAF (C4ISR framework), and TOGAF (The Open Group Architecture framework) already have software tools available to promote their application. This chapter focuses on laying the foundation of why we cover enterprise architecture and enterprise information architecture in teaching enterprise systems and the importance of deriving an enterprise architecture and enterprise information architecture in achieving alignment between IT and business.

Any student who wants to understand and grasp the concepts, knowledge, integration, and application of enterprise systems has to understand the EA and EIA well.

Most approaches to EA and EIA have been far too complex and theoretical. The fundamental assumption in teaching this subject is: (1) a need for a simpler approach in teaching enterprise systems, and (2) the subject can best be learned through learning by doing. We recommend a hybrid academic and industrial approach that combines EA and EIA to teaching enterprise systems. We propose covering theory, framework, principle, and best practice of the EA and EIA in the beginning, and then moving to a practical and

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