



# The Impact of Enterprise Systems on Business and Audit Practice and the Implications for University Accounting Education

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## ABSTRACT

*The recent Institute of Management Accountants' (IMA) sponsored monograph on the state of accounting education and the need for radical change (Albrecht & Sack, 2000) provides a solid foundation for understanding the failures of contemporary accounting education. In this article, the concepts outlined in the Albrecht and Sack monograph are expanded in order to provide a more detailed look at how contemporary enterprise systems integration is impacting the manner in which organizations perform their business and the necessary audit processes to evaluate such businesses. Analysis of these contemporary systems highlight the specific failures of contemporary accounting education in providing the knowledge and skills required to succeed in this new business environment. We use this analysis as the springboard for the development of a framework for revolutionary accounting education change.*

**Keywords:** *accounting education; B2B e-commerce; business education; enterprise resource planning; enterprise risk management*

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## INTRODUCTION

In the recent Institute of Management Accountants' (IMA) sponsored monograph on the dismal state of contemporary accounting education, Albrecht and Sack (2000) identify three primary drivers of change in business and audit practice: (1) technology that has made information preparation and dissemination inexpensive, (2) globalization, and (3) the concentration of power in certain market inves-

tors (i.e., primarily large mutual and pension funds). This latter driver has perhaps influenced accounting and auditing mostly through the demands for additional disclosures of both financial and nonfinancial information. Information is considered inexpensive to produce and therefore reasonable to demand.

To a certain degree, the root of all three of these change drivers is information technology. Information technology has made information

presentation and dissemination inexpensive primarily through two basic premises of systems integration. The first premise is that if the rules for deriving information reports can be explained, they can be programmed into a system that will produce the standardized reports required by users. In application to accounting, this suggests that any accounting rule that contributes to the aggregation of data to form financial statements can be encoded and does not require human input beyond the original data entry (Sutton, 2000). The second rule is that if all of the data about all business events within an enterprise database are captured, that information can be retrieved and any subset can be provided to a user through construction of a database query (Sutton, 2000; Vasarhelyi & Greenstein, 2003). Hence, the generation of information that fulfills users' ad hoc information needs is not a major feat and can be completed through information retrieval from the enterprise database (Mock & Vasarhelyi, 2006). This relates directly to the third change driver: market investors' demand for additional disclosures.

The other driver of change, globalization, has also been enabled by technology. The ability to store and access volumes of information, the ease at which currency translations can be completed automatically through preprogrammed modules in systems, and the reduction in time and effort to communicate globally through electronic commerce applications have all served to reduce many of the complications involved in global commerce. Without the advances in information technology, globalization of markets would have been much more difficult and much less likely to occur (Hronec, 1993).

Why does all this necessarily require change in audit practice and accounting education? First, the value added in capturing and recording business event data (traditionally termed transactions) is negligible and decreasing rapidly (Elliott, 1992). Second, the value added by knowing how to transform the data into financial statements is even more negligible and decreasing rapidly (Elliott, 1992). Third, the ability to track transactions by examining paper documents and assessing traditional control

procedures is rapidly becoming a skill of no value—this information is usually electronic and the various paper forms no longer exist (Elliott, 1994; Vasarhelyi & Greenstein, 2003). Indeed, these forms now are now represented primarily as electronic transaction sets for electronic data interchange (EDI) transmission and receipt, and are stored somewhere in the enterprise database. One more major change in the way audit errors have been traditionally viewed is that random errors in data processing are extremely rare. Instead, errors are usually programmed into a system, meaning they are systematic, that is, every transaction will be processed by the same rules; therefore, all similar transactions will have the same error (Sutton, 2000). Most random errors that still exist are more likely to occur because of fraudulent overrides to the system (Alles, Brennan, Kogan & Vasarhelyi, 2006). Each of these concepts and observations will be detailed in the following sections of this article.

While the Albrecht and Sack (2000) monograph makes a well-articulated and convincing argument for why change is needed, the goal of the monograph is really focused on awakening accounting academia to the urgency of substantive accounting education change. The objective of this article is to focus on how information technology, and in particular enterprise systems, are transforming business information processing and the direct implications these changes have to current and future auditing practice and accounting education.

The remainder of this article is divided into four sections. The first section examines the impact of enterprise-wide database systems with particular emphasis on enterprise systems (also traditionally referred to as enterprise resource planning systems or ERPs). The second section explores the even more radical changes arising via electronic business (e-business) and the resulting extended-enterprise systems linkages across the supply chain. The third section examines the implications of these systems-activated business processes to accounting practice and the need for revolutionary accounting education

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