



Partnering for Change: Infusing Enterprise Resource Planning in the Accounting Curriculum

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TO PROMOTE THE INTEGRATION OF TECHNOLOGY ACROSS THE ACCOUNTING CURRICULUM AND EXPAND STUDENTS' KNOWLEDGE OF ERP, A JOINT INDUSTRY/ACADEMIC INITIATIVE IS DEVELOPING A SERIES OF INTERACTIVE CDS AND HOSTED WEBSITES TO SUPPLEMENT TRADITIONAL INTRODUCTORY COURSEWORK.

EXECUTIVE SUMMARY: The practice environment of the management accountant has changed greatly in recent years. At the same time, many observers have questioned the ability of the academic community to change curricular delivery to meet the new demands of the profession. An initiative is being developed that aims to enhance the relevance of the accounting curriculum and raise the level of quality of future graduates. We will describe how this is achieved through the integration of enterprise resource planning (ERP) concepts in a series of accounting courses along with a partnering of industry and academic professionals.

The theme of the 2003 Institute of Management Accountants' (IMA) Annual Conference was "Management Accountants: Creating Knowledge for Strategic Leadership." Indeed, the past decade has witnessed a growing awareness that management accountants have become key participants in policy development and in making business decisions.

A focal point of this recognition is the 1999 Practice Analysis, *Counting More, Counting Less*. The title itself is an apt description of the changing practice environment it describes: Because management accountants have been freed from previously time-consuming "counting" chores, they have become empowered to fill a more prominent role as advisor in the decision-making process.

This empowerment, however, requires that such professionals bring the requisite skills and abilities to address strategic leadership issues to the table. It is noteworthy that in *Counting More, Counting Less*, a “solid understanding of accounting” was only one of the “Skills Needed for Success” in the finance function.¹ Others include communication and analytical skills, the ability to work on a team, and an understanding of how a business functions.

Respondents noted that such skills reflect the nature of their evolving duties as a management accountant. By the end of the last decade, the majority of respondents viewed themselves as “finance professionals,” not as management accountants. They described their work activities as “internal consulting,” “long-term strategic planning,” and “process improvement”—terms not found in previous IMA practice analyses.

Similarly, respondents noted a trend toward even greater emphasis on planning and analysis as well as an emerging role toward “business partnering” and consulting within the firm. This suggests the existence of real opportunities for advancement for today’s accounting graduate, emphasizing the responsibilities of accounting educators to develop curricular approaches that will enhance student abilities to leverage technology and to develop needed skills as a partner in business decision-making processes.

A WORD OF CAUTION

Signals from the profession have called into question the ability of the academic community to change curricular delivery to meet the demands and opportunities of the profession. Perhaps the most visible of these signals comes from a project sponsored by the IMA, the (then) Big 5 major public accounting firms, the American Institute of Certified Public Accountants (AICPA), and the American Accounting Association (AAA). The full report of this project was published in August 2000 by the AAA in *Accounting Education: Charting the Course through a Perilous Future*.

While the title of the full report is perhaps ominous in predicting a “perilous future,” the IMA was even more direct regarding perceived frailties in the delivery of accounting education. In their article summarizing the tone of the project’s findings, Keith A. Russell, C.S.

“Bud” Kulesza, W. Steve Albrecht, and Robert J. Sack wrote, “We must transform our educational programs merely to *survive*. Failure to embrace market-based changes will continue to decrease the relevance of accounting education.”²

One notable concern identified in the study is the perception that while change in the professional world is well documented, accounting education has remained tied largely to traditional practices of the past, with little change to reflect industry needs. Indeed, a recent study by Christian I. Hastings, Philip Reckers, and Lannie Solomon focused on academic preparation in various technology areas, pointing out disparities between what is now included in the curriculum and the desires of accounting professionals, covering topics such as database concepts, enterprise resource planning concepts and applications, e-business concepts and software, business process analysis, and management consulting.³ In general, results indicate that business professionals would like to see far more coverage of these topics in the curriculum than is currently being delivered. Of particular interest to us is the view expressed by professionals that focusing more on ERP concepts and applications would accentuate the study of business processes and management consulting.

THE NEED TO ACT

Charting the Course Through a Perilous Future does not present a recommended prescription for all educators to follow in addressing perceived problems. Recommendations were made, however, regarding the need for educators to act in a timely fashion rather than hoping for evolutionary changes while clinging to the status quo. An important element of these broad recommendations is the call for educators to develop strategic planning processes for their programs in consultation with major stakeholders. This includes consideration of how individual courses are designed and delivered, of how such courses may be articulated with one another to assure desired outcomes, and of the curriculum as a whole.

Such an emphasis on strategic planning for educators can be an important element in creating knowledge for strategic leadership for business stakeholders. As noted, the opportunities for advancement in the professional

world are identifiable, but only those who have developed the required expertise and skill sets can act on them.

No single prescription for change has been expressed for all programs because each program must address the needs of its particular mission and stakeholders. Our particular interest is the general recognition that changes must be made to assure that the courses and programs as a whole become more relevant to stakeholders.

A specific suggestion made in *Charting the Course Through a Perilous Future* is very much on point regarding stakeholders in management accounting: "Introductory accounting might focus less on preparation of financial statements and more on analysis.... The content might introduce the material that an accountant would need to move into consulting, business advising, and strategic planning."⁴

ACHIEVING CHANGE

There is an approach being developed that provides both greater analytical and strategic perspectives in the introductory course as well as addressing articulation capabilities with other courses in the same accounting curriculum.

An initiative called Advancing Curriculum Change in Technology (ACCT) shows promise for achieving the desired changes in accounting education. Funded by SAP, the leading provider of ERP systems, ACCT is an industry/academic partnership designed to address the information technology and skill-set needs of the profession.

The goal of the ACCT initiative is to promote the ability to integrate technology across the accounting curriculum in an organized, coordinated fashion. The integration of ERP technology will be accomplished through the development of a series of interactive CDs and the use of hosted educational websites for a multiple-course sequence, including Introductory Financial, Introductory Managerial, the Intermediate Sequence, Cost and Advanced Cost, Information Systems, and Auditing. The idea is that students can learn basic information in the early courses so that they will be able to work mini-cases on hosted websites for the later courses.

In the interest of brevity, the approach for Introductory Accounting is outlined here. It links the capabilities of ERP technology to real-world examples in a user-friendly fashion. Each learning module contains a general description of the accounting topic, the business processes that are affected by the transaction, an illustration of how the accounting data are incorporated into the SAP system, an illustration of the output of the SAP system, and a short quiz that the students can use to test their understanding of the material in the module.

The "real-world" and "user-friendly" aspects are important for students and faculty. For students, interest is heightened through discussion of real company scenarios. The use of ancillary CD and Web technology helps faculty demonstrate ways to leverage technology to facilitate data-driven decision making without requiring either student or faculty proficiency with data entry or manipulation.

In addition, the ancillary materials are designed for use with any accounting textbook, thereby enabling the instructor to address "accounting" topics while expanding student understanding of ERP applications. Each course CD is organized into "learning modules" of approximately one hour (or less) and can be employed as part of the class or as outside assignment work.

INTRODUCTORY ACCOUNTING MODULE

Among the many topics typically covered in introductory accounting course are inventory and cost of goods sold. Also, it is not unusual for textbooks to address the recordkeeping needs of identifying when inventory assets are purchased and when they are charged to cost of goods sold as sales are made.

Coverage of inventory often leads to discussion of balance sheet and income statement representations because inventory decreases are recognized as "expenses" in cost of goods sold. Instructors can also identify how credit acquisitions of inventory compare with cash transactions and how sales may be on a cash or credit basis.

Coverage of these transaction types has been considered important in developing student understanding of accounting terminology and recordkeeping needs. The mechanics of accounting for such transactions can uti-

lize the accounting equation to illustrate changes in asset, liability, and owner equity positions and to convey such concepts as the matching principle or product versus period costs. Follow-up coverage can extend to considerations of liquidity, the effects of statement errors, and related statement analysis.

The ACCT approach provides for the ability to follow accounting topical coverage while widening the focus to a broader decision context. It expands the discussion of inventory to broader management perspectives and, by utilizing the ancillary CD, illustrates how SAP technology addresses both accounting and management decision needs.

To increase student interest, it is helpful to draw from actual company experiences that demonstrate these points. A practical example for the Introductory Module is Dell Computer Corporation. Dell has mastered the efficient management of inventory. It orders parts only after a customer places an order for one of its products. For example, in Dell's system, a customer for a new laptop first visits Dell's website. At the website, the customer can configure the laptop to fit the exact specifications that he or she desires, then place the order for that configuration, paying with a credit card. At that point, Dell orders the parts to assemble the laptop. The various components arrive from Dell's suppliers within a day or two at most. Dell has arranged a just-in-time inventory system with its suppliers. With all the components on hand, the computer is assembled in just one or, at most, two days. UPS delivery picks it up for delivery to the customer. The UPS delivery time is most often the longest period of time in the entire process. In this way, Dell minimizes its investment in inventory but does not lose sales to customers.

Because the customer pays with a credit card, Dell is able to minimize its investment in Accounts Receivable by collecting from the credit card company very quickly, usually in no more than two or three days. At the same time, Dell receives very favorable credit terms from its suppliers. The normal time that it takes Dell to pay its suppliers is around 70-75 days. By collecting from customers very quickly and paying suppliers on a lengthy schedule, Dell is able to finance a major share of its operations with the funds of its suppliers, a manner of doing business that contributes greatly to Dell's

profitability.

Using this brief description gives students a better picture of the real-life decision needs and accounting considerations of management. The ability of ERP to facilitate such policy perspectives is amplified throughout the supplemental CD technology.

For example, each learning module emphasizes the relevant business processes that are touched by the transaction. The learning module identifies how the SAP system enables data usage across business functions, including purchasing, manufacturing, warehousing, sales and distribution, and accounting. In this case, the learning module emphasizes the significance of accounting and business process issues to management.

Linked SAP screens are used to demonstrate the ability of SAP software to facilitate decision making through drill-down precision, timely presentation, and graphics capabilities. To allow for further linkage and reinforcement of textbook coverage, the accounting transactions and related treatments are also included as part of the learning module. In addition, an end-of-module quiz enables interim assessment of coverage to that point.

In general, these learning modules are designed to reinforce important accounting topics while extending awareness of broader management decision needs. The ability of ERP technology to provide for accurate measurement and efficient management is illustrated in each module.

PARTNERING FOR CHANGE

The presentation format of the supplemental CDs is designed to be similar for the Introductory, Intermediate, and Cost courses. Intermediate, Cost, and AIS course delivery also provide for interactive applications. SAP will sponsor hosted websites to support this interactive work. To facilitate continuity of delivery, these hosted sites will remain constant for a three-year period.

Many opportunities are emerging for individual faculty members to field test CD modules already developed. In addition, accounting programs can plan for the application of this approach across multiple courses. Given the importance of ERP applications in industry, the ability to develop student competencies in this regard over a number of courses has intuitive appeal. In

a real sense, such adaptability shows the same promise for infusing technology skills that Writing Across the Curriculum (WAC) programs demonstrated for written and oral communications development over the past two decades.

David Stout, Donald Wygal, and Katharine Hoff identify how the WAC experience can generate gains at individual programs as faculty leaders add value to the delivery of accounting coursework by including techniques that also build communication skills.⁵ Often the efforts of one or two individuals in a given setting have shown to be catalysts for change, leading others on the faculty to develop similar attempts to infuse skill-building approaches.

The ACCT program can provide a similar catalytic effect in program settings, which can lead to partnering opportunities among faculty members and between accounting departments and their stakeholders in the professional community.

It is clear that curricular change is necessary to meet the demands of the changing professional environment. As individual faculty members work to infuse ERP applications at the introductory level, other faculty in the same program can build upon their efforts. Furthermore, members of the professional community can show their willingness to partner with academic programs by supporting (and, at an earlier stage, perhaps even requesting the initiation of) efforts at accounting departments that are seen as suppliers of new hires.

As noted earlier, the importance of management accountants continues to grow. In a *Strategic Finance* article, Mark J. Morgan points to ERP applications as the tools that will enable finance professionals to play the role of architect for their companies. This role “requires the finance function to be the champion for change, the conscience of the enterprise, and the counterbalance to cynicism with the management ranks.”⁶ This is accomplished with the aid of ERP applications.

If this opinion truly reflects the continuation of trends identified in previous IMA practice analyses, then the ACCT program is very much on point for addressing needed curricular change. In the professional world, ERP applications can be seen as drivers for change that have empowered management accounting professionals to leverage business knowledge and to

become strategic leaders in the firm. Just as ERP applications have been shown to have transforming effects in the world of business, the development of approaches to facilitate ERP skill building and understanding can be a driver for change in the curriculum. ■

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- 2 Keith A. Russell, C.S. “Bud” Kulesza, W. Steve Albrecht, and Robert J. Sack, “Charting the Course Through a Perilous Future,” *Management Accounting Quarterly*, Fall 2000, p. 5.
- 3 Christian I. Hastings, Philip Reckers, and Lannie Solomon, “The State of Accounting Curriculum: Where It Is and Where It Needs to Be,” Arizona State University Working Paper, 2002.
- 4 W. Steve Albrecht and Robert J. Sack, *Accounting Education: Charting the Course through a Perilous Future*, American Accounting Association (AAA), Accounting Education Series, vol. 16, 2000, p.63.
- 5 David E. Stout, Donald E. Wygal, and Katharine T. Hoff, “Writing Across the Disciplines: Applications to the Accounting Classroom,” *Bulletin of the Association for Business Communication*, December 1990.
- 6 Mark J. Morgan, “A New Role for Finance: Architect of the Enterprise in the Information Age,” *Strategic Finance*, August 2001, p. 37.