

Meeting the Challenge of Rapid Change: Re-Engineering the MBA MIS Course

Dr. Robert M. Siegmann, Mercer University – Atlanta, sieg@bellsouth.net
Dr. Linda L. Brennan, Mercer University – Atlanta, brennan_ll@mercer.edu

ABSTRACT

With the increasing importance of information systems and technology to businesses, changes in the MBA curriculum are warranted. This paper describes how a course in Management Information Systems (MIS) can meet these needs, and argues for its requisite place in the MBA core curriculum. We first characterize the current "condition" of MIS course perception and reality and then develop a new framework for its re-engineering, in terms of content and structure, pedagogy, and staffing. Seven fundamental themes for the course are identified as a stable foundation for an otherwise highly dynamic course. Active learning techniques for course delivery and student assessment are suggested. Staffing the course with experienced scholars is recommended. We conclude the paper with the early results of our initial implementation.

Keywords: MBA curricula, MIS course, pedagogy, teaching MIS, adapting to change

INTRODUCTION

Businesses are not the only organizations challenged by the rapid pace of change driven by new technologies. Graduate schools of business are also struggling with meeting the needs imposed by the accelerating rate of change – and the increasing importance of technology to managers. Changes in information technology (IT) and the strategic use and reliance on IT by all types of organizations are forcing a new look at how management information systems (MIS) and IT content should be delivered to MBA students. Companies expect MBA graduates to be computer-literate change leaders who can leverage technology for strategic and operational advantage [1],[2],[3]. CEOs and CIOs are calling for a new cadre of informed managers who know significantly more about IT, so that they can harness and effectively use its strategic power to best advantage in the business [4]. Supplying managers to information age corporations, with enterprise-wide information systems affecting every part of their businesses, business schools need to respond quickly and effectively to this pressing and serious business need. This need is exacerbated by the accelerated pace of technological change [5]. Today it is not enough for managers to study the traditional business disciplines. To be effective leaders, they must also position themselves in front of the change. This implies an understanding of the direction that information technology is moving. We have been told that technology is too critical to business success to be left solely in the hands of technologists [6]. Effective information technology management skills have now become strong weapons in the arsenal of the general business manager. The business power of IT has evolved to the point that half of CEOs of large corporations consider IT impact when they develop corporate strategies [6].

The American Assembly of Collegiate Schools of Business (AACSB) publishes accreditation standards for collegiate schools of business. The Curriculum Content and Evaluation standards [10] identify the following core areas in the MBA curriculum: financial reporting, analysis and

markets; domestic and global economic environment of organizations; creation and distribution of goods and services; and human behavior in organizations. The coverage of management information systems (MIS) is conspicuously missing from the standards – although there is a requirement for students to have “basic skills in ... computer usage [which] should be achieved either by prior experience and education, or as part of the MBA curriculum.” As a result, MIS coverage is often missing from the requirements of an MBA curriculum.

Information Technology Management, one of the aliases for MIS, according to a 1998 survey of AACSB accredited MBA schools, is still misunderstood [8]. Few have been able to break through the discipline-oriented paradigm to create a strong and vital role for the study of MIS in the MBA curriculum. This “second-class citizen” status in the MBA curriculum has been attributed to many reasons:

- The content and structure of the MIS course varies widely between business schools. A benchmark or "standard" MIS course does not seem to exist [6].
- Traditional methodologies, tools, and techniques are inadequate for an MIS program [5].
- The topics covered in MBA MIS courses are not adequately preparing students to compete in the business world [10].
- There are strong indications that up to three MIS courses are actually required to prepare MBA graduates adequately for today's wired business world [8],[10].

Recent MIS course surveys make it clear a fundamental problem with today's MIS course is the lack of structure, consistent content and undisputed applicability. According to a 1998 survey about the current status of the MBA MIS course in 45 AACSB programs [8]:

- The 45 schools that responded to the survey used thirty different course names for MIS.
- Forty-three different IT topics were covered in the schools, with over half of these being taught by 10 or fewer schools.
- The topics that were covered tended to cluster around two major themes, thus suggesting the need for two different courses: (1) Foundations of IT and (2) Management of Information Technology (MIS).
- The number of different MIS textbooks in use varied considerably -- 27 different textbooks were used in the 45 business schools.
- The two most common teaching methods used in the MIS course were (1) use of CASE studies and (2) research reports.

The course lacks well-defined and consistent content and structure to undergird and increase its visibility, and give it undisputed identity and status. This is further exacerbated by popular misconceptions or “myths” about MIS in the MBA curriculum. These myths are often held by influential academicians and must be exposed for what they are -- misconceptions that are blocking the full understanding and implementation of an important field of study needed by managers today.

These misconceptions can be summarized as four myths that need to be dispelled:

- **Myth #1: The MIS course should be an optional course in the MBA curriculum.** Just as IT has quickly risen in importance and value for companies, it should also

correspondingly rise in importance and value in the MBA curriculum. No MBA graduate should be illiterate or improperly trained in the basic understanding and the practical application of IT to the management profession. *Making this a required course, however, changes the requirements for content.*

- **Myth #2: Teaching the MIS course is essentially the same as teaching any other MBA course.** The content of very few courses in the MBA curriculum change as rapidly and as dynamically as the MIS course. Moore's Law seems to apply to the MIS course, in that at least half the material changes every 18 months. Specific technologies are highly perishable. Textbook editions cannot adequately keep up with the latest changes, so extensive supplemental material is necessary. *These factors all contribute to the need to structure the MIS course differently to maintain its currency.*
- **Myth #3: Student pre-course IT knowledge is about the same for every student.** IT knowledge and understanding has unevenly seeped into the knowledge base of workers in general business jobs. Almost anyone who has worked in a company has been exposed to random bits and often-unrelated pieces of IT -- some more than others, and a few not at all. A survey of student IT backgrounds in the typical MBA MIS course shows not only wide range of IT knowledge, but also widely different and often gaping holes in the information already obtained. This bimodal and uneven student knowledge base creates a difficult requirement for the course designer and instructor. *Instructional methods must be adjusted to accommodate these different learning needs.*
- **Myth #4: Any computer science professor can teach MIS.** Lack of adequately trained instructors also makes the MIS course less effective. The best teacher for this type of course has a blend of both business and teaching experience. Academic qualifications are important, but professional qualifications in this field may be more so. A Ph.D. instructor in a theoretical field will likely have less impact on MBA students than an instructor with practical experience of systems implementation. *Staffing requirements must be reconsidered to leverage the experience base of the faculty and embrace the multi-disciplinary nature of MIS.*

The need to address the reality behind these misconceptions – and to meet the accelerating rate of change – indicates that the MBA MIS course should be re-engineered. These broad concerns were reinforced in our own classrooms. We could sense that comprehensive changes were warranted, in course content, structure, pedagogy and staffing.

THE RE-ENGINEERED MIS COURSE

Our approach is intended to provide a better way to maintain course currency, integrate theory with practice and employ more effective learning techniques. Central to this approach is the use of fundamental themes that we consider to be the basic principles of information technology management.

Content and Structure: Fundamental Themes

In order to address the challenges posed by the first two myths, we struggled to identify the course content in more conceptual and less perishable and technical terms than we had previously done. Our informal benchmarking of MBA MIS course syllabi provided little

guidance. A recent survey indicates that up to 45 different topics are scattered throughout today's course offerings, with new ones appearing daily [8].

Ultimately, we chose to build our courses around seven fundamental themes, each of which receives generally equal emphasis in our course coverage: The Strategic Role of IT; The Corporate Impact of IT; IT Building Blocks; Data, Information and Knowledge; The Internet and E-Business; Information Systems Development; and IT Infrastructure, Architecture and Management. These themes are relatively stable principles of managing information systems, and provide the foundation from which other, more timely topics can be addressed. They provide a conceptual, rather than a technical view of information technology, and are relevant for business managers.

Each theme is readily supported by popular textbooks and can be easily updated with information from periodicals, magazines and newspapers to cover the latest development in these themes. Case study libraries are rich with examples upon which to draw. Table 1 illustrates the combination of readings and specific topics that we have employed for each theme. Architecting the course around these themes helped us to rationalize course content of the MIS as a core MBA course. It also provides a stable framework by which to maintain the currency of the course. The next challenge is to address myth #3 and the usual heterogeneous IT experience of MBA students. To do this, we have incorporated a variety of active learning techniques into our class experiences.

Pedagogy: Active Learning

Active learning is an effective way to get students more involved in the content of the course. This approach is also known as student-centered teaching, where the student takes responsibility for his/her learning experience by setting educational goals, extending course content, and contributing to the class' learning process [11]. Studies have shown it to be a more effective approach than the traditional instructor-led approach. Silberman [3] and others offer a variety of techniques to incorporate active learning approaches into course design. We suggest some specific techniques that leverage the diverse experience base of our MBA students, and allow them to "internalize" their academic experience with creative discussion of IT in the classroom.

- **Synthesize and integrate material in creative ways to solve business problems.** Learning the technical details of IT software, hardware, and communications is not appropriate for MBA students. They must be able to put larger pieces together creatively and accurately to solve business problems. Thus, an effective MBA teaching method is to bypass the usual questions at the end of each chapter and to create a new set of questions designed specifically to integrate the material in meaningful ways to solve managerial IT problems.
- **Incorporate today's important IT issues into the class content.** In addition to the latest periodical, other ways exist to bring in topical IT issues from the marketplace. Some suggestions are: student presentations on their company's use of IT, field trips and case study creation. These have been very popular in our courses, particular with the Executive MBAs.

TABLE 1 Topics and Readings by Theme

THEME	TOPICS	READINGS
The Strategic Role of IT	<ul style="list-style-type: none"> Using IT for competitive advantage New role of IS IS & business strategy 	Textbook [10] chapters: Information Systems Revolution, Strategic Role of IS Case study: Cisco Current periodicals: <i>CIO</i>
The Corporate Impact of IT	<ul style="list-style-type: none"> 1st and 2nd level effects of technology Decision making with IT Social issues Global IS issues 	Textbook chapters: Information, Management & Decision Making, Int'l Information Systems Case study: Virtual Vineyards Current periodicals: <i>Forbes</i>
IT Building Blocks	<ul style="list-style-type: none"> Hardware Software Storage technologies Telecommunications Networking Wireless technology 	Textbook chapters: Hardware, Software & Data Communications, Networking Case study: Butt Grocery Current periodicals: <i>Infoworld</i>
Data, Information and Knowledge	<ul style="list-style-type: none"> Data management Information resource management Knowledge management Intellectual capital Data warehousing 	Textbook chapters: Managing Data Resources, Managing Knowledge Case study: Ernst & Young Current periodicals: <i>Computerworld</i>
The Internet and E-Business	<ul style="list-style-type: none"> The Internet Intranets Extranets E-Commerce 	Textbook chapters: The Internet, E-Commerce Case study: Air Products Current periodicals: <i>The Industry Standard</i>
Information Systems Development	<ul style="list-style-type: none"> Systems design methodologies Project management Large systems development 	Textbook chapters: Redesigning the Organization, Approaches to Systems Building Case study: VASA Current periodicals: <i>Datamation</i>
IT Infrastructure, Architecture, and Management	<ul style="list-style-type: none"> ERP Outsourcing The Strategic Grid Networked enterprises 	Textbook chapters: Managing Firm Infrastructure, Enterprise Systems Case study: Southwire Current periodicals: <i>Information Week</i>

- **Use the latest instructional techniques in creative ways to maintain student interest.** There is a wide variety of active learning and innovative techniques to keep students interested and challenged by IT material. For example panel discussions of system implementation experiences, quiz shows about key concepts, and role-playing for requirements planning vividly emphasize teaching points from assigned readings.
- **Incorporate the use of information technology into the design of the course.** The Internet is an incredibly rich source of supplemental material for an MIS class. The use of electronic

mediated communications is also instructive and highly appropriate for an MIS course. We have employed synchronous chat, asynchronous electronic bulletin boards, and electronic mail LISTSERVs to illustrate the uses and abuses of electronic communications systems. Students appreciate the hands-on experience and participation is usually quite high.

- **Highlight student IT experience.** Identify students with rich IT experience early in the course and channel their energies and knowledge to add content to the course. Some possible activities for them are: giving short reports on what they have done with IT; host a field trip to view their company's technology facilities and applications; or allow them to research a new topic for presentation to the class.
- **Provide outside class help to struggling students.** Some students in the class will probably have no IT experience at all. Additional discussion groups can be set up to allow these students to gain more confidence and understanding via small group discussions with the professor.
- **Encourage the students to pursue life-long learning in MIS.** The old adage is, "If you give a man a fish, he eats for a day; if you teach a man to fish, he eats for life." This applies to the study of MIS as well. We encourage research skills by assigning research briefs, for which a student has to investigate a current issue in MIS, find and read several articles pertaining to the issue, and write a position paper based on his/her research. Another assignment we have used entailed assigning books in the popular business press, related to IT management, to groups of students. They were encouraged to use creative approaches to present book reviews to the class.
- **Develop and use an appropriate on-going course assessment instrument for continuous improvement.** No course pedagogy is complete without an effective assessment tool. One should be designed to measure at least each of the key learning objectives. For example, as part of the course assessment instrument, there should be at least one measurement for each of the above bulleted items.

The main idea is to use a constructivist approach to the course design, building on what the students already know, and encouraging their active involvement in the collective learning experience of the class.

Staffing: Experienced Scholars

An important feature of the re-engineered MIS course is a careful selection of appropriate instructors. This addresses the last myth related to the staffing of the MIS course. It is not enough for an instructor to know the content of the IT discipline. He/she must also be experienced with IT in its business application. Years of corporate IT experience are needed to have credibility with the students. Also a strong background in teaching techniques and methods is essential.

There are ways to augment practical business knowledge for an instructor with a less than optimal background. One useful approach is to use several guest speakers who have current IT experience. Another is to allow the more knowledgeable students to present their IT experiences to the class. Field trips and recent videos on current IT applications can also help to add a "real world" flavor to the class content.

CONCLUSIONS

To summarize: businesses are sending clear signals to the business schools asking for more effective MIS content. No longer can the MIS course be optional or overlooked; the status quo must change. One positive step is to elevate the MIS course content to a solid place in the “core” MBA curriculum. Ideally, the AACSB standards will reinforce this business-driven requirement. Even without that level of support, we have been successful in establishing the MIS course as a required course in the MBA curriculum. It was critical to convince our faculty of the importance of the course concepts in specific and business-driven terms.

Further, the MIS academic community must agree on a consistent body of knowledge. This work proposes a flexible and re-engineered approach, organized around fundamental themes, to provide current content essential to today’s managers. Our initial experiences with this approach have been generally positive. Feedback from students, particularly the experienced managers, has lauded the relevance of the course content. Class participation levels have increased. We continue to work on assessing learning outcomes, integrating technology into the course delivery system, and supplementing course work for inexperienced students.

REFERENCES

- [1] Ford, J. D. (1994). Management education: Shifting our assumptions. Journal of Management Education, 18(2), 212-226.
- [2] Mowday, R. (1996). Reaffirming our scholarly values: 1996 presidential address. Academy of Management Review, 22(2), 335-345.
- [3] Tanyel, F., Mitchell, M., and McAlum, H. (1999). The skill set for success of new business school graduates: Do prospective employers and university faculty agree? Journal of Education for Business, 75(1), 33-37.
- [4] Gates, W., and Peterson, C. (1999). Business at the speed of thought.
- [5] Holmes, M., and Hayen, R. (2001). Putting muscle into the “M” in an MIS program. Retrieved from the World Wide Web March 10, 2001, <http://hsb.baylor.edu/ramsower/ais.ac.97/papers/holmes.htm/>.
- [6] Scheier, R. (1997). Survey: Half of CEOs include IT in strategy. Computerworld, 31(12), 86.
- [7] AACSB. (1994). Achieving quality and continuous improvement through self-evaluation and peer review. Standards for Accreditation Business Administration and Accounting.
- [8] Stephens, C. (1998). Information technology management for rising executives: MBA curriculums at AACSB accredited schools. Proceedings of the International Academy for Information Management, 1998.
- [9] Adekoya, A. (1994). Empirical evidence for a descriptive model of an upper level MIS course. Journal of Computer Information Systems, 35(2), 69-71.
- [10] Vijayaraman, B., Ramakrishna, H., and Quarstein, V. (1994). MIS faculty's perceptions on the structure and content of IT courses in MBA programs. Journal of Computer Information Systems, 34, 3, 72-78.
- [11] Warren, R. (1996). Carpe Diem, University Press of America.
- [12] Silberman, M. (1996). Active Learning: 101 Strategies to Teach Any Subject. Boston, MA: Allyn and Bacon.
- [13] Laudon, K. and Laudon, J. (2000). Management Information Systems, 6th Ed., Prentice Hall.