Association for Information Systems
AIS Electronic Library (AISeL)

AMCIS 1997 Proceedings

Americas Conference on Information Systems (AMCIS)

8-15-1997

Putting Muscle Into The "M" In An MIS Program

Monica C. Holmes
Central Michigan University, monica.c.holmes@cmich.edu

Roger L. Hayen
Central Michigan University, roger.l.hayen@cmich.edu

Putting Muscle Into The "M" In An MIS Program

Monica C. Holmes and **Roger L. Hayen**
monica.c.holmes@cmich.edu and roger.l.hayen@cmich.edu
Central Michigan University
Mount Pleasant, MI 48859

Abstract
Rapid technological changes put pressure on MIS programs in the nation to modify their course offerings. Limited budgets and increased demands on faculty mean that these faculty have to be highly innovative in obtaining resources to support their programs. The authors provide insight into how such limitations can be overcome. They also recommend that teaching theoretical concepts and methodologies should take precedence over merely training students on specific software tools. Flexibility in MIS programs must ensure that MIS graduates join the marketplace with relevant skills-both technical and soft.

Introduction

The continued, and in some areas, accelerated pace of technological change has put a tremendous pressure on universities that offer degrees in Management Information Systems (MIS). Coupled this factor with limited resources to obtain computer hardware and software, as well as the pressure on faculty to produce more in terms of classroom and research productivity, life as an MIS faculty member has been anything but boring. This paper provides some insight as to how a midsize regional school has continued to provide its students with a marketable degree in the face of limited budgets.

There have been many articles, both in academic and business journals, of the need for MIS programs to keep up with the current trends in technological changes. The general consensus is that the traditional methodologies, tools, and techniques are inadequate in the face of client/server application development, the maturing of the object-oriented approach, the pressure to deliver information systems faster and better, and the increasing computer literacy of end users as well as electronic commerce. This state of affairs is recognized by IS academics in their attempts to revise IS curricula as demonstrated by the IS'95 Model Curriculum and Guidelines for Undergraduate Degree Programs in Information Systems.

However, the most difficult decision for such programs has been the direction which they should take, and which tools should be taught under the umbrella of systems concepts and methodologies. Practitioner publications such as Computerworld and Information Week regularly trumpet the "hottest" skills required in the MIS market-Smalltalk, C++, Visual Basic, PowerBuilder, Windows NT, Lotus Notes, Novell, networking, and SQL server database administration (Computerworld 1997; McGee 1996; Lyons 1996). This emphasis on "hot" skills tends to be software tool oriented, rather than having an MIS conceptual foundation. Furthermore, MIS programs housed in business schools are constrained by the requirements of AACSB, the accreditating agency that oversees the

quality of business degrees. These requirements limit the number of MIS courses that can be included in a business degree-to add a new course, frequently, an old one must go. Yet employers find that current MIS graduates are less well-rounded with regard to the mix of technical, business, industry, and soft skills (Maglitta 1996).

At the practitioner levels, MIS professionals are advised to become certified in various software or specialized skills. For example, certification programs are supported by Novell (Novell 1997) and Microsoft (Microsoft 1997). MIS professionals can strength their technical skills by attaining a Certified Novell Administration (CNA), a Certified Novell Engineer (CNE), and a Microsoft Certified Systems Engineer (MSCE) as well as certification in Lotus Notes and PowerBuilder. Higher-level certification for MIS professionals may be obtained from two independent organizations, the Institute for Certification of Computing Professionals (ICCP) and the Network Professional Association (NPA). Both ICCP and NPA offer certification designations that serve similar roles for the information technology profession as the CPA designation does for the financial accounting profession (Salisbury 1997).

Measures Implemented

At the school considered in this investigation, a major accomplishment for the faculty was the establishment of an MIS Advisory Board. Although the MIS faculty regularly meet with corporate recruiters to discuss their needs for MIS skills, there was no formal avenue for such dialogues. One reason given for this lack of formal communication with businesses was that the university is located in a relatively remote region. Despite geographical limitations, during the Spring of 1996, the faculty commenced to contact representatives from different organizations to be involved in the curriculum revision of their MIS program. The first MIS Advisory Board meeting was held in the Fall 1996 and was very successful in bringing forth ideas for incorporating changes in the MIS curriculum. The corporate members were in agreement with the view that, at the university-level, the teaching of concepts should take precedence over tools. Structured programming, systems analysis and design, group dynamics, certain software tools, and communications are some of the topics that are necessary to make an MIS graduate a well-rounded individual. Corporate members were also enthusiastic about the opportunity to participate in this venture. The participation has expanded beyond the face-to-face meeting venue and includes individual campus visits and meetings with faculty together with continuing electronic communications. Currently, the Board is still expanding as more corporate members are added.

The department that houses the MIS degree is multidisciplinary and consists of both MIS and business education faculty. The business education faculty, were responsible for working with the Michigan Board of Education on the establishment of the Novell Education Academic Partnership (NEAP) at this university. This program allows qualified university faculty and staff to teach high-school teachers the Certified Novell Administration (CNA) course. Under the school-to-work programs, these teachers provide high-school students with the opportunity to find lucrative jobs upon graduation. This is an excellent example of how MIS departments can work with their local high

schools or state educational agencies in their needs to update the computing skills of the high-school teachers. Involvement in this program allows the MIS faculty at this university to expose their students to available opportunities that would add value to their degrees. However, there are costs associated with this project. The technical staff had to be sent for costly training at Novell Authorized Education Centers (NAEC). They also had to fly to Provo, Utah to take their Certified Novell Instructor (CNI) examination. This last certification is required if the university wants to advertise itself as a legitimate NEAP center. Faculty members had to undergo the same training and certification if academic credits are to be given to their students. The MIS faculty are considering the option of educating their students about the Microsoft Training & Certification program.

The university has a long history of association with the Dow group of companies. Consequently, when the university decided to adopt the SAP R/3 human resource module as the software to manage its employee information system, the opportunity existed to establish a business-oriented teaching approach with SAP R/3. Currently, a seminar course is being taught with the participation of representatives from SAP, Dow Chemical, and Dow Corning. Future offerings of this and related courses are being discussed by the business faculty. Plans are continuing to include these corporate resources.

Most important of all, the necessity to keep up with technology is recognized by the university's administration. Hence, beginning with the Fall 1997 semester, students have to each pay a $100 technology fee per semester. This fee is used to provide funds for upgrading the computers in the labs and staffing purposes as well as paying for software licenses. In the College of Business Administration (CBA), the labs are furnished with Pentium 133 mhz machines with the standard CD-ROM drives and 1 gig of hard disk space. The university administration also provided $100,000 in 1996 and $200,000 in 1997 as education technology improvement funds for which faculty can apply. These funds pay for the development of improved instructional design with technology. In 1996, CBA faculty received monies to develop multimedia packages that are used to enhance the delivery of their courses in the accounting and management information systems areas. Items funded range from computer equipment, software, and staff support for such development projects.

A Major Drawback Resulting from Technological Advances

A critical observation by the MIS faculty is that the turbulent environment of the technology has caused many employers, students, and faculty to focus more on the software tools than on the methodologies and concepts underlying these tools. The authors emphasize that in today's businesses, methodologies and concepts are even more important. For example, in spreadsheet software, Visicalc was replaced by Lotus 1-2-3 which is now being supplanted by Microsoft Excel. The fundamental concepts of using an electronic spreadsheet have changed little since their introduction with the personal computer. This demonstrates that good tools without the appropriate marketing support often disappear from the vendor scene. What is therefore especially important for MIS programs is the ability to offer courses that teach theoretical concepts, whether "old or new," and provide different software tools that highlight the implementation of these

concepts. While students are frequently observed referring to their MIS course by the software tool that is used for the project portion of the course, faculty must continue to focus on the conceptual foundation. Then the "hot" software tool of the day is selected to support that conceptual foundation. For example, a networking and telecommunications course could include working with a Novell network and providing content that is useful for attaining a Novell certification. Courses with titles such as Certified Novell Administration should be avoided in a degree program. Unfortunately, this is often like walking a tight rope, but is the necessary approach for undergraduate degree program. Other examples of this blending of concepts with "hot" topics include client/server application development that is taught with PowerBuilder or business process re-engineering that applies SAP R/3 Release 4.0 as its software. A continuing dilemma is finding a good combination of textbooks that support the conceptual foundation while providing a practical implementation experience with current software.

Implications for MIS Curricula

A number of implications can be drawn from this discussion. Working in collaboration with the MIS Advisory Board reassures the MIS faculty that universities should provide an education in information systems although current software is necessary for experiential learning. Because of the rapid changes in technologies, the need for an MIS program to stay current is more urgent. Companies are demanding more in terms of technical and soft skills. Consequently, the teaching of concepts is therefore as important as teaching specific software. However, MIS faculty should use course titles that emphasize the concepts first and, if included, the software second. The emphasis of the students' ability to transfer semantic knowledge is paramount. MIS graduates should not only possess the ability to continuously update their skills but also the willingness to embrace change. They have to be creative and be able to envision ways that technology can be applied to support organizational strategic goals. Both the university and the MIS faculty have to be highly innovative in their efforts to obtain the funds necessary to provide the level of technology support necessary to produce graduates for the next millennium. MIS faculty also have to be creative in their use of available technologies.

References

Computerworld Survey, 1997.

IS'95, Model Curriculum and Guidelines for Undergraduate Degree Programs in Information Systems, draft report May 17, 1995.

Lyons, Daniel. "Summer Sizzlers." Computerworld, 1996.

Maglitta, Joseph. "IS Schools: Need Improvement." Computerworld, February 19, 1996, pp. 79-83.

Microsoft Education and Certification Roadmap, Microsoft Corporation, One Microsoft Way, Redmond, WA 98052-6399.

McGee, Marianne Kolbasuk. "Hot Skills in '96". CMP Media, Inc. Jan. 1, 1996.

Novell Education Course Catalog, Novell, Inc. 122 East 1700 South, Provo,Utah, 84601-6194.

Salisbury, Alan. "The changing role of IS Certification." Computerworld, January 13, 1996.