

**A SUCCESSFUL CURRICULUM STRATEGY TO
INCREASE MIS ENROLLMENT**

Type of Submission: Refereed Research Paper

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Abstract

It is commonly known that MIS enrollments have been steadily declining since the dot.com bust of 2001-2003. Enrollment in MIS programs today is about 25 percent of what it was in 2001 (Regan, 2008). While many MIS educators feel the reasons for the decline are out of their control and nothing can be done to prevent it, other MIS educators are implementing strategies to increase their MIS enrollment. The challenges faced by MIS educators are daunting: university administrators pressuring us to increase MIS enrollment or be combined with other departments or phased out altogether, increased budget cuts, inability to hire new MIS faculty because of a hiring freeze, and employers wanting our students to have more technical skills and business knowledge. The purpose of this paper is to examine the strategies other universities are using to increase their MIS enrollment and describe what the authors of this paper are doing to increase the MIS enrollment at their university, with positive results.

Introduction

Most MIS faculty realize that MIS enrollments have been declining since the recession of 2001 – 2003, which hit the technology industry especially hard. Regan’s research (2008) reveals that today, MIS enrollments are only 25 percent of what they had been in 2001, an alarming statistic. Because enrollment remains a critical issue in most MIS departments, MIS faculty must be

creative and innovative to stop the decline. The IS community has been sharing strategies for increasing enrollment (Koch and Kayworth, 2009; Snyder and Slausen et al. 2009, Granger et al., 2007; Becker et al., 2006) for the last several years. Most of these strategies deal with improving recruiting methods or redesigning the curriculum.

When MIS enrollments started declining in 2001, MIS departments faced significant challenges including faculty layoffs, restricted hiring, and budget cuts. Some MIS programs were completely shut down because of low enrollment. When a business is faced with declining market share because customers are not buying their products, smart business executives take corrective action by changing their strategy, hoping to employ one that is more effective, thereby promoting products that customers want to buy. The same analogy also applies to faculty who not only want to save their MIS program, but want to see it thrive. Before any attempt is made to implement a new curriculum strategy, however, it is important to find out what has caused this decline in MIS enrollment and analyze what other universities are doing to confront this problem of declining enrollment.

Reasons for the MIS Enrollment Decline

There are many reasons given in the literature for this decline in enrollment, one of which is that many students think that all IT jobs have been outsourced (Frankel, 2008; George, et. al. 2005; Van Slyke, et. al., 2007), leaving few if any IT jobs available in the United States. This couldn't be further from the truth. The irony is that joblessness among American IT workers averaged 2.1% in 2007, down from 2.5% in 2006, which many economists consider full employment (Regan, 2008). The low unemployment rate of 2.1% has bolstered the argument of many Chief

Information Officers that it's hard for them to find qualified IT professionals (Chambrow, 2008). According to the Department of Labor, high-level jobs that combine business and technical skills are still abundant in the US. The Bureau of Labor Statistics (Computer Systems Design and Related Services, 2008) projects that the number of jobs in the industry sector computer systems design and related services, which includes jobs such as information systems managers, programmers, systems analysts, database administrators, and network administrators, will increase by 54.6% from 2002 to 2012. In fact, the bureau predicts that eight of the 11 fastest-growing occupations through 2012 that require a bachelor's degree will be in computer-related fields. Much research indicates that IT/IS is a dynamic field and that entry-level jobs are back in demand (Shaw et al., 2006) and that the total number of IT positions has increased almost 50% since 2002 (Prabhakar et al., 2005).

According to Gordon (2005), the IT workforce shortage is a legitimate worry. Millions of Americans don't have the right skill sets for the jobs that need to be filled: highly skilled positions that require specialized technology training and education. Unfortunately, many students are earning college degrees that are not translating into decent employment. So the paradox is that students don't think there are many IT jobs available while businesses are finding it extremely difficult to find qualified employees with technical skills and business knowledge; the demand far outstrips the supply of qualified applicants (Frankel, 2008; Locher, 2007).

Many students don't choose MIS as a major due to perceptions about the work, opportunity, and educational curriculum (Colvin, 2007; Walstrom et al., 2008). Other research states that when students were surveyed as to why they didn't choose IS as a major, the main

reasons given were: there were no jobs in the field, my parents told me not to major in that field, and it is too hard and technical (Granger, et al., 2007). Another possible cause was that, MIS, along with other majors such as accounting and engineering, go through cyclical declines every few years (Dick, et al., 2007). Another possible reason for the decline is that students don't have a clear understanding of what MIS really is when they enter college as freshmen, so they make their own assumptions about the field. They assume that a career in MIS involves only programming and technical work, which is not an accurate perception (Frost and Pels, 2010). MIS job descriptions typically require candidates to be able to collaborate, communicate, analyze needs and gather requirements. They also list the need for excellent written and communication skills (Kaiser et al., 2008). According to Saunders and Lockridge (2011) one of the most tenable reasons for the enrollment decline is a perception gap between what IT professors believe is important and what potential employers see as important skills for new hires.

If this declining enrollment trend continues, it will have a major impact on academic institutions and business organizations that depend on these graduates to fill these very specialized positions. So what can universities do to reverse this trend?

Curriculum Innovations to Address the Declining MIS Enrollment Problem

IS departments cannot continue to accept the status quo of declining enrollments. They will continue to lose students to other majors if they continue with a 'business as usual' attitude. A review of the literature reveals that several innovative curriculum strategies are being used to try to reverse the trend of declining IT/IS enrollment and thus, be able to provide employers with qualified applicants to work in computer-related positions.

Most universities have either focused on improved recruiting methods or have redesigned the curriculum. There have been several suggestions offered for improving the recruiting techniques. Some schools have focused on educating the high school counselors, parents, and students about the field of MIS and explaining how MIS differs from Computer Science, hoping to inform potential freshman that there is a tremendous difference between MIS and CS programs (Downey and McGaughey et al., 2011).

Other universities realize that the activities that may have the most immediate impact on enrollments in IS courses is to work with academic advisors to help them better understand the benefits of an IS education. There are a number of “myths” surrounding IS careers, including there being few jobs, that the jobs lack creativity and human involvement, and low salaries for IS jobs, among others. Unfortunately, it is possible that academic advisors hold many of these erroneous beliefs about the IS profession. Helping correct these perceptions has the potential to quickly add to the number of students majoring in IS. Another way to work with advisors is to show the value of adding an IS minor, certificate, or the like to other majors. For example, a joint accounting and IS degree is currently in very high demand. Computer science majors may benefit from adding business-oriented IS courses to their programs of study. Even marketing majors can gain from increased IS knowledge, given the growing interest in electronic commerce and data based marketing (Van Slyke and Case et al., 2007).

Using the introductory MIS course to recruit students to the major is another technique that several universities are using (George et al., 2005; Looney and Akbulut, 2007; Firth et al.,

2008). One university redesigned the Introductory MIS course to make it a more positive experience for the students by focusing more on the systems analysis and design aspect of the MIS major while also improving recruiting efforts. As a result, their enrollment increased over 400% in seven years (Frost and Pels, 2010).

Other approaches include offering multiple specialty tracks, offering certificate programs, reducing the number of prerequisite courses, and keeping the required number of courses reasonable (Becker et al., 2006). Other schools have tried to advertise their MIS programs on social networking sites such as Facebook or offered seminars titled 'Myth Busters' and invited MIS alumni in to address the myths that many current students have of the field (Parker, 2006). Some have started experimenting with integrating enterprise resource planning (ERP) software into their curriculum to increase the marketability of students (Willems and Bhuiyan, 2006).

One of the best ways of attracting new MIS majors would be if IT/IS jobs were available in the area where the graduates live. But the best way to attract employers and jobs is to provide a curriculum that meets the demands of businesses in the area. The field of IS has changed over the years, especially since the emergence of the browser and the Internet where now most, if not all businesses, rely on it for conducting business transactions. So maybe the IS curriculum should change, too. However, it is the opinion of many MIS professors that before any changes to the curriculum are made, it should be determined what knowledge and skills the students should actually have. While technical proficiency is still important, CIOs are desperately seeking employees with project management expertise, enterprise and industry, and the business skills necessary for customer-facing roles (Overby, 2006). Bullen, et al. (2007)

study also indicated the need to match the curriculum to market needs. The next section discusses what Lamar University, Beaumont, Texas has done to increase the number of MIS majors, along with improving its MIS curriculum.

Lamar University's Strategy to Improve MIS enrollment

The Department of Information Systems & Analysis at Lamar University, a regional university in Southeast Texas, USA, took several well thought-out steps in 2008 for the purpose of increasing enrollment in its MIS program and to provide more skilled graduates to regional employers. This strategy involved adding value to the MIS program by:

- Improving MIS Curriculum on a Continuous Basis
- Marketing MIS to Prospective Students
- Creating Job Opportunities for MIS Students
- Increasing Faculty-Student Engagement
- Retraining Faculty

Improving MIS Curriculum on a Continuous Basis

The discipline of MIS is dynamic, the knowledge base changes every day. Many times what we learn in school becomes obsolete by the time we get out of school. Keeping this in mind IS colleagues throughout the world have formed a Curriculum committee which came up with a model curriculum for MIS and revise the curriculum on a two year basis. We mostly followed the IS curriculum developed and updated by the joint ACM/AIS Curriculum task force.

We strive to make the first two MIS core courses, which are taken by all Business majors, interesting to students. We bring in guest speakers to inform students about how MIS can be applied in real life; we let students work on hands-on projects which will expose them to the

power of technology in business. We update the course materials on a timely basis and make them attractive to students.

It became evident from a survey of local companies that all respondents wanted recent Business graduates, with any major, to have as a minimum, familiarity with ERP structure and basic working knowledge of ERP, with a larger percentage wanting moderate working knowledge or higher, of ERP. The local companies also indicated that they were having a difficult time finding new employees skilled in using ERP systems. As a result of the declining enrollment in our MIS program, along with employer demand of people knowledgeable with ERP systems, we knew curriculum changes had to be made.

The Department of Information Systems and Analysis, for the sole purpose of providing our students knowledge of the world's number one ERP program, integrated SAP R/3 in the MIS curriculum. We offer the following SAP-enabled MIS courses to be taken by all MIS majors (Business majors take the first two courses as Business core and the rest can be taken as electives):

- Introduction to Business Technology with the SAP R/3 Sales and Distribution Module
- Principles of MIS with the SAP R/3 Materials and Management module
- ERP-Ecommerce with SAP Netweaver Enterprise Portals and Visual Composer
- Business Intelligence with SAP BW module
- ERP Overview with ERPSIM

To make the students marketable, we offer TERP10 SAP training once every year. We also offer a graduate certificate on ERP and an ERP concentration in the MBA program

consisting of four online graduate courses: ERP Overview, Business Intelligence, ERP Ecommerce, and Supply Chain Management. The graduate ERP courses have been designed with much care; they are technology intensive and SAP-enabled. We use desktop capturing software such as Echo 360, Camtasia to demonstrate software; we use Adobe Connect-Pro to video-tape lectures; and we use Sorenson 360 and YouTube to deliver our lectures.

Marketing MIS to Prospective Students

Increase Visibility of Management Information Systems

The following steps have been taken toward MIS exposure:

1. Exploring MIS & SAP seminar offered every semester
2. Area high schools are visited during Career days and College nights and the students are presented with the prospect of MIS as a major area of study
3. MIS webpage is updated with current information
4. PowerPoint Slides were prepared and updated in the MIS webpage for marketing MIS and SAP
5. Videos on exploring MIS and SAP posted on our Department webpage
6. New student orientations are attended in the COB and the prospect of MIS as a major is presented to incoming students
7. Open houses are attended and MIS is presented as a major area of study
8. Letters are sent to prospective students inviting them to consider MIS as a major/minor area of study

9. A Lamar-MIS group has been created in the social networking site Facebook for fostering a relationship with former and current MIS students
10. A Lamar-MIS LinkedIn group has been created to stay in touch and post job opportunities for MIS students.
11. Collaboration with Industrial Engineering to bring in their students for the ERP courses
12. Working with Small Business Development Center to bring in student projects
13. Encouraging students to do a double major or minor in MIS
14. Chartering an AIS student chapter to attract students

Creating Job Opportunities for MIS Students

By working closely with the career center and through social networking with our former students, we bring in many internships and job opportunities for our students. We also help our students to prepare a resume which is structured, informative, organized, precise, and interesting. Some of our recent graduates are employed in companies such as Eloyalty, GlobalShop Solutions, Protiviti, Inc, Proactive Communications, Invista, Dupont, Information Handling Services, Velocity Futures, Turner industries, Vconstruct.com, Motiva Enterprises, Chevron Services, BISSD, BASF, etc.

Also, by networking with the Central IT and Distance Education Departments at our University, we provide part time MIS-related job opportunities to students while they are working at their MIS degrees. This part time IT-related experiences increase the marketability of our students to a great extent. We also created an industry-relations subcommittee within the ISAD to foster relationships with area businesses which in turn can help us to bring in live projects and internships for students

Increase Faculty-Student Engagement

Department of Information Systems chartered an Association of Information Systems student chapter from Fall 2011. By chartering an AIS student chapter, we hope to increase the visibility of your IS department both on and off campus, access shared resources to fast track our student organization, increase student engagement and enhance IS course enrollment, and network with other faculty advisors. AIS student chapter members will benefit by gaining a competitive advantage to succeed within the IS field and by gaining world-wide recognition through competition and award programs. Students will also benefit by networking with students from around the world, and will have a chance to expand their career opportunities.

Retraining faculty

We have encouraged faculty to attend trainings on Oracle, SAP, Tableau, and other faculty development workshops to enhance their technology-related knowledge to keep up with the changes in the technology platform.

Outcome

The enrollment of MIS majors at Lamar University is shown below. The enrollment recovery strategies were implemented from Fall 2008. It shows immediate impact on our enrollment which has been increasing steadily from 2009 onwards. In the three years since implementing the strategies, our increase in enrollment is 53%, which is encouraging.

Enrollment Numbers of MIS Majors at Lamar University												
Lamar Univ.	Fall 2000	Fall 2001	Fall 2002	Fall 2003	Fall 2004	Fall 2005	Fall 2006	Fall 2007	Fall 2008	Fall 2009	Fall 2010	Fall 2011
MIS Majors	204	221	192	148	111	80	82	69	62	70	82	95

In 2009, we introduced the ERP concentration in the MBA program. At present, we have 70 students in the ERP concentration. The number of students in our MBA program is 140. The graduate student credit hours in ISA have increased from 426 in 2009 to 597 in 2010 which is a 40% increase in student credit hours.

Conclusion

Our first priority was our Curriculum Development. We believed that if we can offer a program which is current and valuable, all other problems would go away; we would have an increase in enrollment, we would attract better students, we would have companies interested in our students, we would be able to recruit excellent faculty, etc

We are happy to report that program development has helped ISA increase enrollment. We have updated the contents of upper division MIS courses. We teach a variety of software such as Oracle, Tableau, Visible Analyst, Visual Basic, SAP, etc in the context of business environment. This has increased the marketability of our students.

With successful Curriculum Development along with strategies to increase the visibility of the department, to help students to find jobs, to increase faculty-student engagement, we have

seen a substantial increase in enrollment (53%) in ISA. Also, our ERP concentration in the MBA program is successful with a 40% increase in student credit hours from 2009-2010.

References

- Becker, J., Hassan, N. et al. (2006) "Combating the Enrollment Downturn in IS/IT programs." *Proceedings of the Twelfth Americas Conference on Information Systems*, Acapulco, Mexico.
- Bullen, C., Abraham, T., et al. (2007) "IT Workforce Trends: Implications for Curriculum and Hiring." *Communications of the Association for Information Systems*, Vol. 20, No. 34, pp.545–554.
- Chambrow, E. (2008) "Damn the Economy! IT Employment Rises to New Heights." *CIO Insight*. Available at: http://www.cioinsight.com/print_article/210,1217,1=223035.00.asp
- Colvin, G. (2007) "Turning Our Backs on Tech." *Fortune*, July 16, 2007.
- Computer Systems Design and Related Services (2008) *Career Guide to Industries*. US Department of Labor, available at <http://www.bls.gov/oco/cg/cgs033.htm>
- Dick, G., Granger, M., et al. (2007) "Where Have All the Students Gone?: Strategies for Tackling Falling Enrollments." *Proceedings of the 13th Americas Conference on Information Systems*, August, Keystone, CO, USA.
- Downey, J., McGaughey, R., et al. (2011) "Attitudes and Influences Toward Choosing a Business Major: The Case of Information Systems." *Journal of Information Technology Education*, Vol. 10, pp. 231 – 250.
- Firth, D., Lawrence, C., et al. (2008) "Addressing the IS Enrollment Crisis: A 12-Step Program to Bring About Change in the Introductory IS Course." *The Communications of the Association for Information Systems*, Vol. 23, No. 2, pp. 17-36.
- Frankel, D. (2008) "Danger: MIS Schools in Decline." *MDA Journal, Business Process Trends* column, Sept. 2008, www.bptrends.com
- Frost, R. and Pels, S. (2010) "Increasing MIS Enrollments in the Introductory Course: Teaching Students to Define MIS By Doing It." *Issues in Information Systems*, Vol XI, No. 2, pp. 48 – 53.
- George, J., Valacich, J. and Valor, J. (2005) "Does Information Systems Still

- Matter? Lessons for a Maturing Discipline.” *Communications of the Association for Information Systems*, Vol. 16, No. 1, pp.219–232.
- Gordon, E. (2005) “The 2010 Meltdown: Solving the Impending Job Crisis.” Westport, CT. Greenwood Publishing Group.
- Granger, M., Dick, G., et al. (2007) “Information Systems Enrollments: Challenges and Strategies.” *Journal of Information Systems Education*, Vol. 18, No. 3, pp. 303–315.
- Granger, M. et al. (2007) “Panel: Declining IS Enrollments: Issues and Strategies.” *Proceedings of the 13th Americas Conference on Information Systems*, August, Keystone, CO, USA.
- Kaiser, K., Nunamaker, J., et al. (2008) “Revising Undergraduate IS Model Curriculum: New Outcome Expectations.” *Communications of the Association of Computer Information Systems*, pp. 591-602.
- Koch, H. and Kayworth, T. (2009) “Partnering with the Majors: A Process Approach to Increasing IS Enrollment.” *Journal of Information Systems Education*, Vol. 20 (4).
- Locher, M. (2007) “IT Education: Where Have All the Young Geeks Gone.” *CIO*, Volume 20, No. 15, pp. 49-53.
- Looney, A.C. and Akbulut, A.Y. (2007) “Combating the IS Enrollment Crisis: the Role of Effective Teachers in Introductory IS Courses.” *Communications of the AIS*, Vol. 19, No. 1, pp.781–805.
- Overby, S. (2006) “How to Hook the Talent You Need.” *CIO*, Vol. 19, No. 22, pp.40–54.
- Parker, P. (2006) “MIS Major Enrollment Continues to Decline.” available at <http://media.www.redandblack.com/media/storage/paper871/news/2006>
- Prabhakar, B., Litecky, C., et al. (2005) “IT Skills in a Tough Job Market.” *Communications of the ACM*, Vol. 48, No. 10, pp. 91–94.
- Regan, E. (2008) “Information Technology: Decreasing Enrollments, Increasing High Salary Jobs.” *Proceedings of AIS SIG OSRA*, February 28-29, 2008, available at <http://www.osra.org/2008/regan2.pdf>.
- Saunders, G. and Lockridge, T. (2011) “Declining MIS Enrollment: The Death of The MIS Degree?” *Contemporary Issues in Education Research*, Vol. 4, No. 1, pp. 15 – 26.
- Shaw, V., Martin, R., et al. (2006) “Undergraduate Information Systems

Programs: Time for a Change.” available at
<http://www.westga.edu/~bquest/2006/undergraduate06.pdf>

Snyder, J. and Slauson, G. (2009) “An Action Plan to Increase IS Enrollment Based on Recent Survey Evidence.” *IS Education Journal* Vol 7, No. 65, available at <http://isedj.org/7/65>

Van Slyke, C., Case, T., et al. (2007) “Increasing Information Systems Enrollments: Long-Term – Short-Term Approaches.” *Proceedings of the International Academy for Information Management*, available at <http://www.sig-ed.org/ICIER2007/index.html>

Walstrom, K., Schambach, T., et al. (2008) “Why Are Students Not Majoring in Information Systems?” *Journal of Information Systems Education*, Vol. 19, No. 1, pp. 43-53.

Willems, R. and Bhuiyan, S. (2006) “Implementing ERP software into business school curriculum: it is more common, less difficult and more important than you may think.” *Issues in Information Systems*, Vol. 7, No. 1, pp. 278–283.