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In this issue:

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Emphasizing Business Analysis to Increase IS Enrollments

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Abstract

The paper describes a proposal to increase enrollments in undergraduate Information Systems programs in Business Schools. In the face of Y2K overhang, the dot com bubble, and the popular press describing the off-shoring of Information Technology, this paper describes a proposal to stimulate interest in Information Systems as an undergraduate field of study. The proposal revolves around emphasizing "Business Analysis."

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1. INTRODUCTION

Many undergraduate programs have seen a serious drop in the number of majors in Computer Science (CS) and Information Systems (IS) for the past several years. While the Taulbee survey (Computing Research Association, 2008) has shown such enrollment trends specifically for CS, they are thought to be similar for IS as well. For example, Snyder et al. (2008) compiled several graphs that show waxing and waning of interest in the computing fields over the past 10-30 years. During other presentations and panel discussions held during the ISECON 2008 conference, several presenters cited declining enrollments in IS at their universities during the past several years. Loyola University Chicago's School of Business Administration is no exception: In the year 2000, IS majors represented 16.4% of the total business school enrollment, but in the fall of 2008 were down to only 1.5% to 2%, which is comparable to the average of 2.29% as reported by Battig (2008).

In order to increase IS enrollments, particularly of majors; we propose an undergraduate curriculum focused on Business Analysis. This paper describes our proposal, its rationale, and the impact on curriculum.

2. CHALLENGES IN IS ENROLLMENTS

The past decade has seen several challenges to the IS profession: Y2K overhang, implosion of the dot.com bubble, and continued press reports about offshoring of I.T. See, e.g., Van Lengen (2003), Snyder et al. (2008), Weber (2004).

In the run up to the year 2000, the IS area was booming. One joke was that "if you can spell C++, you have a job." Many systems were updated to avoid the Y2K bug and many other systems were replaced, often by ERP systems. Because of the shortage of skilled IS labor, e.g., programmers, some foreign countries, e.g., India, had started to attract IS work. After the hard deadline of December 31, 1999, however, most of that work ended, and many IS jobs simply disappeared or transitioned to "dot com" work. VanLengen (2003)

With the advent of the web underway for about five years or so, and with the Y2K fix behind them, many companies started to focus on the potential of eCommerce, inspired by the success of prominent dot com companies, such as Netscape and Amazon. Feverish activities and investments grew a "dot com bubble," sparking the phrase "irrational exuberance." IS jobs were plentiful again. However, all bubbles come to an end; the dot com bubble turned into a dot com "bomb." Meanwhile, some jobs, e.g., in call centers, moved offshore. See VanLengen (2003)

The popular press (general press as well as business press) continues to report about off-shoring of I.T., e.g., to India. While some IT-related jobs have been off-shored, e.g. programmers or call center positions, others have not, e.g. project managers or business analysts. Jobs that are going offshore are of the more "technical" nature. In other words, the perception that particular IT jobs are being offshored is correct. However, that perception is not correct for other IS jobs, although "perception is reality." See Zwieg et. Al. (2006)

Such developments (all occurring within one decade…) may have made students and parents weary of prospects for jobs associated with IT, possibly contributing to declining IS enrollments. Indeed, Olson (2007) found parents and students questioning the career potential in IS. Walstrom et al. (2008) surveyed business freshmen and found that the top two reasons for lack of interesting in the IS field were "not what I wanted to do" and "subject not of interest." Moser et al. (2000) found that students may not see the relevance of IS to their future job success.

Among potential remedies, Walstrom et al. proposed reaching incoming students earlier, i.e., informing them about opportunities in IS while they are still in high school. Babin et al. (2008) surveyed Canadian guidance counselors, IS students and business students and found that guidance counselors are the weakest influencers. They found the strongest influencers to be parents. Accordingly, Babin et al. recommend that IS industry representatives "speak directly with students and their parents." Farkas and Murthy (2004) propose that if attracting IS majors is not successful, attracting IS minors might be. Rajaravivarma and Surendran (2005) focus their attention on increasing retention of IS students.

Yet, similar to Zwieg (2006), we believe IS presents tremendous career opportunities, because of the continual growth of eCommerce, increasing ubiquity of the Web, and increasing global business opportunities, all of which require IS. In this paper, we describe a proposal to focus academic IS programs on preparing its undergraduate students for a prominent position: Business Analyst.

3. WHAT IS A BUSINESS ANALYST?

The International Institute of Business Analysis (IIBA), an association of practitioners from business and industry, defines "Business Analyst" as one "who works as a liaison among stakeholders in order to elicit, analyze, communicate and validate requirements for changes to business processes, policies, and information systems" (IIBA, 2008) According to the IIBA, this type of person "understands business problems and opportunities in the context of the requirements and recommends solutions that enable the organization to achieve its goal." The CIO of Loyola University Chicago, Susan Malisch, expects a business analyst to "analyze business problems and translate business needs into requirements for information systems and business processes." Business Analyst focus on requirements, business problems, business processes, and stakeholders. We regard Business Analysis as a set of tasks, knowledge, and techniques required to identify business needs and determine solutions to business problems.

4. WHY BUSINESS ANALYSIS?

There appear to be plenty of Business Analyst positions available. For example, on July 29th of 2009 (in the middle of the summer), Monster.com showed "5000+" full-time-employee business analyst-type job openings in the US, 281 of them entry-level, and 2303 of them requiring a Bachelor's degree. For the Chicago area, Monster showed 250 full-time-employee business analysts-type job openings, 24 of them entry-level and 138 of them requiring a Bachelor's degree. Among jobs posted in the 30 days prior to July 29th 2009, DICE.com showed 3441 full-time business analyst-type job openings in the US, and 152 in the Chicago

area. Furthermore, employment for business analysts-type jobs in the U.S. is expected to increase 18-27 percent or more between the years 2004-2014 (U.S. Department of Labor, 2008).

We believe that these statistics point to business analysts as an attractive future job position for our current and future graduates. Anecdotal data from conversations we have had with CIOs in the Chicago area appear to confirm a continued healthy demand for business analysts. Indeed, over the past decade our own business school placed many graduates in business analyst-type jobs. (One hurdle is that, unlike IS departments, HR departments may not yet be familiar with the "business analyst" job title or understand its requirements in sufficient detail.)

Furthermore, business analyst is a broad classification, so graduates will not get "pigeon holed" into a narrow specialty. Already, Business Analysts work not only in IT departments. In fact, where Systems Analyst may be a job title used in IT departments, Business Analyst may be a job title used in other business departments (marketing, operations, etc.), although the job descriptions may be quite similar. Already, Business Analysts work in many other business departments in numerous industries, and can move into IT over time. Or, Business Analysts can start in the IT department and move into other business departments over time. This makes our graduates' careers flexible over time. Moreover, business analyst activities are generally performed in close proximity to the customer/user, so they are less likely to be off-shored. In addition, the job title "Business Analysis" is less connected with "technology," reducing the perception that the job may be off-shored.

Students may be more interested in a job if they know that there is an association of professionals who work in the discipline and have titles connected with it, e.g. AICPA for accounting, or AMA for marketing. The IIBA is such a professional association for business analysts, described on its website as an "independent non-profit professional association serving the growing field of Business Analysis. Whatever your role—requirements management, systems analysis, Business Analysis, requirements analysis, project management, or consulting; the IIBA can help you do your job better." Clearly, a number of terms used in the IIBA quote above are well-known in the IS field. The IIBA is quick to point out that Business Analysts can work in various industries and may have different titles such as:

Business Consultant

Business Process Analyst

Data Analyst

Business Architect

Requirement Analyst/Specifier

Systems Analyst

Management Consultant

Previous research by Morrell, et al (2001) showed a similar list of job titles related to "Systems Analyst." In some companies we know, e.g., Blue Cross Blue Shield, "System Analyst" is a job in the IT department, whereas "Business Analyst" is a job title for a similar position in other business departments.

We believe that Business Analysis is particularly relevant for IS programs in Business Schools. Business Schools teach topics such as financial analysis, business process management, project management, quality assurance, organizational development, which complement Business Analysis. Several such topics are referred to in MIS textbooks such as Kroenke (2010).

5. IMPACT ON CURRICULUM

Many Academic IS programs used to focus on IS as *tools* (Lauckner, 2001), focusing on topics such as computer programming, databases, networking technologies, decision support systems, artificial intelligence technology, etc. However, consistent with the IS2002 Model Curriculum (Gorgone et al., 2002), the focus gradually shifted towards how businesses use and manage IS, with topics such as the role of ERP in business, business intelligence, and project management. The Model Curriculum is generally consistent with a focus on Business Analysis, although it does not emphasize Business Analysis. The IS2002 Model Curriculum mentions the word Business Analysis exactly once, in Table A5.1 on page 41. The latest draft version of the Model Curriculum (Topi

et al., 2009) explicitly mentions Business Analyst as one of the 16 job categories it explicitly recognizes (p. 26).

In order to guide the business analyst profession, the IIBA has published the Business Analysis Body of Knowledge (BABOK) (IIBA, 2009) based on extensive input feedback from industry representatives. The BABOK describes the various knowledge areas important for business analyst.

Important areas of overlap between the Model Curriculum and the BABOK include topics/ courses such as Foundations of I.S., Systems Analysis and Design, and Project Management. An existing IS curriculum can accommodate business analysts by weaving in selected topics related to business analysis. For example, a Foundations course can highlight the Business Analyst position, its role in I.S., and its future prospects. A Systems Analysis and Design course can provide tools and techniques to identify business needs. A Project Management course can highlight the Business Analyst role and responsibilities on a systems development project.

Compared to the Model Curriculum, the BABOK focuses on requirements planning, requirements management, requirements elicitation, requirements analysis and documentation. It also emphasizes requirements communication, e.g., interviewing, listening, presenting, and conflict management. This concurs with the results of research done by Mawhinney in 2006 that found "soft skills" were more important than "hard skills."

Systems Analysis & Design courses often include already some requirements analysis. But, in order to properly emphasize requirements analysis and communications, we propose that the IS Model Curriculum be expanded with a (Core) course in Requirements Analysis and Communications. Students would study such key topics as requirements gathering, analysis and prioritization, and practicing related communication techniques. If desired, this new course can be a prerequisite for a Systems Analysis & Design course.

If a course needs to be discontinued (e.g., to "make room" for this new course), we suggest to drop an IS Strategy course, arguing that undergraduates are not very likely to become business/IT strategists without further training. Indeed, in the Fall of 2008, at Loyola University Chicago, we discontinued a Strategic I.S. course and started to offer a course in "Requirements Analysis and Communication." The Appendix to this paper shows the IS Model 2002 Curriculum's courses related to the Business Analysis job position (Topi et al., 2009, p. 26), as well as the IS courses that we offer at Loyola University Chicago's School of Business.

We agree with an anonymous reviewer that a college course in Requirements Analysis and Communication does not provide *industry* experience, which may be required for a Business Analyst position. (We note that, generally, college courses provide no industry experience.) However, such a course does convey knowledge that an aspiring Business Analyst should have. If needed, any industry expertise required for a specific Business Analyst position may be gained in internships or (part-time) jobs, possibly while a student is still studying in the academic IS program.

6. CONCLUSION

We believe that the focus on Business Analysis is important for undergraduate IS programs, particularly in Business Schools. Business Analyst is an attractive job position, offering career potential and flexibility in that it exists in various business departments in addition to the IT department. A Business Analyst acts as a liaison among business departments as well as to the IT department, making it less likely to be offshored. Accordingly, we believe, a focus on Business Analysis in academic IS programs will increase IS enrollments when compared to the past several years. The purpose is to provide sufficient foundation for an attractive entry-level position, and thereby increase interest in IS as a major or minor area of study.

The impact on existing curriculum is relatively small. The biggest change we identified is the addition of one course: Requirements Analysis and Communications.

As our undergraduate IS program at Loyola University Chicago has focused on Business Analysis for only a year yet, we do not yet have data to analyze its effect(s). The reason is that a number of our students declare their major in their junior year, while some

declare their major earlier or later than that. Some students who graduated this past summer may have majored or minored in IS because of the curriculum changes we described in this paper, while current students who are interested in IS may not even have formally declared their major or minor yet. Nevertheless, anecdotally, the number of students who approach our IS faculty with an interest in IS seems to have increased over the past year.

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APPENDIX

This table shows the IS Model 2002 Curriculum's courses related to the Business Analysis job position (Topi et al., 2009, p. 26), as well as the IS courses that we offer at Loyola University Chicago's School of Business

		Loyola University	
	Core Courses	**Before**	**Now**
IS 2002 Model Curriculum Courses	Foundations	**X**	**X**
	Enterprise Architecture	**-**	**-**
	IS Strategy	**X**	**-**
	Systems Analysis & Design	**X**	**X**
	Data & Information Mgmt	**X**	**X**
	Project Management	**X**	**X**
	Electives		
	Application Development	**X**	**X**
	Business Process Mgmt	**-**	**-**
	Data Mining/BI	**-**	**-**
	Enterprise Systems	**-**	**-**
	Knowledge Mgmt	**-**	**-**
Loyola-specific	**Additional Courses**		
	Requirements Analysis & Communications	**-**	**X**
	Telecommunications	**X**	**X**

Legend: X = the course is offered in our undergraduate I.S. program