

INDUSTRY PERCEPTIONS OF OIS CURRICULUM

Industry Perceptions of Office Information Systems Curriculum: Implications for Departments,
Faculty, and Students.

Al Fundaburk

Bloomsburg University of Pennsylvania

(570) 389-4816

afundabr@bloomu.edu

Abstract

Bloomsburg University offers a Bachelor of Science, Business Administration (BSBA) in Office Information Systems (OIS). The goal of this curriculum is for graduates to have specialized knowledge and skills to prepare them for positions in the management of organizational information systems. The objective of this research is to determine which competencies covered in the curriculum are perceived to be required in today's business environment. Of further interest to this research is the name of the program being recognized by industry as an information technology oriented degree and what courses not covered by the curriculum are needed? This research surveyed 200 information technology professionals drawn randomly from the membership of two specific professional organizations: 1) Association of Information Technology Professionals (AISP), and Association of Information Systems (AIS). Of the 200 surveys sent, 62 responses were received (31%). The results of this survey support the existing curriculum at Bloomsburg University as meeting the needs of industry, with the exception of Training and Development. The results of the survey in the area of Training and Development sustain Desai and Von Der Embse's (2001) contention that most organizations support IS training by outsourcing (Desai & Von Der Embse, 2001).

Industry Perceptions of Office Information Systems Curriculum: Implications for Departments, Faculty, and Students.

Introduction

Bloomsburg University offers a Bachelor of Science, Business Administration (BSBA) in Office Information Systems (OIS). The goal of this curriculum is for graduates to have specialized knowledge and skills to prepare them for positions in the management of organizational information systems. RHI Consulting Hot Jobs Report (2001) identifies the following jobs as being in most demand within information technology: 1) Internet/Intranet development, 2) networking, 3) helpdesk/end-user support, 4) applications development, 5) project management, and 6) systems analysis (Lee, 2001). The curriculum presented by Bloomsburg University's Business Education and Office Information Systems Department (BE & OIS) offers course work in all of these areas except systems analysis and help desk/end-user support. Students receive instruction in a variety of areas including information technology, training and development, office environment, and business administration.

Purpose of Study

The objective of this research is to determine which competencies covered in the curriculum are perceived to be required in today's business environment. Of further interest to this research is the name of the program being recognized by industry as an information technology oriented degree and what courses not covered by the curriculum are needed?

Related Literature: Industry Requirements in Information Technology

Information technology has been the catalyst for economic growth during the current economic period (Harper, 2001). Oz (2001) recognizes the impact information systems professionals have on society as businesses have spent billions of dollars on information systems, the development and implementation of which are their responsibility (Oz, 2001). The goal of the OIS curriculum is to provide a cornerstone on which graduates can build a successful career in end-user information technology. Little research has been conducted on the education needed to prepare students for this responsibility. A review of university information systems curriculum identified a wide range of course work and outcomes yet each graduating student is identified as having a degree in some aspect of information systems (IS).

As early as 1993, Trauth and Farwell (1993) identified a gap between industry expectations and academic preparation. Many IS programs have been faulted for teaching obsolete technologies and irrelevant programming languages. Schools are teaching third generation languages such as COBOL when industry expectations and needs focus on fourth generation languages. End-user support and customer interaction have been identified as being extremely important to an IS education. Maintaining a productive relationship with the user/client is viewed by practitioners as being one of the most important sets of skills, yet it receives little attention in the classroom (Trauth & Farwell, 1993).

IS department faculty traditionally develop curriculum that covers the fundamental principles of IS with the understanding that industry will teach specific applications. Businesses have a more

short-term outlook on IS curriculum. They want to be able to place graduates in positions with the ability to begin work with minimum training. Lightfoot (1999) implies that the responsibility for preparing IS professionals for the 21st century lies with the education system. Teaching current skills help students secure their first jobs while teaching fundamentals help them obtain subsequent jobs. Although not mutually exclusive they are often in conflict due to class size, limited course offerings dictated by degree requirements, and the rapid changes in IS (Lightfoot, 1999).

Many professional organizations are creating a model IS curriculum. These models are intended to standardize the profession and provide a guide for educational institutions. Organization Systems Research Association (OSRA) has developed the model in use at Bloomsburg University. OSRA is currently reviewing the model for changes needed to keep pace with current IS requirements.

Research Questions

Is the current Bloomsburg University Office Information Systems (OIS) curriculum recognized by industry as sufficient to provide an entry-level placement into an information technology position? The purpose of this study was to provide the OIS faculty with feedback on the strength of existing curriculum and areas in which the curriculum might be changed. The research questions of this study were to determine the perception of industry regarding the importance of seven basic IS courses, and one projected new course contained in the curriculum described as follows:

1. The course, Information and Office Environment Management, provides acceptable practices in the management of information and the office environment. Students will develop an understanding of the information life cycle, the importance of an ergonomically designed work environment and how information serves as a critical organizational asset.
2. The course, Networking Design and Administration, provides a comprehensive and practical knowledge of network management and enhancement. Students get practical experience working with software, hardware, customizing user environments, implementing security and troubleshooting using the Windows 2000 environment.
3. The course, Office Systems Concepts, offers an overview of office systems technology, people, and procedures within organizational and environmental contexts. Major technologies, both hardware and software, that support information creation, storage, retrieval, manipulation, and distribution are covered.
4. The course, Telecommunications, is an introduction to telecommunications in the business environment. Emphasis is on application of telecommunications to facilitate information interchange in whatever forms the information takes: data, voice, text and/or image.
5. The course, Training and Development, applies theories of learning and instructional procedures to the education and training of employees in office systems. Topics

include instructional design, strategies, technology, and the implementation, evaluation and management of training within the organization.

6. The course, End-User Project Management, presents the student with an opportunity to use project management tools and an office suite to design, implement, and evaluate end-user solutions for an office information systems environment.
7. The course, End-User Solutions Development, uses Visual Basic for Applications (VBA) as a programming tool for developing and enhancing word processing, spreadsheet, and database applications.
8. The course, Managing Information Security, focuses on risk analysis, security policy development and implementation, and system auditing.

Methods

The primary means of data collection was accomplished using sampling survey research. This research surveyed 200 information technology professionals to determine to what extent the competencies taught in the OIS curriculum correspond to the needs of the businesses. This survey also ascertained to what extent the name Office Information Systems relates to the placement of graduates in technology oriented jobs, and solicited recommendations for a more appropriate title for the curriculum if needed.

In their article on determining sample size Bartlett, Kotrlik, and Higgins (2001) list four ways of estimating population sample size: 1) take the sample in two steps, and use the results from the first to determine the number of additional samples needed, 2) use a pilot study, 3) use data from a previous study, or 4) use logical mathematical formulas to estimate the size. Bartlett, Kotrlik, and Higgins include a table for determining minimum required sample sizes based on mathematical formulas. The table uses a margin of error of .03, an alpha of .05, and a t of 1.96 (Bartlett, Kotrlik, & Higgins, 2001). Using the table for continuous data as outlined, the sample size for a population of 200 identifies 59 responses as being representative.

Each of the survey instruments has gone through a pretest, Institutional Review Board (IRB) and survey review group analysis to review questions for clarity, comprehensiveness, and acceptability. The members of this group independently reviewed the surveys and provided input and suggestions to reduce the effects of bias. Both surveys were revised after the reviews and pretest to meet the recommendations of the testers consisting of faculty from the Computer Information Systems and Business Education/Office Information Systems Departments of Bloomsburg University of Pennsylvania.

The Industry Perceptions Survey identified course description and objectives and asked the respondent to classify the importance of using that course in the IS work environment. The responses were based on a five point Likert type scale consisting of: (1) Not Important, (2) Somewhat Not Important, (3) Neutral, (4) Somewhat Important, and (5) Very Important.

The database results were exported to an Excel spreadsheet. Excel with the statistical add-on, Analyze It, provided the descriptive statistics to evaluate the distribution of responses. In this research the data collected was considered to be an interval scale as the interval between scale points are equal. As such the descriptive statistics include the number, percentages, mean, and standard deviation. As no causality is implied this research did not designate dependent and independent variables.

Findings

Table 1 displays the results of the courses, Information and Office Environment Management, Networking Design and Administration, Office Systems Concepts, Telecommunications, Training and Development, End-User Project Management, End-User Solutions Development, and Managing Information Security.

Information and Office Environment Management

56% (35) of the respondents deemed this course as somewhat important, while 29% (18) deemed the course very important.

Networking Design and Administration

29% (18) of the respondents deemed this course as somewhat important, while 59% (37) deemed the course very important. 11% were neutral on this course.

Office Systems Concepts

50% (31) of the respondents deemed this course as somewhat important, while 34% (21) deemed the course very important. 16% (10) were neutral on this course.

Telecommunications

76% (47) of the respondents deemed this course as somewhat important, while 8% (5) deemed this course very important. 16% (10) were neutral on this course.

Training and Development

60% (37) of the respondents rated this course as not important, while 10% (6) of the respondents rated the course somewhat not important. 18% (11) rated the course as somewhat important. 13% (8) were neutral on this course.

End-User Project Management

60% (37) deemed this course as very important, while 14% (9) rated the course as somewhat important. 26% (16) were neutral on this course.

End-User Solutions Development

42% (26) rated this course as somewhat important, while 37% (23) felt the course was very important. 16% (10) were neutral, while 5% (3) deemed the course somewhat not important or not important.

Managing Information Security (projected new course)

61% (38) deemed this course as very important, while 39% (24) felt the course was somewhat important. None of the respondents were neutral on this course.

Conclusion

This research surveyed 200 information technology professionals drawn randomly from the membership of two specific professional organizations: 1) Association of Information Technology Professionals (AITP), and Association of Information Systems (AIS). Of the 200 surveys sent, 62 responses were received (31%).

The results of this survey support the existing curriculum at Bloomsburg University with the exception of Training and Development. The results of the survey in the area of Training and Development sustain Desai and Von Der Embse's (2001) contention that most organizations support IS training by outsourcing (Desai & Von Der Embse, 2001).

The need for a course in Information Security is well documented. Eugene Spafford (2002) in his testimony before the United States House of Representatives' Subcommittee on Technology, Computer, and Network Security noted:

Our students and soon-to-be students will be designing our information technologies of the future. We are endangering them and ourselves because the majority of them will receive no training in information security (Spafford, 2002).

Recommendations

Universities with Training and Development in the OIS curriculum should consider replacing it with a course in information security. This course should concentrate managerial aspects of information security, to include risk analysis, information security policy development and implementation, and audit trails.

As OSRA reviews the current curriculum model, further research should be conducted on industry needs. Another venue of research is the perception of the program name. It is important that industry recognizes the graduates of these programs as being educated in end-user technology. In the survey above the question was asked, "Does the name *Office Information Systems* correctly identify this curriculum as an IS curriculum"? 90% of the respondents answered no, but no alternative names were suggested. Much work is needed to ensure the curriculum keeps pace with industry needs. This research indicates the curriculum at Bloomsburg University does a good job at meeting these needs.

Table 1
Industry Perception of Office Information Systems Curriculum

Statement	Somewhat										Mean	SD
	Not Important		Not Important		Neutral		Somewhat Important		Very Important			
	N	%	N	%	N	%	N	%	N	%		
Please rate the importance of Information and Office Environment Management as part of an Office Information Systems curriculum.	8	12.90%	0	0.00%	1	1.61%	35	56.45%	18	29.03%	3.8871	1.22
Please rate the importance of Networking Design and Administration as part of an Office Information Systems curriculum.	0	0.00%	0	0.00%	7	11.29%	18	29.03%	37	59.68%	4.4839	0.7
Please rate the importance of Office Systems Concepts as part of an Office Information Systems curriculum.	0	0.00%	0	0.00%	10	16.13%	31	50.00%	21	33.87%	4.1774	0.69
Please rate the importance of Telecommunications as part of an Office Information Systems curriculum.	0	0.00%	0	0.00%	10	16.13%	47	75.81%	5	8.06%	3.9194	0.49
Please rate the importance of Training and Development as part of an Office Information Systems curriculum.	37	59.68%	6	9.68%	8	12.90%	11	17.74%	0	0.00%	1.8871	1.2

Table 1
Industry Perception of Office Information Systems Curriculum

	Somewhat					Mean	SD
	Not Important	Not Important	Neutral	Somewhat Important	Very Important		
Please rate the importance of End-User Project Management as part of an Office Information Systems curriculum.	0	0	16	9	37	4.3387	0.87
Please rate the importance of End-User Solutions Development as part of an Office Information Systems curriculum.	1	2	10	26	23	4.0968	0.9
Please rate the importance of Managing Information Security as part of an Office Information Systems curriculum (projected course).	0	0	0	24	38	4.6129	0.49

Reference List

- Bartlett, J. K. J. a. H. C. (2001). Organizational Research: Determining Appropriate Sample Size in Survey Research. Information Technology, Learning and Performance Journal, 19(1), 8.
- Desai, M. a. V. D. E. T. (2001). Synergistic Strategy for MIS Curriculum Development: Response to Rapidly Advancing Information Technology. College Student Journal, 35(4), 552-562.
- Harper, G. a. U. D. (2001). Organizational Culture and Successful Information Technology Implementation. Engineering Management Journal, 13(2), 4.
- Lee, K. (2001). Internet Development and Networking Rank as Technology's Hottest Job Category. Information Executive, 5(1), 2.
- Lightfoot, J. (1999). Fads versus Fundamentals: The Dilemma for Information Systems Curriculum Design. Journal of Education for Business, 75(1), 10.
- Oz, E. (2001). Organizational Commitment and Ethical Behavior: An Empirical Study of Information Systems Professionals. Journal of Business Ethics, 34(2), 5.
- Spafford, E. (Testimony before the United States House of Representatives' Subcommittee on Technology, Computer, and Network Security). [Web Page]. URL <http://www.house.gov/science/hearing.htm> [2002, May].
- Trauth, E. a. F. D. (1993). The IS Expectation Gap: Industry Expectations versus Academic Preparation. MIS Quarterly, 17(3), 13.