

This will require an evolutionary approach to overall e-strategy as shown in Table 4, incorporating the processes and business requirements of customers and suppliers and building a foundation of trust. It is also essential to apply “outside-the-box” thinking to capture information from sources of innovation and create the opportunity to share information in non-competitive situations. The e-business that excels will learn from others.

Table 4. Staged Strategies

Strategy	Focus	Stage	Web site
Exploiter	Customer service personalisation and marketing	Presentation	Static or Mail Order web site – brochureware and advertising, online orders
Exploiter/Explorer	Cost reduction and speed of processing	Communication	Tailored to trading partner-View inventory/orders in hand
Explorer	Efficient pricing and expanded product lines	Interaction	Customer/Supplier order placement/mall/ auction bids
Explorer	Core business concentration	Fulfillment	Links to back-end fulfillment systems
Explorer/Innovator	Expansion of products/services/ business	Collaboration	Dynamic interaction
Innovator	Diffusion of niche markets	Collaboration and Competition	Virtual decision making and Diffused Control

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# IS PROGRAM ISSUES: FROM ORIGIN TO ACCREDITATION

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ofc. 218.755.2754, dept. 218.755.2907, fax. 218.755.4100, E-mail. [dleif@BemidjiState.edu](mailto:dleif@BemidjiState.edu)**ABSTRACT**

*This paper suggests the challenges of academic information systems programs are a product of origin and evolution. Based upon the literature and survey results, the paper suggests issues concerning origin, perceptions, solutions, and accreditation.*

**INTRODUCTION**

The purpose of this paper is to review information systems (IS) trends leading to the present, and to raise issues concerning IS program accreditation. The paper discusses IS program origin, acceptance by other disciplines, and recognition from industry in reviewing answers to the following questions: Why and how did higher education IS programs evolve; will widespread IS program accreditation lead to acceptance by other disciplines and recognition from industry; how does a higher education IS program become accredited; and are clients demanding accreditation? A discussion of information system program accreditation and client perception of accreditation follows.

**BUSINESS BEGINNINGS**

Business education is a relatively old and common discipline in higher education, borne out of demand for educated businessmen [6, 7]. The need to enhance commerce produced a demand for business education. Supplying business education eventually came to the hallowed halls of higher education, leading to degrees in business education [5]. Business education initially included the traditional business cycle functions: management, finance, marketing, and accounting.

**COMPUTER SCIENCE ARRIVES**

Long after many years of business and commerce activity and the introduction of formal business education, computers made their appearance. The advent of this general purpose tool occurred in the 1950s. Computer technology advanced dramatically during the next two decades, stimulating a demand for computer education just as business activity generated a demand for formal business education. In response, higher educational institutions offer degrees in a discipline called computer science.

**INFORMATION SYSTEMS EVOLVE**

In the 1960s and 1970s, business education and computer science remained very distinct and independent disciplines in many, if not most, academic environments. Business functions, however, welcomed computer applications at operational levels. Implementing business computer applications employed graduates from computer science programs. Although success stories abound, major obstacles persist. Business professionals and computer science programmers were not communicating effectively [18]. Based solely on their major area of study, business graduates do not understand computers adequately, while computer science graduates generally do not have knowledge of business cycle intricacies. One business insider sums it up by confiding "We scrapped a new quarter of a million dollar accounting package after eighteen months because our accounting people and computer people didn't under-

stand each other." This obstacle loomed only larger as businesses demanded applications for strategic advantages [4, 15, 20]. Businesses are no longer looking at computers to automate operations, but to improve efficiency and decision-making, and to increase product and service innovation [14].

Business first demanded business graduates, then computer graduates, and once again demands a new type of graduate. The academia response was a degree in IS evolved from the academic blend of business and computer science disciplines. The structure and administration of IS vary among colleges and universities, but the curriculum content generally focuses on both computers and business. The computer core curriculum includes systems development, application development, database management systems, and telecommunications. The business core curriculum includes business cycle functions at levels of the organization encompassing business operations, operations, tactics, and strategies.

**Information Systems Recognition and Acceptance**

While IS programs are still very young, organizations covet IS graduates who understand business activity and management and are computer oriented. Forecasts indicate this trend will continue [3, 10, 17]. However, acceptance from academic disciplines and recognition from industry is proving to be a long process. Newspaper ads for positions responsible for business applications, development, support, and information center support often call for a technical degree, usually in computer science, instead of the business oriented IS degree [19]. Even academia cannot agree on a label, often seemingly randomly selecting among CIS, MIS, IS, BIS, and others [9].

Several tools are available to further promote acceptance from academic disciplines and recognition from industry. Professional associations, with members representing industry and academia, can develop, prescribe, and enhance IS model curricula. An example is the traditional refinement of IS model curricula by the Association of Information Technology Professionals (AITP), formerly the Data Processing Management Association (DPMA), and the Association of Computing Machinery (ACM). Most recently, these two professional associations have joined the Association for Information Systems (AIS) to produce the 1997 IS undergraduate model curriculum guidelines.

Certification is a way to the top of a profession, and certification of computing professionals worldwide validates computing knowledge and experience internationally [12]. Certification provides a vehicle to demonstrate competency. The Institute for Certification of Computer Professionals (ICCP) administers examinations for the Certified Computer Professional (CCP), similar to the Certified Public Accountant (CPA) examination, administered by the American Institute of Certified Public Accountants (AICPA), for accounting professionals.

## ACCREDITATION

Accreditation demands quality of IS programs. Used in conjunction with the former tools, accreditation may be a major contributor to increasing specific and accurate awareness of IS as a major discipline in the worlds of business, computer science, and information technology.

Generally, educational accreditation is a process established to ensure public protection of, and instill public confidence in, collegiate schools and programs [2]. Institutional accreditation is the process by which an institution undergoes an independent appraisal. In the United States, post-secondary institutional accreditation is voluntary, sought by the institution, and conferred by non-governmental bodies. In contrast to institutional accreditation, business program or school accreditation focuses its evaluation on the business units within the already accredited institution.

Two organizations are recognized nationally to accredit college and university business schools and programs: The American Assembly of Collegiate Schools of Business (AACSB) and the Association of Collegiate Business Schools and Programs (ACBSP). While several differences exist between AACSB and ACBSP, both have standards for curriculum, faculty credentials, scholarly and professional activities, educational innovation, outcomes assessment, and articulation and transfer relationships [11].

AACSB accredits business schools. AACSB accredited business schools tend to be large research institutions with master and doctorate programs [13]. AACSB (1916 inception) currently accredits thirty baccalaureate-only degree granting business schools, excluding accounting (out of about 398 accredited overall by AACSB) [1]. AACSB enjoys considerable name recognition amongst readers of business school and program accreditation related topics [21].

ACBSP accredits business schools and business programs. ACBSP accredited business schools and accredited programs attend to primarily undergraduate education which emphasize teaching in a student-learning environment. ACBSP (1988 inception) currently accredits approximately 150 baccalaureate-only and associate-only degree granting business schools and programs, including accounting (out of about 264 accredited overall by ACBSP) [2].

A third option for business program or school accreditation is being developed by the International Assembly for Collegiate Business Education (IACBE).

**Because IS programs are grounded in business, an IS program can obtain accreditation from AACSB or ACBSP. IS programs within accredited business schools or programs, satisfying all standards including a required business core can be accredited. Currently, this is the only course for national accreditation of an IS program.**

Advantages and disadvantages of accreditation vary with each IS program and even then, may be speculative or empirical. Nonetheless, the following points serve as possible advantages of striving for IS program accreditation.

## ACCREDITATION ADVANTAGES

### University Perspective

- The reputation of the institution is enhanced by having a major degree granting area recognized by a national discipline-specific accrediting agency
- In addition to academic enhancement, the recruitment and retention of students of all majors by the institution may improve [2]

- Accreditation may benefit the business area by providing an objective and informed reference for curriculum assessment and future development, evaluation of faculty credentials and professional development
- Students will benefit because they are assured the business and IS program and faculty meet the requirements of a nationally recognized programmatic accrediting agency
- University is assured that there is integrity in the business and IS programs (i.e., institution is doing what it purports to do) [2]
- University can advertise that it has quality business and IS programs because it has met the educational accreditation standards of a nationally recognized accrediting body [2]
- University enhances its attractiveness for purposes of recruiting and retaining business and IS students [2]
- University enhances its attractiveness for purposes of recruiting and retaining faculty
- University provides assurance of quality to potential donors [2]
- Other universities may be exploring or seeking accreditation
- No substantial additional costs by including IS program to business program accreditation process

### Faculty Perspective

- Faculty are interested in being associated with an institution that has a quality academic program in business as validated by a specialized accrediting body [2]
- Accreditation requires faculty to attain and maintain exceptional professional development standards in areas of scholarly activity [1, 2]
- Faculty are assisted in obtaining adequate support for quality [2]

### Student Perspective

- Students are able to transfer their undergraduate course credit more easily from an accredited business and IS program [2]
- Students can apply for graduate school and receive full credit for their courses at the baccalaureate level [2]

### Business/Industry Perspective

- Employers are assured that applicants for employment who have attended and/or completed training at accredited institutions have been exposed to a comprehensive and relevant curriculum [2, 8, 16]
- Employers can expect better trained applicants for positions within their organizations [2, 8, 16]
- International governments and companies career positions require candidates to graduate from accredited business and IS programs

### Societal Perspective

- Society is reasonably assured of high quality leadership from graduates of accredited programs [2]
- Society benefits from the increased productivity and international competitiveness resulting from quality business and IS education [2]
- Some project that unaccredited business and business related programs will be viewed as 'third world' programs in years to come
- Widespread business and IS program accreditation may provide a vehicle for clarification, knowledge and acceptance of the IS discipline and IS programs

**ACCREDITATION DISADVANTAGES**

The following are potential disadvantages of striving for IS program accreditation.

- Accreditation (standardization) may limit the number of students entering the program, and therefore, the number of graduates entering the field
- Programs can use accreditation as leverage to influence curriculum changes
- Programs can use accreditation as leverage to influence funding from colleges or universities
- Accreditation standards may be too prescriptive for programs [13]
- Accreditation standards and accreditation processes may not be in congruence with university, college, school, or program mission
- Accreditation can be a step leading to potential loss or withdrawal of accreditation, leading to negative consequences
- Meeting accreditation standards and undergoing accreditation processes may be very expensive, and potentially prohibitive from a cost standpoint

**ACCREDITATION OBSTACLES**

There are several obstacles to accreditation of business and IS schools and programs. These obstacles, although not an exhaustive listing, vary dependent upon the structure and administration of the specific business and IS program.

- Limited pool of resources in which higher educational institutions exist
- Required reassignment time (for faculty from teaching) necessary to prepare for the accreditation process, write the accreditation self-study, and to design and implement any necessary prescribed programs to treat deficiencies
- Cooperation and coordination of the various departments and their faculty that will be part of the accreditation process (e.i. accounting, business administration, computer science, economics, IS, finance, management, marketing)
- Accreditation process is a long range, on-going entity

**SURVEY: STUDENTS PERCEIVE ACCREDITATION**

Another important issue of accreditation is its perception among potential and current students, as well as alumni. A survey was conducted to determine the awareness of accreditation among a sample of 186 seniors from five high schools and 91 students from one university to determine if accreditation is a consideration in selecting a university program. Eighty percent (149) of the surveyed high school seniors plan to attend college (Table 1). The survey also elicits perceptions of accreditation, the media source of their perceptions, and asks respondents to define accreditation. The sample represents both genders from several majors and disciplines. (The complete survey results concerning media sources of accreditation information and accurate knowledge of accreditation are not within the scope of this paper and are not included.)

The pertinent portion of the survey results for this paper represents the awareness of accreditation among those sampled; and the degree accreditation affected their university and program selection. As table 2, and figures 1, 2, and 3 illustrate, university student respondents are aware of accreditation in larger numbers than are high school seniors respondents. Thirty-seven percent of the university students are aware of accreditation, while fifteen

percent of the high school seniors are aware of accreditation. Twenty-two percent of all respondents are aware of accreditation. This raises an interesting question: Is the twenty-two percent awareness rate on the rise or decline over the past decade or two?

As table 3, and figures 4, 5, and 6 illustrate, high school seniors (47%) consider accreditation a factor in selecting a university program more than university students (33%). This may be explained by the fact university students have already selected an institution, while high school seniors are closer in proximity to the university or university program selection process. Overall, 43% consider accreditation a factor in selecting a university program.

One valid conclusion drawn from this portion of the survey results is that students are exposed to the concept of program accreditation, and they perceive something about it that makes accreditation a positive consideration in selecting a university program.

*Table 1. High School Respondents with Higher Education Plans*

No Indication of Plans to Attend College	37	20%
Plan to Attend College	149	80%
<b>Total</b>	<b>186</b>	<b>100%</b>

*Table 2. Awareness of Accreditation*

<u>University Respondent</u>		
No Indication of Awareness	57	63%
Aware	34	37%
<b>Total</b>	<b>91</b>	<b>100%</b>

<u>High School Respondent</u>		
No Indication of Awareness	158	85%
Aware	28	15%
<b>Total</b>	<b>186</b>	<b>100%</b>

<u>Student Respondent</u>		
No Indication of Awareness	215	78%
Aware	62	22%
<b>Total</b>	<b>277</b>	<b>100%</b>

<u>University Respondent</u>		
No Indication Accreditation is a Factor	61	67%
Factor	30	33%
<b>Total</b>	<b>91</b>	<b>100%</b>

<u>High School Respondent</u>		
No Indication Accreditation is a Factor	98	53%
Factor	88	47%
<b>Total</b>	<b>186</b>	<b>100%</b>

<u>Student Respondent</u>		
No Indication Accreditation is a Factor	159	57%
Factor	118	43%
<b>Total</b>	<b>277</b>	<b>100%</b>

## CONCLUSION

This paper discussed issues from IS academic program origin to accreditation. The discovery by industry of the overwhelming benefits of business computer applications has generated many higher education derivative IS programs from business and computer science. IS, to many non-information technology professionals, remains unidentified, unfamiliar, or completely unknown. National certification exams and professional associations will continue to promote IS as a discipline. Accreditation of IS programs, as this paper proposes, should be gaining momentum. National accreditation of IS programs can promote acceptance and recognition by other disciplines and industry. Initial steps in the process are to investigate issues including examining accrediting agencies; analyzing cost and time resources involved in accreditation; and assessing student-client perceptions of accreditation.

IS programs can become accredited by one of two accrediting bodies, AACSB or ACBSP. By structuring IS majors around a common business core, IS can then proceed through the prescribed accreditation process with the business unit, without a substantial increase in cost.

Many current and potential students are aware of accreditation and perceive it positively. Though not the major factor in the decision to proceed to accreditation, it should not be altogether ignored.

Widespread accreditation of qualified IS programs will better prepare them to move out from under the shadow of its dominating, yet respected parents: Business and computer science.

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