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Robert C. Nickerson

San Francisco State University, rnick@sfsu.edu

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Academic Programs in E-Commerce: Why (or Why Not), How, and What

Robert C. Nickerson, College of Business, San Francisco State University, rnick@sfsu.edu

Abstract

New academic programs in electronic commerce have been created at a number of schools, while at other schools such programs have been rejected. This situation raises questions about the rationale, development process, and course requirements for e-commerce programs. This paper examines these questions by first reviewing e-commerce programs in general and then examining the case of the development of e-commerce programs at one university. The paper identifies the critical success factors in the case.

Introduction

In the past few years, a number of new academic programs in electronic commerce have been created, especially at the master's level. Carnegie Mellon, MIT (Sloan), the University of Florida, Vanderbilt University, the University of Pennsylvania (Wharton), and Bentley College, among others, have recently created new e-commerce programs. At San Francisco State University, this author was involved in the rapid development of two new master's programs in e-commerce that begin in Fall 2000. At the AMCIS 1999 conference, a panel from DePaul University presented their new program in e-commerce (Knight, et. al., 1999). Recent articles in the *New York Times* (Tabor, 1999) and the *San Francisco Examiner* (Strasburg, 1999) describe this rapid expansion of academic programs in e-commerce. To use the old cliché, it looks like a lot of schools are jumping on the bandwagon.

Not all schools are creating new e-commerce programs, however. Some are adding e-commerce courses but not new degrees, saying that e-commerce is not a separate field but part of other business fields. Examples are the University of California at Berkeley, Harvard, and Stanford.

The rapid creation of e-commerce academic programs at some schools and the rejection of such programs at other schools raise many interesting questions about e-commerce in the curriculum. Some basic questions are:

1. What is the rationale for the acceptance or rejection of new academic programs in e-commerce? (*why or why not*)
2. What is the development process for new programs in e-commerce? (*how*)
3. What are the course requirements in e-commerce programs? (*what*)

This paper examines e-commerce programs in general and then answers these questions for one specific case: the e-commerce MBA and MSBA programs in the College of Business at San Francisco State University.

E-commerce Programs

A number of schools have created e-commerce programs. Table 1 lists selected schools and their master's degrees with e-commerce emphasis. Some programs are separate degree programs in electronic commerce or related areas. Other programs are e-commerce tracks or concentrations in an existing MBA or other degree program.

Table 1. Selected schools with graduate (master's level) e-commerce programs

School	Degree	Program
Bentley College	MBA	Concentration in E-business
Carnegie Mellon	MS	Electronic Commerce
DePaul University	MS	E-commerce Technology
Georgia State University	MS	Electronic Commerce
Marlboro College	MS	Internet Engineering
	MS	Internet Strategy Management
Rutgers	MBA	Concentration in Electronic Commerce
Sloan (MIT)	MBA	Electronic Commerce and Marketing track
University of Denver	MS	Information Technology, Electronic Commerce track
University of Florida	MBA	Certificate in Electronic Commerce
University of Maryland	MBA	Concentration in Electronic Commerce
University of Rochester	MBA	Concentration in Electronic Commerce
University of Wisconsin, Milwaukee	MS	eBusiness
Vanderbilt University	MBA	Concentration in Telecommunications and Electronic Commerce
Wharton (University of Pennsylvania)	MBA	Major in Managing Electronic Commerce

The rationale often cited for creating new e-commerce programs is strong student and business interest (Tabor, 1999). Students look upon the programs as ways to get into the rapidly growing and potentially financially rewarding e-commerce field. Businesses find that e-commerce programs provide badly needed employees with special skills. Knight, et. al. (1999) identifies the increasing demand for e-commerce professionals and the corresponding increase in salaries as rationale for creating a new e-commerce program at DePaul University. An additional rationale cited is that some schools have found e-commerce programs (and e-commerce research centers) attract significant corporate donations (Tabor, 1999).

Some schools have purposefully rejected new programs in e-commerce. Examples are the University of Virginia, Harvard, Stanford, Washington University, and the University of California at Berkeley (Tabor, 1999; Strasburg, 1999). Reasons cited for rejection of e-commerce programs include: such programs are a fad; e-commerce topics should be incorporated into existing courses; there is a shortage of qualified faculty; e-commerce textbooks, cases, and articles become quickly out-of-date (Tabor, 1999).

Examination of course requirements at different schools shows two main patterns for creation of e-commerce programs. Some schools have created programs from existing courses, with the addition of a few new courses that specifically target e-commerce topics. Examples are the University of Rochester and Bentley College. Other schools have created programs from the ground up with numerous new e-commerce courses. Examples are Carnegie Mellon and DePaul University. Variations between these extremes are also found.

Course requirements also vary in terms of technical versus non-technical focus. Some schools, such as DePaul University and Marlboro College, have programs that mainly focus on e-commerce systems and technology. Other schools, such as the University of Rochester and the University of Maryland, have programs that focus on e-commerce marketing or management. Some schools offer the option of choosing between a technical or a non-technical focus. Still other schools have programs that provide a balance of technical and non-technical topics.

The Development of E-commerce Programs at San Francisco State University

In Fall 1999, the College of Business at San Francisco State University developed electronic commerce programs in its MBA and MSBA (Master of Science in Business Administration) degrees. The rationale,

development process, and course requirements for the programs are described here.

Rationale

The rationale for the programs came from the Dean of the College, who felt that "e-commerce was having a significant effect on business organizations" and became "convinced that it made sense for us to start [an e-commerce] program." The Dean also felt that an e-commerce program would be "the culmination of [the College of Business's] strategic outlook, taking into account our region, our society, and our perceived need for our students." (All quotations from e-mail from the Dean.)

Development Process

In Summer 1999, the Dean asked the Director of Graduate Studies in the College of Business to coordinate the development of new programs in e-commerce. The Director formed a task force consisting of himself, the Dean, the Chair of the Marketing Department, a professor of Finance, and this author, a professor of Information Systems.

The task force first met in early September 1999 to discuss plans for the programs. Prior to this meeting, ideas for courses and curricula were solicited from the Marketing Department and the Business Analysis and Computing Systems (BACS) Department, which houses the Information Systems faculty. In addition, e-commerce programs at other schools were identified and their curricula reviewed through the Web.

At the first task force meeting, the rationale for e-commerce programs was discussed, with all members agreeing that the College should implement such programs. Various ideas for courses and programs were examined, and decisions were made about how to proceed. The main conclusions reached at this meeting were:

1. The College of Business should develop e-commerce programs because they will provide students with skills that are in high demand. The San Francisco Bay Area is in the forefront of the e-commerce revolution, and graduates with the required background should find significant employment opportunities in the area.
2. The programs should initially be at the graduate (master's) level because it will be easier to implement and control curricula at this level. Undergraduate programs may follow in the future.
3. E-commerce programs will have a relatively short life, perhaps five years or less. As

electronic business becomes mainstream, e-commerce and e-business topics will be integrated into most business courses. Eventually, the distinction between e-commerce/e-business and traditional commerce/business will disappear, and separate e-commerce programs will no longer be viable. Until that happens, e-commerce programs can provide a significant benefit to students and companies served by the College of Business.

4. Because of the short-lived nature of the programs and to capitalize on the current interest in e-commerce, the programs should be developed as quickly as possible. The programs should be in place to begin in Fall 2000. The program development should be completed, with all approvals, by the deadline for the University course bulletin (catalog), which was less than two months away.
5. E-commerce programs will need to be changed frequently. As new technology is developed and new e-commerce applications and approaches appear, it will be necessary to update the programs.
6. The number of new courses in the programs should be kept to a minimum so as to lessen the impact on the already stretched faculty resources. Existing courses that already cover e-commerce topics or that can be modified to include e-commerce topics should be used as much as possible.
7. Two programs should be developed, one for the MSBA degree that provides an in-depth concentration in e-commerce and one for the MBA degree that provides a limited concentration.
8. The MSBA degree, which in its general form requires one specified course (research project) and nine other courses that vary depending on the program emphasis, should be the principal vehicle for an e-commerce program in the College of Business. It should have both information technology and marketing content and should be designed to attract students wanting significant specialization in e-commerce. The program should not, however, require technical expertise in software engineering using programming or scripting languages, but should require expertise in using software tools to develop e-commerce sites.
9. The MBA degree, which requires six specified (general business) courses, three courses in an area of emphasis, and one open elective, should have a program designed for students who want limited specialization in a selected area of e-commerce. It should allow the student to select

either a technical or a non-technical focus, or a combined technical/non-technical focus.

10. Input from companies in the San Francisco Bay Area should be solicited to provide more information on what businesses would expect of graduates from a business program in e-commerce.

Subsequent to this meeting, and pursuant to point 10, the task force met with executives of two companies in San Francisco. The first meeting was with the President and Chief Operating Officer of a communications company. This person described the company's needs in terms of an individual who could function as an e-commerce project manager. According to this person, software engineers were available (although they commanded high salaries), but it was difficult to find individuals who could bridge the gap between the technical side and the business side of an e-commerce project and manage both sides in the development of an e-commerce site. It was also important that the project manager saw how e-commerce fit into the business's strategy.

The second meeting was with the Managing Director of a consulting firm that provides e-commerce site design and implementation services to other businesses. This person described the firm's needs in terms of someone called a *solutions manager* who determines the scope and definition of a client's e-commerce project and manages the design and development of the site. Again, fitting the e-commerce project into the business's strategy was mentioned.

Although the position titles and business environments were different, it was clear that the type of individual needed by both companies was very similar. Because of time limitations, it was not possible to contact other companies, although doing so would have been desirable.

During these meetings, a curriculum for the MSBA program in e-commerce became apparent to the members of the task force. The task force outlined the MSBA program as well as the MBA program (both described later) and solicited feedback from faculty in the Marketing and BACS Departments. With some minor modifications, the curricula were finalized and taken to the College of Business Advisory Board for review. (The Advisory Board consists of business executives who advise the Dean.) Only minor suggestions were made by the Board. Final approvals came from the departments involved and from the Graduate Studies Committee, which made a few minor changes. The last approvals were completed just in time for the University course bulletin deadline.

Course Requirements

Pursuant to point 6 listed previously, the task force used existing courses as much as possible in the programs, modifying some courses to include e-commerce topics. For example, a course on Internet Marketing already existed in the Marketing Department, and a course on Information Systems Resource Management was modified to include e-commerce project management. Only one new course was created, a course on Electronic Commerce Site Design and Management.

Both the MSBA and the MBA degrees require ten courses (after completing a series of foundation courses and other requirements). The MSBA program in electronic commerce, listed in Table 2, contains eight required courses and two electives. Course 1 provides a foundation for other technical courses. Course 2 covers the tools used to develop an e-commerce site. Course 3 examines data communications technology used in e-commerce, in addition other topics. Course 4 deals with e-commerce project management, among other topics. Course 5 looks at the marketing aspects of e-commerce. Selection of one course from those listed under Course 6 provides general business background. Course 7 examines business strategy. In Course 8, students do a research project in e-commerce. Finally, Courses 9 and 10 are electives in electronic commerce. Some possible electives are Advanced Multimedia Business Application Development, Electronic Commerce Marketing Strategy, and Advertising.

Table 2. The MSBA program in electronic commerce

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|---|
| 1. Advanced Computing Applications for Management |
| 2. Electronic Commerce Site Design and Management |
| 3. Distributed Data Processing |
| 4. Information Systems Resource Management |
| 5. Internet Marketing |
| 6. Strategic Marketing <i>or</i> Financial Analysis and Management <i>or</i> Organizational Design and Change |
| 7. Strategic Management |
| 8. Research Project |
| 9. Electronic commerce related elective |
| 10. Electronic commerce related elective |

The MBA program in electronic commerce, listed in Table 3, has six required courses and four electives. Courses 1 through 6 are general business courses required of all MBA students. Three electives in electronic commerce are required. These electives may be selected from the technical or non-technical e-commerce related required and elective courses in the MSBA program. A fourth open elective is also required to complete the ten course requirement.

Table 3. The MBA program in electronic commerce

- | |
|---|
| 1. Advanced Computing Applications for Management |
| 2. Strategic Marketing |
| 3. Financial Analysis and Management |
| 4. Organizational Design and Change |
| 5. Strategic Management |
| 6. Research Project |
| 7. Electronic commerce related elective |
| 8. Electronic commerce related elective |
| 9. Electronic commerce related elective |
| 10. Elective in any area of business |

Critical Success Factors

The e-commerce programs in the College of Business at San Francisco State University were developed under extreme time pressure. The following factors were critical to the success of the development:

1. There was never any debate on the need for e-commerce programs. All members of the task force agreed from the beginning on the desirability of creating such programs.
2. Support from the Dean was provided from the beginning of the process. There was no need to convince administrators of the need for the programs.
3. The task force recognized the urgency of establishing e-commerce programs and agreed to work quickly to accomplish that end.
4. Input from companies was solicited to clarify business needs.
5. The technical (Information Systems) and non-technical (Marketing) sides communicated and cooperated on the development of the programs.
6. Input from interested faculty was solicited from the beginning of the development process.

If there had been more time, the process could have been improved in several ways. More input from businesses would have helped clarify certain questions that were not resolved by the two companies the task force contacted. Input from students was solicited only casually; more student input might have helped identify specific areas of student interest in e-commerce.

Very few problems were encountered during the development of the programs. For the most part, College administrators and faculty supported the programs and provided input when asked. Because the programs are emphasis areas in existing degrees, approval beyond the College of Business was not required. Support from the business community that was contacted by the task force was overwhelmingly positive.

Student Demand and Staffing

The e-commerce programs in the College of Business at San Francisco State University are extremely popular among students. Although the programs will not formally begin until Fall 2000, a number of students have expressed interest in them. Over 60 students have requested to be added to an e-mail list to receive periodic information about the programs. An information session about the new programs attracted over 90 students. Some students have already begun to take currently taught required or elective courses in the programs. A committee of students has been formed to assist with the organization of a conference on e-commerce planned for Fall 2000 in San Francisco.

The expected high demand for the programs could create problems with staffing courses. Because all but one of the courses in the programs already exists, the task force initially felt that only one section of the new course would be required and that normally scheduled sections of existing courses would be adequate. If this were the case, staffing would not be a significant problem. With the high demand indicated by the student interest, however, additional sections of both the new course and existing courses may be required. The College's administration is aware of the potential problem and various ways of handling this situation are being investigated. The actual demand and the staffing needs will not be known precisely until the courses are taught and will have to be monitored carefully after the programs are under way. It is not known at this time how many students will choose the MBA or the MSBA option. This choice may affect course offerings and staffing.

Conclusion

Academic programs in e-commerce have appeared in many schools. The long-term viability of these programs is not clear, but in the short term they are likely to have an impact on students and on the companies that employ them. To meet the demand, e-commerce programs need to be developed quickly and effectively. The San Francisco State University case demonstrates how this can be done. The rationale, development process, and course requirements described in the case illustrate one approach for e-commerce programs.

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