

A Study of Developing Programs in Electronic Commerce

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Abstract

Undergraduate degrees in Electronic Business or Electronic Commerce are relatively new programs. This paper analyzes six programs (five of which first started offering the program during fall semester 2000) in Electronic Commerce. These programs range from strong technical orientation to more business and marketing orientation.

1. OVERVIEW OF ELECTRONIC COMMERCE OR ELECTRONIC BUSINESS IN UNDERGRADUATE ACADEMIC PROGRAMS

Many institutions are starting to offer courses in Electronic Commerce. To understand the growing impact of courses in electronic commerce or electronic business, we surveyed all attendees of the 1999 ISECON conference and received 55 responses. We choose the ISECON conference, since the attendees tend to come from Information Systems departments that are generally more teaching oriented rather than research oriented, plus the e-mail addresses of the attendees was readily available. We received 55 responses, some of which were multiple responses from the same university. The results indicated that 52% of the respondents indicated that their institution offered an e-commerce course, 25% indicated that they did not offer an e-commerce course, but were working on developing one. The rest of the respondents indicated that either they were not developing such a course, or felt that the concepts involved in electronic commerce were being integrated into existing courses. When questioned about offering a bachelor degree program in Electronic Commerce or Electronic Business, the numbers were significantly lower. Thirty-two percent of the responding institutions indicated they were offering or developing programs in e-commerce. Many of these seemed to be on the graduate level as 50% of the respondents that indicated that they offer or plan to offer a degree indicated that it would only be a graduate degree. Of the limited number of institutions that indicated they were offering or planning to offer a degree, 27% were offering or planning to offer an undergraduate degree only, and 20% indicated they were

offering or planning to offer degrees for both the undergraduate and graduate levels.

2. UNDERGRADUATE ELECTRONIC COMMERCE PROGRAMS

Thus, although few institutions currently offer undergraduate programs in Electronic Commerce or Electronic Business, we did find the follow institutions in the United States that offer Electronic Commerce (or will be offering Electronic Commerce) Bachelor Degree programs:

Institution	Location	URL:
Our Lady of the Lake University	San Antonio, Texas	http://www.ollusa.edu/~ectc/ Note: Offers both a BBA and a B.S. in Electronic Commerce
Texas Christian University	Fort Worth, Texas	http://voltaire.is.tcu.edu/~mackay/ecprogram.htm
University of South Alabama	Mobile, Alabama	http://www.mcob.usouthal.edu/ec/curriculum.html
University of Scranton	Scranton, Pennsylvania	http://academic.uofs.edu/departmentsomh/ompage/elctbus.htm
University of Toledo	Toledo, Ohio	http://ecommerce.utoledo.edu/index2.html
Dakota State University	Madison, South Dakota	http://www.departments.dsu.edu/bis/ProposedBS.htm

(Author's note: there may be other programs that are in development. These are the six programs that the authors found through their research.)

3. CURRICULUM ISSUES:

As a campus starts an electronic commerce program, there are many curriculum issues. Some questions might be: is this a

business program or an information systems program; how much marketing should be in the program; how much telecommunications should be in the program; how much technology – and what technologies should be in the program; how do we cover legal issues, financial and accounting issues, security issues and the many other aspects of conducting business electronically. In Internet electronic business, there are graphical and artistic questions, such as which colors and images might appeal most to consumers. There are the technical back-end issues, such as database interfaces, security, and server issues. Other technical questions include: how much programming should be in the program – such as Java, active server pages, CGI, Perl and other programming and scripting languages. The programs described below are in the school of business and generally reflect the business nature of electronic commerce and do not emphasize the graphical or artistic side of electronic / Internet marketing.

4. AN INTRODUCTION AND OVERVIEW OF THE PROGRAMS: OUR LADY OF THE LAKE UNIVERSITY, SAN ANTONIO TEXAS

Our Lady of the Lake University, San Antonio, Texas was one of the first undergraduate programs in Electronic Commerce. They offer both a Bachelor of Science program and a Bachelor of Business Administration Program. The Bachelor of Science program has 24 semester hour credits in business courses, 15 credits in an information systems core, and 24 credits in the electronic commerce program. The Bachelor of Business Administration program has 39 credits in the business core, 15 credits in the information systems core, and 18 credits in electronic commerce courses. The major difference between the two program is that the Bachelor of Science program has 15 less credits (i.e. 5 courses) in the business area, and six more credits (i.e. two courses) in the electronic commerce area. Thus, the Bachelor of Science program has a stronger emphasis on Electronic Commerce courses (24 credits) as compared to the Bachelor of Business Administration program (18 credits).

Taking a closer look at Our Lady of the Lake University's E-Commerce program, the Electronic Commerce courses in the Bachelor of Science program (the more in-depth E-Commerce program) include:

- Introduction to Electronic Commerce
- Electronic Commerce Applications and Business Issues

- Telecommunications Management
- Telecommunications Technology
- Network Design and Implementation
- Computer and Telecommunications Security
- Electronic Commerce Systems Project
- Advanced Electronic Commerce Elective

Of special note is that the courses within their program tend to focus more on the telecommunications aspect of electronic commerce. For the Bachelor of Science degree, there is not a specific marketing class. For the Bachelor of Business Administration, only the traditional marketing course in the business core is taken. The major trade-off between the two programs is that the Bachelor of Business Administration program has a fully offering of business courses and fewer electronic commerce courses, and visa-versa in the Bachelor of Science program.

5. TEXAS CHRISTIAN UNIVERSITY, FORT WORTH, TEXAS

Texas Christian University started their Bachelor of Business Administration for the fall semester 2000. Their program in Electronic Business with 30 hours in business administration courses and 24 hours in electronic business courses. Of special note, in their business administration core, the first course in eBusiness (eBusiness I) is required of all business majors. (Note they have adopted a course prefix of "eBusiness"). Their Electronic Business Courses include:

- eBusiness II. (such topics as security, privacy and legal issues)
- eBusiness Planning (a systems analysis and design course)
- Data for eBusiness (a database course)
- eBusiness Development. (analysis and design topics)
- Telecommunications
- Professional eBusiness Internship
- eBusiness Consultancy I
- eBusiness Consultancy II

In general, the TCU program is less telecommunications oriented and could be considered to be more "balanced" than the Our Lady of the Lady University program in terms of a broader perspective on electronic commerce. The emphasis seems to be more on planning, development and practical experiences (such as the internship and two consultancy courses). The students do take a marketing course as part of the business core. One interesting aspect, although not directly related to the Electronic Business major, is that all students are required to take the first eBusiness course.

6. UNIVERSITY OF SOUTH ALABAMA

The University of South Alabama started their Bachelor of Science in E-Commerce for fall semester 2000. Their business core has 51 credits of standard business offerings – including two accounting courses, two economics courses, two business statistics courses, a marketing course, finance, a business law course, and three management courses, plus two courses designed to give the student an international business

understanding. The E-Commerce major has 24 credits as follows:

- Introduction to E-Commerce (with a MKT prefix)
- Internet Marketing (with a MKT prefix)
- Current Issues in E-Commerce (with a MKT prefix)
- Senior Project in E-Commerce (with a MKT prefix)
- Publishing for the WWW (IS prefix)
- Website management (IS prefix)
- E-Commerce Systems (IS prefix)
- E-Commerce elective course

A general analysis of the University of South Alabama's program indicates a strong emphasis on the marketing aspects of electronic commerce, as four of the courses within the e-commerce program have marketing prefixes. As compared to Our Lady of the Lake's program, where there was no marketing and several telecommunications courses, this program at USA seems to be less technical. There are no explicit telecommunications courses, although it might be assumed that the website management course might include some telecommunications aspects.

7. UNIVERSITY OF SCRANTON, SCRANTON, PENNSYLVANIA

The University of Scranton, in Scranton Pennsylvania is another program that just started for fall semester 2000. Their program has the traditional business core with two economics courses, two accounting courses, two business statistics courses, legal environment, marketing, finance, management science, production and operations management, management, and business policy and strategy. They have only five required courses and three elective courses in their program. The required courses are:

- Introduction to Electronic Business
- Electronic Business Communications Networks
- Database Management for Electronic Business
- Internet Application Development
- Projects in Electronic Business

The student then chooses three electives from six courses:

- Interactive Marketing
- Investments in an IT Environment
- Accounting for Electronic Business
- Supply Chain Management (a SAP course)
- Electronic Business Security, Controls and Ethics
- Electronic Business Entrepreneurship

Analyzing the Electronic Business program at the University of Scranton shows courses in telecommunications, database management, and Internet application development. While the students will have the traditional marketing course in the business core, the interactive marketing course is an elective in the program. The other electives seem to be from the other business disciplines – such as finance (“Investments in an IT Environment”); accounting (“Accounting for Electronic Business”); management (“Supply Chain Management”); and information systems (“Electronic Business Security, Controls and Ethics”). As compared to the previously mentioned programs, this program seems to have less depth in information systems and information technology, but students can take courses that interface with other business disciplines, such as accounting and finance.

8. UNIVERSITY OF TOLEDO, TOLEDO, OHIO

The University of Toledo, in Toledo, Ohio started its Bachelor of Business Administration program in E-Commerce for fall semester 2000. Like the other programs describes in this paper, it too builds on the common business core. Their program requires four E-Commerce courses:

- Ecommerce and the Networked Economy
- Web Design for Business Communication
- Ecommerce Intelligence Management
- Ecommerce Business Models and Projects

Students then select one of two options:

Information Technology track or Electronic Commerce Business track. Each track has two courses. In the Information Technology track, the courses include (1) Programming and (2) Application Development using Database Management. The Business track has the student selecting two courses from three possibilities: (1) Financial Marketing and Institutions; (2) Internet Marketing; and (3) Global Framework for Ecommerce. The University of Toledo's BBA program in E-Commerce does not have the depth in telecommunications of Our Lady of the Lake or the depth in marketing of the University of South Alabama. With only six courses specified for the major, it may not be as comprehensive as the other programs that are being compared.

9. DAKOTA STATE UNIVERSITY, MADISON, SOUTH DAKOTA

Dakota State University is another institution that just began its program in Electronic Commerce for fall semester 2000. It offers the Bachelor of Science degree in Electronic Commerce. It is a variant of their Bachelor of Science program in Information Systems. It too has a common business core – although not as in as much depth as a full BBA program. The courses in the business core include: two accounting courses, two business statistics courses, finance, marketing, production and operations management, MIS, and an added business course called “Entrepreneurship and Marketing Research”.

Their courses in the E-Commerce program include:

- Business Applications Programming
- Web Programming I (Java and HTML)

- Web Programming II (Perl and CGI)
- Systems Analysis and Design
- Computer Hardware, Data Communications and Networking
- Local Area Networking
- Operating Environments
- Database Management Systems
- Advanced Database Applications
- Internet and E-Commerce (security, active server pages and database interfaces)
- E-Commerce Internship

The program seems to be a blend with a strong emphasis on Information Systems plus an additional marketing course (Marketing Research), two courses in communications, two courses in web programming (utilizing Java, Perl, CGI, and ASP); two courses in database management and applications. It tends to be a more technically oriented program with an emphasis on the programming and database applications.

10. ACKNOWLEDGEMENTS

This study included a major undertaking by two undergraduate students: Janel Dopheide and Dusine Jensen. These two students were seniors in Dakota State Universities Center of Excellence in Computer Information Systems during the 1999-2000 academic year. Under the guidance of the author, they conducted an e-mail survey of 116 attendees of ISECON 1999 - with 63 returns (a return rate of 54%). The complete results are available from the Director of the Center of Excellence, Dakota State University, 820 N. Washington Avenue, Madison, SD 57042. The survey determined the current level of electronic commerce courses among the ISECON 1999 attendees.

11. CONCLUSIONS:

Of the six programs studied in this paper, five are new with first programs offerings for fall semester 2000. The programs are all based within the business school and all require a business core, although some require more business courses and others less. The actual electronic business / electronic commerce aspects of the programs do vary widely. Some are very technical and emphasize the telecommunications or programming/database aspects of electronic commerce, while others emphasize the marketing nature of doing business electronically. With the rapid growth of electronic commerce, the author strongly feels that these six programs exhibit leadership in this emerging field of electronic commerce.

It is too early to see what standards may be developed for electronic commerce programs for undergraduate degrees. The schools described in this paper are embarking on a new road, where dynamic change and innovations seem to be the norm. It is expected that electronic business and electronic commerce programs on the undergraduate level will be added on many other campuses in the next few years.

12. REFERENCES

The material in this paper largely comes from web sites from the programs.

Our Lady of the Lake University, San Antonio Texas, web site for the electronic commerce program is at <http://www.ollusa.edu/~ectc/>

Texas Christian University, Fort Worth, Texas, web site for the electronic business program is at <http://voltaire.is.tcu.edu/~mackay/ecprogram.htm>

University of South Alabama, Mobile, Alabama, web site for the electronic commerce program is at <http://mcob.usouthal.edu/eccommerce.html>

University of Scranton, Scranton, Pennsylvania, web site for the electronic business program is at <http://academic.uofs.edu/departments/somhomepage/elctbus.htm>

University of Toledo, Toledo, Ohio, web site for the electronic commerce program is at <http://ecommerce.utoledo.edu/>

Dakota State University, Madison, South Dakota, web site for the electronic commerce program is at <http://www.departments.dsu.edu/bis/ProposedBS.htm>

The American Assembly of Collegiate Schools of Business (AACSB) web site is at <http://www.aacsb.edu/e-business/bachelors.html>

Survey of ISECON 1999 attendees – conducted by e-mail by Bruce White, Janel Dopheide and Dusine Jensen.