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A Comparison of the ERP Offerings of AACSB Accredited Universities Belonging to SAPUA

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Abstract

This paper looks at the ERP offerings at 17 universities that are accredited by the Association to Advance Collegiate Schools of Business (AACSB), have a concentration, major or 4 year degree in Information Systems (IS) and who also belong to the SAP University Alliance (SAPUA). SAP was chosen because it is by far the largest ERP company and is the number one software producer in the world by sales volume. It was intended to find out what are the characteristics of the IS programs that offer ERP. The data was gathered by looking at the web pages of each of the IS programs. A comparison of the IS offerings of these universities to IS'2002 is also made. The major deficiencies of programs that do not meet the IS'2002 Curriculum are listed. In addition, a preliminary indication of how these universities would fare under the ABET IS accreditation criteria is made.

Keywords: ERP, AACSB, SAPUA, comparison

Introduction

There have been many changes in the IS curriculum over the past thirty years. Two recent major changes have been caused by the development of the Internet and the adoption of Enterprise Resource Planning (ERP) software by most major companies in the world. As of January 2003 there were 399 universities that had their business programs accredited by the AACSB. A paper by Maier and Gambell (1) in 1996 looked at 108 universities that had their business program accredited by AACSB and listed the IS curriculum offerings of 43 of these universities that offered a 4 year degree major in IS. It is not surprising that in 1996 there were no courses on ERP being offered. A recent paper by Heinrichs and Banerjee (2) investigated the core IS offerings of 40 randomly selected AACSB accredited universities but ERP was not one of the courses investigated. The paper by Watson and Schneider (3) investigated using ERP in universities but was oriented to discussing how to use ERP in business courses. The paper by Bradford, Vijayaraman and Chandra (4) investigated the integration of ERP into business school curricula with the emphases on integration. Their sample was 35 universities where 23 of these universities were AACSB accredited. It should be noted that most IS programs are in colleges of business and AACSB accredits the college of business but does not accredit the IS program or the department where IS is taught.

Methodology and Data Analysis

As of January 2003 there were 399 universities that had their business programs accredited by the AACSB. The SAPUA had 100 universities and colleges listed on August 2001 (the latest published) and a list of these universities is included in Appendix A. Seventy five of these universities were accredited by AACSB. Of these universities, 66 offered a concentration or a major or a degree in IS. Of these universities it is surprising to see that only 17 of these universities offer courses on ERP or SAP in the IS programs. Since all of these universities have SAP, it is likely that other business departments are using SAP. A study by Rosemann (7) indicated that in 1999 the major users of SAP among the universities

belonging to the SAPUA were the business application areas including accounting, logistics, business administration, human resources (HR) and marketing.

The analysis of the IS programs was done by examining the web listings of the above universities. It is noted that many universities may have a time lag between offering a course and when the course is listed on the IS program web page. It is also noted that ERP may be taught under a generic topics title and this may not be apparent from the course title.

ERP Offerings

The course offerings at the 17 universities are listed in Table 1 below.

Table 1. ERP Course Offerings in IS Programs

University	Prefix	No.	Title
California State U, Chico	MINS	220	ERP: Systems Configuration and Use
California State U, Chico	MINS	222	ERP: Systems Administration
California State U, Chico	MINS	224	Business Programming with ABAP
Central Michigan U	BIS	247	SAP Enterprise Software in Business
Central Michigan U	BIS	357	ABAP/4 Programming Fundamentals
Central Michigan U	BIS	458	SAP Configuration & Implementation
Clarkson U	IS	211	Intro to ERP Tools and Applications
Fairleigh Dickinson U	MIS	6611	Enterprise Resource Planning
Fairleigh Dickinson U	MIS	6612	Enterprise Information Systems
Florida International	ISM	3153	Enterprise Information Systems
Georgia Southern	CISM	4334	Enterprise Planning Using SAP
Indiana U	CIS	415	Enterprise Resource Planning
Indiana U of Penn	IFMG	465	ERP Technical Fundamentals
La Salle U	MIS	405	Emerging Information Technology
Louisiana State U	ISDS	4111	Enterprise Systems
Northern Arizona U	CIS	460	Advanced Topics in Information Technology
Rider U	MIS	485	Management Information Systems
Rider U	MBAD	616	Enterprise Integration
Santa Clara U	OMIS	135	Enterprise Resource Planning Systems
S Illinois U Carbondale	MGMT	456	Enterprise Resource Planning and Decision Support
Texas A & M U	INFO	468	Enterprise Resource Planning
U of Arizona	MIS	451	Enterprises and Business Intelligence Systems
Villanova U	DIT	2175	Enterprise Systems & Applications
Villanova U	DIT	2176	Enterprise Computing & E-Commerce

It can be seen that most universities above offer an introduction ERP course and only 5 universities offer more that one ERP course.

University Data

Although there are some common ERP course offerings among the 17 universities in the sample, there are wide differences in the IS programs in the sample. Summaries of some of the differences are included in Tables 2, 3 and 4.

Table 2. Course Prefixes

Name	No. of Programs	Name	No. of Programs
MIS	4	ISM	1
CIS	2	CISM	1
IS	1	IFMG	1
INFO	1	Other	6

Table 3. Department of IS Programs

Department	No. of Programs
IS, MIS, CIS, CISM, BIS	6
With Decision Science	4
With OM, MS, Quant	3
With MGMT	2
With ACCT	1
With School of Business	1

Table 4. Number of IS Faculty

Characteristic	Number
Range of the number of IS faculty	8-30
Average number of IS faculty	17
29 or more IS faculty	2
20 or more IS faculty	5
15 or more IS faculty	9
10 or more IS faculty	16
8 or more IS faculty	17

Table 5. Comparisons with Heinrichs and Banerjee

Course Prefixes	Current Study	%	Heinrichs & Banerjee	%
MIS	4	23	5	13
IS	1	6	3	7
CIS	2	12	10	25
Other	10	59	22	55
Total universities	17		40	

Table 6. Comparison Of IS Curriculum Studies

	Current Study	Maier & Gambill	Heinrichs & Banerjee
Sample Size	17	43	40
Year	2003	1996	2002
AACSB Accredited U	399	600	390

Model Curricula

IS'2002

Since the release of IS'97, the joint ACM, AIS and AITP IS curriculum committee continues to meet and revise the model IS curriculum in light of technology changes, especially the development of the Internet. When IS'97 was written there was no indication of the importance of the web and Internet programming. Since IS'97 there has also been significant changes in the basic computer literacy of incoming students. However, this improvement in computer literacy might not be as improved as is generally thought, as a paper for Georgia Southern University at this conference shows. IS'2002 was developed to reflect these changes. IS'2002 is shown below in Table 7.

Table 7. The IS'2002 Model IS Curriculum

Course No.	Course Title	Course No.	Course Title
IS'2002.1	Fundamentals of Information Systems	IS'2002.6	Networks & Telecommunications
IS'2002.2	Electronic Business Strategy, Architecture & Design	IS'2002.7	Analysis & Logical design
IS'2002.3	Information Systems Theory & Practice	IS'2002.8	Physical Design & Implementation with DBMS
IS'2002.4	Information Technology Hardware & Software	IS'2002.9	Physical Design & Implementation with a Programming Environment
IS'2002.5	Programming, Data, File & Object Structures	IS'2002.10	Project Management and Practice

It should be noted that there are two major changes in IS'2002 from IS'97. IS'97.PO and IS'97.2 are combined into one course, IS2002.PO, which is a pre curriculum course. IS'202.2 Electronic Business Strategy, Architecture and Design is a new course reflecting the new importance of the Internet. The IS'2002 committee states that their model curriculum should be used as a guide but not as proscribed courses and that faculty can design their own courses.

IS Accreditation

Although AACSB accredits colleges of business, so far it has not accredited information systems (however, it seems to be considering this evaluation). Computer science and computer engineering have been accredited by the Accreditation Board for Engineering and Technology (ABET) for many years. Recently ABET has developed an accreditation program for IS. In 2002, the program at Pace University was accredited. By January 2004 the IS programs at Drexel, Illinois State, North Florida, Pace, Robert Morris, South Alabama and Virginia Commonwealth were listed as accredited on a ABET accreditation web page.

For IS accreditation ABET (5, 6) considers the following:
- Program design and level
- Objectives and assessment
- Students
- Faculty
- Curriculum
- Technology infrastructure
- Institutional support and financial resources
- Program delivery
- Institutional facilities.

For curriculum, The ABET curriculum intent (5, p. 18) is
"The curriculum combines professional requirements with general education requirements and electives to prepare students for a professional career in the information systems field, for further study in information systems, and for functioning in modern society. The professional requirements include coverage of basic and advanced topics in information systems as well as an emphasis on an IS environment. Curricula are consistent with widely recognized models and standards."

Since IS'2002 appears to be the most widely recognized IS curriculum model, it will likely be widely used as an IS accreditation standard. From this study there are two recommended IS'2002 courses that will play an important role in the accreditation process. The courses are IS'2002.2 Electronic Business Strategy, Architecture and Design and IS'2002.4

Information Technology Hardware and Software. The following table shows the offerings of IS'2002.2 and IS'2002.4 among the 17 universities in this study.

Table 8. IS'2002.2 and IS'2002.4 Availability

Course	Course Title	No of Universities Offering
IS'2002.2	Electronic Business Strategy, Architecture & Design	17
IS'2002.4	Information Technology Hardware & Software	0

Table 9. Number Of IS Courses Offered

No of Courses Offered	No of Universities
10 or more IS courses	15
12 or more IS courses	13
14 or more IS courses	10
16 or more IS courses	9
20 or more IS courses	5
29 or more IS courses	3
Less than 10 IS courses	1

To meet the IS'2002 model criteria it is not necessary to offer ten courses with exactly the same titles as proposed by IS'2002 curriculum. However it would be difficult to cover all the content in IS'2000 if significantly less than ten IS courses are offered. From Table 9 it can be seen that 15 universities have 10 or more courses, so it could be possible that they might meet the IS'2002 course criteria. From Table 8 it can be seen that all the 17 universities in the study meet the IS'2002.2 E-Commerce requirement, however it is surprising that none of the universities have a course that is similar to IS'2002.4. Perhaps the IS students take such a course from the computer science department but this was not obvious from the web pages that were examined. These IS programs might have a difficult time making that case that they meet the IS'2002 model curriculum if they do not offer the content of IS'2002.4 somewhere in their curriculum. It is likely that these IS programs would have to make some additions to their curriculum before they could meet the model curriculum requirements.

Conclusions

The purpose of this study was to find out what ERP courses were taught by universities accredited by AACSB (399), had a concentration, major or 4 year degree in IS(66) and belonged to the SAPUA (100). There were 17 universities that met these criteria and the list of the ERP courses is contained in Table 1. In addition to finding out what ERP courses were taught, this study compared these 17 IS programs to see what similarities and differences exist. It was intended to find out what are the characteristics of the IS programs that offer ERP courses. These comparisons are exhibited in Tables 2, 3 4, 8 and 9. Although these departments had widely different course prefixes for their IS courses, it is interesting to note that 12 of these IS programs are in separate IS departments not in combined departments with other subject areas.

In addition it was intended to look at these seventeen IS programs and see how they would fare if they were to be considered for accreditation by ABET. Fifteen of these universities offer at least ten IS courses, so could possibly meet the IS'2002 requirements. It was very surprising to see that all of these universities do not offer any course that could be related to IS'2004 Information Technology Hardware & Software. It should be noted that this Hardware and Software course is the first IS course listed in the ABET accreditation questionnaire document (5, p 29), so it would not be an easy course to overlook. It was also interesting to see that all of these universities offer at least one course in e-commerce. It would be interesting to find out if there are similar results for all IS programs. It would appear that many IS programs should be reviewing there IS curriculum to make sure that IS'2002.2 and IS'2002.4 are covered in their courses.

References

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Appendix

SAP University Alliance Program Members United States

Abilene Christian U	Salem State College
Alfred U	Sam Houston State U
Anne Arundel Community College	Savannah State U
Arcadia U	Southeast Missouri State U
Arizona State U	Southern Illinois U, Edwardsville
Auburn U	Southern U and A&M College
Ball State U	St. John's U
Bentley College	St. Joseph's U
California State U - Chico	Stetson U
California State U - San Bernardino	Syracuse U
California State U - Fullerton	Temple U
Central Michigan U	Texas A&M U
Clarkson U	U of Arkansas
Cleveland State U	U of California - Irvine
The College of New Jersey	U of Cincinnati
Delaware County Community College	U of Delaware
Drexel U	U of Florida
Duquesne U	U of Georgia
Eastern Michigan U	U of Houston
Florida A&M U	U of Michigan - Dearborn
Florida International U	U of Mississippi
Fordham U	U of Missouri - Columbia
George Mason U	U of Missouri - Rolla
Georgia Institute of Technology	U of Nebraska - Lincoln
Georgia Southern U	U of Nebraska - Omaha
Grand Valley State U	U of North Carolina - Greensboro
Harvard Business School	U of Pennsylvania
Houston Baptist U	U of Scranton
Indiana U - Kelly School	U of Southern California
Indiana U - Kokomo	U of South Dakota
Indiana U of Pennsylvania	U of St. Thomas
Indiana U - South Bend	U of Tennessee - Knoxville
John Carroll U	U of Texas - Arlington
La Salle U	U of Texas - Dallas
Lincoln U	U of Wisconsin - Milwaukee
Louisiana State U	U of Wisconsin - Oshkosh
Northern Arizona U	U of Wisconsin - Parkside
Northern Michigan U	Villanova U
Northwestern Polytechnic U	Virginia State U
Pace U	Virginia Commonwealth U
Pennsylvania College of Technology	Washington College
The Pennsylvania State U	Western Michigan U
Purdue U	Wichita State U
Rider U	Widener U
Rochester Institute of Technology	William Paterson U
Rutgers U	Youngstown State U