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December 1999

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## Abstract

This paper presents the results of a survey of AACSB schools of business regarding the extent to which international topics are included in information systems and technology courses. The survey found certain characteristics of the internationalization of such courses that can be used as guides for determining how international topics might be incorporated into an information systems curriculum.

## Introduction

As businesses increasingly compete in the global marketplace, information systems in international businesses become more important. Such systems require special consideration because of the economic, cultural, political, and legal differences among countries. The problems associated with global information systems are not only technical, but also organizational and environmental. While business students today need to be educated in traditional international business subjects such as international marketing and finance, they also need to be prepared in the international problems and issues associated with information systems and technology.

Recognizing this need, a project to explore the internationalization of the information systems curriculum in the College of Business at San Francisco State University was incorporated into a Business and International Education (BIE) grant from the Department of Education. As part of this project, a survey was conducted of AACSB schools of business to assess the extent to which international topics are included in information systems and information technology (IS/IT) courses at these schools. This paper presents the results of that survey.

## Related Work

Only limited previous work on internationalization of IS/IT courses has been reported in the literature. Carmel and DeLone (1997) describe the internationalization of the entire MIS curriculum at American University. El Sawy and Kumar (1998) discuss their experiences teaching IS management for global operations at the University of Southern California. Goslar and Deans (1994) present the results of surveys of IS faculty in U.S. and foreign universities regarding internationalization of the IS curriculum. Deans and Loch (1998) compare the results of the Goslar and Deans (1994) survey of U.S. universities with a follow-up survey of the same universities. Khosrowpour and Loch (1993) cover many aspects of global IT education in chapters contributed by various authors. One chapter by Palvia (1993) presents the results of a survey that assesses teaching and research needs in global information systems at MIS departments.

## Survey Design and Administration

The survey instrument was divided into five parts. (Because of space limitations, the survey instrument is not included in this paper. A copy of it is available from the author.) Part I of the survey examined the general approach used to present international topics in IS/IT courses at respondent schools. Part II was answered only by those respondent schools that do not cover international topics in IS/IT courses and explored the reasons for this situation. Part III was answered by those respondent schools that cover international topics in IS/IT courses and examined the courses and the international topics included in those courses. Parts IV and V of the survey provided background data on the respondent schools.

The survey and a cover letter were sent to the deans of all 335 AACSB accredited U.S. schools of business in the Spring of 1998. Instructions in the cover letter requested that the dean pass the questionnaire on to the individual who could best answer the questions. Seventy (20.9%) completed questionnaires were returned and analyzed.

The remainder of this paper summarizes the responses received from the survey. Because of space limitations, detailed tables with the results of the survey are not included in this paper. An expanded version of this paper with the tables and the survey instrument is available from the author.

## Characteristics of Respondent Schools

Almost all schools offer BA/BS (97.1%) and/or MBA (98.6%) degrees. About one-third of the schools (34.8%) have a PhD/DBA program. Most schools offer an IS/IT degree program or concentration at the baccalaureate (94.3%) and/or masters (83.0%) level. About one-third of the schools (32.1%) provide such a program at the doctorate level.

All but one of the schools indicated that their IS/IT departments were housed in the school of business. The mean number of IS/IT faculty reported was 20.4. An average of 8.4 undergraduate and 6.4 graduate IS/IT courses were offered by the respondent schools.

## IS/IT Course Offerings

A few schools (9.1% UG [undergraduate], 10.3% GR [graduate]) do not have IS/IT courses and some that have such courses (27.3% UG, 16.2% GR) do not cover international topics in the courses. Approximately two-thirds of the schools (62.1% UG, 69.1% GR) cover international topics in IS/IT courses by integrating these topics into selected courses. Some schools (9.1% UG, 19.1% GR) offer separate global IS/IT courses, more so at the graduate level than at the undergraduate level. (Percentages, which are of total number of respondents to this question, do not total 100% because multiple answers were allowed.)

Of those schools that do not cover international topics in IS/IT courses, the most common reason given for not doing so was that the topics were not relevant (40.0%), followed by lack of resources (26.7%), lack of qualified faculty (26.7%), and lack of faculty interest (26.7%). Only one school plans to offer in the future a separate IS/IT course covering international topics. That course is planned for the graduate level. Six schools plan to integrate international topics into existing IS/IT courses in the future, with the courses split evenly between undergraduate and graduate levels.

## International Coverage in IS/IT Courses

Respondents at schools that cover international topics in IS/IT courses were asked to rate the importance of doing so. 81.3% of the respondents to this question felt that covering international topics in IS/IT courses at the undergraduate level was somewhat or very important. 96.0% felt this way for IS/IT courses at the graduate level. Consistent with these percentages, the mean response at the undergraduate level (3.979 on a scale from 1 [very unimportant] to 5 [very important]) was less than the mean response at the graduate level (4.540), and the standard deviation was higher (0.910 UG, 0.788 GR).

At both the undergraduate and graduate levels, the respondents at schools that cover international topics in IS/IT courses somewhat or strongly preferred that international topics be integrated into selected IS/IT courses (77.3% UG, 65.3% GR). Somewhat or strong preference for covering international topics in separate IS/IT courses was higher at the graduate level than at the undergraduate level (16.0% UG, 22.4% GR).

## International Topics in IS/IT Courses

Respondents at schools that cover international topics in IS/IT courses were asked to rate the importance, on a 1 to 5 scale, of covering each of sixteen international topics in IS/IT courses for undergraduate and graduate business students and in IS/IT courses for undergraduate and graduate IS students. Use of the Internet for global applications was rated first or second in importance for all courses. International business concepts, information technology for GIS (global information systems), telecommunications technology and issues for GIS, and global alignment of business and IS strategy were also rated highly for all courses. Managing GIS was rated highly in the courses for IS students but less so in the courses for business students. Global applications in functional areas was rated highly in courses for business students but less so in courses for IS students.

All topics received higher mean responses for graduate IS students than for all other types of students. All but one topic received higher mean responses for graduate business students than for undergraduate business students. All topics received higher mean responses for undergraduate IS students than for undergraduate business students.

Respondents were asked to list up to four IS/IT courses at their schools that included international topics and to check the topics covered in the courses from the same list of sixteen topics discussed previously. These courses were analyzed to identify four general types of courses:

- Course A: An IS/IT course at the undergraduate level that integrates international topics with other IS/IT topics.
- Course B: A separate global information systems course at the undergraduate level.
- Course C: An IS/IT course at the graduate level that integrates international topics with other IS/IT topics.
- Course D: A separate global information systems course at the graduate level.

Courses that did not fall into one of these types were not analyzed.

Consistent with respondents' preferences, courses that integrate international topics with other IS/IT topics (Courses A and C) were the most common (40.0% A, 45.7% C); separate global information systems courses (Courses B and D) were offered at fewer schools (7.1% B, 17.1% D). (Percentages are of all survey respondents.) Courses of all types use lecture and case approaches, although the case approach is least common in Course A. Of those schools offering Course A or C, about three-fourths (78.6% A, 71.9% C) require the respective course of business students. Of those schools offering Course A about eighty percent (82.1%) require it of IS students; of those schools offering Course C about half (53.1%) require it of IS students. Of those schools offering Course B or D, few require either course. Course B was not required of business students in any school and of IS students in one school. Course D was required of business students in one school and of IS students in two schools.

The topics covered in each course were analyzed. Use of the Internet for global applications, international business concepts, telecommunications technology and issues for GIS, information technology for GIS, global alignment of business and IS strategy, and GIS organization are covered in at least half of all four courses at the respondent schools. These topics are the same as the respondents' preferred topics, with the addition of GIS organization.

## Discussion

The survey responses provide indications of the extent of and approach to internationalization of IS/IT courses at AACSB schools of business. The majority of schools cover international topics in IS/IT courses and do so by integrating the topics into selected courses. The schools that do not cover international topics in IS/IT courses do so primarily because they feel the topics are not relevant. The majority of the respondents at schools that cover international topics in IS/IT courses felt that doing so at both the undergraduate and graduate levels was important. Also, the majority prefer that international topics be integrated into selected IS/IT courses at both the undergraduate and graduate levels.

Use of the Internet for global applications, international business concepts, information technology for GIS, telecommunications technology and issues for GIS, and global alignment of business and IS strategy were the most preferred topics in IS/IT courses among those offering IS/IT courses that cover international topics. Topics commonly covered in actual IS/IT courses include these topics plus the topic of GIS organization.

## Conclusion

The survey results reported in this paper provide information to assist in the internationalization of IS/IT courses at colleges and universities. The survey found certain characteristics of the internationalization of such courses that can be used as guides for determining how international topics can be incorporated into an information systems curriculum. The details of such incorporation must, of course, be left to the faculty involved with the curriculum design at each institution.

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