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Industry/Academic Partnerships in Information Systems and Technology

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Abstract

Academic institutions and industry have long sought ways to align their interests and leverage their respective strengths. Academia has looked to external organizations for research funding, curriculum advice, employment opportunities for students, and as partners in field research. Public and private organizations have viewed academic institutions as sources for their educated workforce and research and development partners. A primary objective of this study was to develop a framework of existing IS industry/academic partnership activities that could be used to identify the most common and valuable practices and to share these findings with the IS community. Twenty-two activities were classified into six categories of partnerships: Student-Centered, Faculty-Centered, Curriculum-Centered, Professional/Leadership-Centered, Research-Centered, and Social-Centered. A survey to collect data on the extent and importance of individual activities was developed and piloted with a subset of academics who attended a recent SIM Academic Workshop and were therefore known to be interested in industry partnering. The typology and survey results are presented below.

Introduction and Prior Research

Academic institutions and both private and public organizations have long sought ways to align their self-interests (see Becker et al. 1993, 1994 and 1997). Academia has looked to external organizations for research funding, for employment opportunities for students (through cooperative education and internship programs), and as knowledge bases for research studies (see Dickson & Rockart 1980 and Amoroso et al. 1985). Industrial and private organizations have viewed academic institutions as sources for their educated workforce and for research and development partners. Occasionally ideas formulated in the academic environment even percolate into commercial products or organizations (Powers 1988).

Most of the early industry/academic partnerships were formed between engineering schools and science programs at universities (see NSF & NSB Study 1983). For the last twenty-plus years, information systems and technology programs with Schools and Colleges of Business Administration have sought to foster increasingly innovative avenues for their partnerships and alliances. One of the earliest formal alliances to emerge between management information systems departments in academia and the private sector were so-called

Information Systems Research Centers (see Dickson & Rockart 1980 and Olson & Stohr 1989). Over 200 IS research centers have been identified and catalogued on the IS World Net page for Academic Research Centers [http://www.coba.unt.edu/isitrc/].

A primary objective for this paper, therefore, is to share a preliminary typology that includes six categories of industry/academic partnerships. A secondary objective is to share some preliminary insights about the frequency and value of these activities from the perspective of representatives from 13 academic institutions known to be interested in partnering with the IS practitioner community.

Industry/Academic Partnership Framework

Information Systems Research Centers (ISRCs) were among the first academic organizations to formally recognize the importance of partnering with external constituency groups, such as industry, government and non-profit organizations (herein referred to simply as "industry"). These partnerships may involve activities as diverse as joint research projects, joint training and education programs, joint seminars and symposia, joint conferences, and/or consultancy relationships. However, other activities in schools with and without research centers, such as student internship programs, executives-in-the-classroom programs, and banquets where scholarships from industry are awarded to college students are also known to be widespread.

Based on the authors' knowledge of partnering activities at many different institutions, and the literature cited above, an initial attempt to develop a framework of these joint activities resulted in the identification of 22 activities that were subsequently classified into six broad categories through an iterative process. These are presented in Table 1 and briefly described below.

Student-Centered Partnerships

This category of activities represents one of the primary driving forces for many academic/industry partnerships. Many corporations look to colleges and universities as the primary suppliers of their future IT workforce. Student internships, cooperatives, job fairs, placement centers, student nights, campus recruitment coordinators all help create the bond between student and future employer. A high percentage of student interns are being offered employment opportunities in advance of the

typical recruiting season. Even industry-sponsored scholarships are often viewed as a means of alerting the best students to employment opportunities in one's organization, and in recent years many corporations have targeted a small number of schools for this type of partnership.

Faculty-Centered Partnerships

Faculty-centered partnerships provide a relatively inexpensive vehicle for the transfer of knowledge and skills between practitioners and academics. Because of teaching calendars, many faculty can arrange to spend a few months in-residence at a public or private organization outside of the university. Often times this arrangement can be accomplished during a faculty member's paid-sabbatical semester, although this benefit is not available at all institutions.

Executive speakers and executives on campus provide a direct means of sharing practical knowledge and experiences with a large number of students and faculty. In addition, business executives are exposed to the issues and constraints faced in the classroom by their faculty counterparts.

Curriculum-Centered Partnerships

Most curriculum-centered partnerships have resulted in so-called industry-academic advisory boards. These joint boards advise academic administrators, faculty, and students on the nature of the entry-level skills needed in the workplace, today and in the near future. Anecdotal evidence to date indicates that a gestation period of one of more years is needed for these boards to begin to become successful.

A more recent type of partnership is the design and delivery of customized degree and non-degree programs by a selected university for a particular firm. The Executive MBA is an example of a degree program. Non-degree programs are sometimes referred to by participating organizations as mini-MBA's. Given the shortage of skilled IS/IT personnel, the usual multi-year degree programs have proved to be inadequate to fill the growing needs for new or retrained IT workforce.

Professional/Leadership-Centered Partnerships

Faculty membership in a professional organization such as SIM, ACM, and DPMA is included in the professional-leadership-centered partnership category. Professional organizations that preclude or severely limit academic participation or industry participation (such as AIS and DSI) are not intended to be included here. Some academic institutions sponsor student organizations or chapters of these professional organizations. Another example here would be an educational program conducted

predominantly by industry representatives for selected students, typically not-for-credit.

Research-Centered Partnerships

ISRCs are the most tangible evidence of this type of partnership activity. Also included in this category are corporate or government grants, which foster research interactions among faculty, students and industry.

Table 1. Industry/Academic Partnerships

1. Student-Centered Partnerships
a. Student Cooperatives
b. Student Internships
c. Scholarships
d. Job Fairs
e. Placement Centers
f. Student Nights
g. Campus Recruitment coordinators
2. Faculty-Centered Partnerships
a. Faculty Internships
b. Development Grants
c. Executive on Campus
d. Executive Speakers
3. Curriculum-Centered Partnerships
a. Industry-Academic Advisory Boards
b. Customized Degree Programs for Companies/Consortia
c. Customized Non-Degree Programs for Companies/Consortia (some w/partial credit for degree programs)
4. Professional/Leadership-Centered Partnerships
a. Faculty Membership in Professional Organization
b. Student Professional Organizations/Chapters
c. Specialized Professional Leadership Programs for Students and/or Faculty
5. Research-Centered Partnerships
a. Corporate & Government Grants
b. Research Centers
6. Social-Centered Partnerships
a. Corporate Tours
b. Social Events
c. Awards Banquets

Social-Centered Partnerships

A final category includes a set of wide-ranging activities to bring faculty, students and industry representatives together in what ostensibly appears to be primarily a social networking event. Awards banquets, tailgate parties at sporting events, and ad hoc invitations for on-site tours.

Survey Methodology

A survey instrument was developed to collect data on institutional participation in each of the 22 activities identified, as well as the perceived value of this activity to the respondent's institution. As a first step toward identifying the completeness of the framework and

capturing some insights about partnership practices, a pilot study was conducted with representatives of academic institutions that were expected to be more experienced with industry partnerships than academic institutions with IS/IT programs as a population. The respondents were 13 attendees at the Society for Information Management (SIM) Academic Workshop held in December 1999 prior to ICIS in Charlotte, North Carolina (representing about one-quarter of the workshop attendees). Most of the attendees at this workshop were members of SIM—academic institution members, chapter members, or members-at-large. Six of the respondents were SIM Academic Institutional members for 1999 and/or 2000, representing about 30% of this type of membership category.

Pilot Survey Results

The lists of items within the six categories were found to be relatively complete. Only two respondents provided an "Other" response for any of the six categories. Both of these responses referred to "other" business speakers—one for the Student-Centered category, one for the Social-Centered category. The respondents indicated that these business speakers were not involved in a Faculty-Centered activity. Rather, the executives spoke at either their corporate location or at a professional organization meeting. In addition, one school reported that their annual participation in an Information Technology Exhibition was perceived to be a high-value activity. This item belongs to the Professional/Leadership-Centered category.

The results in terms of levels of participation in the six broad categories of industry/academic partnerships are presented in Table 2. The two categories with the highest level of participation (average percentage of activities within category checked "yes") were the Student-Centered Partnership category (79%) and the Professional/Leadership-Centered category (77%). Faculty-Centered activities had the lowest frequency (42%).

The respondents were also asked to indicate the "perceived value (high to low) to your organization" for each of the activities that they participated in. As can be seen from Table 2, the mean for all categories was well above the scale midpoint (4.23/5.0). Research-Centered Partnerships were scored the highest (4.47) and Social-Centered Partnerships had the lowest perceived value (3.93). Faculty-Centered Partnerships received the second highest value rating (4.34). Since this last category also had the lowest level of participation, it represents an area where academia could potentially gain considerable additional value. Given the makeup of our sample, however, these results must of course be viewed as representative of academic institutions with considerable interest in industry partnerships for research purposes. The survey asked no questions about the perceived value from the practitioner viewpoint.

Table 2. Participation Level and Value by Partnership Category

Type of Partnership	Level of Participation (mean % of activities checked "yes")	Value of Activities (mean rating on 5-point scale where high=5, low=1)
1. Student-Centered	79%	4.29
2. Faculty-Centered	42%	4.34
3. Curriculum-Centered	64%	4.22
4. Professional/ Leadership-Centered	77%	4.09
5. Research-Centered	65%	4.47
6. Social-Centered	67%	3.93
Overall Mean	*65%*	*4.23*

The results of our examination of specific activities within each category will be shared at the conference.

Conclusion

Academia has long looked to external organizations as sources for funding, knowledge bases for research and curricula studies, as well as employment opportunities for students. This six-category framework appears to be useful for comparing partnership activities across institutions, as well as for highlighting activities of high perceived value that are not being widely leveraged. These issues will be explored further, when the sample size is expanded to a larger sample of schools as well as industry organizations.

References (selected)

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Note: Complete references, definitions of terms, and a copy of the survey are available from the first author.