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## **Goal Congruence, Trust and Organizational Culture: Strengthening Knowledge Links<sup>1</sup>**

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### **Abstract**

*Collaboration between organizations benefits from knowledge links  $\frac{3}{4}$  a form of strategic alliance that gives organizations access to the skills and capabilities of their partner and opportunity to create new capabilities together. Using the example of alliances between two universities and SAP AG, the market leader in Enterprise Software, the paper suggests some management practices to improve goal congruence, trust and alignment between different organizational cultures. For example, face-to-face interactions are critical for building a close relationship over time. A theoretical framework of the five phases of partnership development and the three challenges faced by knowledge link partnerships is proposed, along with implications for management, universities and research.*

**Keywords:** Strategic Alliances, IS Curriculum, Software Packages, Organizational Culture

### **INTRODUCTION**

The University of Texas at Austin (UT) and Queensland University of Technology, Brisbane, Australia (QUT) have formed alliances with SAP in America and Australia, based on a vision to sponsor relevant research and opportunities for students to gain enterprise software experience. SAP provides valuable resources, at a nominal fee that include the R/3 enterprise software with a populated learning database, and multimedia curriculum materials. Moreover, SAP offers training to faculty and university staff involved in the teaching, installation and technical support of R/3. In return, SAP seeks to access faculty research and to spread R/3 awareness and knowledge to students. Students gain exposure to a rich Enterprise Resource Planning (ERP) environment that illustrates concepts studied in class. These concepts include reengineering, change management, project management, client/server architectures, middleware, software objects, standards, business engineering modeling tools, process flows, and enterprise systems integration. In addition, R/3 provides students with hands-on experience and knowledge of business processes in financials, logistics and human resources. This type of alliance is a knowledge link.

The objective of this study is to further our understanding of how to strengthen such knowledge links. We have identified goal incongruence, lack of trust and incompatible organizational cultures as impediments to the success of such alliances. Consequently, efforts to manage these issues are likely to improve knowledge links. Using participant observations to analyze the gestation of two university-SAP alliances, we make recommendations and present implications for management, universities, and researchers.

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<sup>1</sup> This paper represents an early, exploratory analysis. Gable, Scott and Sapient College are continuing a longitudinal evaluation of their 'knowledge links' which is being written up in a pending journal publication.

## **THEORETICAL BACKGROUND**

The paper begins with a conceptual discussion of alliances and the partnership process, and then discusses the literature on goal congruence, trust and organizational culture.

### **The Partnership Process**

Interorganizational relationships, alliances and partnerships typically have five phases: (1) establishing the purpose, (2) finding a partner, and (3) defining, (4) maintaining and (5) institutionalizing the partnership (Lasher, Ives and Jarvenpaa 1991). First, the purpose of a partnership is to improve a firm's capabilities and resources when there is a perceived deficiency or opportunity (Badaracco 1991, Borys and Jemison 1989, Eisenhardt and Schoonhoven 1996, Hamel 1991, Lasher, Ives and Jarvenpaa 1991). Second, criteria for finding a suitable partner include assessment of strategic compatibility, trust and complementarity of resources and skills (Kanter 1994). Third, defining the partnership requires specifying, possibly with a legal contract or diplomatic boundary roles, activities, long-term commitments, and limits to sharing (Kanter 1994).

The fourth phase, maintaining cooperative relationships, depends on top management commitment, common superordinate goal setting, exchanging persons, a favorable attitude to the relationship, creating an atmosphere of mutual respect, maximizing opportunities to experience joint success, promoting open communication and communicating value creation (Badaracco 1991, Borys and Jemison, 1989, Eisenhardt and Schoonhoven 1996, Henderson 1990, Kanter 1989, 1994, Lasher, Ives. and Jarvenpaa 1991, Stern 1978). In the fifth phase, institutionalizing the partnership is achieved by the creation of a joint organizational culture (Lasher, Ives. and Jarvenpaa 1991).

### **Goal Congruence**

The first step to achieving goal congruence between partners is to focus on corporate vision (Badaracco 1991, Bennett 1996) and the intent of the partnership (Hamel 1991). The partnership needs to fit with top management's vision and the long-term strategy for both organizations (Lasher, Ives and Jarvenpaa 1991).

### **Trust**

Many researchers propose that trust is an important determinant of successful relationships (Badaracco 1991, Bennett 1996, Hamel 1991, Hart and Saunders 1997, Kumar 1996, Kumar and van Dissel 1996, Lasher, Ives and Jarvenpaa 1991). Trust decomposes into rational cognition-based trust versus social affect-based trust (McAllister 1995, Tyler and Kramer 1996). Cognition-based trust encompasses competence, ability, responsibility, integrity, credibility, reliability and dependability. In contrast, affect-based trust encompasses care and concern, benevolence, altruism, a sense of personal obligation, commitment, mutual respect, openness, a capacity for listening and understanding and a belief that sentiments are reciprocated (Badaracco 1991, Hart and Saunders 1997, Mayer et al. 1995, McAllister 1995, Mishra 1996).

Mistrust is more likely to occur at early stages in relationships, when stereotypes affect first impressions, not later in the relationship as people come to know one another (Kanter 1994 ). With mutual trust, partners will reciprocate openness and sharing of information and

knowledge over time (Hart and Saunders 1997, Nelson and Coopridner 1996), and be less concerned with how much knowledge “leaks out” (Hamel 1991).

### **Organizational Culture**

Organizational culture is associated with an organization’s sense of identity, its goals, its core values, its primary ways of working and a set of shared assumptions (Schein 1996a, 1996b). However, the static metaphorical view of culture as a glue binding the organization together overstates the integrating forces and understates the disintegrating forces (Nord 1985), such as differentiation (inconsistencies between espoused values and actual behavior) and fragmentation (pervasive ambiguity) (Martin 1995). Furthermore, the cultural trait, adaptability, reflects the importance of external orientation and flexibility in addition to the more traditional cultural trait, consistency, which is associated with internal integration and stability (Denison and Mishra 1995).

Dysfunctional interactions contribute to a lack of alignment between cultures (Schein 1996b). For example, different languages and different assumptions are barriers to mutual understanding (Schein 1996b, Trice and Beyer 1993). Similarly, “Difficulties in communication may arise from failing to recognize and accommodate differences in values” (Bennett 1996). On the other hand, a cross-cultural study reports evidence of the insignificance of national cultural differences but the significance of organizational and industry similarity (Kanter and Corn 1994). Badaracco (1991) suggests that partnerships should avoid the futile attempt to change either culture which should be kept separate and intact.

### **RESEARCH QUESTIONS**

The overriding problem driving this study is how can universities proactively seek to strengthen knowledge links with their industry partners? The authors initiated the study in order to facilitate sharing of experiences with SAP alliances among universities.

Creating and sustaining an alliance poses considerable challenges. The literature on alliances stresses the importance of (1) fit with the partner’s vision and goals, (2) trust, and (3) institutionalization of a partnership-specific culture (Badaracco 1991, Bennett 1996, Borys and Jemson 1989, Hamel 1991, Hart and Saunders 1997, Kumar 1996, Kumar and Dissel 1996, Lasher, Ives and Jarvenpaa 1991). Furthermore, the research literature reveals the frequent existence of impediments to these objectives. Thus, we focus the following research questions emerging from the research problem: (1) What management practices encourage goal congruence in knowledge links? (2) What management practices facilitate trust in knowledge links? (3) What management practices prevent dysfunctional interaction between organizational cultures in knowledge links?

### **METHODOLOGY**

In this study we examine the early stages of alliances between SAP, and two universities: the University of Texas at Austin and Queensland University of Technology in Brisbane, Australia. The authors are key participants as researchers, project managers and teachers in the establishment of these alliances. As such, an appropriate methodology is participant observation (Vinten 1994). However, participant observation usually takes place outside the researchers’ organizations. Similar to Gioia et al. (1994), the authors were “insiders” and at

the same time, took part in the action. The dual roles of participant and scholarly-observers merit the label of “actor-observer” (Gioia et al. 1994). We also provide “outsider” perspectives of each other’s case study, thus mitigating to some extent the idiosyncrasies of a single observer (Gioia et al. 1994).

### **UT-SAP ALLIANCE**

In late 1995, an adjunct faculty member approached SAP with a proposal for an alliance with UT. Telephone discussions over the next several months culminated in a meeting of two SAP executives with UT faculty in April 1996. A SAP “document of intent” to participate in an alliance was signed by a UT professor in May 1996. The faculty member who was planning to teach the first SAP related class in Fall 1996 attended SAP R/3 training and submitted a curriculum proposal to SAP in July 1996.

The Fall semester started in late August but UT was unable to communicate with SAP until early September to discuss the Fall SAP related course. Despite repeated attempts by UT to clarify the situation there was no further progress until late October. In October 1996, UT appointed its Chief Technology Officer (CTO) as project leader for the alliance. At this time, he unexpectedly received a contract from SAP, and after repeated requests, he also received technical specifications for the server required. The CTO expedited the contract as far as possible and operationalized the technical aspects of the R/3 installation. R/3 requires powerful hardware and the CTO organized the loan of a UNIX server (HP 9000 Enterprise Level K-Series, 256MB memory, 40GB disk, UNIX, 12K+ transactions/minute) from Hewlett-Packard, the company from which he was on leave.

In early February 1997, an executive and a consultant from SAP visited UT and were guest speakers in the SAP-related classes (1) Cross-functional Systems Integration and (2) Business and Systems Change. The SAP consultant demonstrated R/3 configuration functionality using a simulation to “build a pizza”.

After a four month contractual phase, the partnership began to become well-defined. The contract itself specified the legal boundaries of the alliance and was ratified by the University of Texas at Austin and SAP America in late February 1997. In early March 1997, four executives visited UT to establish common goals and success criteria for the partnership. Many faculty members attended the meetings with SAP executives and further developed the vision for the alliance.

In March 1997, several students who had taken the SAP-related classes received and accepted job offers from SAP America. These students were in demand for their business experience and background in financials and logistics, as well as their familiarity with conceptual issues related to SAP learned in the Fall and Spring classes. Several other students from these classes will be working with packaged software following graduation, in firms and with consulting companies, and expect that the concepts learned in class will apply to their situations.

Although SAP provided technical support by sending an SAP consultant to UT, and by troubleshooting via email and telephone, the installation of R/3, conducted in March/April 1997, was technically complex. Students, as a group project for the Cross-functional Integrated Systems class, compiled a summary of installation challenges and found that

compounding the complexity of the software and procedures, was the UT technical staff's lack of SAP R/3 experience and training, and lack of access to documentation.

In March 1997, UT students began using the multimedia curriculum materials and in April 1997 they began hands-on experience with R/3. These students had considerable knowledge of SAP and R/3 having studied relevant books, articles, cases, CD-ROMs and websites in advance.

### **QUT-SAP ALLIANCE**

QUT first made contact with SAP Australia in late-1995. Queensland Treasury had then just signed an agreement to implement R/3 throughout Queensland State Government. QUT, SAP and the Financial Information Systems Branch (FISB) of Queensland Treasury interacted on a range of issues over the following months, and approximately one year later entered into a partnership whereby QUT would offer package software related education within their curriculum, using R/3 as the vehicle. They are also discussing alternative collaborative research possibilities. QUT's partnership with SAP has been to a large extent driven by industry demand, in particular by Queensland Treasury who have invested heavily in the R/3 software.

QUT's rationale for seeking partnership with SAP was otherwise similar to UT's. In addition to resources, QUT expects to benefit from access to "real world" data, ideas, input on curriculum design, and a sounding board for research concepts and interpretation of results. Practical, empirical research is synergistic in this sense, both yielding research results and updating staff knowledge of practice, albeit typically in breadth rather than depth.

In 1996 SAP Australia and New Zealand established "Sapient College", a novel concept of a virtual college which draws on the resources and skills of leading universities and technology companies to provide a unique blend of industry and tertiary education. QUT is a founding member of Sapient College and their alliance project leader is on the Board of Governors. The College serves as an umbrella for SAP's existing product training, and draws upon areas of competence in regional universities to offer SAP's clients in particular, a more complete package of education and training necessary for many clients to realize full benefit from R/3 implementations. The virtual college concept is yet evolving and is in its infancy and may prove a very interesting mechanism for future partnering.

Regardless of QUT's early involvement in Sapient College, in contrast to UT, the alliance between QUT and SAP Australia is in the planning stages. In addition to adding new subjects, QUT are considering usefully accessing R/3 in a range of existing subjects including: IS Audit, Information Systems Management and Project Management.

QUT, with visible support from the Dean of the Faculty of Information Technology, too have made a large commitment to the partnership by (1) putting a senior staff member in charge of the initiative and making him the primary interface with SAP, (2) creating room in a very tight curriculum, and (3) sending staff to R/3 courses. The project leader from QUT has had significant prior experience with the sale and implementation of packaged financial software, in the capacity of senior consultant with an Australian "Big 6" firm.

## **DISCUSSION**

Having presented background on the two case studies, in this section the SAP alliances with the two universities are subjected to a cross-case analysis. This analysis generates alternative future actions, and provides answers to the study research questions.

### **The Partnership Process**

Universities possess the ability to project-manage research and R&D, to generalize findings, to package and publish results and to incorporate findings into teaching materials and approaches. They nonetheless tend to suffer from resource poverty and often have difficulty gaining access to real-world data. This lack of access and consequential attention to surrogate data contributes to the 'ivory tower' image of academics held by many practitioners.

Large, successful, 'resource rich' private sector firms on the other hand tend to be less able to objectively analyze and learn from their experiences and environment. Yet their projects, their clients and their firm itself, offer a rich potential source of data for the conduct of empirical research. If applied, such research may yield substantial economic benefit to the industry collaborator, as well as rich research results to the academic community.

Given the seemingly complementary nature of knowledge, skills and resources, we expect an alliance between universities and industry to be mutually beneficial. Further, it is reasonable to suggest that governments are increasingly supportive of university-industry alliances as a means of grounding university research in practice, thereby making a more direct contribution to practice and the national economy.

Our two cases are at different stages in the partnership process. QUT is defining the partnership, and is benefiting from the experiences of UT which is now in the "maintaining the partnership" phase. Being amongst the "first movers" was difficult for UT since SAP America was relatively inexperienced in university collaborations. Since then, SAP has improved the alliance process by establishing a "boundary spanning" university liaison position.

Other differences between the cases include size of the institution and the level of the organization at which the partnership was initiated. UT is one of the world's largest universities, and has a proportionately large administration which can cause delays (e.g., in approving contracts). The UT collaboration was initiated at a "grass roots" level, (by an adjunct faculty member who consequently became disassociated with UT), and took some time to gain high level strategic recognition. On the other hand, QUT's collaboration did not involve a contract, was initiated at a middle level, and eventually gained support from the state government as well as the university. Nevertheless, both universities are now making excellent progress in their SAP collaborations.

### **Goal Congruence**

Overall, universities and vendors have largely different goals. The overriding mission of the university is to promote learning and knowledge creation through teaching and research. And, though SAP too has client learning as a goal, it is reasonable to argue that the main goal of industry is profit maximization. Nevertheless, there is a common ground in the human resource supply chain. As students gain practical, relevant experience and related conceptual

knowledge, student satisfaction increases, and organizations like SAP benefit from new employees who are prepared to immediately add value to their operations.

Many universities need to self-fund a growing portion of their budgets. The ability to attract exemplary, fee paying students through offering exposure to industry preferred software has not been overlooked by either of the two case universities. Moreover, university research generally is becoming more applied, and IS research being in the main empirical and multidisciplinary is substantively so. In the face of budget constraints and increased scrutiny, relevance in research is highly valued. In this climate, IS researchers are seeking to collaborate closely with practitioners. One means of achieving this is through alliances which yield valuable research results as well as produce practical outcomes and implications for the practitioner collaborator.

Thus, while total goal congruence between universities and SAP is not possible, some common goals that arise from the overlap of applied research are attainable. Goal congruence does not suggest only goals that benefit both partners. Identification of goals that accrue to only one partner or the other will enable the partners to assist each other in achieving their respective aims. Some common goals have been identified, including research that is applicable to SAP and graduating students who are SAP proficient. Table 1 summarizes expected benefits accruing to the two universities and to SAP from the alliance.

**Table 1. Goals of the University-SAP Alliance**

<p><b>Mutual Benefits</b></p> <ul style="list-style-type: none"><li>• student awareness of industry preferred software</li><li>• applied research and R&amp;D (e.g. local context, cross-cultural, change management, BPR, workflow, education &amp; training)</li><li>• improved insight into the local/regional package marketplace</li><li>• positive visibility/kudos in the local community</li></ul> <p><b>Benefits to UT and QUT</b></p> <ul style="list-style-type: none"><li>• hardware and software resources for teaching and research</li><li>• multimedia curriculum materials</li><li>• expert guest speakers</li><li>• input on curriculum design</li><li>• access to “real world” data</li><li>• feedback on research ideas, results/interpretations</li></ul> <p><b>Benefits to SAP</b></p> <ul style="list-style-type: none"><li>• improved relations with local clients</li><li>• insight into suitability of training materials in local context</li></ul>
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Many benefits are common to both SAP and the universities. R/3-aware graduates are attractive prospective employees of SAP and its clients, and help to address criticisms SAP has faced from its clients and competitors. These students may also in the future be unwitting emissaries of the R/3 “religion”.

### **Trust**

SAP demonstrates competence (cognitive trust) to universities by providing trouble-free software, and installation expertise, and demonstrates caring (affective trust) with support and

reliability by delivering what is promised. Universities demonstrate competence, caring and reliability to SAP through activities completed within a reasonable timeframe, and various constraints within which SAP and the universities must function: (1) gaining support for the introduction of SAP to the curriculum, (2) marshalling necessary university resources, (3) technical mastery of the R/3 related architecture, (4) effective integration of SAP with conceptual teaching material, (5) effective promotion of SAP related subjects, (6) facilitation of SAP's positive image in the local market, and (7) ultimately through the graduation of highly capable, SAP-aware students.

Trust has increased with face-to-face meetings at both universities. QUT have engaged in a series of face-to-face meetings with key, senior and appropriate SAP staff, in Brisbane, Sydney and Melbourne. Both parties have been willing to invest time and expense to travel to these meetings. Trust has increased with exchange of personnel such as, SAP guest speakers at UT and the employment of UT graduates by SAP. QUT is exploring the possible secondment of a staff member to SAP's Training and Education Division in order to further facilitate knowledge transfer, and progress in collaborative R&D initiatives currently being discussed.

### **Organizational Culture**

Incompatibilities between organizational cultures need to be minimized to prevent potential conflict and misunderstanding. Cultural differences between universities and SAP include organizational structure, a non-profit versus profit culture, nationality, a resource constrained versus resource rich environment and knowledge creation and dissemination versus knowledge acquisition and possession.

The organizational culture of academia is usually considered different to that of industry, and researchers have become frustrated trying to apply the bureaucratic model to universities (Trice and Beyer 1993). However, large universities (e.g., UT) tend to be more bureaucratic than smaller universities. Although academia is egalitarian and steeped in tradition, a trend toward declining enrollments, reduced funding and external competition has pressured many universities into dealing with a new competitive environment (Gioia et al. 1994).

SAP is a large German software business. However stereotypes of large business culture, German culture (Hofstede 1994), and software culture (Carmel 1997) do not entirely apply to SAP, particularly to SAP university liaison personnel. Atypically, the organizational culture at SAP has been described as congenial (Scott and Kaindl 1997), the turnover is low and there are relatively few management layers. In summary, whereas there is no doubt that differences in organizational cultures at universities and SAP exist, shared experiences at UT and QUT are building a partnership culture, and boundary spanning liaisons are helping to bridge differences with mutual understanding and respect.

### **IMPLICATIONS**

We can strengthen ties between universities and industry with management practices that address the challenges associated with goal congruence, trust and organizational cultures. We present a research framework of these challenges and management practices for each phase of partnership development in Table 2.

**Table 2. Partnership Phases, Goal Congruence, Trust and Organizational Culture**

<b>Partnership Phases</b>	<b>Goal Congruence</b>	<b>Trust</b>	<b>Organizational Culture</b>
<b>Establishing the Purpose</b>	<ul style="list-style-type: none"> <li>Universities: access to resources to publish relevant research and teach relevant topics</li> <li>SAP: profits from shaping attitudes of SAP knowledgeable students &amp; university research</li> </ul>	<ul style="list-style-type: none"> <li>Universities: concern with intellectual property rights</li> <li>SAP: concern that proprietary knowledge must be protected</li> </ul>	<ul style="list-style-type: none"> <li>Universities: resource constraints, knowledge creation and distribution skills</li> <li>SAP: resource rich</li> </ul>
<b>Finding a Partner</b>	<ul style="list-style-type: none"> <li>Universities: alliance with SAP, the market leader, is beneficial for student placement &amp; relevant research</li> <li>SAP: Universities chosen that fit SAP's vision of "spreading the gospel", scholastic excellence</li> </ul>	<ul style="list-style-type: none"> <li>Universities: Assess level of trust dimensions openness, competence, caring &amp; reliability; negotiate plans before commitment</li> <li>SAP: Assess level of trust dimensions openness, competence, caring &amp; reliability; set realistic expectations</li> </ul>	<ul style="list-style-type: none"> <li>Universities: Assess reciprocity of resources</li> <li>SAP: Assess reciprocity of skills</li> </ul>
<b>Defining the Partnership</b>	<ul style="list-style-type: none"> <li>Universities &amp; SAP: Meetings for goal setting, success criteria, measurement systems</li> </ul>	<ul style="list-style-type: none"> <li>Universities: Contract sets limits to SAP's openness &amp; knowledge sharing</li> <li>SAP: Contract sets limits to knowledge sharing &amp; support</li> </ul>	<ul style="list-style-type: none"> <li>Universities &amp; SAP: Contract sets limits to adaptability, specifies appointment of boundary spanning roles</li> </ul>
<b>Maintaining the Partnership</b>	<ul style="list-style-type: none"> <li>Universities &amp; SAP: Ongoing process of reevaluating and setting common strategic &amp; tactical superordinate goals</li> </ul>	<ul style="list-style-type: none"> <li>Universities: Build trust by improving R/3 competency; face-to-face meetings</li> <li>SAP: Build trust by improving reliability; exchanging people SAP guest speakers at UT; UT students become SAP employees</li> </ul>	<ul style="list-style-type: none"> <li>Universities &amp; SAP: Build shared norms as a middle ground for mutual understanding &amp; respect &amp; to prevent conflict; make rules &amp; procedures explicit</li> </ul>
<b>Institutionalizing the Partnership</b>	<ul style="list-style-type: none"> <li>Universities &amp; SAP: Establish incentives &amp; rewards to align with partnership goals; Institutionalize information exchange on plans &amp; goals</li> </ul>	<ul style="list-style-type: none"> <li>Universities &amp; SAP: Institutionalize information exchange (openness)</li> </ul>	<ul style="list-style-type: none"> <li>Universities &amp; SAP: Institutionalize partnership roles, rules &amp; procedures, norms &amp; values; Document common history</li> </ul>

Adapted from Lasher, Ives and Jarvenpaa 1991

### **Implications for Management**

Management can promote goal congruence by establishing explicit common goals, or setting superordinate goals, evaluating the purpose of the partnership and mutual benefits, realigning incentives and reward systems with partnership goals, and by monitoring achievement with success criteria and a measurement system (Badaracco 1991, Borys and Jemison, 1989, Henderson 1990, Kanter 1989, Lasher, Ives. and Jarvenpaa 1991, Stern 1978).

Management practices that build trust in a partnership include shared (preferably face-to-face) experiences, frequent interaction, shared information, and the transfer of organizational members to the partner (Badaracco 1991, Bennett 1996, Hamel 1991, Hart and Saunders 1997, Jarvenpaa, Knoll and Leidner 1997, Kumar 1996, Kumar and van Dissel 1996, Lasher, Ives and Jarvenpaa 1991, Mayer et al. 1995, McAllister 1995, Stern 1978).

Management practices that promote a joint organizational culture stress adaptability. The partners build a partnership culture with shared values and norms by (1) making partnership-specific roles, rules and procedures explicit, (2) documenting a common history and (3) exchanging information on corporate plans, directions and business policy (Badaracco 1991, Bennett 1996, Borys and Jemison 1989, Hamel 1991, Kanter 1989, Lasher, Ives and Jarvenpaa 1991). Our research shows that management needs to be aware of threats to a successful alliance, since awareness can promote evaluation and preventive measures. It is important to monitor and periodically evaluate the status of resources and capabilities partnership-specific roles, rules, procedures and business policy (Lasher, Ives and Jarvenpaa 1991) (see Table 2).

The cases of the two university-SAP alliances illustrate the problems with a contract, the need for a pre-contract document and the need to limit partners. The need for a contract is debatable. An informal document that makes assumptions explicit would avoid delays due to legal technicalities.

SAP has a vested interest in addressing the severe shortage of R/3 literate implementers and administrators in the marketplace, since clients' implementations overruns in time and cost are often the result of R/3 knowledge scarcity. However, knowledge links with universities require considerable support from SAP due to the complexity of R/3 and the resources needed. As a consequence, SAP should limit the number of university alliances and communicate to potential partners (1) the estimated project time line and (2) resources that the university must provide. This communication is preferably distributed in written form to the university before it makes a commitment to the alliance. Universities need the time line and advance notice to plan courses, to allocate funds and to acquire hardware and other resources.

### **Implications for Universities**

University partnerships with IT industry are likely to benefit from analysis of the collaboration literature and lessons learned from our experiences. A rational approach would posit making goals and procedures explicit. While there is obviously merit in the rational approach, both the literature and our cases illustrate the importance of affective factors and emotional trust such as openness, caring and benevolence in building relationships. Our contribution includes specifying what to expect and an indication of the resources universities need for a relationship with SAP. To prevent misunderstandings, academic institutions

considering educational or research partnerships with IT industry should develop a written statement of expectations and objectives for discussion with the potential partner. It is advisable not to proceed until your potential partner has agreed to your conditions or negotiated a mutually acceptable alternative.

Universities need to become more “business-like” to find a middle ground with industry (Gioia et al. 1994). Universities need cultural traits with an external orientation, like adaptability and flexibility (Denison and Mishra 1995). Universities contemplating an alliance with SAP need to be cognizant of the project scale and intensity of effort required. In particular, the technical capabilities and resources of the institution will be strained. Without previous experience, installation of the R/3 software and teaching database is challenging, and system maintenance and support also demand the development of specific skills. It is easy to underestimate the time and effort required to implement R/3 for teaching purposes.

Despite a provision of resources from SAP, the partnership requires considerable university resources, such as hardware, operating systems, database software, and access to a multimedia laboratory. Moreover, although SAP provides training as part of the alliance, the university pays travel expenses to the training centers. In addition, curriculum development is time intensive and problematic for faculty. With no textbooks or course materials and the need to adapt the SAP Training Material to an academic environment, structuring the curriculum is laborious. It is important to include substantial conceptual material not specific to SAP to avoid criticism from academics and students that there is too much emphasis on a product. Additionally, because of the R/3 skills shortage, it is difficult to get support and knowledgeable teaching assistants. Hence, before committing to an alliance, a university should assure that it has the necessary technical capabilities and resources. Given that trust and a partnership culture are achieved through the introduction of R/3 to the curriculum, collaboration in research should follow naturally.

### **Implications for Research**

This study has emphasized the importance of building trust, shared values, and norms for a successful relationship. Ties can be strengthened by encouraging and communicating value creation and institutionalizing the partnership. Although the collaborative literature is vast, there have been very few studies of university collaborations and most of those address knowledge transfer from scientific or engineering labs in the university to industry (Randazzese 1996). Research on collaborations between universities and IT industry in curriculum and teaching has not been addressed, as far as we know. Table 2 offers a framework to guide further research based on the five phases of partnership development and the three challenges. For example, future work should analyze the need for universities to adapt their organizational cultures to align with collaboration goals.

There is considerable interest both from practice and academia in research on relationships. Where academics have a close relationship with a vendor such as SAP, the university itself can become a laboratory for experiments on the partnership. While this form of research may lack total objectivity, fieldwork becomes localized and accessible. There is the opportunity to practice longitudinal studies, and the researcher has the potential to improve the situation, make a relevant contribution and gain insights to further theory.

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