Using Information Technology to Establish Relationships and Improve Relevance

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Abstract

Recognizing longstanding concerns surrounding relevance to practice in business school curriculums and scholarship, we explore a method to establish and strengthen the academic-practice relationship. Leveraging the theory of social exchange, we identify shared interest in high-value information technology as a key to developing sustained and mutually beneficial relationships between academia and industry. We examine how our model explains the reciprocity of the partnership between Saint Louis University (SLU) and Deloitte, a relationship that has yielded technical support for SLU faculty; mentorship, internship, and recruitment opportunities for SLU students; community engagement opportunities for Deloitte employees; and a stream of potential employees equipped with skills germane to Deloitte’s needs. We posit similar benefits may be realized as other universities seek increased relevance to practice via sustained partnerships with industry.

Keywords: Information Technology, Social Exchange, Relationships, Relevance, ERP
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1. Introduction

A longstanding concern surrounding business school curriculums and scholarship is their relevance to business practice (Straub and Ang, 2008; Lyttinen, 1999; Rynes, 2007). Against the backdrop of intense criticism toward MBA programs for failing to impart useful skills (Bennis, 2012), the AACSB is calling for business schools to develop curriculums connected to industry and generate research relevant to practice (AACSB, 2012). Moreover, the Academy of Management is encouraging members to engage in scholarship that matters via dialogue with practice (http://aom.org/strategicplan). The information technology (IT) community shares this concern, indicating that alliances between academia and practitioners are a key ingredient to successfully educating students and conducting research (Benbasat and Zmud, 1999, p.8).

Despite widespread agreement that academic-practice relationships are important aspects of curriculum and research agendas (Rynes, 2007), forming and maintaining such relationships is difficult for several reasons. Because many faculty interact primarily with other faculty, contact with industry is infrequent, thereby limiting opportunities for academics to connect with potential practice partners (Martin, 2012). Moreover, the interests of faculty sometimes do not align with those of practitioners (Bartunek, 2007), often resulting in research of interest primarily to academics and having limited value to practice (Bennis, 2012; Bennis and O’Toole, 2005; Martin, 2012). Further, tenure and promotion standards typically do not incentivize practice-relevant research: “Existing faculty policies and systems have caused too much emphasis on counting journal articles and favored basic research over other forms of scholarship, such as contributions to practice and teaching” (AACSB, 2012). Often, the result is faculty who produce non-actionable articles (Martin, 2012; Sidhu and Calderon, 2014) and who struggle to deliver curriculums that adequately prepare students for the workplace (Bradford et al., 2003).

In this paper, we seek to improve relevance in the business school curriculum and in academic research by establishing and strengthening the academic-practice relationship. Leveraging the theory of social exchange (Blau, 1964; Rodell, 2013; Wasko and Faraj, 2005), we identify high-value IT as important to both practitioners and academics, thereby providing a common interest that may lead to a deeper and more mutually beneficial relationship between faculty and industry.
We discuss how high-value IT and social exchange theory explain the reciprocity of the partnership between Saint Louis University (SLU) and Deloitte, a major consulting firm. Recognizing a mutual interest in the widely-used enterprise resource planning (ERP) software SAP, SLU and Deloitte engaged in an action research agenda to improve relevance in the business school curriculum and to produce graduates with industry-pertinent skills. The SLU-Deloitte relationship has yielded much needed technical support for faculty; valuable mentorship, internship, and recruitment opportunities for students; community engagement opportunities for Deloitte employees; and a stream of potential employees equipped with skills germane to Deloitte’s needs. In contrast to much of the research on university-industry partnerships – which focuses primarily on high-cost and highly-specialized research and development, technology transfer, and commercialization – the SLU-Deloitte relationship is a model for business schools, pointing toward the potential benefits to academe and practice from a common interest in high-value IT.

The SLU-Deloitte action research agenda seeks to investigate three questions. First, does high-value IT enable a working relationship between academia and practice? Second, over time, does such a relationship extend beyond the mutual interest in high-value IT, leading to other collaborations? Third, does such a relationship lead to increased relevance to practice in scholarship and the curriculum?

The remainder of the paper is organized as follows. In section 2, we outline our application of social exchange theory. In section 3, we discuss challenges associated with academic adoption of high-value IT. Section 4 details the SLU-Deloitte action research process and includes experiences integrating SAP into information systems, enterprise practicum, accounting, and supply chain management courses. Following the discussion in section 5, we provide concluding remarks in section 6.

2. Social Exchange Theory and High Value Information Technology Underlie Building Relationships

Social exchange theory predicts the dynamics of interorganizational relationships without the assumption of pre-determined commitments among parties (Blau, 1964; Liao et al., 2010). We model the academic-practice partnership via the theory of social exchange because such relationships are often characterized by loosely-specified obligations.

Figure 1 outlines how social exchange theory, coupled with high-value IT, can drive relationship building between academia and practice to improve relevance in business school scholarship and curriculums. Industry values university volunteering opportunities because engagement with the academy generally promotes organizational citizenship, improves employee retention, allows
employees the opportunity to reciprocate, and betters job performance (Rodell, 2013; Jones, 2010). Academia values collaboration with practitioners because such opportunities typically build trust and gratitude between faculty and their practice partners, generate increased status and respect from industry for the role faculty play in preparing students for the workforce, foster relational capital, and do not specify contractual obligations on faculty’s limited resources (Lakhani and von Hippel, 2003; Latour and Woolgar, 1988; Wasko and Faraj, 2005; Blau, 1964; Bouty, 2000).

A common interest in high-value IT facilitates an exchange between academia and practice in the form of collaboration on curriculum design and on research, leading to hands-on skills for students and investigation of practical research questions, respectively. Potential outcomes of such collaboration include preferred recruiting and research fellowship, both of which improve the relevancy to practice of business schools’ teaching and scholarship.

Figure 1

Social Exchange Theory and High Value Information Technology: Two Key Elements of Relationship Building

![Figure 1 Diagram]

Value of Volunteerism
- Organizational Citizenship
- Intention to Stay
- Reciprocity
- Job Performance

Value of Collaboration
- Unspecified Obligations
- Gratitude/Trust Building
- Approval/Status/Respect
- Relational Capital

KEY ELEMENTS
- Social Exchange Theory
- High Value Information Technology

OUTCOMES
- Preferred Recruiting
- Hands-On Skills
- Questions of Practical Value
- Research Fellowship

RELEVANCE
- Collaboration on Curriculum
- Collaboration on Research
4. High-Value Information Technology

Our social-exchange-theory-based model of the academic-practice relationship suggests a common interest in high-value IT – in this case SAP, widely-used ERP software – drives each party to work with the other. ERP systems are valuable to industry because they integrate into a shared platform varied aspects of complex business functions, enabling enterprise-wide decision making (Dewett and Jones, 2001; Lado and Zhang, 1998; Leidner and Elam, 1995). ERP systems offer academia a unified environment to teach standard business functional areas, adding value to the education of both undergraduate business and MBA students (Fichman et al., 2014).

Seeking to meet the needs of industry and academia, the SAP University Alliances program provides SAP software and instructional aids to faculty with the aim of recruiting talented young technology professionals (Nerney, 2013). Established in 1996, SAP University Alliances supports over 200 universities, has developed University Competence Centers to host SAP software, and coordinates regular workshops and online meetings to facilitate faculty training and curriculum materials sharing. These initiatives help faculty integrate SAP into the curriculum and promote networking, research support, and professional development opportunities for students (Watson, 2001; Bradford et al., 2003).

Although the SAP University Alliances program provides strong introductory training, academic adoption of industry-scale ERP software poses several roadblocks. One potential difficulty is a significant resource requirement, requiring faculty to travel, engage in training, and forfeit research time (Becerra-Fernandez et al., 2000). Even when funds are available to support travel and training, the expertise required to successfully integrate SAP into coursework often goes beyond University Alliances instruction (Bradford et al., 2003). Further, even when advanced instruction and support are available, the difficulty of coping with complex software discourages many faculty from attempting to use such systems in the classroom (Philippakis and Hardaway, 1999).

Acknowledging the difficulties of integrating SAP into a business school curriculum, our social-exchange-theory-based model posits a relationship with practice can alleviate challenges associated with academic adoption of high-value IT. Via support from an industry partner, the model suggests the hurdles for academic ERP adoption can be significantly lowered, benefiting both sides of the academic-practice relationship.

5. An Action Research Approach

In this section, we detail the SLU-Deloitte action research agenda aimed at improving relevance in the business school curriculum and producing graduates with industry-pertinent skills. Drawing from the literature on action research methodology (Baskerville, 1999; Baskerville and
Myers, 2004; Chiasson et al., 2009; Mårtensson and Lee, 2004), SLU and Deloitte engaged in the three-phase action research approach depicted in Figure 2. The first phase – Diagnosing and Action Planning – identifies faculty support needs, examines the academic-practice relationship in the context of social exchange theory, and surveys collaboration opportunities between SLU and Deloitte. The second phase – Action Taking – focuses on resolving faculty’s issues with classroom SAP use, leading to actions ranging from troubleshooting assistance to mentoring programs. The third phase – Evaluating and Specifying Learning – serves as a continuous improvement mechanism to assess the SLU-Deloitte collaboration, brainstorming new ideas and making changes as necessary. Below, we describe in detail each phase of the action research agenda, sharing thoughts from both SLU and Deloitte.

Diagnosing and Action Planning

The first action research phase began with SLU’s acknowledgement of the aforementioned difficulties surrounding the implementation of an industry-scale ERP system in the classroom – resources were limited and faculty expertise was lacking. Seeking to overcome these obstacles and improve relevance to practice in their curriculum, SLU sought assistance from Deloitte, a major consulting firm with in-house SAP and business experience. Recognizing a common interest in SAP, SLU and Deloitte discussed how a formal relationship might be mutually beneficial, identifying the various aspects of volunteerism and collaboration discussed in section 2. Phase one concluded with a commitment from Deloitte to collaborate with SLU via student mentorship, potential student internships, and the possibility of preferred recruiting.

Action Taking – Deloitte’s Experience

Deloitte decided to participate with SLU to help create opportunities for its leaders and staff members to be actively involved in their communities. Deloitte is also seeking to facilitate the education and development of university students by exposing them to business tools used across industries.

Deloitte views participation in SLU’s SAP Program as an investment by contributing to the building of an educated workforce, allowing students to gain experience working with software and applying critical-thinking skills based on their interactions with consulting professionals.
The collaboration between SLU and Deloitte also fosters a closer relationship between the two organizations beyond traditional alumni and educational programs. Community outreach, involvement, and volunteering are some of the core Deloitte values. Deloitte’s experienced practitioners receive credits for collaborating with the university and its students, which are then applied against expectations embedded in their performance evaluations and career development plans.

Additionally, the collaboration with SLU allows Deloitte practitioners to apply their skills beyond the traditional client-consultant environment. In working with faculty and students, consultants typically provide cross-functional rationale for decisions made related to system functionality and/or actions taken by end-users (i.e., the students). Deloitte consultants are also able to connect with the members of tomorrow’s workforce, who learn and think differently.
Such association helps expand consultants’ perspectives and challenge consultants’ norms of how problems are solved.

Faculty members can also benefit from the SLU-Deloitte relationship. By interacting with consultants in their community, faculty’s academic views often become more practical, which can be helpful in preparing lab work and practicum exercises. Faculty members can also build upon their relationships with Deloitte professionals to forge other connections within the overall business community.

Deloitte consultants offer SLU faculty and students three main types of skills and experience:

1. **Business Process Knowledge and System Functional Experience** (per module, e.g., Sales and Distribution (SD), Materials Management (MM), and Financial Accounting (FI))—Consultants’ know-how can be leveraged to provide break-fix and error-resolution scenarios.

2. **Managerial, Reporting and Analytical Skills**—These skills are useful in explaining why the system is set up in a particular way and how to interpret inputs and outputs to support business decision-making, facilitate business-process execution, and/or understand system options and choices.

3. **Change Management Know-how**—Change management skills are critical for facilitating the introduction of new processes, work methods, and systems within an organization, including gaining executive buy-in and promoting user adoption.

To provide the aforementioned skills, knowledge, and experience to the SLU program for the SD, MM and FI scope of the curriculum, Deloitte assembled a team of seven seasoned consultants, each of whom has at least five years of experience implementing SAP.

The team of consultants has remote access to SLU’s ERP system to identify errors and fix erroneous codes, settings, and data. By engaging experienced consultants, SLU has significantly reduced response times by quickly providing students with solutions to problems that arise within their curriculum exercises.

Furthermore, each consultant is assigned to a faculty member so he or she can evaluate the curriculum, provide direct coaching on using the SAP system, and present guest lectures based on real business examples.

Each team member also serves as an advisor/consultant to a group of four to five students, the members of which are jointly responsible for completing the curriculum and associated ERP system exercises. Students have the opportunity to solicit input on their exercises and to receive explanations about why their approaches produced particular results.
In continuing its relationship with SLU, Deloitte expects to enhance the existing curriculum with real-life business examples and strengthen its community involvement and ongoing interaction with the future users of ERP systems. Based on the knowledge gained and its positive experience thus far, Deloitte also expects to expand this type of volunteering program to other universities.

Additionally, Deloitte has implemented a mentoring program to which sophomores and juniors may apply and which may lead to future internships. As of this writing, Deloitte has admitted four SLU students to the mentorship program. A preferred recruiting arrangement is also being planned. A final goal is to establish areas for faculty research with the hope for future fellowships.

**Action Taking -- Faculty's Experience**

In conjunction with Deloitte, SLU faculty identified six opportunities for practice to participate in the business school curriculum. Table 1 describes the six actions along with the required levels of individual and institutional involvement. As of this writing, SLU and Deloitte have engaged in the first five actions and have plans to explore the sixth action.

The first action is the traditional in-class Presentation by a guest practitioner, typically a one-time engagement with students and faculty. An industry presentation allows the practice partner to speak on a topic of practical importance, share professional insights, and interact with students and faculty via a question-and-answer forum. The purpose of a presentation is to generate interest, clarify misconceptions, and illustrate real-world work. Presentations require little involvement from the parent company and minimal individual engagement with students.

Like Presenting, the second action – Discussion and Joint Meeting – is often a one-time event, but typically leads to higher levels of student and faculty engagement via a panel discussion on a practical and current topic. The purpose of a Discussion and Joint Meeting is to provide students and faculty additional opportunities to interact with industry experts and to consider alternative perspectives on practice-relevant topics. Discussions and Joint Meetings may require some coordination from practice-partner companies, particularly if multiple guests participate.

The third action, Troubleshooting and Assessment, solicits one or more practice partners to evaluate student work orally and/or in writing, in one or more sessions, and potentially across multiple courses. The purpose of Troubleshooting and Assessment is to provide students with feedback from practice experts and encourage students to view their academic work critically and from a professional perspective. Such interaction with industry experts can guide students as they make the transition from coursework to a career. Relative to the first two actions,
Troubleshooting and Assessment requires sustained support from practice-partner companies, at times calling for frequent interaction between employees and students.

**Table 1**

Results from Action-Taking by Academe

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
<th>Level of Individual Involvement</th>
<th>Level of Institutional Involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presenting</td>
<td>Practitioners speak to students and/or faculty, present on a topic, and answer questions.</td>
<td>One-session occasion with minimal engagement with students and faculty</td>
<td>Little or None</td>
</tr>
<tr>
<td>Discussion and Joint Meeting</td>
<td>Practitioners conduct an open forum discussion on a topic with interaction from students and/or faculty.</td>
<td>One-session occasion with moderate engagement with students and faculty</td>
<td>Low, Ad hoc</td>
</tr>
<tr>
<td>Trouble Shooting and Assessment</td>
<td>An assessment of student work with feedback or trouble shooting</td>
<td>One or more sessions (written and/or oral) with involved engagement with students</td>
<td>Medium, Systematic</td>
</tr>
<tr>
<td>Consulting</td>
<td>An ongoing exchange with students about student work or activity</td>
<td>A series of sessions with in-depth engagement with students</td>
<td>High, Systematic, Strategic</td>
</tr>
<tr>
<td>Mentoring</td>
<td>Competitive mentoring programs for students that may lead to future internships at the practice</td>
<td>A semester-long program aimed toward a long-term relationship between academe and practice</td>
<td>High, Systematic, Strategic</td>
</tr>
<tr>
<td>Team Teaching</td>
<td>Practitioners and researchers jointly develop curriculum and teach courses</td>
<td>Long-term curriculum development and collaboration</td>
<td>High, Systematic, Strategic</td>
</tr>
</tbody>
</table>
Consulting, our fourth action, invites practice partners to have ongoing oral and written exchanges with students across courses. The purpose of Consulting is to simulate a real-world work environment where consultants work with clients on various projects. Engagement with practice in this fashion allows students to better connect academic knowledge with practice. Consulting requires a systematic and strategic relationship between the academic institution and the practice partner, necessitating regular time commitments from professionals.

Action five, Mentoring, asks the practice partner to develop a competitive mentoring program to provide higher-level training to select students, potentially leading to internship and career opportunities with the parent company. As with Consulting, Mentoring requires a more mature relationship between the university and the industry partner.

The sixth action, Team Teaching, allows the university to share the classroom with the practice partner, jointly developing curricular materials and working together to teach students. This type of collaboration requires a strategic academic-practice relationship and has high potential to improve relevancy in the business curriculum.

**Evaluating and Specifying Learning**

The final step of the three-phase approach seeds subsequent iterations of action research via assessment of actions taken. The action-taking experiences shared above are the result of several repetitions of the action research process. The progression of actions from standard in-class presentations towards a formal mentoring program and team teaching is the result of numerous brainstorming sessions and continuous improvement efforts. Below, we illustrate the action research evaluation phase via several examples.

Initial efforts to incorporate SAP into SLU’s curriculum were made in an introductory course on ERP systems and IT management and in an accounting information systems course. A portion of the first course guided students through SAP University Alliances exercises focusing on the cash-to-cash cycle, while the second course exposed students to exercises on the sales and distribution, materials management, and financial accounting modules of ERP systems. In both courses, because each exercise builds on the previous exercise, and because a mistake early on can upset later portions of the exercise, students and faculty spent a significant amount of time debugging errors. Consequently, the focus sometimes shifted from practical business instruction to frustration with error-prone exercises.

Working together to improve the integration of ERP in the curriculum, SLU and Deloitte identified Troubleshooting and Assessment as an appropriate action to remedy the difficulties with SAP exercises. Under this arrangement, Deloitte consultants remotely access SLU’s SAP
clients and assist students and faculty with the debugging of errors, thereby mitigating the difficulty of working with a complex ERP system in the classroom.

Integration of SAP into an enterprise practicum course led to additional action taking. Via a SAP-based simulation, the enterprise practicum course challenges students to run a business in a competitive environment, requiring students to gather and analyze information about company performance and to make decisions to improve profitability. The complexity of the simulation often overwhelms students, at times causing confusion about what data might be helpful to guide decision making and which SAP features could aid in the diagnosis of business problems.

Via joint discussions, SLU and Deloitte identified Consulting as an effective action to guide students through complex business scenarios. Mirroring real-world business situations, each student team is assigned a Deloitte consultant with whom they can confer during the simulation. As needed, the consultants help students leverage the ERP system to analyze business operations strategies. Consulting in this fashion resulted in a higher level of student learning in the enterprise practicum course.

As of this writing, SLU and Deloitte are brainstorming ideas to facilitate a more effective integration of ERP into a supply chain management course. The MBA-level course treats the operational control of capacity, production, inventory, and material movement. The primary challenge of integrating SAP into the supply chain course is the balancing of practice-focused SAP exercises with concept-focused course material. For example, the set of SAP University Alliances exercises guiding students through a full supply network design requires 15-20 hours to complete. Dedicating in-class time to the exercises may require as much as half of the semester contact hours, leaving too little time to teach the concepts necessary to understand the goals of the exercises. On the other hand, requiring the exercises to be completed outside of class also presents obstacles. Even with the assistance of a Deloitte consultant, students working full-time are typically unable to dedicate sufficient time to the exercises to derive substantial benefit.

As SLU and Deloitte identify potential solutions to better incorporate an industry-scale ERP system into the supply chain management course, resulting actions will be added to those of Table 1. Continuing the action research process in this fashion deepens the SLU-Deloitte relationship with each iteration, signaling an increase in the mutual benefits afforded by the collaboration.
6. Results and Commentary

In this section, we revisit the three questions posed in section 1, providing answers based on the continuing SLU-Deloitte relationship currently several years in the making.

**Does high-value IT enable a working relationship between academia and practice?** Our experience suggests yes. Because students with SAP skills are valuable to Deloitte, and because industry-scale ERP software increases relevance to practice in the business school curriculum, a common interest in high-value IT can enable a working relationship between faculty and industry.

**Over time, does an academic-practice relationship extend beyond the mutual interest in high-value IT, leading to other collaborations?** The SLU-Deloitte relationship points toward the affirmative. Beginning as a conversation between a SLU professor and a Deloitte Director, over several years the academic-practice collaboration has grown to include a formal Deloitte volunteering program to assist student teams with SAP-based coursework, a formal mentoring program geared toward preferred recruitment of SLU students, and the possibility of team-teaching arrangements for future course offerings. Beyond the initial shared interest in SAP, SLU and Deloitte have initiated collaboration on analytics. Specifically, undergraduate business analytics students serve as consultants to undergraduate enterprise systems students, providing analysis and recommendations via the data generated from the latter group’s SAP-based simulations. After observing student interactions among the two courses, Deloitte consultants offered feedback, indicated the analysis was relevant to practice, and collected student resumes from top-performing teams.

**Does a sustained academic-practice relationship increase relevance to practice in scholarship and the curriculum?** After several years of SLU-Deloitte collaboration, the relationship has yielded the curriculum-focused action research described in section 4. The action research collaboration has focused coursework toward practice-relevant topics, improved student contact with industry specialists, and increased student job opportunities. Thus, the sustained interaction between academia and industry has increased relevance to practice in the business curriculum. Although to date the SLU-Deloitte relationship has not resulted in joint modeling and analysis of practical business problems, cooperation on practice-relevant research remains a possibility for future collaboration.

7. Concluding Remarks

In response to longstanding concerns surrounding relevance to practice in business school curriculums and scholarship, we explore a method to establish and strengthen the academic-
practice relationship. Leveraging the theory of social exchange, we identify shared interest in high-value IT as a key to developing sustained relationships between academia and industry. The relationship between SLU and Deloitte suggests sustained academic-practice collaboration is possible and can be mutually beneficial, leading to a more practice-relevant business school curriculum. As the SLU-Deloitte relationship continues to mature, we believe opportunities will arise to jointly consider the modeling and analysis of practice-relevant research problems, thereby making basic research contributions rooted in industry-pertinent issues.

As other institutions seek to build relationships with practice partners, we offer Figure 3 as a potential roadmap for successful collaboration. Following these steps, the SLU-Deloitte relationship has yielded much needed technical support for faculty; valuable mentorship, internship, and recruitment opportunities for students; community engagement opportunities for Deloitte employees; and a stream of potential employees equipped with skills germane to Deloitte’s needs. We posit similar benefits may be realized as other universities seek increased relevance to practice via sustained partnerships with industry.

Figure 3: Suggested steps to forming a mutually beneficial academic-practice relationship
References


