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The Credibility Crisis in IS: A Global Stakeholder Perspective

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Abstract:

The field of information systems (IS) faces a credibility crisis, which threatens its stature as a highly-respected academic discipline (Firth, King, Koch, Looney, Pavlou, and Trauth, 2011; Winter and Butler, 2011; among others). This article summarizes a panel discussion at the ICIS 2011 Conference, where a group of distinguished IS professors offered their unique perspectives on the challenges, origins, and solutions related to the global credibility crisis in IS. Using stakeholder theory as an organizing framework, the panel session identifies the key stakeholders influencing the credibility of the IS discipline, as well as the challenges and opportunities facing IS programs worldwide.

Keywords: future of information systems, practice, education, research, enrollment, credibility crisis

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I. INTRODUCTION

The purpose of this article is to summarize an ICIS panel discussion in which IS professors worldwide offered their perspectives on impediments the IS field needs to address in order to manage and improve our discipline's credibility in society, industry, and higher education. We based the panel on the notion that the IS field faces a credibility crisis. *Credibility* is the extent to which an academic field produces reliable information about a particular knowledge domain [Bocking, 2004]. While scholars highlight positive aspects of the IS field, including high market demand for IS graduates [Light, 2010] and increasing legitimacy and credibility as the field matures [Dufner, 2003; Klein and Hirschheim, 2006], the goal of this article is to highlight how the IS field can improve by acknowledging and addressing the IS field's problems, which include: cyclical student enrollments, student perceptions that IS courses are uninteresting, shrinking IS programs and departments, troubled relations with other business and STEM (i.e., science, technology, engineering, and math) disciplines, increasing perceptions that IS research is irrelevant to practice, and most importantly that IS lacks a clear identity [Davidson, 2011; Firth, Lawrence, and Looney, 2008; Hassan and Hovorka, 2011; Ramiller and Pentland, 2009; Somers, 2010]. In fact, some scholars (Agarwal and Lucas, 2005; Firth et al., 2011; and others) believe that these impediments are creating an unsustainable and dangerous situation, threatening the IS field's stature and long-term viability.

To date, discussions about the credibility crisis have tended to have a U.S.-centric focus on IS enrollment, research [Davidson, 2011; Gill and Bhattacharjee, 2009; Straub and Ang, 2011], and teaching [Looney and Akbulut, 2007], overlooking the potential effects of other relevant factors, such as prevailing market trends and political landscapes [Firth et al., 2011]. Despite these valuable contributions, a more comprehensive debate is needed to further our understanding of the IS credibility crisis as a global problem. Moreover, the discussion must generate ideas for strategic actions at different levels and by different stakeholders. Based on the panel's discussion, this article aims to address the IS credibility crises more broadly by exploring the IS field's stakeholders' views and interests from a global perspective. Bringing together these views, as this article does, represents an important step toward understanding trends within our field, thereby providing an opportunity to stimulate comprehensive solutions.

The article proceeds as follows. The next section highlights the article's organizing framework. Section III discusses the key stakeholders that affect the IS discipline, while the final section offers some lessons for IS academics as we strive to serve our key stakeholders.

II. USING STAKEHOLDER THEORY TO STUDY THE ISSUE

The panel utilized *stakeholder theory* [Freeman, 1984] as an overarching framework to understand the credibility crisis in IS. A stakeholder can be defined as any group or individual who can affect or is affected by the achievement of an organization, institution, or, in this case, a field's objectives [Freeman, 1984]. Stakeholder theory includes both normative and descriptive aspects [Donaldson and Preston, 1995; Freeman, 1984; Mitchell, Agle, and Wood, 1997]. The normative portion involves *identifying* the field's key stakeholders. The IS academic credibility crisis discourse (Hassan and Hovorka, 2011; Marcus, 1999; Winter and Butler, 2011; among others) identifies the following stakeholders in the IS field: practitioners, employers, students, faculty, academic staff, journals, research, funding sources, administrators, university colleagues, and regulators.

According to stakeholder theory, influence will vary in terms of *salience*, which is defined as "the degree to which managers give priority to competing stakeholder claims" [Mitchell et al., 1997, p. 854]. By examining the multi-dimensional nature of salience—power, legitimacy, and urgency—we can identify these stakeholders' interests, the mechanisms through which these stakeholders influence other stakeholders, and the potential risks and opportunities that exist with particular stakeholders. *Power* refers to "the extent to which individuals or groups are able to persuade, induce, or coerce others into following certain courses of action" [Johnson and Scholes, 1999, p. 36]. Stakeholders who can exert influence over other stakeholders possess power in the IS discipline. *Legitimacy* can be defined as "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions" [Suchman, 1995, p. 574]. A stakeholder needs legitimacy to affect the IS discipline's stature. Finally, *urgency* constitutes "the degree to which stakeholder claims call for immediate action" [Mitchell et al., 1997, p. 867]. Stakeholders who require immediate attention often will be given higher priorities (i.e., urgency) over other stakeholders.

The multidimensional nature of stakeholder salience implies that various stakeholders deserve different levels of consideration. Moreover, stakeholder attributes (i.e., power, legitimacy, and urgency) vary over time based on environmental factors. Referring to time, from the 1970s until the turn of the century, IS academics viewed internal IT departments as the discipline's key stakeholders. The IS discipline created curriculum and research that helped IT professionals develop functional area software, such as payroll systems that automated organizational processes [Marcus, 1999]. Leading up to the turn of the century, packaged enterprise resource planning software bestowed importance on IT companies (e.g., Oracle and SAP), creating software and consultants (e.g., Accenture) who implemented these systems [Marcus, 1999]. In addition to time, geography may affect stakeholder salience. Undoubtedly, academic institutions located on different continents will encounter different stakeholders or stakeholders with different levels of importance. For example, regulatory forces, such as the Association to Advance Collegiate Schools of Business (AACSB), shape academia in business schools located in the United States, but have had a limited influence on universities located in other countries.

Given the problem's international nature, the following section provides insight and advice from IS professors across continents (i.e., Australia, Asia, America, and Europe). Using stakeholder analysis as an organizing framework will allow us to view the IS discipline as an integration of resource, market, and socio-political forces [Donaldson and Preston, 1995; Mitchell et al., 1997].

III. IS DISCIPLINE STAKEHOLDERS

Table 1 lists and describes the IS discipline's key stakeholders. The table ranks each stakeholder based on feedback from twenty-two IS scholars who attended the ICIS panel session. While these rankings may not necessarily reflect the opinions of scholars unable to attend the panel, they stimulated scholarly discussion. The audience ranked IS discipline stakeholder from 1 to 7, with 1 meaning most important to the IS discipline and 7 meaning least important. Based on the panel discussion, the following subsections provide additional insight on how each stakeholder affects the IS discipline, as well as how the discipline can effectively manage the stakeholder.

Stakeholder	Stake in the IS Discipline	Ranking*
Practitioners/ Employers	<ul style="list-style-type: none"> • Employ students • Partner on research projects and consume research • Provide funding for programs • Serve as program advisors and guest speakers 	33
Students	<ul style="list-style-type: none"> • Consume teaching and research • Work in IS jobs 	55
IS Faculty	<ul style="list-style-type: none"> • Produce and consume research • Produce and consume course material • Teach courses and mentor student • Manage programs • Serve as reviewers and editors of journals 	67
Journals/Research	<ul style="list-style-type: none"> • Publish research results • Define quality and legitimacy of academic knowledge 	70
Funding Sources	<ul style="list-style-type: none"> • Provide resources for research efforts and teaching • Define research legitimacy 	74
Administrators/ University Colleagues	<ul style="list-style-type: none"> • Set strategic objectives for universities, schools, and programs • Allocate resources to programs • Allocate teaching resources to courses 	94
Regulators	<ul style="list-style-type: none"> • Define course standards • Dictate course offerings (e.g., AACSB) • Establish program legitimacy (e.g., accreditation) 	101

* Twenty-two IS scholars responded to the survey. The most important stakeholders have lower rankings.

Practitioners/Employers

Overwhelmingly, panel attendees indicated that practitioners and employers represent the most important stakeholders in the IS discipline. Practitioners employ IS students and engage in our research. In many cases, the promise of employment drives students into the IS field. Especially when employers need students graduating with an IS degree to fill open positions, employers are interested in contributing to IS programs as guest speakers, scholarship funders, and research participants. IS academics can effectively leverage employers and practitioners by better educating them on how to interact with students, the skills our students possess, and the benefits of research engagement.

IS academics need to help practitioners understand how to interact with our students and assess students' skills. When the job market is robust, employers are excited about interacting with our students, frequently volunteering to deliver classroom lectures. Unfortunately, employers sometimes fail to capture the true nature of the IS field. For instance, highly technical people often deliver talks to IS students who tend to find these presentations overly technical and uninspiring. On other occasions when human resource recruiters facilitate the discussion, students commonly view such talks as insufficiently rigorous and overly focused on marketing the company. IS academics can help employers better interact with our students by carefully orchestrating platforms to facilitate student-practitioner interactions. This may involve providing more meaningful forums (e.g., mentoring and coaching) for employers to interact with students, coaching employers on presentation content and speakers, and vetting presentations beforehand.

Regarding student skills, employers often do not understand the unique skill sets that IS graduates possess. While job postings tend to list the combination of business, communication, and technical skills that we teach our students [Kennan, Cecez-Kecmanovic, Willard, and Wilson, 2008], entry-level IS positions often require programming and networking skills, which may be too technical for IS students. IS academics can address this problem by educating employers and integrating academic programs. We can help employers understand the skill sets IS students possess and the types of jobs they have been trained to perform. Unfortunately, this approach severely limits IS students' job opportunities because many employers find the skills that we teach our students (e.g., process analysis, project management, teamwork, understanding diffusion and user resistance) insufficient for the technical nature of entry-level jobs. IS programs that have insufficient technical faculty or time in the curriculum to instruct students on technical topics may consider developing integrated programs with computer science. Well-integrated programs may be able to produce a stronger mix of students with the technical and IS skills that employers are seeking, providing career paths that start with technical jobs and lead to more managerial-oriented IS roles.

In addition to employing our students, practitioners benefit the IS discipline by engaging in our research. This may involve participating in our research as subjects or using our research to benefit practice. Soliciting practitioner participation can be difficult when practitioners are not accustomed to research projects. For example, in some developing countries in Asia, practitioners hesitate to open their doors and share information with researchers, voicing secrecy and privacy concerns. On the upside, these practitioners are anxious to learn from academics. They want to know what other companies in the region are doing to identify best practices, manage change, and handle discord.

IS academics may consider two approaches to better engage practitioners in research. First, partner with colleagues in other disciplines who may have relationships with the CXO audience. Second, consider hosting or delivering a lunch-time talk to interest practitioners in research projects. Such talks need to be developed around a "hook" that interests practitioners and also adapt the talk for regional differences. For example, Asian companies are discovering that Western practices need to be adapted for regional differences in growth and infrastructure.

Students

Panel session attendees ranked students as the second most important stakeholder. Consistent with this result, IS scholars [Firth et al., 2008; Koch, Van Slyke, Watson, Wells, and Wilson, 2010b] have long recognized students' critical role in sustaining IS programs. The IS field's research efforts have put forth proven strategies for increasing the number of students majoring in IS, such as assigning the most effective teachers to the introductory course [Looney and Akbulut, 2007]. While these strategies have contributed to steady enrollments in IS, the population of IS majors often pales in comparison to other business school disciplines. Many business school students want to major in finance because they perceive it as a career that offers more interesting work, better pay, and more upward mobility than IS. Similar to the U.S., Asian students increasingly view IS as unglamorous and too technical, with jobs requiring programming and database administration. Students returning to school to pursue a master's degree are also often uninterested in IS because they already have technical undergraduate degrees in fields like engineering and computer science. Given these students' management aspirations, they seek course work that helps them understand strategy and finance. On a positive note, upticks in new ways to deploy and use technology such as mobile and cloud computing help students recognize that IS is important to the organization. Many understand that IS may provide differentiation in job interviews, while helping them succeed in their careers.

Given these realities, IS programs might consider two additional student stakeholders: students who are majoring in other business disciplines and have an interest in IS electives that complement their major and students from disciplines outside business schools. The IS field can leverage these stakeholders by creating courses that complement their field of study and partnering with other programs. For example, the Nanyang Business School in Singapore offers cross-disciplinary courses such as IS in financial services, financial analytics for accountants, and IS in human resource management, which tend to be popular with students from other business majors. IS faculty have an advantage in designing and teaching these courses, as they require in-depth knowledge about the systems

and IT-enabled processes within particular business domains. To reach students in other disciplines, partnerships in dual degree programs enable students to pursue both a business-oriented IS degree with a computer science or computer engineering degrees, for example, as is the case at the Nanyang Technological University.

IS Faculty

According to attendee rankings, IS faculty represent the third most important stakeholder in the IS discipline. The diversity of teaching and research topics within IS contributes to the credibility crisis by confusing stakeholders about the identity of IS, casting doubt on the field's legitimacy. IS faculty teach in a variety of degree programs housed in several different schools. For instance, business schools tend to teach management information systems courses, while schools of information often teach information science. More technical courses, such as programming and networking, often are located in schools of computer science and engineering. This situation confuses those in industry, resulting in practitioners not understanding the unique knowledge IS graduates possess.

Faculty also engage in research which often lacks the context needed to understand issues facing practice. Figure 1A shows IS research that considers people, context, and the IT artifact. Unfortunately, as a field we often study systems and technology independent of context (see Figure 1B). As a field, IS has tended to focus on rigor, nomothetic explanations, and knowledge claims similar to the natural sciences. Much of our field is characterized by research agendas defined by individual scholars that focus on surveying businesses [Limayen, Niederman, Slaughter, Chen, Gregor, and Winter, 2011; Winter and Butler, 2011]. The IS discipline must intensify its efforts

to connect our research findings to specific contexts and organizational settings.

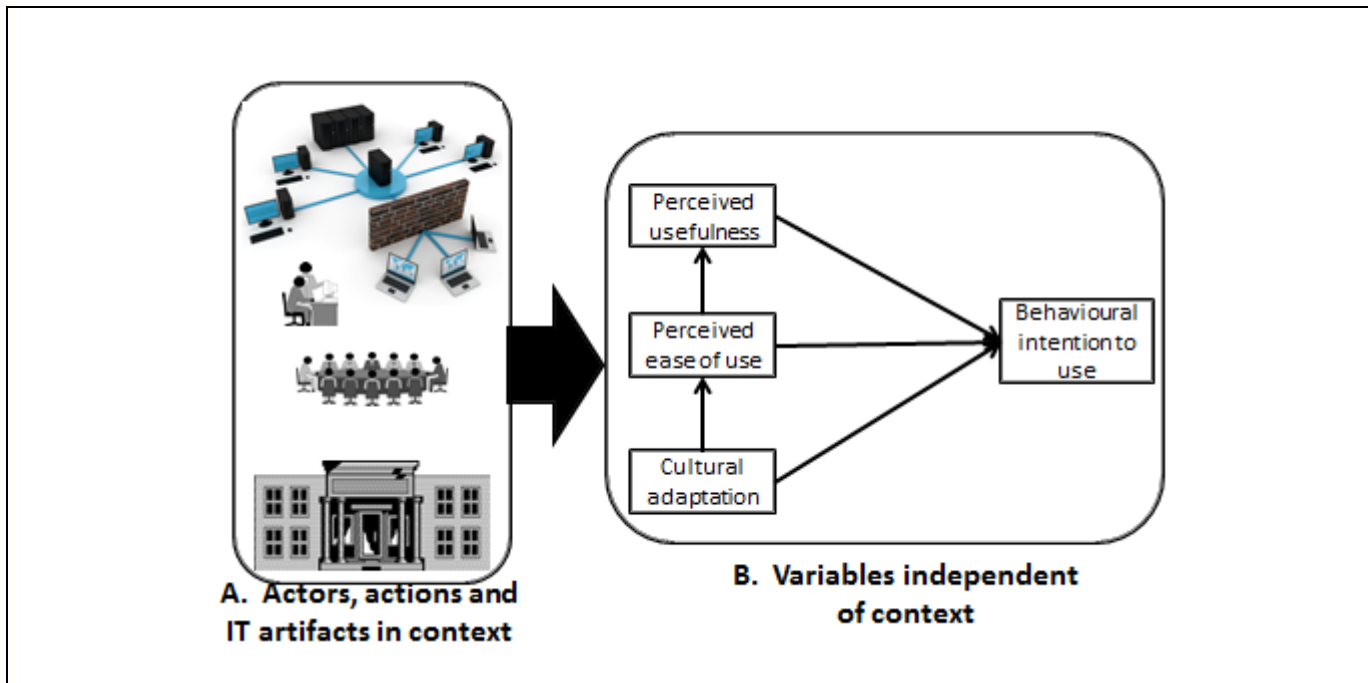


Figure 1. Stories IS Research Tells [Ramiller and Pentland, 2009]

Panelists argued that the field needs a set of grand challenges, which govern the types of research IS scholars pursue [Limayen et al., 2011]. The grand challenges will move beyond the current debate of whether we need to focus on the IT artifact [Benbasat and Zmud, 2003] or embrace a more fluid identity [King and Lyytinen, 2004]. Rather, grand challenges would mobilize the discipline to address more pressing problems like health, the economy, and poverty. Doing so will require defining our identity and nurturing critical attitudes toward imports from other disciplines. Panelists argued that the discipline needs to develop a set of intellectual ideas, aims, values, norms, concepts, and methodologies that are unique to the IS field. Our research needs to ask distinctive questions and produce knowledge claims that IS scholars are uniquely qualified to answer [Hassan, 2011]. In cases where we borrow theories from other disciplines, we need to translate them to our problem domain and context. This will require mobilizing IS faculty to engage in discourse about IS identity and to engage in topics that move beyond the business value of IT. As a field, IS needs to critically reflect on our achievements, renegotiate our boundaries with our reference disciplines, and engage in broader discourses at community, industry, and national levels.



Journals/Research

Driven by current academic incentive systems that award tenure, promotion, and raises based on publishing in top journals, IS scholars' research goals tend to focus on preserving strong publication environments rather than on generating profound knowledge [Lyytinen, Baskerville, Iivari, and Te'eni, 2007, p. 321]. Such a situation contributes to the IS credibility crisis, causing the IS discipline to become increasingly self-contained and self-affirming. Continuing along this path without market tests or reality checks may limit the discipline's ability to generate research that matters to anyone beyond other IS academics [Quah, 2011]. Fortunately, countervailing pressures are apparent in the field. IS scholars are discussing how we can change the field's culture so that it values, measures, and rewards the generation of beneficial knowledge.

Australia and the United Kingdom (UK) exemplify incentive systems that encourage research that benefits society. Australian universities incorporate community service into faculty performance measures. Through community service, faculty members must demonstrate how they engage with industry in research, influence, and practice. The UK awards universities research funds based on the university's research effectiveness score. Beginning in 2014, publications will form *only* 65 percent of this score. The remainder will come from the environment (15 percent) and impact case studies (20 percent). Impact case studies must demonstrate research benefitting the wider economy and society. Impact case studies exclude impacts on students, teaching, the university, and other academic colleagues. A London School of Economics professor explains the impact case study:

A major driver of the impact case study is the taxpayer who does not want to fund academics publishing in the best outlets for the sake of it. Imagine a really grumpy treasury official who is saying, "We're giving the university all of these millions of pounds. They get to go to Shanghai. They get to talk about each others' research. Why should the public sector pay for these kinds of impacts? Why can't we get greater scientific benefit for society?"

The impact case study model requires measurable proof, subject to government audits, that research has impacted society beyond academics. Dissemination without evidence of benefits is not considered an impact. The government assesses research based on its reach and significance.

Research on government proposals to introduce identity cards into the United Kingdom effectively illustrates an impact case study benefiting society [Whitley and Hosein, 2009]. In 2005, IS researchers led a report about the potentially harmful impact of identity card legislation in the United Kingdom. The government, wanting to push the legislation through, was unhappy with the report and tried to censor the research by asking the London School of Economics to not publish it until the bill passed parliament. To raise the debate on identity cards, the London School of Economics released the report in a press release. Based on the research, in 2010 two opposing parties formed a coalition to scrap national identity cards [The_Home_Office, 2011]. Nonetheless, the issue of identity in other forms of online transactions still prevails. In addition to leading a nation to abandoning national identity cards, the research continues to impact society on an ongoing basis by advising the government in IT-related matters.

Funding Sources

IS programs need funding to support faculty positions, graduate students, and research efforts. Faculty position funding typically emanates from university budgets, which are based on undergraduate and graduate classes and enrollment. While universities, schools, and departments provide some research funding, industry and grant-making organizations also can play a key role. Academics can secure industry funding by participating in consulting, systems development, and implementation projects. Securing industry funding requires faculty members to proactively cultivate industry relationships. For instance, one panelist, from the University of Arizona, developed a partnership with Microsoft whereby MBA students solve real business problems. Recently, a team of MBA students assessed and designed a merger and acquisition framework for the company's CIOs. The head of Microsoft Services liked the framework and decided to use it when selling services. Based on the project's success, Microsoft plans to fund additional research projects, which will likely lead to research publications and interesting stories that may entice other companies to participate in such efforts.

While performance reviews sometimes show disdain for industry funding through consulting, IS faculty also can pursue funding from grant-making organizations. In the U.S., these organizations include the National Science Foundation (NSF) and the National Institute for Health (NIH). Asia, China, Hong Kong, and Taiwan each have grant-making organizations. China's organizations include the National Natural Science Foundation (NNSF), National Social Security Fund (NSSF), Ministry of Science and Technology (MoST), and the Ministry of Education (MoE). Hong Kong has the Research Grant Council (RGC), while the National Science Council (NSC) services Taiwan. Countries vary in their funding opportunities. For example, Taiwan has much better funding opportunities than the U.S.

To date, many IS scholars bemoan the difficulty of obtaining and securing the limited amount of funding available. As one IS scholar commented on applying for a grant:

I am never doing that again. It was a ton of work, I didn't get the grant, and it doesn't even count toward anything. The funding agencies don't support the type of work we do.

Nonetheless, pursuing interesting, fundable projects can help the IS field move beyond what one panelist called “esoteric problems and second rate organizational behavior, strategy, or consumer behavior work.” Rather, pursuing funding may help us concentrate on important problems, such as cyber security, which not only are exciting, but also impact individuals, industry, and society. Such a strategy can facilitate successful IS programs, built around securing grants. For instance, the University of Arizona has secured more than \$100 million by focusing on solving information problems: big data, big computation, and big impact. As a result, the university's IS program is relatively immune to cut-backs, even today when many programs are facing financial turmoil.

Administrators

University administrators, such as deans and provosts, affect the IS discipline by controlling an IS program's ability to hire and promote faculty. IS department chairs encounter administrative challenges trying to explain the discipline's value to the curriculum, negotiating the boundaries between IS and other disciplines, managing the cyclical nature of IS enrollment, and conveying the value of IS research.

IS department chairs struggle to convince administrators that IS adds value to the core curriculum. While IS remains in undergraduate business school curriculums, most MBA programs eliminated IS from the curriculum nearly a decade ago [Dhar and Sundarajan, 2004]. Many business school administrators, with nationally-ranked MBA programs, play the rankings game. Since ranking organizations like *Business Week* do not view IS as a core area, MBA programs focus scarce resources on ranking-improving initiatives. A panelist who has taught in several nationally ranked MBA programs explained, “If the dean could raise our rankings by painting the building pink, he'd have the faculty out there with paintbrushes.”

At the undergraduate level, IS departments struggle with online education. In efforts to reduce degree program credit hours, required courses, and faculty, administrators sometimes decide to replace the core IS class with an online training program, which requires students to demonstrate proficiency in Excel, Access, Word, and PowerPoint before gaining admission to schools of business. These situations can hurt an IS program's ability to attract students. The best faculty never interact with students in the introductory IS course, where many students have yet to formally declare a major [Firth et al., 2008]. IS programs need savvy department chairs who can convince other administrators across the school that IS involves teaching students to leverage technology for business value and is not about gaining proficiency using Microsoft Office tools.

The ubiquity of the field spawns boundary challenges. Since IS permeates business and society, other disciplines frequently want to teach courses that IS faculty believe fall within our core expertise. Blurry boundaries force administrators to mediate territorial disputes between IS and other disciplines. For instance, accounting programs often offer accounting information systems courses, which cover databases and structured query language. Marketing programs frequently teach Web development, business analytics, social media, and customer relationship management, while management programs often teach project management. In addition to boundary disputes within business schools, university administrators mediate quarrels between MIS courses and similar courses offered in other schools (i.e., engineering and information) across campus. For example, both MIS programs in the business school and computer science programs in the school of engineering frequently offer programming and database courses.

IS scholars can employ various strategies to manage the situation. First, the IS field must decide what courses fall within the IS domain and develop and publish compelling arguments that professors can customize when they encounter territory disputes at their institutions. Second, IS programs should build relationships with other programs (e.g., marketing, accounting, and computer science) to offer customized courses that meet the needs of the students pursuing other majors. As an example, an IS faculty member could develop a customer relationship management course for the marketing department and teach it to marketing students. Third, IS faculty can recommend successful IS graduates for the school's advisory board. Since these graduates often provide jobs, funding, and insights, they could help shape the dean's opinion about the IS field. Consequently, the administration could help manage challenges from other disciplines about course content.

The cyclical nature of IS enrollment poses a third challenge with university administrators. Rising and falling enrollments of the dot.com boom and bust, respectively, perpetuated problems with securing IS faculty lines. Even



when student enrollment rises, administrators have grown wary of IS programs, as the following quote from a panelist with administrative experience captures:

Many institutions substantially expanded their faculty rosters during the dot.com boom and felt tremendous pain during the bust when enrollments plummeted. Today, there is still lingering damage from that era. It is widely shared in the discipline that many administrators are reluctant to make the same mistake again—hiring lots of IS faculty and paying them high wages. They have placed a glass ceiling on growth opportunities within the discipline.

Over the last decade, IS faculty have tried to endear themselves to university administrators by helping administrators achieve their performance objectives, which includes graduating students who secure well-paying positions and stretching budgets. Today, IS faculty actively recruit students to the IS major and then highlight the program's success by reporting on enrollment increases, student job placement, and starting salaries, which are typically the highest in the business school [Firth et al., 2008; Koch et al., 2010b]. See the *National Association of College and Employers* report which lists MIS starting salaries at \$63,100 [NACE, 2013]. IS faculty have helped administrators manage budgets by classifying the major as a STEM (science, technology, engineering, and math) discipline and leading online education initiatives. Some states, such as Texas, award universities more funds for STEM graduates compared to business school and liberal arts graduates [Trauth, 2013]. Being at the forefront of online education has allowed IS programs to help university administrators manage higher education costs by expanding student-teacher ratios and by meeting the university's outreach mission.

The fourth challenge confronting administrators is comprehending the value of IS research. The field's diversity hampers administrators' and colleagues' ability to form a clear picture of our core contributions. Even within the discipline, scholars vary as to what should be considered acceptable IS research (e.g., behavioral versus design science), research methods (e.g., surveys, case studies, experiments, and analytic modeling), and top conferences. Regarding the latter, other disciplines have premiere conferences that most scholars attend (e.g., Academy of Management for management scholars, AMA for marketing, AAA for accounting), whereas IS scholars attend a wide array of conferences, including ICIS, AMCIS, HICSS, DSI, INFORMS, and ECIS, as well as a plethora of regional conferences and methodological or topical-oriented conferences and workshops (e.g., WITS, WISE, DIGIT).

The IS field might follow two strategies to better market the value of its research. First, the field must continue to nurture critical attitudes toward relying on theories from other disciplines [Agarwal and Lucas, 2005]. While IS researchers can emulate other disciplines, panelists argued that it may not be fruitful to seek legitimacy by primarily borrowing theories from other disciplines. Doing so may compromise legitimacy, as other disciplines will continue to view our work as unimportant and ununique. Second, we should create an overarching vision for the field that would unite our diverse research around addressing an important core problem such as Markus's suggestion, "electronic integration of socioeconomic activity, which encompasses households, industries, nations, education and leisure" [Marcus, 1999, p. 197].

Regulators

Administrators, like most stakeholders care deeply about accreditation, a process that can provide significant and positive long-term impacts to the quality of IS programs. Accreditation regulators help IS programs make decisions, implement improvements, shift resources to the appropriate places, and meet minimum standards, such as maintaining a sufficient ratio of academically qualified versus professionally qualified faculty who teach classes. To employers, parents, and students, accreditation signifies an important academic threshold that must be met. Unfortunately, schools spend inordinate amounts of time and resources satisfying periodic regulatory reporting requirements. The accreditation process shifts resources away from student learning and other mission-critical efforts.

Depending on the IS program's location within the university, different accreditation organizations hold jurisdiction. For instance, the Association to Advance Collegiate Schools of Business (AACSB) accredits business schools, whereas the Accrediting Board for Engineering and Technology (ABET) accredits programs located outside business. To complicate matters, different accreditation bodies focus on different quality factors. AACSB, for instance, focuses on student admission standards and graduate placements. AACSB accredits the entire business school rather than specific programs (except accounting), broadly considering the direction of the overall college-wide curriculum and metrics such as the number of total courses offered, overall qualified faculty-to-student ratios, and so forth. Given AACSB's focus on the generic set of business programs and metrics, the accreditation is considerable different than ABET, which manages IS programs located in information or engineering schools. To obtain accreditation, ABET primarily focuses on operational program execution issues. For instance, ABET examines whether the program follows the Association of Information Systems (AIS)/Association of Computer Machinery (ACM) model curriculum, as well as the quality of computing resources and laboratories. AACSB is

unlikely to consider these issues during a review. It should be no surprise that most IS programs within business schools do not pursue ABET accreditation. Alternatively, for programs outside business schools, AACSB accreditation is not pertinent.

IV. LESSONS LEARNED

Based on the preceding discussion of key stakeholders affecting the IS discipline, this section discusses four key lessons emerged. IS scholars can leverage these lessons to continually improve the IS discipline's credibility across the globe.

Lesson 1: IS academics from across the globe face similar issues.

One primary purpose of the panel involved expanding the current discussion beyond the North American perspective, which has dominated previous panels [Koch, Firth, King, Looney, Pavlou, and Trauth, 2010a]. Nonetheless, the international panelists expressed relatively few differences in stakeholders affecting their programs. Despite going to great lengths to identify panelists from Asian, Australian, European, and North American universities, all panelists concurred that the most important stakeholders were practitioners, employers, and students. In fact, the panel organizers were hard-pressed to find panelists willing to discuss the impact regulators and funding sources have on the IS discipline. Simultaneously, the panelists understood students well. Students across the globe had similar perceptions about IS careers.

Lesson 2: As IS academics, we need to broaden our perspective of key stakeholders.

As IS faculty, we need to expand our understanding of the stakeholders affecting our discipline. Figure 2 below summarizes the audience's perceptions of the IS field's key stakeholders. The figure suggests that student job placement drives the IS field. The opportunity for employment promotes student enrollments, which then drives faculty existence. Journals validate the quality of our existence. IS faculty who publish in top journals obtain perks, such as travel funds, release time, salary increases, and opportunities to teach interesting classes that are smaller and more aligned with our research (e.g., Ph.D. seminars).

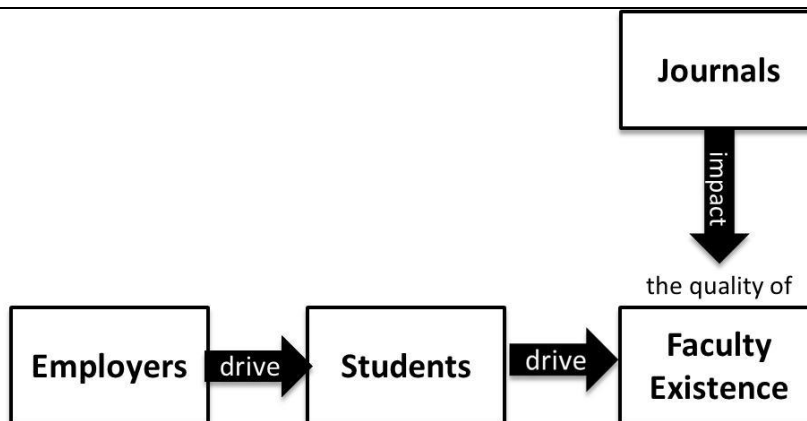


Figure 2. Audience's Synopsis of IS Discipline's Stakeholders

Environmental forces, such as rising tuition costs, reduced government funding, and dismal employment prospects for college graduates are facilitating changes in higher education that may disrupt this model [DeRITIS, 2011; Kamenetz, 2010]. Yet panelists and audience members hardly discussed the impact of administrators trying to manage reduced funding and competition from massive open online courses (MOOCs). The first MOOC started in Fall 2011 by broadcasting Stanford's best artificial intelligence course to 160,000 students worldwide. Since that time, droves of universities have signed up to participate, partly out of fear of being left behind [Marklein, 2012]. However, our search of the ICIS proceedings through May 2013 returned no papers focused on MOOCs. Since MOOCs represent a technology answer to the business problem of managing higher education costs, the IS discipline should advise universities on how to implement MOOCs. At a minimum, the IS field should recognize how MOOCs impact our discipline. MOOCs could lower higher education costs by reducing the number of faculty needed to develop course content [Wieberg, Upton, and Berkowitz, 2012], holding implications for the role of IS faculty. While fewer faculty members will design courses, others may administer courses and some may focus on generating funding to sustain research programs [Trager, 2011]. As evidenced in the quote below, a faculty member who obtained a Ph.D. in a business school and subsequently received an appointment in a school of information, laments about publishing. Although publishing in the #1 and #2 ranked IS journals is paramount in business schools, such journals matter little to schools of information.



Administrators in schools of information are concerned about grants. They could care less if I get an ISR [Information Systems Research] or an MISQ [Management Information Systems Quarterly]. They want me to get grants to fund my research and Ph.D. students.

The key lesson is that the IS discipline needs to broaden its understanding of stakeholders beyond employers, students, and journals.

Lesson 3: The IS field needs to welcome research and education programs spanning beyond business school MIS departments.

Given higher education and societal changes, IS research and education programs need to embrace the ubiquitous and interdisciplinary nature of IS by evolving beyond the field's business school origins. The IS field has demonstrated the business value of IT [Limayen et al., 2011; Winter and Butler, 2011] and fulfilled its long-time mission of "delivering usable systems on time on budget" [Marcus, 1999, p. 194]. Instead, of "ceding the vision, work, power and control of defining focal problems to surveys of corporate executives and consultants—a narrow group of external stakeholders" [Winter and Butler, 2011, p. 102], we should pursue research agendas that mobilize the IS field to impact significant issues in our communities, our nation, and our world, such as the economy, the environment, and well-being [Limayen et al., 2011; Winter and Butler, 2011].

As a field, IS might consider adopting Markus's advice and focusing on "electronic integration of socioeconomic activity, which encompasses households, industries, nations, education and leisure" [Marcus, 1999, p. 197]. Another option involves benchmarking the engineering field's grand challenges, which include preventing nuclear terror, making renewable energy affordable, and advancing health informatics [Limayen et al., 2011; The_National_Academy_of_Engineering, 2012; Winter and Butler, 2011]. Pursuing meaningful grand challenges can increase the IS field's credibility by demonstrating to our stakeholders, especially funding sources, administrators, students, and colleagues the contributions IS scholars can make.

On a related note, the IS field needs to actively pursue educational programs beyond those offered in business school IS departments [Marcus, 1999]. Based on information collected from colleges, the Bureau of Labor Statistics, the U.S. Census Bureau, and job search intelligence, the National Association of College and Employers' annual undergraduate salary survey for 2011–2012 report explained that "too few business school students graduated with MIS degrees to report a salary" [NACE, 2013, p. 9]. Yet the report listed information sciences and systems degrees offered in information schools as one of the fastest growing majors with a top starting salary of \$52,000 [NACE, 2013]. This suggests that the IS field needs to (1) further develop programs in informatics, information systems and technology, and business analytics and (2) teach in other business school disciplines like marketing and accounting or (3) team-teach in cross-functional courses. Such an approach will demonstrate the value of IS to other fields. As the IS field evolves, modern-day biology may provide some inspiration. The biology field evolved from the biology of the 1950s into a discipline with specialty fields like biochemistry, genetics, and environmental biology.

Lesson 4: Managing stakeholders requires local efforts by academics and global efforts by the Association of Information Systems.

Bringing about change in the IS discipline requires that IS scholars manage stakeholders within their control. Working together under the Association of Information Systems umbrella, we can bring global change to the discipline. At the global level, AIS might consider the following initiatives. First, engage our field's top journal editors, AIS fellows, senior scholars, grant making agencies (e.g., the National Science Foundation), and the Society for Information Management to chart a path for the IS discipline that will continue to evolve as society changes. Winter and Butler's [2011] grand challenges could be leveraged as a useful framework for this endeavor. The framework suggests that our field's grand challenges need to be rigid enough to provide a governing roadmap, yet malleable enough to allow different stakeholders to appropriate them to meet their needs. For example, deans, funding agencies, and administrators can use the grand challenges to justify their investment in IS research. In addition, IS scholars could adopt the challenges to frame their research.

Second, faculty incentive systems should be aligned to encourage faculty members to work toward addressing the field's challenges. Current incentive systems heavily weigh student evaluations, journal publications, and research impact (e.g., citations), which encourages strong publication cultures where publishing in the top journals represents the ultimate prize (see <http://www.vvenkatesh.com/isranking/>). Alternative incentive mechanisms may require government interventions that tie research funding to generating knowledge that benefits society, such as the UK model. Academic institutions worldwide might consider benchmarking the UK's impact case studies, which in 2014 will tie 20 percent of research funding to measurable societal impacts.

Third, AIS-level relationships must be cultivated with key stakeholders, like technology partner businesses, students, and funding agencies. Currently, much relationship building occurs at the local level with individual scholars and universities developing relationships with regional stakeholders. Fostering relationships at the AIS level could prove beneficial to all IS programs because stakeholders could focus less on maintaining local relationships. While AIS has made some efforts in this area, the institution needs member help. Unfortunately, most individuals hesitate to build relationships on behalf of AIS in an effort to preserve relationships for the benefit of their own institution, program, and students.

VI. CONCLUSION

While the ICIS panel offers several important lessons for IS academics as we continue to develop our field and manage key stakeholders, the panel has several limitations, many of which can be addressed with future research. First, stakeholder analysis, which offered an organizing framework, is normally used in business and organizational settings. Academic disciplines like IS differ from businesses in that our setting promotes academic freedom, thought diversity, individual contributions and scholarship, whereas business settings display clear ownership, leadership, and profit-making [Hassan, 2011; Ives, Parks, Porra, and Silva, 2004]. Stakeholder analysis led to the business-focused discussion reported in this article's lessons learned section. Future research needs to embrace other frameworks, which may generate lessons about scientific knowledge that supplement the business lessons obtained from this panel.

Second, despite its global focus, the panel revealed few systemic differences across international regions. Even after great effort was made to identify panelists from across the globe, meaningful differences between countries failed to emerge. Future research might look at in-depth case studies to better understand the different affect IS stakeholders have on the discipline across continents.

Despite these limitations, the panel stimulated provoking thoughts and questions. What is at stake for the IS field? Some programs will continue to thrive and others will fail. Some will be able to make changes; others will not. As we noted above, much of what happens at the local level emerges as a result of the IS field as a collective. As scholars have noted, "While developing stronger theory might be helpful, it is more important that the IS field pushes back against the hegemony of IS critics outside the field whose arguments masquerade as concerns about academic quality" [King and Lyytinen, 2004, p. 539]. The Association of Information Systems, therefore, has an important role to play, as do we, its members. The IS field as a whole cannot push back; it is we, the AIS membership, who can push back.

Finally, who is to say that the field would not perform better if fragmented into domain-specific research and teaching? Many IS programs have abandoned a protective stance of the IS field, becoming successful by embracing IS as a "second major in a dual-major" for students. Nonetheless, it is currently unclear whether such an approach compromises the IS field's credibility or better demonstrates the value of IS and, therefore, underpins its credibility. Since IS is so deeply embedded in society, government, and business, separating IS may prove unproductive. For instance, human resources (HR) represents a distinct aspect of business, focusing on specific events and processes within an organization. Therefore, it makes sense that HR should be treated as a separate discipline. Finance might be viewed the same way. Such skills are particularly needed when considering how to raise and invest funds, for instance, yet finance does not pervade every aspect of the government, business, or society as whole. Yet, finance enjoys its status as an important discipline. Although one could make similar arguments for accounting, marketing, and management, should the same argument be made for IS? Is the field so cross-functional and pervasive that it should *not* be a separate discipline? Clearly, further work and future panel sessions are needed to explore these arguments.

REFERENCES

Editor's Note: The following reference list contains hyperlinks to World Wide Web pages. Readers who have the ability to access the Web directly from their word processor or are reading the article on the Web, can gain direct access to these linked references. Readers are warned, however, that:

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Agarwal, R., and H.C. Lucas, Jr. (2005) "The Information Systems Identity Crisis: Focusing on High-visibility and High-impact Research", *MIS Quarterly*, (29)3, pp. 381–398.

- Benbasat, I., and R.W. Zmud (2003) "The Identity Crisis Within the IS Discipline: Defining and Communicating the Discipline's Core Properties", *MIS Quarterly*, (27)2, pp. 183–183.
- Bocking, S. (2004) *Nature's experts: Science, Politics, and the Environment*, Rutgers University Press: New Brunswick, NJ.
- Davidson, E.J. (2011) "Hey Professor, Why Are You Teaching This Class?: Reflection on the Relevance of IS Research for Undergraduate Students", *European Journal of Information Systems*, (20), pp. 133–138.
- DeRITIS, C. (2011) "Student Lending's Failing Grade", *Regional_Finance_Review*, July, edited by Moody's_Analytics, pp. 54–59.
- Dhar, V., and A. Sundarajan. (2004) "Should the Core Information Systems Curriculum Be Structured Around a Fundamental Question?", *Panel Discussion at Twenty-fifth International Conference on Information Systems*, Washington, DC, 2004, pp. 1021–1022.
- Donaldson, T., and L.E. Preston (1995) "The Stakeholder Theory of the Corporation: Concepts, Evidence, and Implications", *Academy of Management Review*, (20)1, pp. 65–91.
- Dufner, D. (2003) "The IS Core-I: Economic and Systems Engineering Approaches to IS Identity", *Communications of the Association for Information Systems*, (12)31.
- Firth, D., J. King, H. Koch, C.A. Looney, P. Pavlou, and E.M. Trauth (2011) "Addressing the Credibility Crisis in IS", *Communication of the Association for Information Systems*, (28), Article 13, pp. 199–212.
- Firth, D., C. Lawrence, and C.A. Looney (2008) "Addressing the IS Enrollment Crisis: A 12-step Program to Bring About Change in the Introductory IS Course", *The Communications of the Association for Information Systems*, (23)2, pp. 17–36.
- Freeman, R.E. (1984) *Strategic Management: A Stakeholder Approach*, Boston, MA: Pitman.
- Gill, G., and A. Bhattacharjee (2009) "Whom Are We Informing? Issues and Recommendations for MIS Research from an Informing Sciences Perspective", *MIS Quarterly*, (33)2, pp. 217–235.
- Hassan, N.R. (2011) "Is Information Systems a Discipline? Foucauldian and Toulminian Insights", *European Journal of Information Systems*, (20)4, pp. 456–476.
- Hassan, N.R., and D.S. Hovorka (2011) "Sociomateriality and IS Identity", *Australasian Conference on Information Systems*, Sydney, Australia.
- Ives, B., M.S. Parks, J. Porra, and L. Silva (2004) "Phylogeny and Power in the IS Domain: A Response to Benbasat and Zmud's Call for Returning to the IT Artifact", *Journal of the Association of Information Systems*, (5)3, pp. 108–124.
- Johnson, G., and K. Scholes (1999) *Exploring Corporate Strategy*, Hemel Hempstead, UK: Prentice Hall.
- Kamenetz, A. (2010) *DIY U: Edupunks, Edupreneurs, and the Coming Transformation of Higher Education*, White River Junction, VT: Chelsea Green Publishing, p. 208.
- Kennan, M., D. Cecez-Kecmanovic, P. Willard, and C.S. Wilson (2008) "A Content Analysis of Australian IS Early Career Job Advertisements", *Australian Journal of Information Systems*, (15)2, pp. 57–78.
- King, J.L., and K. Lyytinen (2004) "Reach and Grasp", *MIS Quarterly*, (28)4, pp. 539–551.
- Klein, H.K., and R.A. Hirschheim (2006) Ch. 15: "Further Reflections on the IS Discipline: Climbing the Tower of Babel" in King, J.L., and K. Lyytinen (eds.), *Information Systems: The State of the Field*, West Sussex, England: John Wiley & Sons, p. 389.
- Koch, H., D. Firth, J. King, C.A. Looney, P. Pavlou, and E.M. Trauth (2010a) "Addressing the Credibility Crisis in IS", *American Conference on Information Systems*, Lima, Peru.
- Koch, H., C. Van Slyke, R.T. Watson, J. Wells, and R.L. Wilson (2010b) "Best Practices for Increasing IS Enrollment: A Program Perspective", *Communication of the Association for Information Systems*, (26)22, pp. 477–492.
- Light, J. (2010) "Psych Majors Aren't Happy with Options", *The Wall Street Journal*, October 12, http://finance.yahoo.com/college-education/article/111000/psych-majors-not-happy-with-options?mod=edu-continuing_education.
- Limayen, M., F. Niederman, S.A. Slaughter, H. Chen, S. Gregor, and S.J. Winter (2011) "What Are the Grand Challenges in Information Systems Research? A Debate and Discussion", *International Conference on Information Systems*, Shanghai, China.

- Looney, C.A., and A.Y. Akbulut (2007) "Combating the IS Enrollment Crisis: The Role of Effective Teachers in Introductory IS Courses", *Communications of the Association for Information Systems*, (19)38, pp. 781–805.
- Lyytinen, K., R. Baskerville, J. Iivari, and D. Te'eni (2007) "Why the Old World Cannot Publish? Overcoming Challenges in Publishing High-impact IS Research", *European Journal of Information Systems*, (16)4, pp. 317–326.
- Marcus, M.L. (1999) "Thinking the Unthinkable: What Happens If the IS Field as We Know It Goes Away?", in Currie, W., and R. Galliers (eds.), *Rethinking Management Information Systems: An Interdisciplinary Perspective*, Oxford: Oxford University Press, pp. 175–203.
- Marklein, M.B. (2012) "College May Never Be the Same", *USA TODAY*, September 12, <http://usatoday30.usatoday.com/news/nation/story/2012/09/12/college-may-never-be-the-same/57752972/1>.
- Mitchell, R.K., B.R. Agle, and D.J. Wood (1997) "Toward a Theory of Stakeholder Identification and Salience: Defining the Principle of Who and What Really Counts", *Academy of Management Review*, (22)4, pp. 853–886.
- NACE (2013) *National Association of Colleges and Employers Salary Survey, Starting Salaries for New College Graduates*, Bethlehem, PA: National Association of Colleges and Employers.
- Quah, D. (2011) "IS UK Academic Social Science Following a Work Model Others Are Already Discarding", London School of Economics, <http://dannyquah.wordpress.com/2011/11/11/is-uk-academic-social-science-following-a-work-model-that-others-are-already-discarding/> (current May 20, 2012).
- Ramiller, N.C., and B.T. Pentland (2009) "Management Implications in Information Systems Research: The Untold Story", *Journal of the Association for Information Systems*, (10)6.
- Somers, M.J. (2010) "Using the Theory of the Professions to Understand the IS Identity Crisis", *European Journal of Information Systems*, (19), pp. 382–388.
- Straub, D., and S. Ang (2011) "Rigor and Relevance in IS Research: Redefining the Debate and a Call for Future Research", *MIS Quarterly*, (35)1, pp. 3–11.
- Suchman, M.C. (1995) "Managing Legitimacy: Strategic and Institutional Approaches", *Academy of Management Review*, (20)3, pp. 571–610.
- The_Home_Office (2011) "National Identity Registry Destroyed", The_Home_Office, <http://www.homeoffice.gov.uk/agencies-public-bodies/ips/press-releases/nir-destroyed> (current May 21, 2012).
- The_National_Academy_of_Engineering (2012) "The Grand Challenges of Engineering", <http://www.engineeringchallenges.org/cms/challenges.aspx> (current May 17, 2012).
- Trager, R. (2011) "Texas Universities' Spending Under Scrutiny", *Chemistry World*, <http://www.rsc.org/chemistry/world/News/2011/May/31051102.asp> (current May 20, 2012).
- Trauth, D. (2013) *Texas State University Legislative Update*, San Marcos, TX: Texas State University.
- Whitley, E.A., and G. Hosein (2009) *Global Challenges for Identity Policies*, Basingstoke, UK: Palgrave Macmillan.
- Wieberg, S., J. Upton, and S. Berkowitz (2012) "Texas Athletics Overwhelm Rivals in Revenue and Spending", *USA TODAY*, May 15, <http://www.usatoday.com/sports/college/story/2012-05-15/texas-athletics-spending-revenue/54960210/1>.
- Winter, S.J., and B.S. Butler (2011) "Creating Bigger Problems: Grand Challenges as Boundary Objects and the Legitimacy of the Information Systems Field", *Journal of Information Technology*, (26), pp. 99–108.

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