

Maintaining Academic Currency in a Changing Business Environment: A Study of AACSB International Member Response to Trends in IT Project Management

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Worldwide information technology (IT) spending is estimated to be over \$3.75 trillion in 2011, and IT project management (ITPM) is the driving force behind most of it. Given the substantial resources being invested, it should come as no surprise that ITPM skills are in high demand in today's job market. Yet the question remains: Are business schools doing enough to prepare students for the ITPM demands that exist in the marketplace? This research seeks to answer that question by examining the ITPM degree programs and course offerings of schools belonging to AACSB International – the predominant accrediting body in business education.

INTRODUCTION

Worldwide information technology (IT) spending is estimated to be over \$3.75 trillion in 2011 (Gartner, Inc., 2011) and IT project management (ITPM) is the driving force behind most of it. Given the substantial resources being invested, it should come as no surprise that ITPM skills are in high demand in today's job market. The importance of project management (PM) skills is reflected by the fact that 43% of respondents to a *Computerworld* survey said they will be seeking PM skills in their new hires; Monster.com is reporting more than half of the respondents they polled will be seeking project managers (Collett, 2010). In fact, a Monster.com careers expert is advising IT/IS applicants to respond to the hiring trend by adding PM to their resume (DeZube, 2011). As ITPM skills grow in importance to business, so, too, should their importance grow in IT higher education. Yet the question remains: Are business schools doing enough to prepare students for the ITPM demands that exist in the marketplace? This research seeks to answer that question by examining the ITPM degree programs and course offerings of schools belonging to AACSB International – the predominant accrediting body in business education.

One of the constant challenges in higher education is maintaining currency in a highly dynamic, fast-paced, and increasingly interconnected world. This is perhaps nowhere more the case than in the field of IT. Every day, the importance of IT to global business practice increases. Companies spend billions of dollars on IT investments annually. Technology investment and management are larger and larger concerns to businesses looking to their IT organizations for opportunities to reduce costs through the improvement of business practices and/or increase revenues through novel uses of IT that will help them achieve a competitive advantage.

Perhaps the driving force behind the demand for ITPM skills is the fact so many IT projects are not delivered successfully, with “success” defined as delivering a project on time, within budget, and with the promised functionality. If projects are not successful, they can fall into one of two other categories; they are either challenged – meaning that something was delivered, but was either late, over budget, or did not contain all of the promised features – or they are outright failures. As far back as 1994, the Standish Group, an IT consulting company, has been tracking the success rates of IT projects by surveying IT executives. In 1994, the success rate was a paltry 16% (Anderson, Henriksen, & Aarseth, 2007). Over the years, the success rate has steadily risen. By 2006, the success rate had risen to 35%; however, the rate decreased in the 2009 survey to 32% (Levinson, 2009). While this dip is modest, and can hopefully be partially explained by poor economic conditions overall, the fact remains that this is the first decrease in the IT project success rate in quite some time.

Even with improvements since 1994, the fact that only one-third of all IT projects are successful highlights the need for PM improvements in the business and IT curricula. A cursory look through job postings for IT project managers shows that a PM certification is increasingly preferred, if not required, for consideration for PM positions. Indeed, it can be argued that the doubling in the success rate of IT projects seen in the past 15 years can be attributed to the greater infusion of individuals holding such certifications (and, presumably, the knowledge of PM best practices that comes with them) into the marketplace.

IT projects are distinct from day-to-day IT operations management in a number of ways. For example, projects are temporary, have a clearly defined start and finish, and are mounted to achieve change (PMBOK A Guide to the Project Management Body of Knowledge, 2008). These unique attributes of projects require a somewhat different skill set for project managers than those occupying more traditional types of management positions. In particular, project managers must be able to effectively deal with great variability in the human and capital resources dedicated to projects. Furthermore, these resources are often not under the direct authority of the project manager, which requires that project managers have enhanced negotiation skills that might not be required of traditional functional area managers.

Not only does PM require different management skill sets, in some organizations the pervasiveness of project work has led to the adoption of different organizational structures. Although project work certainly occurs in traditional, hierarchically arranged organizations, some organizations have adopted “projectized” structures where reporting relationships and work assignments are arranged entirely around project work. Software vendors who develop custom software for customers often use such a “projectized” structure. Other organizations have adopted “matrix” structures whereby employees report to both functional area managers as well as project managers (White, 2001). Proper education in ITPM includes empowering students with knowledge of the requisite skill sets for effective PM, as well as an understanding of the context in which their work will take place.

So the question remains, is traditional management education providing students with the knowledge they need to be successful in this arena? Although the textbooks of general management courses sometimes dedicate as much as a chapter or two to general PM, this inherently superficial coverage of the topic does not provide business students, IT business students in particular, with the requisite knowledge they need to enter the workplace, even in entry level positions. Traditional operations management and decision science (e.g., management science, operations research) courses touch on some PM issues, but the depth and breadth of the treatment varies widely across campuses and faculty. While decision science textbooks occasionally give attention (often minor attention) to PM issues such as the project life cycle

and the key decisions and duties of a project manager, the reality of time constraints and the quantitative nature of such courses typically lead to such materials being ignored or given a lower priority. In fact, decision science courses generally concentrate on the continuous and more permanent nature of operations as opposed to the temporary nature of a project. In order to truly provide students interested in ITPM with the skills they need to enter and be successful in the workplace, entire courses – if not degree programs – need to be dedicated solely to this topic. The purpose of this research is to determine the extent to which business schools are meeting this need.

METHODS

In this study, we examine the project management curricular offerings of AACSB International member schools in the United States (US). All AACSB International member schools with membership at the time of the study (4th quarter, 2011) were examined. While project management courses may also be a part of other academic units, such as engineering, this study is specifically concerned with curriculum offerings in the business context. The selection of AACSB International member schools was a natural choice, given this business emphasis. AACSB International is known world-wide as the oldest and best recognized form of professional accreditation for business programs. AACSB International, as suggested by its name, is an international body; however, we chose to limit this study to US based member schools. A preliminary analysis of non-US based member schools raised concerns about the comparability of the data based on variations in the nomenclature used in some cases in describing curriculum offerings.

We included all US based “member” schools in the study. A school may be a member without holding, or even pursuing, accreditation. We identified 480 accredited schools and 175 member-only schools. Some studies (Gambill & Maier, 1998; Apigian & Gambill, 2010) found no differences between accredited versus non-accredited colleges and universities with respect to IT curriculum, but those studies did not focus specifically on ITPM course offerings.

This study focuses on curricular offering. Many institutions have non-curricular offerings in project management. These range from non-credit to extensive professional project management certification preparation courses. It was often unclear where, in terms of academic unit, these offerings were housed. These were excluded from the study.

We examined the ITPM curricula of AACSB International member institutions in order to ascertain the extent to which project management has been integrated into business curricula. We examined degree programs and courses at both the undergraduate and graduate level in order to identify project management related majors, minors, specializations, certifications, courses, etc. While we were especially concerned with ITPM, we also looked for offerings in other business academic units.

The web site of each school was examined to determine whether the business academic unit of the school offered an IT related degree at the graduate and/or undergraduate level, whether it offered an ITPM degree at the graduate and/or undergraduate level, and what project management courses it offered. In addition to direct observation of obvious locations for possible information, extensive searches were conducted using “project management” as the search phrase.

To increase reliability, a list of field definitions was developed and reviewed with all participating observers prior to the start of data collection. The definition information was also available electronically for the research team’s reference throughout data collection. Repeated observations for random schools were conducted and compared to confirm consistency. A database with extensive check boxes, drop downs, etc., was created by the research team to reduce data entry errors.

ANALYSIS

We began our analysis by considering whether the institution offered IT/IS related undergraduate and/or graduate degrees (see tables 1 and 2). We use the term “IT/IS” to refer to the wide array of academic programs related to the delivery of an information system related degree within a business unit. Research indicates that the name of the degree or program within this broad community does not indicate

any difference in the program (Gambill, Clark, & Maier, 1999). A “degree” was defined as a major, an emphasis, a specialization, etc. – essentially any designation that uniquely and separately identified IT/IS as a field of study.

Undergraduate IT/IS programs were identified in 63% of the institutions in the universe. Graduate programs in IT/IS were identified in 34% of the institutions in the universe.

A chi-square test indicated that there was no difference (at the .1 level of significance) in the likelihood of offering either an undergraduate or graduate degree between AACSB International accredited schools and AACSB International member only schools.

**TABLE 1
UNDERGRADUATE IT/IS DEGREE**

AACSB Intl Status/ Undergraduate IT/IS Degree	Yes	No
Accredited	315	165
Member Only	97	78

**TABLE 2
GRADUATE IT/IS DEGREE**

AACSB Intl Status/ Graduate IT/IS Degree	Yes	No
Accredited	175	305
Member Only	50	125

The same factor, AACSB International status, was used to categorize ITPM degrees (see tables 3 and 4). The nature of the data did not lend itself to tests of significance; however, there are three points of interest suggested.

First, overall, there are very few degree programs relative to programs in IT/IS dedicated to ITPM at either the undergraduate or graduate level. Given the rising importance of ITPM skills it may be reasonable to suggest that this is, overall, an underrepresentation relative to market need.

Second, it appears that an ITPM program is more likely to occur at the graduate level than at the undergraduate level. This is likely due a combination of factors including the need for foundation coverage at the undergraduate level and the managerial tendency of ITPM.

Third, with the caveat that the data are blurred and statistical analysis is absent, it may be the case that “member only” schools (meaning non-accredited), are more likely to offer ITPM programs. If this modest indication becomes a documented trend it could be suggestive about market responsiveness. In spite of the apparent appeal of “market responsiveness,” it is a double-edged sword. Balancing the need for market sensitivity with the danger of impetuous, “faddish” action has long made curricular design a challenge.

We drilled down on the individual institutions with ITPM programs, at both the undergraduate and graduate levels. In this examination, we discovered that almost all of the institutions with ITPM programs

used either exclusively or predominantly on-line delivery. Also, we discovered that every program with a large number (more than five) courses identified as relating to PM were on-line programs. The number of accredited programs with ITPM degrees was so small that it was impractical to develop a model offering.

**TABLE 3
UNDERGRADUATE ITPM DEGREE**

AACSB Intl Status/ Undergraduate ITPM Degree	Yes	No
Accredited	1	479
Member Only	6	169

**TABLE 4
GRADUATE ITPM DEGREE**

AACSB Intl Status/ Graduate ITPM Degree	Yes	No
Accredited	11	469
Member Only	16	159

While the number of ITPM degree program offerings was small, even perhaps surprisingly so, a large number of schools (307) do make ITPM offerings of some kind. These offerings include both curricular and non-curricular programming.

A general caveat to the analysis is order. While our focus was explicitly on business units, with “units” including schools, colleges, departments, etc., as appropriate to the institution, the line of demarcation between academic areas was often blurred, making the specific “business” identification sometimes difficult. This was especially the case as the program inclined toward either non-traditional or non-credit delivery and/or structure. As a result of this occasional ambiguity, we caution against over interpreting the meaning of individual, discrete occurrences.

DISCUSSION

Our findings suggest that accredited public business schools have adopted a different approach to ITPM education than private unaccredited institutions. In particular, private unaccredited institutions are offering more ITPM courses, and they are offering those courses in a predominantly online format. There are several plausible explanations for the differences in course offerings. One is the curriculum adoption process. Changing and adopting a new curriculum is a slow and laborious process within traditional institutions of higher education. This is especially true for accredited schools that must make sure that curriculum changes both conform to marketplace needs and hold up under the scrutiny of rigorous accreditation processes. Kao and Mao (2011) discuss the reactive position this places educators in as they attempt to align the curriculum with this constantly changing environment. New knowledge must be observed and transformed into teachable skills in a timely fashion. Mamun and Mohamad (2009) posit

the fundamental question of whether today's business school curricula can produce future corporate leaders armed with the expertise and skills to face contemporary challenges given the increasing complexity and the changing dynamics in this global business environment. Pressure to do so comes not only from students and employers but also from accrediting bodies, alumni, and even legislators.

Another potential explanation is the reliance upon model curricula as a guideline for curriculum development. Educators are aided in their attempts to understand the changes in the business environment by referring to curriculum models developed collaboratively by academics and professionals in their respective fields. Although these models are developed to be helpful, the time it takes for them to be developed and disseminated to the academic community, plus the time it then takes for individual institutions to adopt curricula based upon the model, suggests that there is a substantial gap between the time at which a particular skill is identified as being important to the marketplace and when it will be integrated into curriculum.

The IT field has been guided by such curriculum models since the 1970s when both the ACM (Association for Computing Machinery) and the AITP (Association of Information Technology Professionals) developed model curricula for the computing and information systems/technology fields. Since that time, all model curricula have considered PM as a course to be included in any IT/IS degree program. However, the topics of interest in a proposed PM course have changed over the years. Early versions of the model included PM as a capstone development experience that emphasized more technical skills and focused on design and implementation. However, more recent models have addressed the managerial aspects of ITPM, including the processes of initiating, planning, executing, controlling, and closing a project. Newer models also recognize the complexity of this team-based activity that includes both technical and behavioral skills that may involve resources within the firm or resources contracted from outside the organization. Leadership and group processes are listed as tools that can enhance effective PM (IS 2010 Curriculum Guidelines for Undergraduate Degree Programs in Information Systems, 2010).

Even among the schools that have been aggressive in developing and offering ITPM courses and degree programs, the question remains as to whether the material is being covered in the format best suited to the topic. As we reported earlier, those institutions offering the most extensive list of ITPM courses are doing so in a mostly online format. Levinson (2011) reported on a survey that suggested that the majority of businesses investing in ITPM training found instructor-led classroom training to be the most effective method. The cited benefits of this method of instruction included networking, asking questions, and sharing experiences in a project team environment. Given that most of the schools we identified as offering comprehensive project management degree programs were offering the content in a predominantly online format, our findings suggest that even the institutions offering ITPM content might not be doing so in the most ideal manner.

CONCLUSION

Although curriculum currency is an issue across a wide variety of academic disciplines, it is of particular importance to educators in business disciplines who are expected to educate students in both conceptual fundamentals and state-of-the-art best practices. These best practices encompass a wide range of subject matter, including changing organizational structures, management theory, and technological competence (e.g., the ability to use specific software tools in order to accomplish work tasks). Given the rapidly changing business environment, business educators are hard pressed to maintain the currency of content and thus properly prepare business students for the challenges that await them in the workplace. This research examined one area of the business environment that is changing, the growing emphasis on ITPM skills, and assessed whether business schools are meeting the need. Our findings suggest that the academic response has been varied and that unaccredited private institutions may be offering more ITPM courses and degree programs than their accredited counterparts. This is perhaps due to the more bureaucratic structures that are in place in traditional institutions of higher education and highlights the important challenges facing business schools as they seek to adapt to the 21st century marketplace.

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