Don't Forget the Manager: Management of IT Professionals by IT Professionals for IT Professionals

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Abstract

Computer Information Systems students who enter their profession immediately after college graduation will most probably have positions dealing almost exclusively with information technology services and support. But, it is likely their career ladder will take them at some point into managerial positions. Are these graduates being prepared to assume the duties of a manager of information technology professionals? The core curriculum for these students should not only include those specific computer and information technology skills needed in a constantly changing field, but also include the development of core management skills which embody capabilities and knowledge expected of future leaders in an organization. In this paper, the authors propose an addition to future IT curricula in terms of the outcomes as described in the IS 2002 Model Curriculum.

Keywords: Information technology (IT) curriculum, computer information systems (CIS), organizational behavior, retention of IT professionals, trends in the IT profession, the IS 2002 Model Curriculum.

1. INTRODUCTION

As Computer Information Systems (CIS) departments know, there is a need for CIS programs to continue to evolve and adapt as technology progresses. Moving from one curriculum guideline to another (i.e. IS 1997 to IS 2002), in addition to new paradigm shifts in theory, force departments to invoke "process feedback loop" introspection of courses and support systems (McAleer and Szakas, 2004). Computer disciplines have undergone enormous growth and evolution, requiring "faculty to periodically update curricula to prepare their students for the new tasks they are likely to face upon graduation." (Cohen, 2005) In addition to the technological changes and challenges to a department, there is a realization that courses in other disciplines that support the CIS students also need to be studied for their applicability to the assessed outcomes and objectives for CIS students. As is highlighted in the IS 2002 model curriculum and guidelines for undergraduate degree programs in Information Systems, graduates should

have the skills to function in an entry level position in information technology within their organization and they should also have a basis for continued career growth (Gorgone et al, 2002).   At the University of Maine at Augusta, CIS students are required to take a Principles of Management course to prepare them as graduates to not only be able to step into a job requiring their computer knowledge but also be prepared to assume positions of management of both IT and non-IT professional within a department or organization. The job environment CIS graduates face in the State of Maine is such that it is conceivable and even probable that a Bachelor's degree will open doors to positions in management; therefore, CIS graduates should have a solid understanding of management theories and techniques from an IT perspective.

It is not surprising that some of the skill sets as described in the IS 2002 curriculum are also found in business administration curriculum. The IS 2002 curriculum describes a number of skills which should be included in a CIS degree program, including interpersonal communication skills, business fundamentals, analytical and critical thinking skills, and team skills (Gorgone et al, 2002). The guidelines in the curriculum proposal also specify the capabilities and knowledge EXPECTED for IS program graduates: critical thinking, leadership, creativity, contemporary and emerging business models, organizational theory, structure and functions, interpersonal skills of listening, motivation, team building, negotiating and facilitating, developing and communicating a vision/mission among others—capabilities and knowledge which have a managerial overlap.   Ngai et al (2004) agree that, in addition to information systems concepts, doing business in an e-environment now requires non-technical knowledge and skills from business and other disciplines. The curriculum as it stands certainly addresses the needs of IT professionals in the field today, but it is lacking a managerial core. Yet, some educators have noted that computer curricula already contain more information and material than can be covered in a degree program (Cohen, 2005). It is worth a look to the future to

determine how IT professionals will be prepared to meet the rapidly emerging trends of consolidation, e-commerce, data sets/data mining, complex systems, retention issues, computer security issues, and outsourcing, especially the outsourcing of services and repair by developing the skills necessary to manage the of outsourcing technical services. "Outsourcing isn't going to disappear, and given the success that many companies have begun enjoying; it's not likely to level off soon" (Yourdon, 2005).   Therefore, as Cohen (2005) states, "educators should be sensitive to presenting new directions in the computer science field, constantly reviewing the relevant material to be transmitted to the next generation of practitioners."

Though graduates of business administration programs also need to continue to prepare to deal with emerging business trends and develop managerial skills, they have a basic knowledge base. Adding a course in management skills, leadership, and communication to the CIS curriculum that is designed primarily for IT professionals can add balance between management and IT knowledge, a balance that Kock (2002) notes is needed today. MBA graduates have already practiced how to adapt familiar management theories to emerging trends; CIS graduates will need management training first, then learn how to adapt current theory with future developments.   And, as not all CIS programs reside within Colleges of Business, standards for outcomes assessment for this management training need to be established within future IS model curricula.

More than ever, managers need to be IT savvy to succeed. Planning, organizing and evaluating projects require measuring and analyzing feedback data at critical phases of the process. It has been reported that fully one-third of new IS projects are canceled before completion – at a combined cost of $81 billion. And, more than half of all projects completed are significantly over budget (Ewusi-Mensah, 1997). The Standish Group reported that, in the early 1990s, U.S. companies spent more than $250 billion each year on IS projects, with a success

rate of only 16.2% as rated by IS executives. By 2000, the success rate, though improved, was still only 28% (Xia & Lee, 2004).   Lack of a management measurement system and lack of managerial involvement are the prime factors contributing to this enormous waste of time and money.

The same personality characteristics which would enable a person to succeed as an IT professional -- a preference for working alone, orientation to detail, logical and unemotional – are not the traits desired in a manager who must spend 80% of the workday involved in interpersonal relationships. There needs to be common ground between managers and information systems specialists when confronting an organizational problem that requires planning and implementation of a complete business solution.   According to Kock (2002), any of the recent management schools of thought are compatible with using new Web-based IT systems. But, are these schools of thought readily accessible to IT managers? Will the IT professional be able to take advantage of today's management tools to explain in "layman's" terms the complexity of the technology solution to a business problem, and will this new manager be able to appropriately explain the business needs in an IT framework? The IT professional now needs more business knowledge than ever before to bring a balance of IT knowledge and business skills to managerial positions and this knowledge should be reflected in the curriculum. It is now time to require non-CIS courses such as business and mathematics courses in the IS curriculum.

2. HISTORY

New employees entering the workplace bring with them certain preferences, expectations, personal characteristics, personalities, and experiences that can affect their job satisfaction and performance. Smits et al (1993) studied how managers play a pivotal role in extracting high performance from their employees, especially in their ability to communicate, motivate, and lead each individual employee through performance management and reward systems. For

many years, performance reward was a synonym for promotion, a theory soundly debunked by Lawrence Peter in his "Peter Principle" Book. According to Peter, people were promoted based on past performance, not potential for future success; it is possible that each employee would be promoted to a level of responsibility and performance higher than his or her capability.   As Peter states: "In a hierarchy, every employee tends to rise to his (sic) level of incompetence." (Hersey, Blanchard, Johnson, 1996) This means that employees promoted past their level of competence could become overwhelmed, dissatisfied, and ultimately leave the organization as could those who are managed by them.   Smits et al (1993) found that high achieving IT professionals do not necessarily view promotion as a reward for performance; rather, for many, reward is characterized by being assigned more challenging work along with task autonomy and variety.

Do IT professionals avoid promotion to managerial positions? How do they view management's role and the duties of management – critical to the organization? Important to organizational success? Or administrative paper-pushing? Strassmann has noted that, "Spending money on IT guarantees absolutely nothing. The absence of a demonstrable relationship between profitability and IT spending should be seen as evidence that other influences, such as strategic advantages, competitive positioning, and leadership's effects are likely to be more decisive than information technologies." (Strassmann, 2001) Understanding how good management may have more impact on profitability and success than good IT is critical for IT professionals who may be asked to assume a managerial role in the organization. Good management is needed more than ever, and understanding this fact is essential for IT professionals.

3. RETENTION OF IT PROFESSIONALS

A perennial problem in IT is the retention of qualified staff, which is a direct function of management. Some studies have shown that MBA-trained managers may even have difficulty managing IT professionals. Pawlowski et al conducted a

study in 2002 to learn more about retention issues of IT workers in the Louisiana state government. The researchers cited the National Association of Public Administration in listing four work factors for satisfaction, and thus retention, in government IT jobs at the local, state and federal levels. The factors include salary levels, work-life balance, rewards/recognition, and possibility for advancement/training. The survey in Louisiana was to determine the impact of each of these factors on IT employees' job satisfaction.

The majority of the employees described themselves as "somewhat satisfied" with their state jobs. What were the factors contributing to job satisfaction?   Intrinsic factors relating to the job itself were the most motivating. Employees value autonomy and flexibility in their work, their coworkers, and the professional environment. What were the factors contributing to job dissatisfaction? Salaries compared to the private sectors was the number one dissatisfier, but also mentioned were limited opportunities for advancement, inadequate formal training, and a dislike for administrative paperwork. Other factors cited were lack of appreciation and recognition, people issues – conflict with coworkers, boredom and lack of challenge. Why do employees leave their state jobs? Salary was listed as number one, followed closely by non-monetary factors related to management issues and career and professional growth. Though salary is often considered to be the major issue in employee retention, there are non-monetary issues that affect retention as well.

Retention of qualified employees is so important to many organizations that they have instituted the payment of cash retention bonuses to encourage employees with key talents to remain. According to a survey conducted by World at Work, the most predominant employee group eligible for cash retention bonuses are IT workers. In fact, 73% of over 500 professionals surveyed reported that their companies awarded bonuses to IT professionals; many received 10-20% of their base pay as a retention bonus (Johnson, 2001).

What applies to retention as a current issue facing managers today also applies also to the issue of computer security. As many computer crimes happen from within rather than from outside an organization, "sound management is one of the most overlooked and perhaps basic security procedures for any company. In fact, the best security may be in managing employees more effectively rather than relying on the latest technology." (Forester and Morrison, 1994). A study paid for by the Department of Homeland Security found that most cases of computer sabotage within an organization come from angry employees who are motivated by revenge against their managers. The report recommends increased training for managers to better understand why IT employees are disgruntled. (Bridis, 2005).

IT jobs tend to be rather autonomous in which the work situation requires less supervision and greater autonomy where employee behavior is not easily observed and reinforced. "Without steady interaction the IT worker can lose an understanding of why activities are being undertaken and the manager can lose sight of issues involved in completing the activities." (Moore and Love, 2005). Moore and Love (2005) ask, "Are the managers discouraging IT professionals from exhibiting the behaviors organizations desperately need?" And, if so, what can CIS programs do about this in terms of model curricula?

4. THE NEED FOR CIS STUDENTS TO TAKE AN ORGANIZATIONAL BEHAVIOR COURSE

The IS 2002 Model Curriculum guidelines, a timely update to the 1997 model, recognized prerequisite or interleaved topics DIRECTLY applicable to the IS curriculum include: communication skills, quantitative and qualitative analysis, and the functional areas of an organization – including principles of economics, accounting, finance, human resources, marketing and operations. The students should also be introduced to special issues in international business. (Gorgone et al, 2002). Noting the capabilities and knowledge expected of CIS graduates,

according to the IS 2002 model, and understanding the results of the IT survey conducted in Louisiana, is the study of management as covered in a Principles of Management course enough to develop necessary skills? Though the IS 2002 model curriculum mentions the need to cover these topics in a degree program, there is no specific course mentioned and no good management specifications in the outcomes assessment. And, even in the IEEE's recent curriculum proposal for 2005, there is no specific management or organization skills course included.

To comply with the IS 2002 model, and to better prepare CIS graduates to assume management duties, students should take an expanded management course which includes topics covered in an Organizational Behavior course. Managing IT is different from typical management; courses dealing with management of IT professionals should have their own perspective, especially dealing with computer security issues and [personnel issues. A typical course in Organization Behavior is divided into 3 sections --- the individual, the group, and the organization. Topics included in each section are as follows:

Individual

Managing people, personality differences, diversity, attitudes, creativity, perspectives on motivation, job design, employee participation, alternative work arrangements, goal setting, performance and rewards, and work-life balance.

Group

Interpersonal communication, group dynamics, teams, leadership theories, decision making, and negotiation.

Organization

Organizational structure and design, responsibility and authority, organizational culture, organizational change and development and career dynamics. When this list is compared to the capabilities and knowledge expected of information systems graduates, the similarity is remarkable.

Course Proposal

This proposed revision of an Organizational Behavior course would be described for the IS 20XX model as a third-year course as follows:

IS 20XX.OB: Organizational Behavior for the IT Manager (Prerequisite: none)

Catalog: This course focuses on an analysis of the interaction between individual and work group behavior, leadership styles, and organizational cultures. Applications of behavioral sciences are made in areas of motivation and influence, structure of work, leader-group relations, and organizational design and change.

Scope: This course enables students to improve their interpersonal skills, develop a basic understanding of individuals and groups within organizations, and learn how to integrate a variety of perspectives to work toward solutions of complex behavioral issues.

Topics: Managing people and organizations; basic management functions roles and skills; managing global and workforce diversity; people, personality and attitudes in organizations, need-based and process-based theories on motivation; job design, employee participation. Goal setting and motivation, performance management and rewards, work-live balance; communications in organizations; group dynamics and stages of group development; using teams in organizations; leadership theories; decision making; negotiation; organizational structure; responsibility and authority; organizational designs; organizational culture; and organizational change and development.

Discussion: Students will have an opportunity to learn more about themselves, their personalities, and the personalities of others in the workplace; how these differences can contribute to the success of an organization or hinder it; how individuals come together into successful teams; how the organization

structure itself can support or retard the progress of teamwork; and develop an understanding for the critical need for good management --- and good managers – in an organization.

A brief review of the topics included in this course proposal shows how the skills sets which are addressed in the IS 2002 model, and which have been identified in the professional world as necessary management capabilities, would be reinforced in the CIS curriculum for IT professionals.

How could such a course be created to prepare better IT managers within the CIS curriculum? An organizational behavior course, as discussed above, includes not only individual and group processes, but also covers principles of management topics, and human resource management issues within the context of organizational behavior. This one Organizational Behavior course would encompass not only the skill sets as required by the IS 2002 model curriculum, but also replace the need for a Principles of Management and/or a Human Resource Management course within the curriculum.

5. CONCLUSION

The need for organizations to have IT staffs efficiently managed requires that the IT employees promoted to management via career ladders are assured to have the fundamental management skills necessary to succeed in managing IT professionals. IT has always held the promise of increases of productivity, but IT alone doesn't guarantee profits. By taking advantage of existing business courses in organizational behavior and give these courses the needed IT slant, IT professionals will develop the balanced knowledge and capabilities needed to prepare for managerial roles. The skills needed to manage IT professionals require specific development; the need for courses to prepare IT professionals for management positions is apparent. As the IT curriculum continues to be very dynamic in the computer field, so also should the curriculum be updated to include courses to prepare IT professionals to manage organizations as they deal with the

emerging trends of e-commerce, data mining, retention and outsourcing. Managers with IT knowledge will be in great demand as they will have the skills and knowledge for employee oversight to ensure the benefits promised from trends such as outsourcing.

Yourdon (2005) says, "Eight out of 10 CIO's in American companies had direct marching orders to move offshore at least part of the technology services they provide to their business." It has been said that the jobs that have been outsourced, i.e. programming and hardware services, are not coming back. Any courses still in the curriculum which support the objectives and skill sets of those jobs being lost should be cut from the curriculum and replaced by courses that support better enlightened and better prepared IT managers. The IT field is dynamic; the IT curriculum needs to better address how market forces are changing the knowledge and skills needed to succeed. Technology services may be outsourced; what will be needed in the remaining jobs are the skills to manage the outsourced services. IT professionals with an understanding of good IT management skills will be in great demand. Post the IS 2002 model, when the next curriculum is proposed, these skills should be either embedded into current courses or required in supplemental courses.

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