PROVIDING VALUE TO THE USERS OF

INFORMATION SYSTEMS:

A THEORY OF THE IS-USER RELATIONSHIP

DEVELOPMENT

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The computerization of organizations has become increasingly important since the introduction of first computers in the late 1950s. The rapidly changing business environment and technological advances of the 1990s are triggering major transformation in the way companies organize their work and conduct their business. Information technologies (IT) and information systems specialists are critical enablers of this transformation. Successful provision of an IT-related service depends on the partnership between IS professionals and the user community. Providing value to the users is a means to an end in building these critical IS - user partnerships.

The purpose of this paper is to present a theory of how IS specialists provide value to their users through the development of IS-user relationships and the consequences of these value-adding activities to the organization. The theory involves three core processes which have been discovered to be relevant to the way IS professionals provide value. These processes are-inciting, intervening, and informating. Furthermore, the theory specifies the stages through which IS specialists provide value to their business clients. These stages are-building, maintaining or destroying the IS-user relationships. In this paper we describe the conditions under which value-adding activities take place, strategies by which IS specialists engage in value-adding activities, and the consequences of these activities to the organization.

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INTRODUCTION

Background

Change seems to be the only constant in the IS field. The cost/performance improvements in the core information technologies (IT)--between 30 percent and 50 percent per year since the 1960s--have indeed been dramatic (Tapscott and Caston, 1994). As organizations progressed through periods characterized by computing hardware, software, and user relations' constraints (Friedman, 1989), they employed the expertise and talent of many IS specialists to conceive, design, and diffuse technological solutions to business problems. However, as IT advanced and the number of IS specialists grew, so did the problems associated with IT implementations (Yourdon, 1992). Since the effective management of information flows inside and outside organizational boundaries is critical to the health and effectiveness of many organizations, IT implementation problems may negatively impact organizational performance. Recognizing the influence IS professionals can have on organizations, Orlikowski and Baroudi (1989) have called for increased research on IS as an occupation and the role of IS workers including their world views and behaviors.

As we approach the end of this century, literature suggests the Information Systems (IS) profession is plagued by a myriad concerns that IS specialists are not providing adequate value to the organization (Cusack, 1993; Markus and Keil, 1994; Markus and Robey, 1994; Walton, 1989). The value-added aspect of the IS service provision continues to be challenged by productivity paradox and outsourcing phenomena. For example, massive investments in information technologies have not resulted in sufficient productivity improvements (Brynjolfsson, 1993). Thus, many executives are faced with a formidable task of justifying the ever-increasing expenditures for the IT infrastructure and the IS human resources (Preiser-Houy, 1996). Outsourcing is yet another phenomenon foreshadowing IS.

Outsourcing is viewed by many business executives as a potential value-adding strategy. In fact, the results of a recent empirical study of IS outsourcing benefits indicate that both technical (i.e., technical expertise), business (i.e., lower costs of operation), and non-technical (i.e., better quality of IS service) benefits were significant motivators of outsourcing decisions (Loh and Venkatraman, 1995). The outsourcing business has grown rapidly in the past years and is expected to be a record high forty billion dollars by the end of 1990s (Burkett, 1993). This trend may eventually spell danger to the IS profession as users outsource and rightsize their IS organization, thus putting IS professionals out of work.

In the past thirty years, computer systems' development practices have progressed through three distinct phases, each dominated by a certain constraint: *hardware* constraint-i.e., limitations of hardware cost and reliability, *software* constraint --i.e., difficulties of producing quality systems on time and within budget), and finally, *user relations* constraint-i.e., inadequate servicing of user needs (Friedman, 1989). While

hardware and software limitations are not as prevalent today as they were a decade ago, the dominant constraint of the 1990s is that of *user relations*. Providing value-added service through effective IS-user relationships is one of the ways IS specialists can successfully address the dominant user relations constraint, and thus, ensure the long-term survival of the IS profession.

Purpose of the paper

In this paper we present a theory of how IS specialists provide value to their users and the consequences of these value-inducing activities to the organization. The theory is comprised of three core value-adding processes: (1) *inciting*, i.e. instigating, being proactive, etc., (2) *intervening*, i.e. acting as a go between various stakeholders including users, management, and vendors, and (3) *informating*, i.e. educating or helping to 'digest' technology. This paper describes the conditions, strategies, and consequences relevant to the three value-adding processes of IS service provisions.

Methodology

This study was conducted using a grounded theory method. Grounded theory is an inductive, theory building methodology that enables researchers to develop theoretical accounts of the phenomenon under investigation by grounding these accounts in empirical data (Glazer and Strauss, 1967). The key aspect of the chosen method is the analytic activity of constant comparison. As data about the IS value-added processes was gathered, it was constantly fragmented, coded and compared to existing theoretical categories. Results of these comparisons were constantly fed back to both the analysis and the data gathering phases of the study.

The data collection strategy involved multiple sources of evidence including personal interviews with twenty IS specialists and their clients, follow up telephone interviews, and the review of company and IS project documentation. The focus of the semi-structured personal interviews with the IS specialists and their clients was on the tactics employed by IS specialists to provide the information systems-related services during IS implementation projects. The IS projects involved new system development efforts, post-production support and routine maintenance activities. IS specialists interviewed for this study had the following demographics: (1) two to eight years of IS experience, (2) 22 to 34 years of age, (3) 80% had college degree in IS or Business, and, (4) worked in banking, retail and communications industries.

THEORY

The theory of how IS specialists provide value to their business clients is summarized in Table 1. This theory is comprised of the key value-adding processes (i.e. inciting, intervening and informating), and the stages through which IS specialists progress in providing value to their clients (i.e., building relationships, maintaining

relationships, and destroying relationships). Next, each of theses core value-adding processes will be described.

Table 1. Theory of IS value-adding activities: Stages and Processes

Stages / Processes	BUILDING RELATIONSHIPS	MAINTAINING RELATIONSHIPS	DESTROYING RELATIONSHIPS
INCITING	Instigate users to "push" for new technologies	Act as liaisons between users and IS management	dentify ways to hange users' work ithout understanding olitical environment
INTERVENIN G	Bridge the "culture gaps"	Change roles depending on what is needed at the time	Enhance authority and status of IS function at the expense of the user group
INFORMATING	Educate users on how IT can improve their jobs	Continue education until users are self-sufficient	Provide no training for users

Inciting Process

Webster' s Dictionary (1988) defines the word *inciting* as stimulating to action, either in a favorable or unfavorable sense. IS specialists stimulate users to action by identifying ways to change the workflow so that the company runs better and by suggesting information technologies to enable the new world of work. As one IS specialist commented, "I think it is part of my job to help people change the way they are thinking about manufacturing. I consider myself to be an educator. Part of what I do is explaining how important it is to be open to new ways to do things." Other IS specialists used their social skills, combined with technical expertise, to instigate users to push for new technologies from their management when the users' management was unresponsive to the IS specialists' recommendations for the new system.

Many IS specialists recognize that the effectiveness of IT lies in enabling a more efficient and streamlined workflow. They view the activity of automating the currently inefficient business process as a 'Band-Aid' approach to solving a business problem, an approach that ultimately leads to a 'more expensive mess'. Furthermore, they understand that users may be resistant to change the ways they view and perform their work. According to one IS specialist, "It is a culture shock to reverse the current thinking about the process". Yet, IS specialists also realize that in order to reap the benefits from IT and to use systems effectively, users may have to change the way they operate and perform their business activities.

While all IS specialists recognize the difficulty associated with proactively instigating users to rethink their processes, some of them are more successful than others at convincing users to change their old ways of doing business and to adopt various information technologies to enable the new world of work. Among the successful strategies are: (1) setting up training classes for users to educate them about IT and its potential to change the organization, (2) letting ideas about change emerge from the group discussions with users, IS, and the management, and, (3) viewing implementation more as a social rather than a predominantly technical process. Unsuccessful strategies to stimulate users to change include: (1) telling users what to do, (2) perceiving technology as an end, rather than the means to an end, (3) underestimating clients' resistance to change, (4) 'fighting fires' instead of finding ways to make IT improvements in the long run, (5) not framing the changes in the context of the political and cultural environment, and, (6) lacking solid functional knowledge.

The key consequence of successful instigative practice is that users are more willing to accept change. This change, in turn, may lead to substantial improvements in one or more contemporary measures of performance -- cycle time, cost, quality, and customer service. The consequences of the negative instigative practices range from deterioration in the IS-user working relationships to systems that fail to improve the organization. Once users start viewing the IS specialists as technicians, systems builders, and adversaries rather than agents of change, collaborators, and business partners, they become defensive towards IS professionals, and may fail to cooperate and contribute to the subsequent systems development efforts.

Intervening Process

Another way IS specialists engage in value-adding activities is by acting as the liaisons between various stakeholders in the systems development effort. The stakeholders are those individuals who make contributions to the development effort (e.g., allocate resources, ensure funding, provide requirements, offer specialized technical expertise, etc.) in return for certain inducements (e.g., money, product deliverables, etc.). This role could be adopted by users, management, external consultants, and internal IS specialists.

Many good high-tech ideas fail due to low-tech problems--inadequate perception of stakeholders' demands and/or inadequate servicing of their needs. Yet, technology that is never productionalized or successfully used in the aftermath of the implementation effort adds very little, if anything, to the financial bottom line of the company.

Some IS specialists view IT implementation as a complex technical as well as social process. Such views help them be more proactive in dealing not only with technical challenges of the IT project, but with potential conflicts and user resistance to new information systems. According to several IS professionals, . . ."when implementing technology you are not totally dealing with the artifacts, you are touching values all the

time. . . you must portray an image that people trust, otherwise there is a good chance you will fail. . . "

Any one of the potential stakeholders in IT implementation can make or break the implementation effort. Users may be unwilling to change, be generally afraid of technology, or aim to optimize their own workflow at the expense of other functional units. Managers may be concerned with the loss of power and control in the aftermath of technological diffusion since IT may change the organizational structure, the locus of control, the source of power, and the process of decision making in the organization. External consultants and other IS professionals may also have their own hidden agendas that effect their contribution to the implementation effort.

By viewing themselves as collaborators and facilitators of the systems implementation effort, IS specialists aim to bring the technical, business and social cultures together in order to accomplish a common goal. The ability to bridge the culture gap between different stakeholders and functional areas is an important relationship-building skill. While the stakeholders may share the same goal of implementing IT to make the company run better, they may have different means to reach that goal. Thus, one of the ways IS specialists provide value to their clients is by building consensus among functional areas with different stakes in the IT implementation effort.

IS specialists employ a number of different strategies to bridge diverse and at times conflicting interests during the process of implementing IT solutions to business problems. IS specialists set up the brainstorming sessions to build consensus among various users on what needs to be done and how. They talk the language that merges business and technology with a goal of user-friendly and productive interchange.

Another intervening tactic used by IS specialists is to develop/maintain personal relationship with their business clients and to open themselves to criticism as well as praise. IS specialists may admit to their users that they do not have all the answers, but they are willing to do their best to find the answers by enlisting the help of others. Furthermore, IS specialists try to anticipate potential conflicts and the sources of various social problems and work on addressing these problems before the implementation effort gets underway. Another ploy is to work hard at determining what makes different users 'tick' and present their ideas in such a way as to maximize the chances for their acceptance. System justifications are many times the responsibility of the IS function. Bias by the IS professionals in developing the cost-benefit analysis in order to 'sell' systems that are valuable to the organization but may not necessarily meet hard dollars and cents payback, was yet another strategy employed by IS specialists in this study.

The successful use of the above-stated strategies not only maximizes the chances for successful IT diffusion and subsequent IT use, but also improves the credibility of IS specialists in the eyes of their business clients. Users gravitate towards such individuals. They trust them and feel comfortable around them. Moreover, IS managers consistently rank these IS specialists as high performers.

Informating Process

The third way IS specialists engage in value-adding activities is by helping users develop competency and mastery in using information technology in their respective work settings. Users are only human. They tend to resist new information systems that are unfamiliar to them unless they get help overcoming their own fears of the unknown. Therefore, educating users about how the system can be used, as well as training them in the mechanics of that use, are critical to the success of the technology implementation process. This process of education and training starts and ends with making users feel comfortable with technology.

IS specialists use a number of different strategies and tactics to inform users about technology. Some IS specialists set up training sessions where they explain what IT is all about and how technology can potentially change the flow and content of users' work. Other IS specialists go an extra mile to ensure that users actively participate in the systems development efforts and contribute to the emergent system design. Still other IS specialists work diligently on developing training guides and user manuals and organize one-on-one training sessions to make users feel more comfortable with IT.

The consequences of these strategies are many and varied. Informating users about the use of IT helps IS specialists build relationships with the user community. Users tend to view IS workers as helpful, trustworthy, and knowledgeable professionals. Users become more knowledgeable and, consequently, make increasingly valuable contributions to systems implementations. Users feel comfortable around IS specialists and make sure they are included in the subsequent IT implementation projects. Moreover, users are also likely to accept the new system much more readily if they are comfortable with it and have the knowledge of how it can be used to help them do their job better. But, probably the most significant consequence of informating tactics is a continuing business relationship and partnership between the IS and other functional groups.

On the other hand, prolonged 'hand-holding' may develop into increased reliance on IS specialists. Such reliance may hamper any subsequent efforts to make users self-sufficient. Consequently, from the organizational point of view, such intricate dependency may lead to sub-optimization of critical IS resources and dissatisfied users.

DISCUSSION

Some behaviors of IS specialists enable them to build and maintain effective and credible working relationships with users. Good working relationships between IS specialists and clients reduce chances of IS implementation failures (Preiser-Houy et al., 1997; Remenyi, 1996), enable IS specialists better manage client expectations and build systems clients actually use (Landeros et al., 1995; McConell, 1996), and work effectively with users to achieve common goals (Henderson, 1990). Such relationships, thus, add real value to the provision of IS service.

However, other behaviors of IS specialists may actually contribute to the deterioration of the IS-client working relationships. Such behaviors are counter-productive and add no value to the provision of IS service. Consequences of non-value adding behavior can be minor, such as a slip in schedule or increase in costs, or major, such as a failure of a complex system implementation effort. But, in either case, IS value-reducing consequences threaten the credibility of IS specialists and the IS profession. If the consequences of value-reducing behaviors are not good, why do some IS specialists behave the way they do?

Little research has addressed the behavioral aspects of the IS service provision and the way IS develop (or fail to develop) effective working relationships with their business clients. However, the findings from this exploratory research suggest that the cognitive style, personal characteristics, and social motivational needs of IS specialists are at the core of their relationship building behaviors.

For example, individuals with good interpersonal and social skills, collaborative attitude, and a sincere desire to work with people as well as technology are effective in developing good IS-client relationship, and thus, engage in value-adding activities. On the other hand, individuals with good technical, but poor interpersonal skills, low need for social interaction, and desire to work with technology rather than people, are not very effective in building good IS-client relationships. Consequently, since poor IS-client relationships may lead to failed IT projects, it is questionable whether IS specialists with relationship-destroying behaviors provide much value to their clients in the course of a service transaction. While more research is needed to better understand the interpersonal-level conditions under which IS specialists engage (or fail to engage) in value-adding activities in the context of relationship building, this exploratory research provides a lens through which the value-adding (and value-destroying) behaviors of IS specialists could be examined.

Inciting, intervening, and informating in the diametric form are value-reducing or alienating tactics; in the form present in this descriptive write-up, they become value-adding representations. The interviewees were generally adept at identifying their value-added behaviors and activities. In addition, their behaviors appear to fit a mental model that stresses the importance of good user relationships. Results of the interviews indicated a strong compulsion toward adopting the role of "collaborator" instead of a "pair-of-hands" approach for IS-user relationships. Collaborators apply their specialized skills to help clients diagnose their own problems (Schein, 1990). Furthermore, they

negotiate issues of control and communicate well with clients (Block, 1981; Markus and Benjamin, 1995). On the other hand, IS specialists whose predominant role is that of a pair-of-hands adopt inactive role vis-à-vis the client and engage in a limited two-way communication with the clients. The collaborative approach to service provision seemingly fits the ideal model of the way things should be in order for IS specialists to add value to their organization.

In the course of this study, IS specialists consistently identified human resource dimensions (i.e., formal systems of expectations and rewards, organizational practices concerning the orientation, training and socialization of new employees, and career facilitation) as enablers (or barriers) to effective IS-user relationships. For example, when human resource policies of the organization promote service quality and encourage customer orientation through rewards, formal evaluations, career development, and socialization, IS specialists work well with their users and users report higher levels of satisfaction with the service they receive. But, human resources policies and procedures of the organization may provide barriers to effective IS-user relationships if they do not encourage, cultivate and promote collaborative, customer-focused behaviors on the part of their IS specialists.

Implications of these findings may establish a precedent for changing the way IS value is derived and determined. Value is in the eyes of the beholder, and as the productivity paradox and other theoretical frameworks portray problems in quantifying IT value, maybe it is the day-to-day behaviors of IS specialists and the contribution of these behaviors to the users that should be examined for value-adding measurements. There are some things that can not necessarily be measured in tangible dollars and cents or identified on the balance sheet bottom line. But if IS specialists take a proactive and perfunctory role concentrating on value-adding behavior, the contributions of IS services to the organization will not be so vague and implicit. IS challenges, such as cost/schedule overruns and production problems, should be met with 'working smarter' not 'working harder' philosophy. Let the IT strategic planners continue trying to solve the seemingly impossible "big picture" problems of IS value. In the meantime, IS specialists can provide value-added services to their clients through behaviors that lead to good IS-client relationships. Such value-added provision of IS service will incrementally improve the concept of IS value and possibly change the way IS value is derived and measured!

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