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Ephraim McLean  
*Georgia State University*

Stanley Smits  
*Georgia State University*

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# A ROLE MODEL OF IS LEADERSHIP

**Ephraim R. McLean**  
Robinson College of Business  
Georgia State University  
[emclean@gsu.edu](mailto:emclean@gsu.edu)

**Stanley J. Smits**  
Robinson College of Business  
Georgia State University

## Abstract

*“Management” is said to deal with complexity, and “leadership” is said to deal with change; and nowhere is change more evident than in the organizational use of information technology. This paper, based upon the extensive literature on leadership and a series of in-depth interviews with senior IS executives, posits an integrated model of executive-level IS leadership. This model identifies and discusses four key role dimensions: **technologist, enabler, innovator, and strategist**. Implications of the model are presented and a call for research is issued.*

**Keywords:** Leadership, roles, executives, transactional, transformational

## Introduction

“Management is about coping with complexity. . . . Leadership, by contrast, is about coping with change. [S]trong leadership with weak management is no better, and is sometimes actually worse, than the reverse.” (Kotter 1990, pp. 103-104)

“Leadership,” described variously as an “elusive and enigmatic” concept (Meindl, Ehrlich, & Dukerich 1985), a “crucial” role but profoundly different from management (Bennis 1989), and corporate America’s “scarcest natural resource” (Tichy & DeVanna 1986), continues to serve as a popular theme for information systems (IS) conferences but receives little attention from IS scholars. This situation may be due to the fact that, while IS was growing during the 1960s and 1970s, academic scholars in the field of organizational behavior were becoming increasingly frustrated with leadership as an area of inquiry: “Four decades of research on leadership have produced a bewildering mass of findings . . . the endless accumulation of empirical data has not produced an integrated understanding of leadership” (Stogdill 1974).

However, in the two decades since Stogdill’s statement, leadership research has continued at a feverish pace—a phenomenon that Meindl, Ehrlich, and Dukerich (1985) labeled as an “obsession” with “the romance of leadership.” Day and Lord (1988) disagree with the Meindl et al. notion that the infatuation with leadership is somehow mysterious and romantic. To them it is a matter of bottom-line profitability: “When several methodological concerns are addressed, it is evident that executive leadership can explain as much as 45% of an organization’s performance” (Day & Lord 1988, p. 453).

The purpose of this paper is threefold: First, to describe the challenge of leading the IS organization within the context of the nature of leadership and management and the role each plays in organizational performance; second, to present an integrated, dynamic model of IS leadership that encompasses four separate but interactive and interdependent roles; and third, to issue a call for further research regarding IS leadership.

### *The Challenge of Leading the IS Organization*

Leadership and management, innovation and improvement—these and other terms are often used interchangeably; and, although closely related, there are subtle and important differences between them. Leadership and innovation are intimately linked in a continuous cycle of cause-and-effect relationships. As Kotter (1990) stated, “effective leadership produces useful change,” (p.

103) while “more change always demands more leadership” (p. 104). But innovation must be harnessed; it must be used to meet the organization’s goals, while at the same time recognizing the need for stability, order, and efficiency. Several authors contend that this latter dimension is the definition of “management” (Bennis & Nanus 1985, Kotter 1990, and Schein 1985). Changes in technology, the Internet, global competition, deregulation of markets, downsizing, renewed emphasis on quality, and countless other dynamic forces require a balanced response that demands both strong leadership *and* strong management. As Kotter points out, “strong leadership with weak management is no better, and is sometimes actually worse, than the reverse” (1990, p. 103).

Information technology has had a dramatic impact on the way business is conducted today in contrast with earlier decades. Advances in hardware coupled with reductions in cost, the ever-improving user friendliness of software, and the growing dispersion of information technology throughout all parts of the organization contribute to a continuous process of change of revolutionary proportions—with no end in sight.

Information systems leaders have played important roles in the transformation of their organizations and, in turn, have themselves been changed by these transformations (Hayley 1989, Radding 1989). IS leaders have done more than contribute to a “reengineering” of business; the successful ones have experienced a reengineering of their own roles as well. It would be unrealistic to think that IS leadership roles would remain static in dynamic business environments where information technology has been busily changing everyone else’s roles. On the contrary, as business has become more reliant on innovations in information technology to solve their problems of competitiveness and efficiency, the role of the IS leader has grown in importance and visibility.

New demands for innovation *and* efficiency have led to role expansion and growth to the point that IS leaders are now being called upon to engage in a complex mix of leadership and management functions in order to attain a balance between innovation, stability, effectiveness, and efficiency in their organizations (Amoroso, Thompson, & Cheney 1989, Kiely 1991, Passino & Severana 1988, and Stokes 1991). This paper contends that IS leadership roles and functions have progressed over the last decade to the point that a clearer picture of IS leadership is now emerging, that the role demands among IS leaders are becoming similar, and that a model of IS leadership is stabilizing to the extent that it now can be subjected to scholarly inquiry.

### ***An Overview of Leadership***

Leadership—the use of noncoercive influence to direct and coordinate the activities of group members toward goal attainment—has fascinated mankind for centuries, but has only recently been subjected to systematic scientific inquiry. And this inquiry has not been altogether smooth. The 1930-1950s saw scholars trying to isolate the traits that distinguished great leaders from the rest of us. But the underlying concept of being born to lead or to follow was too deterministic for a culture built on concepts of equality and unlimited opportunity, so trait theories were replaced in the 1950-1960s by behavioral theories that postulated that one could be taught the behaviors that distinguished successful leaders from others. Since the late 1960s, the behavioral theories have been seen as too simplistic and have given way to contingency theories—the notion that circumstances play a key role in determining whether or not one will succeed as a leader.

While each of these various theories of leadership invariably attract critics that point out their conceptual weaknesses and the methodological flaws in the research supporting them, publications about leadership number in the thousands. In spite of the well-documented problems encountered when trying “to comprehend and integrate the diverse theories and often inconsistent findings” (Yukl & Van Fleet 1992, p. 147), however, several useful findings have begun to emerge.

First, comprehensive assessments of leadership theory and research by Yukl and others (Yukl 1989, Yukl & Van Fleet 1992) have helped to bring into sharper focus some useful findings from among the variety of theories and research and to bridge the gaps among these various perspectives. While each of these perspectives provides a part of the picture, an emerging composite view is beginning to clarify the complexity of traits, behaviors, and situational variables needed to describe leadership.

Second, without negating the importance of these traits, skills, and behaviors, of equal importance is how the situation faced by the leader impacts what is done, how it is done, and the results obtained. This fact is particularly important for the research presented here because we believe that the IS function and the technologies and structures that support it have sufficient *situational uniqueness* to warrant the study of IS leadership as a special class of leadership, with corresponding unique characteristics.

And finally, the emerging trends in the leadership literature demonstrate a rich smorgasboard of potentially interesting and useful topics for IS scholars. It would be impossible in anything short of a full book to translate the vast leadership theory and research literature into a specific research agenda for IS.

The decade of the 1990s experienced a resurgence of leadership theories, including those from the past and variety of new ones focussing on such diverse themes as leadership substitutes, organizational culture, vision, and leader as servant. Unfortunately, as the available theory base is growing, a rift is widening between the academic community, which tends to downplay the importance of leadership—perhaps in frustration due to its complexity and measurement problems—and corporate America that continues to invest substantial resources in leadership development. As Day and Lord (1988) have pointed out as much as 45% of an organization's performance can be explained by executive leadership. They claim that the confusion in the leadership research literature stems from two problems. First, they argue that “theories or empirical findings developed at lower levels do not necessarily apply to executive levels . . . Applying leadership theories developed at low levels to explain leadership at upper levels assumes a construct isomorphism across levels that is probably not true” (p. 459). Second, they reject the narrow research focus on leadership style rather than substance and argue that “A theory of executive leadership needs a much broader conceptual and methodological foundation” (p. 459).

However, the issue of the importance of executive leadership pales in comparison to the controversy regarding the differences, if any, between the concepts of “management” and “leadership.” The scorecard is about even between those authors making no distinction between them (Bradford & Cohen 1984, Mintzberg 1973, Pavett & Lau 1983; and Yukl, 1989), and those contending that they are fundamentally different (Bennis & Nanus 1985, Kotter 1990, Schein 1985, and Zaleznik 1977). We agree with the position that distinguishes between management and leadership, but we accord them equal importance. Kotter's contention that “leadership and management are two distinctive complementary systems of action” (1990, p. 103) reflects our position. His descriptions of management and leadership can be paraphrased as follows:

- **Management** is about coping with *complexity* through planning and budgeting, organizing and staffing, controlling and problem-solving. Without good management, complex enterprises tend to become chaotic in ways that threaten their very existence.
- **Leadership** is about coping with *change* through setting a direction, aligning people to a vision of an alternative future, and empowering and motivating them to meet the challenges created by the vision.

From our perspective, executive-level IS leadership can be described as follows:

- **Power** is the capacity to exert influence, and leadership is the successful exercise of power to accomplish organizational goals. IS leaders rely upon multiple sources of power including the legitimate power stemming from their organizational positions, the expert power they derive from their knowledge of information technology, and the referent or personal power they acquire through their alliances and relationships with other executives and managers.
- The leadership function is multidimensional and dynamic, and IS leaders are called upon to emphasize different dimensions of their roles as the circumstances in their organizations and the larger environment change.
- There are two types of leadership that are essential to ensure the vitality of the IS function: *transformational* leadership to produce innovation and effectiveness, and *transactional* leadership to produce stability and efficiency.
- And finally, IS leadership roles have been evolving in tandem with the evolution of information technology in business itself and have been taking shape through a process of role integration.

## An Integrated Model of IS Leadership

The model described below has its origins in a longitudinal study of IS careers (McLean, Smits, & Tanner 1991, McLean, Smits, & Tanner 1994, and Smits, McLean, & Tanner 1993, 1997). This careers research has two components: a prospective study and a retrospective study. The prospective component involves a five-year longitudinal study of over a thousand recent IS graduates from 38 colleges and universities to assess the factors associated with their career progression, job satisfaction, and organizational and professional commitment; while the retrospective study is based on in-depth interviews with approximately 35 senior IS executives from three different cities and focuses on how they achieved their present positions. The retrospective analyses of

these career development interviews, plus a careful reading of the leadership literature, brought to light the model of executive-level IS leadership presented here.

As information systems were integrated into the operational, managerial, and strategic processes of the organization, the leadership demands of the organization, in turn, influenced the IS leader's role. Our search for a vehicle to describe the complexity of emerging IS leadership roles led us to a diverse set of models including Adler, McDonald, and MacDonald's (1992) model depicting the strategic management of technical functions, Hinterhuber and Popp's (1992) models contrasting managers and strategists, Keen's (1991) Career Trajectory Model depicting hybrid careers that combine technical and business expertise, Kolb's (1974) Learning Model and its four related types of managers, Nolan's (1973, 1984) Stages of DP Growth and the difficult transitions between the Stages, Rogers' (1983) model depicting the responses to innovation ranging from pioneers to laggards, Stokes' (1991) New IS Manager's Competency Model, and several leadership models including Yukl's (1989) Integrating Conceptual Framework [of managerial leadership] and the Wharton School's report on visionary leadership (West & Wind 1991).

In the end, we identified two approaches to the study of leadership that seemed most parsimonious: one depicting the four major role dimensions now present in varying degrees in IS leaders—an interactive, interdependent, *Integrated Model*; and the other depicting the historical progression of IS leadership roles, a *Growth Model*. Each approach, however, recognizes four dimensions of IS leadership, that of technologist, enabler, innovator, and strategist. Figure 1 depicts these roles and their relation to the organization and the business climate.

The vertical dimension, depicting the **business climate** facing the IS manager and the organization of which he or she is a part, ranges from one that is relatively placid and stable to one of extreme turbulence and rapidly changing conditions. The horizontal dimension represents the primary **focus** of attention of the IS manager. It can be either on the IS organization and the information technology that underlies the delivery of IS services or on the relationship between IS and the users and managers in the host organization. Like any framework, each cell represents only an indication of central tendency; the boundaries are blurred considerably.

### ***The Integrated Model***

The Integrated Model of IS Leadership is presented in Figure 2. It is a graphical representation of the following aspects of IS leadership:

- IS leadership requires a focus on *both* **technology** and the **people** who use it to achieve organizational efficiency and effectiveness.
- IS leaders will be required to engage simultaneously in **transactional** (complexity) and **transformational** (change) leadership to ensure that the organization's needs for both order *and* innovation are met.
- The organization will find itself facing both **stable** and **dynamic** business climates, thereby experiencing periodic needs for transformation and “unfreezing,” managed change, and “refreezing” (Lewin 1964).

Four dimensions or roles of IS leadership will emerge as essential for the long-term success of businesses in the highly competitive, global marketplaces of the 1990s, that of *technologist, enabler, innovator, and strategist*. These IS leadership roles will be interdependent, with changes in one triggering reciprocal changes in the others.

		<b>FOCUS</b>	
		Technology and the IS Function	The Business
<b>BUSINESS CLIMATE</b>	Stable, Static	Technologist	Enabler
	Dynamic, Turbulent	Innovator	Strategist

Figure 1. IS Leadership Role

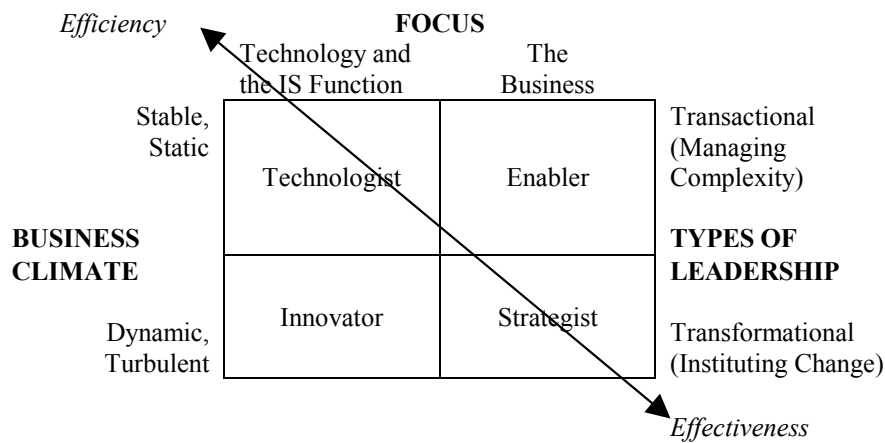


Figure 2. The Integrated Model of IS Leadership

The role diffusion caused by attempts to integrate these four leadership dimensions will make it increasingly difficult for a single IS leader to handle all of the required responsibilities. It may be that specialization will be required with a team approach needed to discharge the multidimensional responsibilities assigned to the IS leadership function. In fact, the use of teams at senior levels in the organization may become as common as lower-level multifunctional teams are today.

**Growth Model**

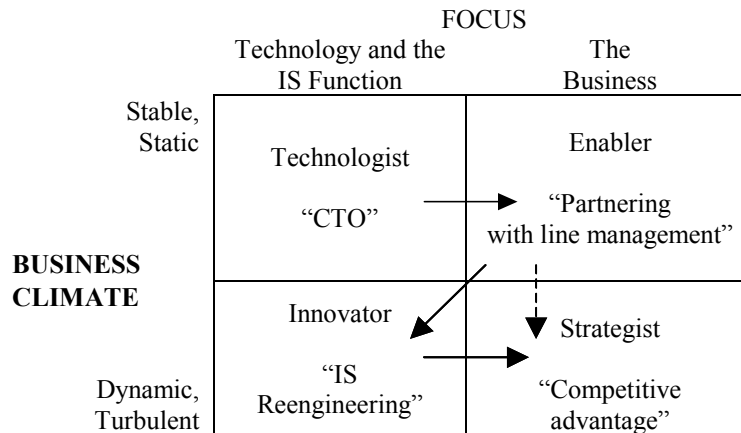
The IS organization and the role of the IS executive have evolved in parallel with information technology’s development of increasingly more meaningful applications. For many pioneers and early adapters (to use Rogers’ [1983] terms), the technology was little more than a curiosity. Few people in the 1960s and early 1970s had the vision to see where it was headed.

In the decade of the 1960s, IS leaders were challenged to master the technology, to find out what it was capable of doing, and how it could be applied. Their progressive success in doing so through the 1970s gave them a firm grasp on their role as **technologist**—a role that persists to this day and is of such importance that some authors (Ashmore 1989) have called for a chief technology officer (CTO) to be established as a separate position, one which would serve in partnership with the chief information officer (CIO).

Having mastered the technology in the 1970s, IS executives entered the 1980s ready to function as **enabler** and to create the business partnerships needed to maximize the use of the technology. At this point, even the late majority and laggards (to use Rogers’ terms again) had adopted information technology and were busy putting it to use. But a curious event happened on the way to the future. Bolstered by their success as technologists and enablers, IS leaders felt themselves ready to begin functioning as business **strategists**, that is, to help their organizations use information systems for strategic advantage and to play a proactive role in shaping that strategy. Few of them, however, had prepared for this final role to the necessary degree. Rather than going

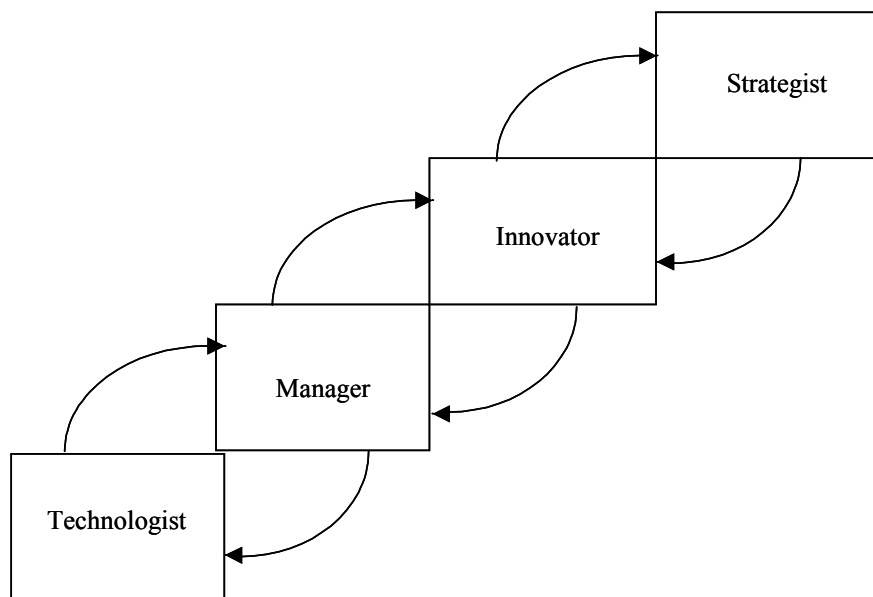
directly to the fourth cell of strategist, they needed to engage in a re-engineering of the IS function to introduce the innovations necessary to support the organization’s strategic direction (Hammer & Champy 1993), thereby adding the dimension of **innovator** to their previous roles of technologist and enabler. In other words, the route to the strategist role is through the innovator role, not directly from the enabler role. Figures 3 and 4 show the dynamic nature of the IS leadership role and its growth over the last three decades.

Figure 3 shows the dynamic nature of IS leadership roles. First, organizational acceptance is gained through the role of technologist and then solidified through the enabler role as partnerships with users are created by providing reliable systems and cost-effective applications of information technology for the business. But the dynamic environment of the 2000s calls for more than mere improvement; it demands dramatic innovation, that is, the reengineering of the core processes of the business, often through the use of information technology. Therefore, the IS leader will only move to the strategist role after he or she has successfully reengineered the IS function and is thus ready to assist in the reengineering of the business itself.



**Figure 3. The Dynamic Nature of IS Leadership Roles**

Figure 4 depicts the growth and evolution of the IS function and the resulting differentiation and complexity of the IS leader’s roles. The technologist role serves as the base with subsequent roles built upon it. Similar to Maslow’s (1954) hierarchy of human needs, our model posits that the innovator and strategist role dimensions are higher-level functions that emerge in mature IS organizations after the basic functions of technologist and enabler have been mastered.



**Figure 4. Role Differentiation and Complexity in the Evolution of the IS Function**

## Implications

“Leaders manage attention through a compelling vision . . .” Warren Bennis (1989)

“The last thing IBM needs right now is a vision.” Louis V. Gerstner, Jr. (July 29, 1993)

Leadership theorists argue that no vision leads to no future, while advocates of strong management contend that inadequate management threatens efficiency and ultimately brings into question the long term viability of the enterprise. We want to broaden this question a bit and apply it to the future of the IS organization: What are the possible consequences of not fulfilling each of the managerial-leadership roles for the IS organization; that is of technologist, enabler, innovator, and strategist? In addressing this, we will contrast what each role is intended to accomplish, with the void that is created by its absence or ineffectualness.

### *Technologist*

Advocates of the CTO (Chief Technology Officer) role would argue that this role is the *raison d'être* for the existence of the IS organization. Beginning with the introduction of the IBM 360 series of computers in 1963, there was nearly two and a half decades of having a single dominant technology platform in place. Although other vendors grew and prospered, many under the IBM “umbrella,” it was the overwhelming and longstanding dominance of IBM technology that allowed early IS managers to mature in their roles as technologists. Although there were many changes during this era, there was still enough time to “get it right” and to master and apply the technology to key operational functions.

In the last decade, all this has changed. Software firms like Microsoft have emerged as being more powerful than the once-mighty IBM. Networked and client-server architectures are replacing mainframe-based platforms. Object-oriented design approaches are causing radical changes in the way systems are constructed. The Internet is becoming a primary vehicle for reaching both customers and suppliers. Each of these changes bring new opportunities; but, at the same time, demand new understandings. IS executives who have left technology behind in their quest for “partnerships” with top management and to create “information systems for competitive advantage” will find themselves ill-prepared for leading the emerging IS organizations of the 2000s. If they do not re-energize their role as technologists, or form a strong team to provide these needed technology leadership skills, the subsequent role of innovator, with its need to reengineer the information services function, will be nearly impossible to achieve. Companies without strong technological leadership will be “blind-sided” by their competition and will fall increasingly behind in their ability to master new technological developments.

### *Enabler*

It has often been said that IS managers need to think more like business people and less like technicians. Technical mastery, in and of itself, is of little use to a business; to be useful, it must be applied to serve business needs and to solve business problems. Thus information technology can be thought of as a business enabler—the means by which business efficiency can be improved, costs reduced, and revenues enhanced. The IS leader, in this enabler role, provides a vital link between the available technology and systems and the desired business results and outcomes.

However, this enabler role can only be achieved by building a strong relationship or partnership with the user community and its management. But this partnership must be built upon more than mere good relations; it must reflect a strong record of service. Are the systems upon which the business must rely dependable and reliable? Are requirements for new features or functionality being met in a timely and accurate fashion? Does a climate of confidence and trust exist between the IS organization and the business of which it is part? Simply put, is the IS organization being well managed?

If this enabler role is not mastered, a serious credibility gap can occur. Confrontation rather than cooperation will be the norm. Differences and disputes will escalate and the resolution of problems will become increasingly more difficult. In time, user management may choose to “go their own way” by attempting to build their own systems or demanding the ouster of the CIO or even the outsourcing of the entire IS department to someone who is more “user oriented.”

The importance in the enabler role of building a strong partnership with the business users cannot be overemphasized. Without such a relationship in place, it is virtually impossible to move to the next roles.



## **Innovator**

The area of IS innovation is receiving increased attention (see Couger 1990, Couger & Dengate 1992, Couger, Higgins & McIntyre 1990, and Higgins, Couger & McIntyre 1990). In their roles as innovators, IS leaders are challenged to create and sustain an internal IS organization that facilitates creativity and innovation. In a word, they need to develop the type of “learning organization” advocated by Senge (1990a, 1990b). Environments that stimulate and sustain innovation are characterized by visionary leadership, team problem-solving and shared learning, experimentation, and the absence of structural barriers that prevent networking and boundary spanning (McLean & Smits 1993).

IS leaders can stimulate innovation in at least three general ways. First, they can reach back to their expertise in information technology to articulate a vision of the changes such technology can make in the core functions of the organization, and use their experience as managers of this technology to map a course from the present situation to a desired future state. Senge (1990b) calls this the leader’s roles as “designer” and “teacher.” By exercising these roles, they create policies, strategies, and structures that facilitate translating emerging technologies into valuable business tools.

Second, they can use this creative tension to create a climate for innovation. This is accomplished through creating a shared vision—getting people to align their personal visions with the leader’s vision thereby attaining the synergism and commitment needed for sustained, constructive change. They can also take the suggestions from the literature seriously and begin to use team approaches and experimentation for problem solving and generative learning. If team approaches and experimentations are adopted, it will require changes in performance appraisal and reward systems and a greater tolerance for the temporary inefficiencies caused by such experimentation.

Third, they can foster the early adoption of technology. As Beath and Ives (1988) point out, this means that, as “pioneers,” the IS leader must identify and seek out the influence leaders in the user community to serve as “early adopters” and thus champions of the innovation, thereby ensuring its success.

Obviously, the starting point for the IS leader’s successful implementation of the innovator role is his or her capacity for vision. But how does one acquire “vision”? Senge (1990b) suggests that success in this area is proportional to the executive’s capacity to engage in systems thinking, to “focus less on day-to-day events and more on the underlying trends and forces to change.” He suggests that would-be leaders need to develop the following new skills:

- Seeing interrelationships, not things, and processes, not snapshots—avoiding seeing the world in static terms and attempting linear explanations of what are actually systemic phenomena.
- Focusing on areas of high leverage—finding “where a change, with minimal effort, would lead to lasting, significant improvement” (p. 15).
- Avoiding symptomatic solutions—foregoing quick fixes to “keep the pressure on everyone to identify more enduring solutions” (p. 15).
- Acquiring systems thinking skills instead of merely reacting—“Many charismatic leaders manage almost exclusively at the level of events. They deal in visions and in crises, and little in between” (p. 10).

In summary, IS leaders can do much to improve the environment of the IS organization for innovation albeit, perhaps, at some expense to their roles as enablers, where stability and efficiency are the hallmarks of success.

What happens to IS organizations that do not stimulate and sustain creativity? If their parent organizations are in slow-changing industries, the negative consequences may be only minimal or moderate. However, if they are attempting to support an organization in a dynamic, global marketplace, several serious negative consequences could result from the lack of innovation. First, they could do nothing to help stem the parent company’s loss of market share; second, they could lose internal credibility and reinforce existing tendencies to outsource essential IS functions; and finally, they could escalate a drift toward obsolescence and stagnation. The often-paraphrased options are familiar: “Lead, follow, or get out of the way.” Creating a healthy environment for innovation may be the only way to position one’s organization to lead.

## **Strategist**

In their emerging roles as strategists, IS leaders have two challenges: First, to make sure that the IS organization is ready to play a key role in its parent organization’s future, and second, to help ensure its parent organization is ready to play a key role in its marketplace. “Information systems for competitive advantage” or “strategic information systems” have become almost hackneyed phases since their introduction in the 1980s. However, like most over-worked slogans, they have a basis in fact. Some companies

are achieving substantial strategic gains through the use of information technology. On the other hand, many companies are not, and, if the economists can be believed, the IT expenditures of the 1980s and 1990s have had little overall effect as yet on American productivity.

In those cases where strategic gains have been realized, it is because strong IS leadership has been in place. Each of the four leadership roles are active, either in the person of the CIO or, more likely, in the IS leadership team. When this is true, the CIO can then function as a strategist, in partnership with the other top management strategists (i.e., marketing, finance, production, etc.), and under the overall leadership of the organization's chief strategist, the CEO.

If the CIO is absent as strategist, IT-based opportunities may be overlooked and new strategic initiatives missed. Because "you don't know what you don't know," the effects of the absence of IS strategic leadership may go unnoticed for awhile. With existing systems well managed and users happy, the very effectiveness of this transactional IS leadership may blind top management to the need for transformational IS leadership. Lulled by "if it ain't broke, don't fix it," companies would be well advised to heed Hammer's advice: "If it ain't broke—there's still time to fix' it."

## Concluding Remarks

In this paper, we have attempted to capture the "dynamic complexity" of the IS leader's multidimensional and emerging roles. We believe the real challenge for IS leaders is to maintain a balance among the roles of technologist, enabler, innovator, and strategist so that the acquisition of each new role does not disrupt the successful discharge of previously mastered roles. Similarly, when changes in the business environment disrupts this balance, efforts must be made to bring it back into harmony.

We hope this paper serves as a vehicle to acquaint the reader with the importance of the managerial-leadership challenges facing the IS organization in the decade of the 2000s. But the paper is conceptual in nature and borrows heavily from the generic fields of management and leadership. It only scrapes the surface of what is needed for IS leadership. What is clearly needed next is empirical research in order to build a strong theoretical understanding of this important, but understudied, area.

A number of key questions arise: Are the four roles, as characterized in our conceptual model, the right four? Under what circumstances, does one or more roles emerge as being dominant? How is role transition managed? Are some roles harder to master than others? Is it possible for one person to excel in all four roles simultaneously? How are teams constructed to compensate for missing leadership skills in one individual? Are there differing career paths that lead to different role mastery? Therefore, we want to end this paper with a call for further research—research that will facilitate the IS organization's transformation or metamorphosis while simultaneously maintaining or enhancing its present transactional contributions.

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