LEADERSHIP IN THE INFORMATION AGE: HOW CHIEF INFORMATION OFFICERS LEAD INFORMATION TECHNOLOGY WORKERS

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ABSTRACT

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This dissertation reports the examination of the leadership behaviors of a small sample (23 participants) of CIOs in Fortune 500 companies using a modified version of the Leadership Practices Inventory (Kouzes & Posner, 2001). The aim of this survey research was to identify leadership behaviors that support the effective leadership of information technology (IT) knowledge workers by randomly selecting a representative sample. The literature review discusses the role of IT in the attainment of competitive advantage; the role of the CIO as a leader of IT knowledge workers; transformational, exemplary, and technology leadership models; and a change management model; the characteristics of CIOs were discussed.

Of Kouzes and Posner's leadership behaviors, Challenging the Process and Encouraging the Heart were identified by the participants as the behaviors they exhibit most often, while Enabling Others to Act and Modeling the Way were designated as areas in need of the most development. There was no significant statistical relationship between the CIOs' reported leadership behaviors and their demographic characteristics (level of education, academic major, gender, length of tenure as a CIO, length of tenure with present organization, number of years in the IT/MIS field, membership in the organization's top management team, frequency of informal interactions with members of the top management team and with the CEO, and having a close relationship with the CEO).

Some of the relationship of leadership behaviors and demographic characteristics of CIOs were found to support some of the theoretical assumptions found in the literature. CIOs participating in this study reported to be performing as agents of change within their organizations. Potential problems in the successful leadership of IT knowledge workers included the identification of rewards that promoted the alignment of employee and organizational goals.

This dissertation is dedicated to my wife Marta and our grandson Lucas. You are the strength and the promise behind all I do. *Te amo!*

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CHAPTER I: INTRODUCTION

Statement of the Problem

In the last quarter century, we have witnessed unprecedented changes precipitated by the information revolution and globalization. The information revolution was the result of technological changes that have allowed us to redefine the way we perform routine tasks – filing taxes, buying and selling goods and services, paying bills, planning a trip, sending and receiving messages electronically, earning an education, and even working– whereas globalization has extended the competition for markets to the whole planet (Reich, 2001). These technological changes have also allowed us to create new and exciting tasks such as performing surgery from an office in New York on a patient in Paris (Marescaux et al., 2001) or mapping the human genome in 20 years (Baltimore, 2001).

Perhaps the most visible facet of the information revolution is the Internet and its commercial applications. Already, most Internet communication is commercial rather than personal, which generates an estimated annual savings in business expenses in excess of one trillion dollars (Cetron & Davies, 2001). These savings are welcome as companies struggle to remain competitive in the era of global markets.

In business organizations, for example, the infusion of information technology (IT) not only changed products and processes but also created new positions. The creation of the chief information officer (CIO) or chief technology officer (CTO) positions was a direct response to the need to obtain competitive advantage in the global markets through the deployment of key business tools reliant on new IT

(Rothfeder, 1999). As technology continued to evolve, companies continued to invest in new technologies to develop the internal capabilities necessary to remain competitive. In the process, the role of the CIO evolved from that of a technical expert to that of crucial organizational decision maker responsible for the development and implementation of projects intimately connected to the survival of the organization (Sifonis & Goldberg, 1996).

CIOs were no longer expected to simply make the technology work. They now had to ensure that the integration of IT with business objectives provided the needed competitive advantage to allow the organization to survive in a rapidly changing, and global, economic environment (Case & Murphy, 2000). Discussing the role of IT in business-process transformation, Gillhouse (2003) pointed out that in order to

> succeed in the increasingly competitive global market, companies must define and implement world-class business processes using information technology as a key enabler. IT by itself is never the end-all solution; if you automate ineffective processes, you will only make the same mistakes faster.
>
> But, if you streamline and transform your business processes using leading-edge technology, the results can be outstanding. (p.156)

The alignment of business and technology was so important that some, like Batchelder (1995), advised CEOs to staff their IT positions with general managers instead of the traditional technology manager. Still according to Batchelder, staffing the CIO position with a general manager was justified because

[n]o company can afford to overlook the role information technology can play in

spurring organizational change and shaping the business processes. You can no

longer delegate the IT function to the back office. Rather, you need to see it as a

vital business within your business, run by people with commercial backgrounds

who know how to make decisions that are based on ever changing competitive

imperatives. (p. 162)

Nonetheless, despite the increased amount of technological resources under the

direct control of a CIO, the primary task with which the CIO was charged – the creation

of competitive advantage through the alignment of IT and business objectives (Synnott

& Gruber, 1981) – became even more challenging. The ever-increasing use of IT in

business processes reduced many of the traditional vertical, horizontal, external, or

geographic boundaries of the organization and gave workers access to new business-

critical knowledge. Since knowledge was the most valuable when controlled and used

by those on the front lines, the ability to exploit knowledge became key to the

achievement of competitive advantage (Barlett & Ghostal, 1995, p. 142).

As IT increases the amount of, and ease of access to, information available to

consumers, business competitors, and the workforce, it also changes the power bases of

these constituencies and their relationships (French & Raven, 1959; Malone & Rockart,

1993). In possession of knowledge, the scarce resource, workers became the owners of

the means of production and were ready to forge a new psychological contract with

organizations (James, 1997; Reich, 2001). Whereas in the industrial age those who

owned the machines owned the means of production, in the information age those who

owned the knowledge owned the means of production (Ashkenas, Ulrich, Jick, & Kerr, 1995; Hirschhorn, & Gilmore, 1992; Mirvis & Hall, 1994; Sifonis & Goldberg, 1996).

Bennis and Thomas (2002) reported what could be a very illustrative example of how control over the means of production has shifted as we emerged from the industrial age into the information age. The authors featured Michael Klein, who addressed the challenges of trying to inspire loyalty in an information-based company. According to Klein,

the biggest issue is that there's not any, [*sic*] not any bricks-and-mortar element, no assets, no buildings that you own, no processes that you own, nothing that you can lay your hands on. And then you have these prima donnas who walk out the door every night with everything that you own in their heads. Being able to convince those people that you are the company that they want to stay with is, to me, a twist on things. I mean you take a General Motors. Lots of people can walk out the door. They've still got a manufacturing plant. People go on strike, you know, they'll still own all their assets. If we had a breakdown of key talent walking out the door, we would be lost. (p. 70)

This is particularly significant when, according to Drucker (1992), one observes that

loyalty can no longer be obtained by the paycheck. The organization must earn loyalty by proving to its knowledge employees that it offers them exceptional opportunities for putting their knowledge to work . . . . This change reminds us that it is the individual, and especially the skilled and knowledgeable employee,

who decides in large measure what he or she will contribute and how great the yield from his or her knowledge will be. (p. 101)

For the CIO, this new knowledge-based workforce added an unexpected layer of complication to the achievement of competitive advantage. According to Drucker (2002), a knowledge-based workforce

is qualitatively different from a less-skilled one. True, knowledge workers are a minority of the total workforce and are unlikely ever to be more than that. But they have become the major creators of wealth and jobs. Increasingly, the success – indeed the survival – of every business will depend on the performance of its knowledge workforce. (p. 76)

Moreover, Glen (2003) stressed the fact that IT personnel possess specific characteristics that significantly differentiate them from their counterparts in the organization. Glen (2003) proposed that IT knowledge workers are different from other workers because they (a) are highly intellectual and have been rewarded since a very young age for individual achievement; (b) value other people of similar knowledge while possibly being intolerant of dissimilar ones; (c) are attracted to business due to the technology and tend to work on technology for technology's sake; (d) tend to view technology tools such as networks and data centers as expressions of their art; (e) are introverts by nature and tend to have difficulties with interpersonal communication; and (f) are extremely skeptical of business and its objectives, drivers, and the people who make up the business units.

As leaders of technically sophisticated teams, composed primarily of highly mobile knowledge workers, CIOs are expected to effectively motivate these employees to "perform beyond their contractual considerations as it is the only way to survive and prosper in global economies" (Thite, 2000, p. 240). Given the fluid nature of the organizational environment, in light of the new psychological contract in the global economy of the information age and the obvious importance of knowledge workers, successful CIOs must embrace and promote change as they enable the organization to maintain its competitive advantage through the strategic and effective use of its IT infrastructure.

Hence, CIOs must not only be technically talented, but also possess the leadership abilities to provide for the organizational needs, manage change (Larosa, 1985), and build relationships with direct reports based on "loyalty to something more fundamental than today's earnings or stock price" (Reichheld, 2001, p. 84). CIOs must be capable leaders; leaders who are not only able to hold a traditional team together, but also able to lead virtual teams toward the completion of projects and the attainment of objectives that simultaneously foster organizational, team, and individual goals (Mahoney, 2001; Townsend, DeMarie, & Hendrickson, 1998). For this new reality of the information age, Drucker (2000) suggested that there are four ways to best develop and motivate knowledge workers: (a) know people's strengths, (b) place them where they make the greatest contributions, (c) treat them as associates, and (d) expose them to challenges.

Specifically concerning the leadership of IT knowledge workers, Glen (2003) suggested that it is fundamentally different from leading anyone else. The difference is three-fold. First, IT knowledge workers are different from other people. Second, the work they perform is different from other work. Third, power is useless with them.

The dawn of the information age has increased the significance of the CIOs' performance to the survival of the organization. Nonetheless, very little is empirically known about their leadership behaviors (Watson & Brohman, 2003). Eisenbach, Watson, and Pillai (1999) pointed out that "models of outstanding leadership such as transformational, charismatic, and visionary leadership, which focus on organizational transformation, are likely to become even more important to organizations because of the breathtaking changes foreseen in business and political environments" (p. 80). Nevertheless, there is little evidence of the efficacy of CIOs' leadership behaviors.

Indeed, leadership scholars have recognized that "past leadership research has not focused on issues confronting the leadership in organizations where work is mediated by Advanced Information Technology" (Avolio, Kahai, & Dodge, 2001, p. 615). "[O]rganizational scientists have begun to talk about 'e-leadership' to refer to leaders who conduct many processes of leadership largely through electronic channels" (Zaccaro & Bader, 2003, p. 377). This is particularly true concerning a global workforce composed of telecommuters, virtual teams (where members are separated by time and space), and other forms of virtual work arrangements (Cascio & Shurygailo, 2003) that also take into consideration the impact of the Internet (Pulley, McCarthy, & Taylor, 2000). Moreover, "CIOs have developed organized approaches to getting the right

information and technology assets that will produce the maximum impact on the goals and aspirations of the organizations they help lead" (Hoenig, 2003, ¶ 3).

Despite this weak evidence, concrete efforts are being made to pursue e-leadership as a field of study. The University of Georgia, for example, has recently established the Center for Information Systems Leadership (CISL) in an effort to study the leadership impact of new technology. The Center is also committed to the study of CIO competencies through the creation of an IS leadership community and the combination of leadership and IS management expertise (Watson & Brohman, 2003).

These budding efforts and theoretical assumptions are logical but the fact remains that the body of research focusing on the performance of the CIO as a leader lacks focus on two fronts. First, very little is known about the CIO as a leader of IT knowledge workers, who by definition comprise the majority of the workforce likely to be direct reports to CIOs. Knowledge about how CIOs perform as leaders gains in importance as organizations face increasing competition on a global scale in an ever-changing environment. As Stephens (1995) argued, the work of CIOs is important to the organization's (a) survival, (b) competitive advantage, (c) restructuring, and (d) ability to act upon paradigm shifts.

Second, leadership development models and theories, proposed under the insignia of e-leadership, seem to be overbroad due to their focus on varying levels of management. Studying the leadership characteristics of CIOs will provide this emerging strand of research with baseline data about leadership behaviors of e-leaders

at the top rungs of managerial hierarchy in companies at the top of their market segments.

<div align="center">Purpose of the Study</div>

As stated above, there is very little empirical evidence of the leadership practices of CIOs. Thus, the aim of this study was to describe the leadership behaviors of CIOs through the investigation of the leadership behaviors of the CIOs of Fortune 500 companies in the United States of America. With this research effort, the researcher intended to contribute to the understanding of how CIOs lead IT knowledge workers, as they attempt to affect the performance of their organizations in a rapidly changing and technologically rich global environment.

Participants were asked to complete Kouzes and Posner's (1997) Leadership Practices Inventory-Self (LPI-Self), which is one part of the Leadership Practice Inventory (LPI). Additional items were included in the LPI to collect data about leadership behaviors specific to the context of IT knowledge workers, as proposed by Glen (2003). Moreover, the instrumentation was further enhanced with a demographic questionnaire (Appendix A).

The LPI was originally developed as an instrument to measure the five leadership practices described in Kouzes and Posner's (1997) model of effective leadership. These leadership practices are (a) challenging the process, (b) inspiring a shared vision, (c) enabling others to act, (d) modeling the way, and (e) encouraging the heart. Additional questions added to the LPI have to do with the unique leadership behaviors that, according to Glen (2003), are effective with knowledge workers in the IT

industry. These behaviors are (a) representing the IT workers to organizations and individuals outside the IT division, (b) facilitating the flow of information and ideas, (c) engaging IT workers in open discussions to help link the business and the technology sides of the organization, (d) managing structural ambiguity, (e) clarifying task ambiguity, (f) telling a compelling story, and (g) embodying the ideas and values of the organization. The survey instrument was mailed to a randomly selected sample of CIOs from companies listed on the 2003 Fortune 500 ranking.

The selection of the Fortune 500 ranking as the sampling frame for this study was based on three principles. First, the Fortune 500 rank encompasses the most successful business organizations in operation in the United States. These companies are, in many respects, leaders of their respective market segments. They represent the best and most successful in their fields and, as a group, they have achieved some form of competitive advantage as indicated by their revenue.

Second, the Fortune 500 rank also represents a group of business organizations that has figured out how to survive and thrive in the information age. These organizations use technology and manage their knowledge workforce in a manner that has awarded them their current position in the rank. Some, like first ranked Wal-Mart, have risen to such a level of prevalence that they set the standards of technology-supported processes for their market segment (Stein, 2003; Useem, 2003).

Third, the use of the Fortune 500 ranking afforded the researcher the opportunity to collect data on personal best leadership practices (Kouzes & Posner, 1997) in the context described in the statement of the problem. That is, how CIOs lead IT knowledge

workers in an effort to leverage information technology to the attainment of competitive advantage for their organizations.

Even though this sample frame would normally lend itself to a purposive sample study (Shaughnessy & Zechmeister, 1997; Sowell, 2001), a randomized sampling strategy was utilized instead, in an effort to allow for the use of descriptive and inferential statistics (Borg, & Gall, 1971). Data were analyzed for descriptors of leadership behaviors that support this leadership model; as well as for other demographic variables that describe this population.

Research Questions

The questions guiding this research study were:

1. What are the leadership behaviors exhibited by the CIOs of the Fortune 500 companies in the United States?

2. What is the relationship between the CIOs' reported leadership behaviors and their demographic characteristics (level of education, major, gender, length of tenure as a CIO, length of tenure with present organization, number of years in the IT/MIS field, belonging to the top management team, frequency of informal interactions with members of the top management team and with the CEO, and having a close relationship with the CEO)?

The purpose of the first research question was to identify the leadership behaviors of CIOs in general and concerning IT knowledge workers in particular. To identify general leadership behaviors the LPI-Self (Kouzes & Posner, 2002) was used

(Appendix A); whereas a set of nine items were added to the LPI-Self to identify leadership behaviors specific to the context of IT knowledge work. The nine items developed stemmed from Glen's (2003) framework for leadership of IT knowledge workers.

The purpose of the second question was to identify the relationships between leadership behaviors and the characteristics of CIOs identified in the literature. Moreover, this question was aimed at clarifying the extent to which these characteristics relate to leadership behaviors.

<div align="center">Significance of the Study</div>

Learning about the leadership practices of CIOs will help not only business but also educational organizations. Business organizations will benefit from this knowledge in the sense that they will be better able to identify and promote effective technology leadership practices to maximize their benefits (e.g., greater competitive advantage, faster response to environmental change, knowledge worker satisfaction, increased market share, and reduced cost of operation), while minimizing risks and disadvantages (e.g., reduced competitive advantage, reduced market share, knowledge worker dissatisfaction and high turnover, and greater cost of operation).

Recognizing these needs, Keil et al. (2001, p. 275) argued for the study of leadership practices that enable IT knowledge workers to promote their productivity and well being. Additionally, IT knowledge workers have very different needs and expectations from, and reactions to their working environments and their leaders than other professionals (Glen, 2003). Therefore, learning more about effective leadership

practices employed by CIOs may help reduce the cost (in terms of money, lost productivity, time, and knowledge) of employee turnover (Sockel, 2000).

Perhaps another benefit from learning more about the leadership behaviors of CIOs will be to finally elevate the position of CIO as a viable assignment in the career path of future CEOs. By illuminating the leadership practices of CIOs, this research will be contributing to the development of knowledge that may lead to a paradigm shift that will enable CIOs to be more readily accepted as CEO candidates in organizations other than dot coms.

Educational organizations will also benefit from knowledge about the leadership practices of CIOs. Institutions of higher education, for example, will be able to adapt or develop professional preparation courses that focus on the development of leadership practices applicable to the effective management of IT knowledge workers. Moreover, they will also be able to educate other professionals regarding the leadership challenges faced by CIOs which, according to Glen (2003), require different leadership than the ones traditionally prescribed in the management and leadership literature.

Still within the field of education, data about the leadership practices of CIOs will also inform human resources and OD practices. It is the hope of this researcher that data from this study can offer better information regarding the skill set that CIOs need to develop so that training programs and succession plans can be designed to address these needs.

Definitions of Terms

This section contains, in alphabetical order, the definitions of terms and concepts utilized throughout this study.

Active Management-by-Exception - is a leadership behavior that "focuses on monitoring task execution for any problems that might arise and correcting those problems to maintain current performance levels" (Avolio, Bass, & Jung, 1999, p. 445). Typically, leaders "enforce rules to avoid mistakes" (Bass, 1997, p. 134).

Boundaryless organizations - According to former General Electric CEO Jack Welch, a boundaryless company is one "where we knock down the walls that separate us from each other on the inside and from our key constituencies on the outside" (as quoted in Hirschhorn & Gilmore, 1992, p. 104).

CEO – Chief Executive Officer is the highest-ranking corporate or executive officer in an organization, with ultimate authority over the management of the organization (Chief Executive Officer, 2006).

Charisma/Inspirational Motivation – is a leadership behavior that provides followers with a clear and energizing sense of purpose. It is also seen as "a role model for ethical conduct and builds identification with the leader and his or her articulated vision" (Avolio, Bass, & Jung, 1999, p. 444).

Challenging the process – leadership behavior in which leaders search for opportunities to change the status quo. Leaders look for ways to improve the organization and embrace risk-taking and experimentation, as well as mistakes and failures, as

learning opportunities and as inevitable steps in the promotion of change (Kouzes & Posner, 1997).

CIO – for the purposes of this study, the CIO or Chief Information Officer is defined as the Information Systems Leader; "the senior executive responsible for establishing corporate information policy, standards, and management control over all corporate information resources" (Synnott & Gruber, 1981, p. 66).

Contingent Reward – a behavior demonstrated by the leader who aims to clarify "what is expected from followers and what they will receive if they meet expected levels of performance" (Avolio, Bass, & Jung, 1999, p. 444).

E-leadership – for the purposes of this study, e-leadership is defined as "a social influence process mediated by Advanced Information Technology (AIT) to produce a change in attitudes, feelings, thinking, behavior, and/or performance with individuals, groups, and/or organizations" (Avolio, Kahai, & Dodge, 2001, p. 617).

Enabling others to act – a leadership behavior in which leaders foster collaboration and teamwork by involving others in the process, strengthening and enabling others to achieve their best performance. Leaders understand that extraordinary performance can only be achieved in an atmosphere of trust and dignity (Kouzes & Posner, 1997).

Encouraging the heart – a leadership behavior in which leaders recognize contributions to the team efforts, and reward and celebrate extraordinary performance (Kouzes & Posner, 1997).

Fortune 500 Companies – the 500 US companies with the largest revenue in the previous

fiscal year (Fortune, 2003).

Individualized Consideration - a behavior demonstrated when the leader "focuses on

understanding the needs of each follower and works continuously to get them to

develop to their full potential" (Avolio, Bass, & Jung, 1999, p. 444).

Inspiring Shared Vision – a leadership behavior in which leaders build, shape, and

communicate the unique vision of what the organization can become. Leaders

relentlessly communicate this vision with the organization's constituencies

seeking to build a common direction that meets organizational and individual

goals (Kouzes & Posner, 1997).

Intellectual Stimulation – is a leadership behavior that provides followers with the

necessary support to "question the tried and true ways of solving problems, and

encourages [followers] to question the methods they use to improve upon" these

problem solving methods (Avolio, Bass, & Jung, 1999, p. 444).

IS – Information Systems constitute a "set of information resources organized for the

collection, storage, processing, maintenance, use, sharing, dissemination,

disposition, display, or transmission of information" (Committee on National

Security Systems, 2003, p. 33).

IT – Information Technology concerns the technology and other aspects of managing

and processing information using computer software and hardware to convert,

store, protect, process, transmit, and retrieve information (Information

Technology, 2006).

Laissez-Faire Leadership – a nonleadership component where "leaders avoid accepting

responsibilities, are absent when needed, fail to follow up requests for assistance,

and resist expressing their views on important issues" (Bass, 1997, p. 134).

Leadership – for the purposes of this study leadership is defined as both a process and an

art. It is "the process of influencing the activities of an individual or a group in

efforts toward goal achievement in a given situation" (Hersey, Blanchard, &

Johnson, 1996, p. 91) and "the art of mobilizing others to want to struggle for

shared aspirations" (Kouzes & Posner, 1997, p. 30).

Modeling the Way - a leadership behavior in which leaders set standards of excellence

and model these standards for others to follow. Leaders establish the ethical

principles by which constituents, colleagues, and customers should be treated

and the way goals should be pursued. This behavior also serves as a motivator as

it removes the barriers of bureaucracy that may impede change, celebrates small

successes, and creates opportunity for victory (Kouzes & Posner, 1997).

Passive-Avoidant - a reactive behavior exhibited by leaders only when problems have

become serious. Otherwise, leaders tend to avoid making decisions at all (Avolio,

Bass, & Jung, 1999, p. 445). It was originally defined as Passive Management-by-

Exception.

Passive Management-by-Exception – a behavior exhibited by leaders in which they "fail to

intervene until problems become serious. They wait to take action until mistakes

are brought to their attention" (Bass, 1997, p. 134).

Spam – for the purposes of this study spam is defined as continued unsolicited e-mail

that is of a commercial nature, or of a political nature, or that in some way causes

distress to the receiver (Sheehan & Hoy, 1999).

Transformational leadership – for the purposes of this study, transformational leadership

is defined as

a deliberate influence process on the part of an individual or group to

bring about a discontinuous change in the current state and functioning of

an organization as a whole. The change is driven by a vision based on a

set of beliefs and values that require the members of the organization to

urgently perceive and think differently and to perform new actions and

organizational roles. (Pansegrouw, 1996, p. 525)

Vision – for the purposes of this study, vision is defined as "an ideal and unique image

of the future" (Kouzes & Posner, 1997, p. 95), a mental picture of what tomorrow

will look like that expresses our highest standards and values (Kouzes & Posner,

1996, p. 17).

Limitations of the Study

There are limitations inherent to the design of this research study. First, the

leadership behaviors measured by the LPI-Self are self-reported and may not positively

correlate with the behaviors and practices perceived by direct reports or superiors.

Measures from direct reports or superiors can only be reliably obtained through the

utilization of the LPI-Observer (a companion survey to the LPI-Self, intended to be used

by those interacting with the subjects) and is beyond the scope of this research effort.

Additionally, other unanticipated extraneous variables may have an influence on the results of the present research effort relative to the impact of the organizational climate on the CIO's performance. For instance, the CEO has had increased responsibility for establishing the direction of the organizational effort and for shaping the relationship with the CIO. This is an increasingly important concern since the dialogue between CEOs and CIOs is not always adequate. Hence, there may be instances in which strained relationships between these players may adversely affect the CIO's performance (Davis, 1999), and are beyond the control of this research study.

This chapter introduced the problem and a rationale for studying it. The research questions, operational definitions, variables, a brief description of the participants and methodology, and the significance of the study and its limitations were included. The following chapter contains a review of the related literature.

CHAPTER II: LITERATURE REVIEW

This review of literature starts with a brief historical overview of the field of leadership studies, which provides the basis for the discussion of the transformational leadership model and includes a review of the change management literature. This historical overview culminates with Kouzes and Pozner's (1997) leadership model, which sets the stage for the discussion of the characteristics of the CIOs. Following, there is a discussion of Glen's (2003) model of leadership applied to IT knowledge workers and a presentation of previous research findings focused on CIOs. A summary closes this chapter.

A Brief History of Leadership Studies

According to Conger (1999), the scientific study of leadership began in the early part of the 20th century. Since then, research on leadership has taken several approaches, but most can be classified into one of the following major categories: (a) trait approaches, (b) attitudinal or behavioral approaches, (c) situational approaches, and (d) integrative approaches (Gordon, 2002; Hersey, Blanchard, & Johnson, 1996).

Trait Approaches

Trait approaches to leadership studies placed great emphasis on the determination of what made individuals great leaders (Kirkpatrick & Locke, 1991) and in identifying specific attributes that clearly differentiated between leaders and followers (Bass, 1990; Jago, 1982). The theories developed under this approach focused on identifying innate qualities and characteristics in leaders that made it more likely

that they would seek and attain positions of leadership and be more effective in them

(Yukl, 1998).

While not a guarantee of leadership effectiveness, the trait approaches to the

study of leadership pointed out that there were differences between leaders and non-

leaders. For instance, leaders tended to differ from non-leaders with respect to (a) drive,

(b) leadership motivation, (c) honesty and integrity, (d) self-confidence, (e) cognitive

ability, and (f) knowledge of the business (Hersey et al., 1996; Kirkpatrick & Locke,

1991; Yukl, 1998). However, trait approaches were unable to predict leadership

effectiveness, because the number of identified traits grew so large as to render this

research paradigm useless.

Attitudinal Approaches

While the trait approaches to leadership studies focused on the personality traits

of leaders, the attitudinal or behavioral approach focused on leader actions. The

emphasis of this approach was on the identification of the most effective leadership

behaviors (Likert, 1961; McGregor, 1966), and was centered on the determination of

how leaders could balance task and relationship behaviors for maximum effectiveness

(Northouse, 2000). Likert (1961, 1967) defined high performance managers as those who

focused their primary attention on the human aspects of their employees' problems and

built effective work groups with high performance goals.

Despite its contributions to the understanding of leadership beyond the

possession of certain traits, attitudinal approaches failed to find any consistent

relationship between leader behavior and group performance (Hersey et al., 1996).

Further research resulted in the inclusion of the circumstances in which leaders and followers interacted as a variable in the study of leadership effectiveness, leading to the development of situational approaches.

Situational Approaches

The contingency or situational approaches to leadership studies took into consideration not only the leader's traits (from the traits approach), or the task or people orientation of the leader (from the attitudinal approaches) but also the interaction of these variables with the situation (Fiedler, 1967; Filley & House, 1969; Vroom & Yetton, 1973; Yukl, 1989). The situational approach to the study of leadership contributed the notion that there is no one best style of leadership. Rather, effective leaders adapt to the situation (Gordon, 2002; Hersey et al., 1996). Situational approaches, however, failed to account for followers' perceptions of the leader which, when positive, resulted in followers' willingness to put forth extraordinary effort (Burns, 1978; Gordon, 2002).

Integrative Approaches

Differently from previous approaches to leadership studies, integrative approaches attempted to explain why followers of some leaders were more willing to exert exceptional effort and to make a personal sacrifice to accomplish organizational goals (Yukl, 1998). Integrative approaches considered follower perceptions as an important feature in examining leader effectiveness, and disregarded the pursuit of one best style or set of behaviors that could be attributed to effective leadership (Bass, 1985; Yukl, 1989, 1998).

Additionally, it recognized that the same leader behavior had different effects on followers depending on the situation, the history of interactions between leaders and followers, and the way the behavior was interpreted by followers (Hersey et al., 1996). Understanding leadership effectiveness - especially the causes of success in organizational transformations that depended on followers' perceptions - became an increasingly salient issue due to the emergence of a globally competitive economic, technological, and political environment. Globalization was embodied by the rise of Asian and European countries who challenged the economic dominance of North American companies (Beckhard, 1989; Conger, 1999, p. 147).

The lasting effects of globalization will be addressed in a later section. However, it is an integral part of the historical context of the development of leadership studies and helps explain the relevance of transformational leadership.

Integrative approaches to the study of leadership presented two basic theories: transformational leadership and charismatic leadership (Bass, 1985; Burns, 1978; Conger, 1999; House, 1978; House & Howell, 1992; Kouzes & Posner, 1997; Yukl, 1999). Both theories took into consideration the needs of the followers and their changing dynamics within their organizations (Conger, 1999; Hersey et al., 1996; Yukl, 1999).

Charismatic leadership outlined leader behaviors that were associated with a charismatic leader as well as some personal traits and situational variables (Conger, 1999, p. 154). Charismatic leadership's contribution to the integrative approaches to the study of leadership was the introduction of measurement, as the effects of leaders'

charisma on followers could be measured to distinguish charismatic from non-charismatic leaders (Gronn, 1997; House, 1977).

Conger and Kanungo (1988) contributed to the charismatic leadership model by introducing situational leadership and by proposing that followers attribute charisma to those leaders perceived to be effective. They further suggested that for a leader to be perceived as transformational, the leader must (a) see the opportunity and develop a vision to address it, (b) communicate the vision to followers and persuade them that change must occur, (c) earn the followers' trust in the leader's abilities and vision, and (d) convince followers that the vision is achievable. While seen as a remarkable form of leadership for its ability to inspire followers to great heights of performance, history contained examples of charismatic leadership gone awry, which lessened the charismatic leadership model's appeal (Conger, 1999; Humphreys & Einstein, 2003; Yukl, 1998).

On the other hand, transformational leadership was applicable to most situations and had greater appeal to organizational theorists dealing with issues of organizational change and transformation (Yukl, 1998). It incorporated charisma as a transformational factor, but charisma alone was not enough to explain a transformation (Bass, 1985).

Burns (1978) was credited with developing the first transformational leadership model, envisioning transformational and transactional leadership at opposite ends of a continuum (Bass, 1985). In this model, transformational leaders understood followers' needs and attempted to structure their relationships with followers in such a manner as

to appeal to those needs through a sense of obligation and values; while transactional leaders only appealed to followers' self-interests.

Bass (1985) expanded on Burns' idea by depicting transformational and transactional leadership as complementary, thus augmenting active transactional leadership behavior. By expanding on Burns' conceptualization, Bass has helped make the transformational model "a normative theory for the field" (Conger, 1999, p. 149).

Transformational leadership according to Bass

Bass' (1985) theory of transformational leadership derived from Burns' (1978) qualitative classifications of transactional and transformational political leaders. Bass (1985) identified four basic interrelated transformational leadership components: idealized influence (charisma), inspirational motivation, intellectual stimulations, and individual consideration. He also identified three components of transactional leadership – contingent reward, active management by exception, and passive management by exception. The transactional leadership components were "usually characterized as instrumental in followers' goal attainment" (Bass, 1997, p. 133). Additionally, he also identified a component associated with lack of leadership named Laissez-Faire Leadership (Bass, 1985).

At the core of the transformational model proposed by Bass (1985) was the idea that leaders motivated followers to commit to and realize performance that exceeded their expectations. In the process, leaders increased followers' awareness about the importance of the goals and the means to achieve them, encouraged followers to transcend their own self-interests for the good of the organization and its goals, and

stimulated and met followers' higher order needs (Maslow, 1968) through the leadership process and mission. In turn, followers responded by generating greater commitment, effort, and performance.

Another contribution stemmed from the fact that "Bass was the first organizational scholar to operationalize the transformational leadership model into a measurement instrument" (Conger, 1999), the Multifactor Leadership Questionnaire (MLQ) (Bass & Avolio, 1990). The MLQ has been used to measure transformational leadership in diverse contexts (i.e.; Barling, Weber, & Kelloway, 1996; Berson, Schamir, Avolio, Popper, 2001; Howell & Avolio, 1993; Sosik, Avolio, Kahai, & Jung, 1998; Zacharatos, Barling, & Kelloway, 2000) and shown "a high degree of consistency in estimates of reliability, intercorrelations, and factor loadings … providing a broader base of evidence for the six-factor model" (Avolio, Bass, Jung, 1999, p. 458). Its latest version identified seven behavioral dimensions exhibited by the leader: charisma (or idealized influence), intellectual stimulation, contingent reward, individualized consideration, active management-by-exception, passive-avoidant leadership, and laissez-faire (Avolio et al., 1999).

The MLQ has been widely used in research that expanded the understanding of the impacts of transformational leadership on organizations. For instance, Banerji and Krishnan (2000) reported preliminary evidence that (a) inspirational leadership and intellectual stimulation were negatively related to the leader's preference for bribery, (b) charisma and individualized consideration were not related to the leader's ethical

preferences, and (c) organizational culture might moderate the relationship between transformational leadership and ethics.

Additionally, Parry and Proctor-Thompson (2002) reported positive relationships between transformational leadership and integrity and perceptions of integrity and perceptions of organizational bottom-line effectiveness. According to these authors, ethical conduct was no longer "a 'feel-good' quality of organizational functioning, but rather … an essential component of success" (p. 91).

Research on leadership perceptions across 60 different cultures around the globe concluded that "several attributes reflecting charismatic/transformational leadership are universally endorsed as contributing to outstanding leadership" (Den Hartog, House, Hanges, & Ruiz-Quintanilla, 1999, p. 250). The study of leadership of culturally diverse organizational environments, one of the many impacts on organizations brought on by globalization and the transactional contract instituted in the information age, was important due to the impact on followers' commitment to the organization (Neck, Smith, & Godwin, 1997; Sonnenschein, 1997).

Specifically in Europe, an area of increasing economic and political integration, it was suggested that leaders must understand and adapt to cultural differences regarding work-related values and culturally endorsed leadership concepts (Brodbeck et al., 2000). Pillai, Schriesheim, and Williams (1999) reported that transformational leadership influenced citizenship behavior through perceptions of procedural justice and trust in the supervisor.

Despite the unprecedented amount of research it generated, Bass' model of transformational leadership was not unique. Conger (1999) contended that there was "considerable and growing overlap in terms of leader behaviors and activities" (p. 156), among the three main models of transformational leadership (Bass and Avolio's transformational leadership, Conger and Kanungo's behavioral model, and House and Shamir's charismatic leadership). For example, the three models (a) shared nine components (vision, inspiration, role modeling, intellectual stimulation, meaning-making, appeals to higher-order needs, empowerment, setting higher expectations, and fostering collective identity); (b) described an empowerment process; and (c) shared similar beliefs about the role of vision in providing direction and meaning.

Moreover, Yukl (1999), contended that

[t]he focus on dyadic processes limits the utility of the theories for explaining leadership effectiveness at the group or organizational level. The dyadic perspective should be replaced by a systems perspective that describes leadership in terms of several distinct but inter-related processes at the dyadic, group, and organizational level. The inherent assumption of heroic leadership biases the theories toward explaining effectiveness in terms of skills and actions of the leader. (p. 301)

Another criticism regards leaders' power sources and relationship building skills in the organization. Regarding relationship building, at a macro level, "[g]lobalization and advances in communication technologies mean that firms are more connected to each other. Organizations now attempt to coevolve in common economic and social

ecosystems" (Salem, 2002, p. 444). Hence, building a network of supportive

relationships at work is essential to maintaining organizational vitality in an

environment of constant change (Baker, 2003; Wood & Bandura, 1989). Relationship

building is also a function of leadership skills that affect internal and external

constituencies through supply chain relationships (Hult, Ferrel, Hurley, & Giunipero,

2000).

Regarding power, Bass and Steidlmeier (1999) contended that "[r]ather than

being immoral, transformational leadership has become a necessity in the post-

industrial world of work" (p. 211). However, as "[m]anagers make greater use of

influence strategies that correspond to their own bases of power than subordinates

[do]" (Somech & Drach-Zahavy, 2002, p. 176), it becomes more likely that inappropriate

choices of influence strategy negatively impact leaders' ability to build relationships

and coalitions through leadership and change management skills.

At the micro level, however, as evidenced by corporate malfeasance scandals,

there was a lacuna in the leadership literature concerning the discussion of power at a

deep structure level – or forms of constraint that were not readily identifiable, like codes

of behavior (Gordon, 2003). "As organizations have downsized and flattened to meet

the demands of competitive environments, the distribution of power between superiors

and subordinates has been changing" (Somech & Drach-Zahavy, 2002, p. 175).

Moreover, knowledge possession determined ownership of the means of production

and caused significant power ownership realignments within organizations (James,

1997; Reich, 2001; Sifonis & Goldberg, 1996), resulting in low-powered managers still responsible for trying to influence the now high-powered followers.

Low-power managers generally tended to use rational (the application of bargaining and logic) and soft strategy (polite, humble, or friendly manner of securing voluntary participation), more often influencing followers by less aggressive and more instrumental and psychological means. High-power managers tended to use hard strategy (assertive requests for compliance or manipulative threats and aggression) with their followers more often than less powerful superiors did. However, when the powers of followers and managers were balanced, superiors relied more on hard strategy, consisting of higher authority and sanctions (Somech & Drach-Zahavy, 2002).

Other concerns expressed about the transformational leadership model focused on the fact that it (a) appealed to emotion over reason, (b) lacked the checks and balances of democratic discourse and power distributions, and (c) violated the principles of Organizational Development (OD) among other concerns related to the transformational leader's ethical behavior. In defense of the model, Bass and Steidlmeier (1999) counter-argued that true transformational leadership went beyond the individual leader or follower by "forging a path of congruence of values and interests among stakeholders, while avoiding the pseudo-transformational landmines of deceit, manipulation, self-aggrandizement, and power abuse" (p. 201).

Perhaps a better understanding of the true effects of transformational leadership could be gained by focusing on the inordinate amount of transformation surrounding organizations. A central theme of the transformational leadership model is that it helps

leaders transcend the exchange of inducements and rewards for desired performance

(characteristic of the transactional model) by simultaneously developing, intellectually

stimulating, and inspiring followers to rise above their own self-interests for a higher

collective good, mission, purpose, or vision (Bass, 1985). Howell and Avolio (1993)

pointed out that transformational leadership behaviors directly and positively predicted

performance and supported Bass' (1985) hypothesis that transformational leaders

performed better in innovative environments.

> Keep in mind that transformational leadership is
>
> a deliberate influence process on the part of an individual or group to bring
>
> about a discontinuous change in the current state and functioning of an
>
> organization as a whole. The change is driven by a vision based on a set of beliefs
>
> and values that require the members of the organization to urgently perceive and
>
> think differently and to perform new actions and organizational roles.
>
> (Pansegrouw, 1996, p. 525)

Indeed, Beckhard (1989) characterized a transformation as a unique and vital

type of change involving substantial and discontinuous change to the shape, structure,

and nature of the organization. Specifically, in a transformation (a) the need for change

was propelled by forces external to the organization; (b) the change was deep and

pervasive, affecting all parts of the organization; and (c) change required significantly

different, and sometimes new, sets of behaviors from the organizational members.

Transformations have been experienced by organizations on the wake of

globalization and the information age. Other authors (Bass, 1985; Bennis & Nanus, 1985;

Kouzes & Posner, 1997; Tichy & Devanna, 1986) have contributed to a more thorough understanding of these key leadership actions. Altogether, there should be no surprise that the series of critical leadership incidents (or themes) in an organizational transformation listed above (Pansegrouw, 1996) bare a significant resemblance to Kotter's (1995) change model and to Kouzes and Posner's (1997) leadership model. These themes have been addressed by the change management literature.

Change and transformational leadership

In the process of adapting to the new reality of the global economy, organizations downsized and performed other extensive re-arrangements aiming at flatter hierarchical structures with better bottom-lines. However, the cost of the transformation included rupture of the social contract of long-term employment in return for employee loyalty and added lower employee satisfaction and empowerment (Ashkenas, et al.; 1995; Conger, 1999; James, 1997; Mirvis & Hall, 1994).

The transformational leadership model was particularly appealing in this changing environment because it addressed leaders' concerns about transforming the existing order of things and followers' needs for meaning and personal development (Conger, 1999). The ability to understand, embrace, and manage change is closely related to leaders' ability to help organizations survive (Bennis, 1989). This is not an easy feat when one considers that

> [c]hange can be painful or exhilarating, but it cannot be avoided. For the last
> forty years we have been discovering that technical, economical, and social
> change is a mirror for our own values. One promising new management

perspective is the growing realization that the future is shaped by acting on our

own values today. Treating action that way is infinitely more satisfying than

turning the problems over to experts to be solved in light of *their* values.

(Weisbord, 1987, p. 94)

In an environment where the only constant is change, to be a leader one must learn to

love change "because it is intrinsic to the leadership process" (Hersey et al., 1996, p.

460).

The early theorists of organizational development had recognized change as part

of the organizational environment. Kurt Lewin (1946, 1974), for example, characterized

the change process as having three phases: unfreezing, changing, and refreezing.

Unfreezing was defined as the phase designed to motivate individuals to change. It

involved the breaking down of customs, traditions, and old ways of doing things so

that individuals could get ready to accept new alternatives.

The next phase in the process was changing. Changing, or moving, was defined

as a modification of attitudes, values, structures, feelings, and behaviors (Lewin, 1946,

1974). It was more likely to occur by identification, internalization, or compliance.

Identification was the process by which one or more role models were provided in the

environment and individuals learned from these models by identifying with them and

trying to emulate them. Internalization was the process by which individuals were

placed in situations in which new behaviors were demanded of them. Individuals

internalized new behavior patterns that were initially developed as coping behaviors

for the high-strength needs introduced in the system (Lewin, 1946, 1974).

Compliance was the process by which individuals were forced to change due to the manipulation of rewards and punishments administered by someone in a position of power in the system. The major argument against the promotion of change by compliance derived from the need for constant supervision. Behaviors changed through compliance tended to last for only as long as the change agent was present, being often dropped when supervision was removed. Compliance is more useful as a tool for unfreezing (Lewin, 1946, 1974).

The last phase of the change process was refreezing. Refreezing is defined as the internalization of the new behaviors, when new behaviors become an integral part of the individual's personality or emotional relationships (Lewin, 1946, 1974).

A significant amount of change has been introduced, for instance, by disruptive technologies that at first did not have a market value due to their initial performance attributes. When the performance improved, these technologies were able to invade and take over the established markets (Bower & Christensen, 1995). This alone has exposed the limitations of Lewin's model. Hence, as the importance of change management to organizational development has become more pronounced, other authors (Barabba & Zaltman, 1991; Isabella, 1990; Kotter, 1995) have reconceptualized the change process to reflect its transformational characteristic. Given this particular set of characteristics, what are the responsibilities of the organizational leader? What are the specific leadership behaviors that would enable organizational leaders to bring about organizational transformation?

To start the search for these answers, one must first look at change as a process. After studying the transformational efforts of organizations, more likely to fail than produce their wanted results, Kotter (1995) proposed a transformation process that consisted of a series of phases that required a considerable amount of time, with the added benefit of minimizing critical mistakes that were likely to negate any gains. His transformation model called for leaders and change agents to establish a sense of urgency by examining markets and competitive realities to identify and discuss crises, potential crises, or major opportunities. The urgency rate was high enough when "about 75% of a company's management team is honestly convinced that business-as-usual is totally unacceptable" (Kotter, 1995, p. 62).

Once a sense of urgency had been established, it was necessary to form a powerful guiding coalition, or a group with enough power to lead the change effort as a team. Failure to amass a powerful coalition has been identified as a cause of failure in producing change because "the opposition gathers itself together and stops the change" (Kotter, 1995, p. 63).

Once the coalition was formed, it was necessary to create a vision to direct the change effort, and devise strategies for achieving that vision. A vision is "an ideal and unique image of the future" (Kouzes & Posner, 1997, p. 95). It contained "a clear and compelling statement of where all this was leading" (Kotter, 1995, p. 63).

Once the vision was created, the guiding coalition or leader would communicate the vision to the organization utilizing every possible vehicle to communicate the new vision and strategies, and teaching new behaviors by example of the guiding coalition.

The most successful transformation efforts not only used every possible channel to communicate the vision to the whole organization, but also had executives who had learned to "walk the talk" (Kotter, 1995, p. 64).

After establishing a sense of urgency, forming a powerful guiding coalition, and creating and communicating a vision, it was necessary to empower others to act on the vision. This required changing systems or structures that seriously undermined the vision, including getting rid of obstacles to change, and encouraging others to take risks by trying nontraditional ideas, activities, and actions. "In the first half of the transformation, no organization has the momentum, power, or time to get rid of all obstacles. But the big ones must be confronted and removed" (Kotter, 1995, p. 65).

Dealing with resistance to change has also become an important element of change management. Keep in mind that "resisting change is as futile as resisting weather" (Bennis, 1989, p. 172), and that only recently a better understanding of the deep-seated motivators for resisting change have begun to be understood (Brightman & Moran, 2001; Kegan & Lahey, 2001).

After removing the obstacles, it was necessary to plan and create short-term wins. One of the main tasks was to plan for visible performance improvements and to create those improvements. These allowed recognition and reward of employees involved in the improvements, and led to their consolidation. "Commitments to produce short-term wins help keep the urgency level up and force detailed analytical thinking that can clarify or revise visions" (Kotter, 1995, p. 66).

Following the planning and creation of short-term wins, it was necessary to consolidate improvements and produce still more change. One of the main tasks involved the use of the increased credibility gained by the celebration of short-term wins to change systems, structures, and processes that did not fit the vision through hiring, promoting, and developing employees who could implement the vision. Thus, the leader reinvigorates the process with new projects, themes, and change agents (Kotter, 1995).

"Institutionalizing change – making it last – is critically important. Transformational change, by its very nature, entails major disruptions – dramatically altering how work is done – and in the process, how people communicate and interact with each other throughout the organization" (Dess, Picken, & Lyon, 1998, p. 727).

The final step in Kotter's model asked for the institutionalization of new approaches through the articulation of the connection between the new behaviors and corporate success. This included leadership development and succession, and taking the time to ensure that "the new generation management really does personify the new approaches" (Kotter, 1995, p. 67) and that the transformation cannot be undone.

However skillfully planned and executed, technological and commercial changes in the environment have created an environment of rapid IT changes. Given constant innovations, the survival of the organization became increasingly more dependent on its ability to adapt. "Successful innovations require that either the technology be designed to fit the organization's current structure and culture or that the

organizational structure and culture be reshaped to fit the demands of the new

technology" (Cabrera, Cabrera, & Barajas, 2001, p. 245).

Benamati and Lederer (2001) reported five coping mechanisms (i.e., education

and training, vendor support, endurance, internal procedures, and consultant support)

IT managers use to deal with accelerated IT change. Of the five constructs, "*Education*

and Training and *Internal Procedures* predicted problem reduction significantly.

Interestingly, *Endurance* and *Consultant Support* significantly correlated with increased

problems" (p. 106). Vendor support, consultant support, and endurance reduce the

need for information processing by relegating it to outside sources or ignoring it.

Education and training and internal procedures increase the capacity of the

organization to process information by increasing staff expertise and simplifying tasks

(p. 107).

Mumford, Zaccaro, Harding, Jacobs, and Fleishman (2000) expanded the

organizational context in which transformations are likely to occur beyond

environmental changes, subsystem differences, and diversity. According to these

authors, the organizational context also included complexity, conflict, and dynamism

that required leaders to attempt to solve complex social problems.

"Complex systems are evolving systems that engage in self-organizing

dynamics, though to different degrees and with varying levels of success" (Laszlo &

Laszlo, 2002, p. 402). "Complexity theory offers a way to understand processes that

accelerate or amplify change as an alternative to older model's emphasis on planning,

slowing, or diminishing change. Complexity theory describes the interactive and

evolutionary processes of organizational development (Salem, 2002, p. 448).

Therefore, to the organizational leaders in general and CIO in particular,

managing change became a significant part of their jobs. Indeed, when Kouzes and

Posner (1997) looked into the personal-best leadership experiences of leaders,

participants chose to talk about change. They found that

> [r]egardless of function, field, economic sector, organizational level, or national
>
> boundary, the leaders in our study talked about the times when they led
>
> adventures in new territories. They told us how they turned around losing
>
> operations, started up new plants, installed procedures, or greatly improved the
>
> results of poorly performing units. (p. 37)

The Leadership Challenge

The analyses of personal-best leadership experiences identified that successful

leaders took a similar path. This path was marked by common patterns of action forged

into exemplary leadership, the model proposed by Kouzes and Posner (1997).

Kouzes and Posner (1997) defined leadership as "*the art of mobilizing others to*

want to struggle for shared aspirations" (p. 30). Arising from the survey of constituents'

expectations of leader behaviors, as well as from the analyses of personal-best cases, this

model portrays exemplary leadership as a study in relationships "between those who

choose to lead and those who decide to follow. Any discussion of leadership must

attend to the dynamics of this relationship" (Kouzes & Posner, 2003a, p. 1).

Despite differences in definition, the leader behaviors described in the exemplary and transformational leadership models are very similar. Both models describe leaders "inspiring others to excel, giving individual consideration to others, and stimulating people to think in new ways" (Kouzes & Posner, 1997, p. 321). The basic difference was on each model's stance on leadership behavior. The transformational leadership model described leadership effectiveness based on influence behaviors without much consideration for their origins or development. Leadership behaviors were more or less effective based on how well they affected or influenced followers through the alignment with followers' needs and motivations (Bass, 1985; Conger, 1999; Yukl, 1998).

The exemplary leadership model, on the other hand, has a developmental approach that focuses on leadership behaviors as a set of skills that "can be strengthened, honed, and enhanced if we have the proper motivation and desire, along with practice and feedback, role models and coaching" (Kouzes & Posner, 1997, p. 323). Leadership behaviors are more or less effective based on the leader's demonstrated competence in facilitating constituents' goal achievement.

Reviewing traditional management teaching, Kouzes and Posner proposed the abandonment of managerial traditions and myths because they "foster a model of leadership antithetical to the way real-life leaders operate" (Kouzes & Posner, 1997, p. 15). These traditions and myths included the idea that the ideal organizations were orderly and stable and organizational processes could and should be engineered to make things run like clockwork. This conclusion drew parallels to some of the criticism related to the transformational leadership model and Organization Development, and

offered the opportunity to consider the effects of the changing organizational

environment on leadership, especially considering that "[l]eading in knowledge

organizations is quite different from leading in traditional ones. Whereas traditional

organizational leaders lead from the base of legitimate power, this use in knowledge

organizations is sure to backfire" (Amar, 2002, p. 139).

Before discussing the skill set that constitutes the exemplary leadership model, it

is necessary to understand its underlying principles. A central tenet of exemplary

leadership focused on the leader's credibility (Kouzes & Posner, 1997, 2003a).

Credibility provides evidence that leaders are personally committed to the

transformation. "Credibility of action is the single most significant determinant of

whether a leader will be followed over time" (Kouzes & Posner, 1997, p. 16), since it is

"what people look for and admire in leaders – people whose direction they willingly

follow" (Kouzes & Posner, 1997, p. 210).

Credibility

The conceptualization of credibility involves six disciplines or practices that

build the foundation of leadership as they help distinguish between "those individuals

who can lead others to new visions of the future and those who cannot" (Kouzes &

Posner, 2003a, p. 287). The six disciplines are (a) discovering yourself, (b) appreciating

constituents, (c) affirming shared values, (d) developing capacity, (e) serving a purpose,

and (f) sustaining hope (Kouzes & Posner, 2003a, p. 51).

Discovering your self involves value clarification that allows the leader to

translate these values into a set of guiding principles to be communicated to

constituents. It also helps leaders determine if they have the competence and self-confidence to deliver their promises (Kouzes & Posner, 2003a, p. 52).

The second discipline is appreciating constituents. It involves developing a deep understanding of the collective values and desires of constituents. Understanding and appreciating constituents' needs and values helps leaders gain constituents' trust, and demonstrate that they have the constituents' interests at heart (Kouzes & Posner, 2003a, pp. 52-53).

The third discipline is affirming shared values. Affirming shared values involves building a common, shared set of values and principles that create a sense of community among a diverse constituency. "[S]hared values gives everyone an internal compass that enables them to act independently and interdependently, responsibly and publicly" toward the principled resolution of dilemmas (Kouzes & Posner, 2003a, p. 53).

The fourth discipline is developing capacity. Developing capacity involves educating constituents to enable them to build their knowledge and skills to keep their commitment. Continuous learning and improvement increase self-confidence and personal responsibility, which spreads the responsibility for guiding the organization toward the future to every member and empowers everyone to take initiative toward shaping the organization (Kouzes & Posner, 2003a, p. 54).

The fifth discipline of credibility is serving a purpose. "Leaders serve a purpose for the people who have made it possible for them to lead – their constituents. They are servant leaders – not self-serving, but other serving" (Kouzes & Posner, 2003a, pp. 54-55). By making certain that constituents' highest priority needs are being taken care of

first, leaders allow constituents to grow – likely into leadership positions as well – and model the values, behaviors, and attitudes of the organization (Kouzes & Posner, 2003a).

Sustaining hope, the last discipline, involves fostering a positive, optimistic attitude that leads to more challenging goals and achievements. It also involves supporting constituents in times of need, celebrating success stories, and making corrections to the plan based on the contingencies faced by constituents. These corrections and success stories are based on shared values (Kouzes & Posner, 2003a, pp. 56-7).

Thus, based on their credibility, leaders can engage in the five fundamental practices of exemplary leadership "that can serve as a basis for learning to lead" (Kouzes & Posner, 1997, p. 17). The five practices are (a) challenging the process, (b) inspiring a shared vision, (c) enabling others to act, (d) modeling the way, and (e) encouraging the heart.

Fundamental Practices of Exemplary Leadership

Each fundamental practice of exemplary leadership involves two leadership commitments. Challenging the process, the first fundamental practice of leadership, involves (a) the search for challenging opportunities to change, grow, innovate, and improve, and (b) the chance to experiment, take risks, and learn from the accompanying mistakes. The second fundamental practice, inspiring a shared vision, involves (a) envisioning an uplifting and ennobling future and (b) enlisting others in a common

vision by appealing to their values, interests, hopes, and dreams (Kouzes & Posner, 1997, p. 18).

The third practice, enabling others to act, involves (a) fostering collaborations by promoting cooperative goals and building trust, and (b) strengthening people by giving power away, providing choice, developing competence, assigning critical tasks, and offering visible support. The fourth practice, modeling the way, involves (a) setting the example by behaving in ways that are consistent with shared values, and (b) achieving small wins that promote consistent progress and build commitment. The final practice, encouraging the heart, involves (a) recognizing individual contributions to the success of every project, and (b) celebrating team accomplishment regularly (Kouzes & Posner, 1997, p. 18).

Before delving into each one of these five behaviors in greater detail, it would behoove the reader to appreciate how the ten leadership commitments embedded in Kouzes and Posner's (1997) leadership behaviors closely resemble the change management process proposed by Kotter (1995). Table 1 provides a visual summary of the two theories and their similarities.

This resemblance is expected. Remember that Kouzes and Posner's model resulted from their experiences with leaders who chose to describe their most successful experiences in terms of the changes they were able to promote, and their roles in them as agents of change (Kouzes & Posner, 1997, pp. 37, 51-52). "The quest for change is an adventure. It tests our skills and abilities. It brings forth talents that have been dormant. It's the training ground for leadership" (Kouzes & Posner, 1997, p. 54).

Table 1

Exemplary Leadership and Kotter's Change Model Compared

	Exemplary Leadership		Kotter's Change Model
Practices	Commitments		Phases
Challenge the Process	Discover challenging opportunities to change, grow, innovate, and improve.		Establish a sense of urgency
	Experiment, take risk, and learn from the accompanying mistakes		
Inspiring a Shared Vision	Envision an uplifting and ennobling future		Create a vision
	Enlist others in a common vision by appealing to their values, interests, hopes, and dreams		Establish a powerful guiding coalition[1]
Enabling Others to Act	Foster collaboration by promoting cooperative goals and building trust		Communicate the vision
	Strengthen people by giving power away, providing choice, developing competence, assigning critical tasks, and offering visible support		Empower others to act

Modeling the Way	Set the example by behaving in ways consistent with shared values	Remove obstacles to change
	Achieve small wins that promote progress and build commitment	Plan and create celebrations
Encouraging the Heart	Recognize individual contributions to the success of every project	of short-term wins
	Celebrate team accomplishments regularly	&
		Institutionalize change

[1] This is the second step in the model.

Therefore, how do leaders achieve extraordinary success in organizations? According to the model being described, it begins with challenging the process as "[l]eaders look for ways to radically alter the status quo, for ways to create something totally new, for revolutionary new processes, for ways to beat the system ... for opportunities to do what has never been done" (Kouzes & Posner, 1997, p. 36).

Challenging the process require leaders to commit to searching out challenging opportunities to change, grow, innovate, and improve.

Leaders search for opportunities for people to exceed their previous levels of performance. They regularly set the bar higher. However, leaders also appreciate that the challenge shouldn't be so great as to be discouraging. This awareness of the human need for challenge and this sensitivity to the human need to succeed at that challenge are among the critical balancing skills of any leader. (Kouzes & Posner, 1997, p. 40)

The authors cautioned, however, that to be effective, "to create a climate for developing the best leaders we must make the challenge meaningful" (Kouzes & Posner, 2003b, p. 19). Seeking out opportunities and confronting the status quo must be balanced by a greater acceptance of the risks that accompany all untested ideas and experiments. It involves rewarding risk-taking behaviors (Kouzes & Posner, 1997, p. 83) since failure is an expected byproduct of experimentation, of trying new things. "Leaders don't look for someone to blame when mistakes are made in the name of innovation. Instead, they ask, 'What can be learned from the experience?'" (Kouzes & Posner, 1997, p. 70).

To promote risk-taking behaviors, leaders treat failures as opportunities. Leaders set up little experiments and make it safe for others to experiment; they eliminate fire hosing by working with new ideas even when the ideas sound strange at first; they debrief every failure and success in an attempt to flush out the lessons learned and increase organizational knowledge. Leaders who model risk taking by attempting new things themselves, increase constituents' trust in the leader by ensuring that constituents "will not be unfairly treated, embarrassed, harassed, or harmed by taking some action" (Kouzes & Posner, 2003a, p. 110).

Another important aspect of promoting risk taking and experimentation is to develop constituents' psychological hardiness – a condition in which stress does not promote sickness but success. To accept the challenge of change, constituents need to believe that they can overcome adversity (Kouzes & Posner, 1997; 2003b). This can be achieved by encouraging possibility thinking, by encouraging constituents to see change as a set of possibilities; and maximizing opportunities for choice by reducing the tendency toward satisficing, and setting in motion a self-fulfilling prophecy (Kouzes & Posner, 1997).

Challenging the process is simply the first step toward promoting exemplary leadership in organizations. To be successful, leaders must also inspire a shared vision, the second fundamental practice of exemplary leadership. A vision is

> a mental picture of what tomorrow will look like. It expresses our highest standards and values. It sets us apart and makes us feel special. It spans years of time and keeps us focused on the future. And if it's to be attractive to more than

an insignificant few, it must appeal to all of those who have a stake in it. (Kouzes

& Posner, 1996, p. 17)

Visions have four attributes: ideality, or the pursuit of excellence; uniqueness, or

pride in being different; future orientation, or looking forward; and imagery, or pictures

of the future (Kouzes & Posner, 1996; 1997). "The most important role of visions in

organizational life is to give focus to human energy" (Kouzes & Posner, 1996, p. 17).

The first attribute, ideality, reflects the characteristics of visions to be "our

higher-order value preferences. They represent our ultimate economic, technological,

political, social, and aesthetic priorities … they're statements of the idealized purpose

that we hope all our practical actions will enable us to attain" (Kouzes & Posner, 1997,

p. 99).

Uniqueness reflects the characteristics of visions to "communicate what makes us

singular and unequaled, they set us apart from everyone else" (Kouzes & Posner, 1996,

p. 15). "Uniqueness fosters pride. It boosts the self-respect and self-esteem of everyone

associated with the organization" (Kouzes & Posner, 1997, p. 99). The uniqueness of a

vision helps organizations attract talent, clients, and investment, since "there's no

advantage in working for, buying from, or working in an organization that does exactly

the same thing as the one across the street or down the hall. Only when people

understand how we're truly distinctive, how we stand out in the crowd, will they want

to sign up with us" (Kouzes & Posner, 1996, p. 15).

Future orientation reflects the characteristic of visions to be statements of a

destination over a period of time. "Constituents want their leaders to be 'forward-

looking', to have a 'long-term vision or direction' … Leaders need to be proactive in thinking about the future, and this imperative increases with one's scope and level of responsibility" (Kouzes & Posner, 1997, p. 100).

Imagery, as pictures of the future, reflects on the characteristic of vision to draw upon the natural process of creating images. "Visions are conceptualizations. They become real as leaders express those images in concrete terms to their constituents. . . .[and] find ways of giving expression to their hopes for the future" (Kouzes & Posner, 1996, p. 17).

Inspiring a shared vision contains two commitments. Envisioning an uplifting and ennobling future is the commitment of the leader to focus the vision and create positive expectations about the future so that leaders can communicate the vision to constituents as they attempt to enlist others in their vision of the future. It is an image of the future for the common good of the leader's constituency, and as such should contain constituents' dreams and aspirations to be found appealing (Kouzes & Posner, 1997, pp. 118-119). Enlisting others in a common vision by appealing to their values, interests, hopes, and dreams is another leadership commitment associated with inspiring a shared vision. It involves developing a shared sense of destiny. It promotes "buy-in" because it allows constituents to identify their own aspirations and desires embodied in the vision. It is dependent on leaders' ability to develop their interpersonal competence, to inspire constituents to pursue a vision that constituents identify with and take into account (Kouzes & Posner, 1997).

Enabling others to act is the third fundamental leadership practice. It requires leaders to foster collaboration by promoting cooperative goals and by strengthening people by giving power away, providing choice, developing competence, assigning critical tasks, and offering visible support. To successfully enable others to act, leaders also seek integrative solutions, and build trusting relationships (Kouzes & Posner, 1997, p. 154).

Collaboration is more effective than competition in promoting best performance. As Kouzes and Posner (1997) stated, "[s]hared goals bind people together in collaborative pursuits. As individuals jointly work together and recognize that they need each other in order to be successful, they become convinced that everyone should contribute and that, by cooperating, they can accomplish the task successfully" (p. 155).

To promote cooperative goals, leaders need to develop a standard of reciprocity within and among constituents as a means of demonstrating willingness to be cooperative and unwillingness to be taken advantage of; and develop stable and predictable relationships. Leaders use diverse reward systems to promote cooperation, ensuring the legitimate interests of all involved. Reward systems may or may not involve monetary means, but they are a way of operationalizing how each can gain from collaboration (Kouzes & Posner, 1997, p. 157).

In summary, leaders enable others to act by actively involving others and understanding that mutual respect is what sustains extraordinary efforts. Hence, leaders strive to create an atmosphere of trust and human dignity. They strengthen others by sharing information and providing choice (Kouzes & Posner, 1997).

Modeling the way, the fourth fundamental practice of exemplary leadership, requires leaders to set an example of excellence for others to follow that are consistent with the shared values of the organization. Leaders focus on the little things that allow them to connect with constituents on a personal or individual level and seize brief moments of learning to make heroes of others.

Not only do leaders establish values about how constituents, colleagues, and customers should be treated, but also plan and enact opportunities for constituents to "cement social bonds" (Kouzes & Posner, 1997, p. 265), that will allow them to remain committed to each other. To this end, "[a]chieving small wins is a leadership strategy of choice" (Kouzes & Posner, 1997, p. 258), because it breeds success and propels constituents down the path. Facilitating constituents' choices, increasing the visibility of their decisions and actions also strengthen their commitment to the organization and to the vision.

Encouraging the heart, the fifth fundamental practice of exemplary leadership, requires leaders to recognize contributions to vision and values. "Leaders express their appreciation far beyond the limits of the organization's formal performance appraisal system" (Kouzes & Posner, 1997, p. 285). Leaders set high expectations for themselves and their constituents. Through example and building constituents' self-confidence, leaders set up an environment of self-fulfilling prophecies. The clear connection between performance and rewards serve as a means of clarifying expectations. Leaders focus on providing feedback about constituents' performance, and acknowledging those who meet the standards through a blend of intrinsic and extrinsic rewards that go

beyond the formal performance appraisal system established by the organization. They get creative and spontaneous when they demonstrate their appreciation (Kouzes & Posner, 1997).

This is especially important for leaders dealing with knowledge workers. "[A] knowledge organization leader helps his workers achieve their goals and draw on his authority from their success at making them achieve their goals" (Amar, 2002, p. 161).

The final commitment associated with encouraging the heart is the celebration of accomplishments. It is the process of "honoring people and sharing with them the sweet taste of success" (Kouzes & Posner, 1997, p. 294). Celebrating accomplishments requires leaders to cheer about key values, to make ceremonies public, to be personally involved, and to create social support rituals that ultimately allow changes and successes to take root in the organizational culture.

Cheering about values reinforces key organizational values by highlighting the possibility of success and encouraging constituents to remain committed to these goals through the opportunity to be recognized and acknowledged for them. By making the celebration a public event, leaders communicate the message to the boarder audience of the organization and make the celebration a reminder about the key values that are sponsored by the organization (Kouzes & Posner, 1997, p. 296).

Leader participation in the celebration allows leaders not only the chance to focus attention on the organizational values, but also to interpret key organizational events. It is an opportunity to establish a human connection between people, facilitate

the creation of shared vision and values, and strengthen commitment (Kouzes &

Posner, 1997, p. 301).

Characteristics of CIOs

Heresniak (1999) called the position of CIO "the most maligned and misaligned

occupation around" (p. 51). Perhaps one of the contributing factors to the general

dissatisfaction with the performance of the CIOs had to do with their understanding of

the performance expectations set by the CEO. While CIOs perceived themselves actively

involved in top-level information technology planning and in providing input to the

CEO about information technology opportunities and threats, the priority set by CEOs

was that CIOs understand the business goals of the organization so that they could

support them and contribute to organizational strategic planning (Armstrong, 1995;

Jones, Taylor, & Spencer, 1995).

This difference in perception exemplified some of the ambiguity surrounding the

role of the CIO, and could account for the misalignment between the business and the

IT sides of the organization (Peppard & Ward, 1999). However, this difference was also

puzzling, since the fundamental role of CIOs involved the organization's (a) survival,

(b) competitive advantage, (c) restructuring, and (d) ability to act upon paradigm shifts

(Stephens, 1995).

The organization's survival entailed closing the gap between the use of

information resources and the strategic objectives of the firm in an intensely competitive

global economy. Competitive advantage referred to the organization's ability to deploy

IT to create, maintain, or advance its market position.

Restructuring focused on linking IT to the business internally and externally. Internally, it provided the interface between the work units within large, complex, and geographically dispersed organizations seeking flexibility in a rapidly changing environment. Externally, it provided the interface between the organization and its competitive environment (Stephens, 1995, pp. 4 - 5).

The Internet has played a large role in precipitating restructuring. Many organizations have set up web sites that serve a dual purpose. On the one hand, web sites with e-commerce capabilities provide organizations with an external interface with their competitive environment. On the other hand, the same web sites provide workers with worldwide access to intranets where they find connections to the inner workings of their organizations.

Finally, there is the ability to act upon paradigm shifts through leadership of the IT group. The role of the CIO has been through major changes in function and focus (Stephens, 1995, p. 6) as CIOs perform as general managers and managers of change (Larosa, 1985). CIOs ultimately strive to capture, leverage, and apply the creative work of IT knowledge workers "to enable business operations, improve efficiency, develop competitive products, fulfill regulatory requirements, provide management information, speed production, or improve customer service" (Glen, 2003, p. 21). It is mostly with respect to the general success of CIO performance that one can find sources of empirical studies in the literature.

The Top Management Team

One of the variables related to CIO success in the organization found in the literature was whether the CIO belonged to the top management team. "Despite the fact that IT has been heralded as a key to future business success and growing market share, it is striking that the CIO is often isolated from the company's top decision makers" (The CIO Executive Research Center, June 1999, ¶ 2). Cahill (2002) contended that despite the CEOs' leadership role in setting the strategic goals for the organization, the CIOs' success does not depend exclusively on their relationship with the CEO. To realize the strategic alignment of the IT function with the business function in organizations, CIOs must learn to build coalitions as a means of rallying the support from fellow chief officers and of eliminating barriers to the success of the IT operation (Wallington, 2001).

The importance of support from the top management team is felt in many stages of IT execution. Teo and Ang (2001) studied the problems of (a) launching the IT planning effort, (b) developing the strategic IT plan, and (c) using the strategic IT plan. The authors identified failing to get top management support for planning effort as a "major problem" (p. 460) in the area of launching the IT planning effort. Similarly, these authors identified failing to sufficiently involve top management as the major concern in the area of developing the strategic IT plan, and difficulty in securing top management commitment to implement the IT plan, as concerns in the area of using the strategic plan. Indeed, Gottschalk (2000) reviewed survey responses from members of the Society for Information Management in different countries and identified business

relationship, or "improving links between information systems strategy and business strategy" (p. 176), as the most important concern of IT managers over the following two to five years.

Enns, Huff, and Golden (2001) examined the barriers and facilitators of peer commitment to the implementation of information technology projects by investigating the relationship between the CIO and the top management team. They concluded that (a) the environment in which the CIO operates, (b) the appropriateness of the IT initiatives proposed by the CIO, (c) good peer relationships, (d) peer background accommodations, and (e) implementation constituted important factors in determining peer commitment and support to IT projects.

Good communication skills and political savvy (Johnson, 2001; Smaltz, 1999) are important components of the CIO's capability, which mediate the effectiveness of the relationship with the top management team (Smaltz, 1999). Armstrong (1995) reported that the greatest impact on a firm's ability to effectively utilize its IT resources resulted from the combination of the CIOs' high strategic IT and business-related knowledge, high participation in the top management team, and firms that viewed IT as the basis for transforming the organization.

Kearns and Lederer (2000) reported that the CIO associated alignment of the business plan with the IT plan with the use of IT for competitive advantage, but members of the top management team did not. However, both CIO and the top management team associated the use of IT for competitive advantage with the alignment of the IT plan with the business plan. From a resource-based view of strategic

IT alignment, when the business plan reflected the IT plan it did not reflect a positive and significant relationship with the use of IT for competitive advantage (Kearns & Lederer, 2003). Moreover, IT assimilation in the organization was found to be more significantly impacted by the CIOs' possession of high IT and high business knowledge, due to the synergistic relationship of this knowledge with the CIOs' participation in their firms' top management teams and the frequency of the CIOs' informal interactions with its members (Armstrong & Sambamurthy, 1999, pp. 317-319).

Therefore, it is crucial that CIOs not only have a seat at the top management team table, but also enjoy frequent informal interactions with members of the top management team. This realization seems to be in line with the fact that "achieving high performance from IT is not just about the IT function's ability to build, maintain, and deliver systems but is an organizational [*sic*] wide activity requiring a strong business/IT partnership" (Peppard & Ward, 1999, p. 29).

Actually, there is evidence that the impact of IT on the supply chain is a measure of the influence of IT applications on many activities across many organizations that depend not only on the quality of the IT department and the IT plan, but also on top management's support of IT (Byrd & Davidson, 2003, p. 252). Hence, two of the variables in this study, membership in the top management team and frequency of informal interactions with top management team members, identify additional characteristics that may influence CIOs' leadership behaviors.

Belonging to the top management team was only one of the variables found in the literature that accounted for the general success of the CIO. Maintaining an effective relationship with the CEO was another one.

Relationship with the CEO

In her research to generate theories regarding the perceptions of information managers in terms of the responsibilities, knowledge, and skills needed to perform their jobs, Larosa (1985) identified the reporting status of the CIO as one of the factors that influenced the CIOs' diverse roles and responsibilities. For instance, Kearns and Lederer (2003) reported that information-intensive firms participated more in business and IT knowledge sharing than did other firms, where the CIO remained primarily responsible for aligning IT strategies with business strategies. Participation in business planning was positively associated with the IT plan reflecting the business plan and vice-versa. Moreover, the IT plan reflecting the business plan was positively associated with the use of IT to provide competitive advantage. Therefore, "CIOs in information-intensive firms should increase their efforts to establish and refine the alignment mechanism: participate in business planning, develop informal relationships with the CEO and other executives, and educate management about competitors' uses of IT" (Kearns & Lederer, 2003, p. 23), as well as manage their bosses' expectations to keep them realistic, on track, and well satisfied (Potter, 2003).

Concerning alignment, Johnson (2001) investigated the communication patterns between CIOs and CEOs and tested whether convergence was a significant factor in explaining the degree to which IT was aligned with business strategy and whether

alignment influenced IT effectiveness. Three hypotheses were supported. First, more frequent communication between the CEO and CIO predicted convergence. Second, there was evidence that greater convergence in communication predicted more IT strategic alignment with the business strategy. Third, there was further evidence that greater IT strategic alignment predicted greater IT effectiveness.

Jones et al. (1995) looked at "CEO satisfaction with various aspects of CIO performance, CIO perceptions of their own involvement with strategic information systems (IS) planning and corporate strategy planning, their relationship with the CEO, and their satisfaction with the planning" (p. 124). CEOs were generally satisfied with their respective CIOs, but not strongly so. These researchers found that CIOs were becoming what CEOs said they wanted CIOs to become – "technically competent managers with business savvy" (p. 128).

Nonetheless, the same research reported that CEOs were most satisfied when CIOs (a) put the needs of the company above those of the IT area, (b) did not "talk down" to the them, (c) understood the goals of the company, (d) related well with other managers, and (e) were sharp, creative thinkers. Conversely, CEOs were least satisfied when CIOs (a) failed to separate important from unimportant tasks, (b) focused on what could not be done, and (c) failed to complete projects on time (Jones et al., 1995).

Close CIO/CEO ties were identified as a key factor in amplifying the impact of IT investments on the organization's financial performance when there were greater environmental changes (Li & Ye, 1999). These ties may be more important at times than membership in the top management team (Feeny, Edwards, & Simpson, 1992). Hence,

two variables in this study, who the CIO reports to and the frequency with which CIOs have informal interactions with CEOs, identify additional characteristics that may influence CIOs' leadership behaviors.

Gender and the CIO

Although women have made significant strides in several fields, their participation in engineering, mathematics, and computer science remains persistently low (McGrath Cohoon, 2003). Fountain (2000) argued that an increase in the participation of women in the design of information technology at all stages would "both redress a significant shortfall in human capital and influence the construction of an increasingly information-based society" (p. 59).

In 1997–98, women still earned considerably less than half the bachelor's degrees in the traditionally male-dominated fields of agriculture and natural resources (41%), physical sciences (38%), computer and information sciences (27%), and engineering (17%). Nevertheless, women have made substantial gains in all of these fields since 1970–71 (National Center for Education Statistics, 2001).

King (2002) attributed this phenomenon to differences in the career pathways of women, and proposed a transformational adult pedagogy as a means to promote greater appeal in technology-related careers for women. These differences sparked interest in replicating the findings reported by Kouzes and Posner (2000) and Perelman (2000) that concluded that there were no statistically significant gender-based differences in leadership behaviors.

Level of Education of the CIO

Larosa (1985) suggested that the preparation for the position of CIO consisted of a four-part strategic plan that involved (a) acquisition of appropriate education, (b) obtaining broad business experience, (c) development of special factors, and (d) concentration on future needs. Furthermore, Enns et al. (2003) suggested that there were no significant differences between CIOs with greater and lesser technical backgrounds with respect to their use of influence behaviors. Hence, two variables in this study, highest educational level and major, identify additional characteristics that may influence CIOs' leadership behaviors.

The Value of Experience

Prattipati and Mensah (1997) reported that CIOs in high productivity companies had been with their organizations for a shorter period than CIOs in low productivity companies. Many of these new CIOs, as their research indicated, had been hired to replace CIOs whose ability to understand the new challenges and opportunities in the deployment of IT had become a liability in the presence of ever evolving technology.

These findings seem to contradict the fact that as CIOs advance upward through the organization's hierarchy during their careers, they tend to learn how to successfully influence others (Enns et al., 2003). Hence, three additional variables, length of tenure with the organization, length of tenure as a CIO, and number of years in the IT/MIS field, identify characteristics that may influence CIOs' leadership behaviors.

These additional variables (level of education, major, gender, length of tenure as a CIO, length of tenure with present organization, number of years in the IT/MIS field,

belonging to the top management team, frequency of informal interactions with members of the top management team and with the CEO, and having a close relationship with the CEO) help create a more complete picture of the leadership practices of CIOs in Fortune 500 companies in the United States. However, few of them, as reported in the literature, have accounted for the impact of followers on the leadership behaviors CIOs adopt.

<div align="center">Leading IT Knowledge Workers</div>

IT knowledge workers, as the creators and keepers of technology, are essential to every organization's ability to innovate and remain vibrant and viable. In the ever changing business environment of the information age, CIOs must not only be cognizant of the external customers of the IT organization but first and foremost fully understand the cultural identity and unique characteristics of IT knowledge workers. To this end, Glen (2003) offered one of the most illustrative examples of the need to understand the distinctions between the leadership of IT knowledge workers and the leadership of other employees.

Based on his experiences as a senior-level consultant in the IT industry, Glen (2003) proposed that the first step toward the effective leadership of IT knowledge workers is recognizing that they are different. Glen explained that not only are IT knowledge workers different, but their work is quite different as well (Glen, 2003). This difference is due to the imposition of patterns of thinking originated in the daily work of "those who engage with [knowledge workers] on an ongoing basis, and the

assumptions induced by work permeate the relationship among manager, leader, and follower" (Glen, 2003, p. 12).

Additionally, the shift in power-base caused by the increased availability of business-critical knowledge (Bartlett & Ghostal, 1995), a new psychological contract (James, 1997; Reich, 2001), and a new ownership of the means of production (Ashkenas et al. 1995; Bennis & Thomas, 2002; Hirschhorn & Gilmore, 1992; Mirvis & Hall, 1994) have created a new organizational environment in which it is not uncommon for subordinates to know more details about the work than their managers. This new reality reverses the historical basis of managerial power, and is the norm in present day IT organizations (Glen, 2003, pp. 64-65).

Regarding the relationship between the IT leader and the IT knowledge worker, leadership practices that rely on traditional sources of power are ineffective. Glen argued that most of the power in the traditional relationship between leaders and workers was based on the leader's ability to control employee behavior. However, since behavior plays an insignificant part on the technology-intensive work performed by IT knowledge workers, power becomes substantially less important (Glen, 2003, p. 13).

Therefore, effective leadership of IT knowledge workers must take into consideration the context and the content of the relationship with IT knowledge workers. The context of the leadership of IT knowledge workers represents the unique relationship among leaders, IT knowledge workers, and the work performed – whose highly abstract, creative, and technical aspects impose demands on both leaders and workers (Glen, 2003, pp. 14-15).

The content of IT knowledge worker leadership is different from traditional notions of command and control. The leader takes a more enabling role that (a) provides internal facilitation and external representation, (b) nurtures motivation, and (c) helps manage ambiguity. The primary task with which the leader is charged is to build and balance both the context and the content of the work to enable IT knowledge workers to function at peak levels of efficiency and effectiveness (Glen, 2003, p. 15).

Peak efficiency and effectiveness, manifest by highly motivated and productive workers, is achieved when IT knowledge workers "understand the mission, vision, and values of their overall organization; recognize technology's part in fulfilling the organization's goals' and feel that the values of the organization are consistently upheld by leaders and followers alike" (Glen, 2003, p. 16). Therefore, one of the key roles of the leader is to embody a defining narrative that helps IT knowledge workers "make sense of all the disparate facts of their work world fulfilling the essential human needs of the people who deliver technology" (Glen, 2003, pp. 16-17).

Balancing content and context does more than manage the inherent ambiguity of IT work. It helps IT knowledge workers find answers to fundamental questions about the environment, structure, and tasks that allow them to align these answers in a manner that fosters coherence and completeness (Glen, 2003, p. 222). Hence, leaders use compelling narrative and embodiment of the values espoused by the organization to symbolize the desired balance between context and content of the IT work for the knowledge worker.

Motivation

As far as the context is concerned, no aspect is more important than motivation. Glen (2003) contended that most leaders attempt to motivate IT workers with incentives and reward systems designed to elicit particular behaviors. These systems are ineffective because IT knowledge workers do not add value to the organization through their physical labor but through their thoughts and applied knowledge (Glen, 2003, p. 121). However, the only tool available to the leader is the manipulation of the work environment through extrinsic rewards.

Amar (2002) suggested that knowledge organizations should redesign their reward systems to fuse intrinsic and extrinsic rewards, thus creating extrinsic intrinsic rewards. Extrinsic intrinsic rewards have the property of being intrinsic in the short term and the potential of becoming extrinsic in the long term. The challenge for the leader, according to Glen (2003), is "to encourage intrinsic motivation and support it with the appropriate extrinsic motivation" (p. 108).

Among the 11 different extrinsic motivators recommended by Glen (2003), (a) offering free food, (b) controlling resource availability, (c) limiting group size, (d) designing interdependence, (e) engendering external competition, (f) encouraging isolation, (g) projectizing – establishing goals through projects, (h) showing a career path, (i) communicating significance, (j) managing meaning, and (k) selecting wisely, the most effective ones are selecting wisely and managing meaning. Selecting wisely is a tool for promoting intrinsic motivation because it affords the leader an opportunity to tap on participants' desire to be in a team or project in the first place. The management

of meaning supports the development of intrinsic motivation because it affords the leader an opportunity to reduce ambiguity by clarifying the meaning of the work in its broadest context, making sense of how it relates to others' work, the organization, as a whole, and even society in general (Glen, 2003, p. 110).

Besides management of reward systems, CIOs and other technology leaders should facilitate the flow of ideas and activities as a way of counter-balancing their weak position of power. This facilitative role allows leaders to establish and maintain the work environment by creating community and developing culture where it is "safe to make stupid comments sometimes without being dismissed by the group as an idiot" (Glen, 2003, p. 128).

Additionally, a productive work environment for knowledge workers has forums where everyone's point of view is being advocated effectively and fairly. This is a way of legitimizing decisions as well as of ensuring that the best decisions prevail (Glen, 2003).

Representation

Another specific role of the IT leader is to provide representation to the IT group. Representation includes (a) the acquisition of information; (b) the establishment and maintenance of alignment with the needs and goals of internal and external clients (Green, 2000; Hirschheim, Porra, & Parks, 2003; Jiang, Kelin, Van Slyke, & Cheney, 2003); (c) the securing of resources; (d) the management of expectations (Enns, 2000; Feeney, Edwards, & Simpson, 1992; Johnson, 2001; Peppard & Ward, 1999); (e) projecting prominence and securing prestige to the IT group through the leader's

interaction with others; (f) protecting the IT group from the world outside the IT organization, especially from the organization's politics; (g) insulating the IT group from distracting forces surrounding the IT organization, thus allowing IT knowledge workers to focus and concentrate on their work; and (h) attracting new IT knowledge workers to the IT organization (Glen, 2003).

Ambiguity

Perhaps no other aspect of the leadership of IT knowledge workers has been more intensely scrutinized than the leaders' ability to connect the IT function to the business objectives of the organization (Armstrong & Sambamurthy, 1999; Green, 2000; Kearns & Lederer, 2000, 2003; Vedder, Vanecek, Guynes, & Cappel, 1999). Glen (2003) depicted alignment of the IT function with the business as part of the environmental ambiguity within which IT knowledge workers operate. As effective leaders engage IT knowledge workers in open discussions of technical issues in an effort to communicate to them how the technology they develop affects and relates to the overall organization, they also support and promote motivation, since it clarifies to IT knowledge workers the organizational purpose, thus providing individual and group identity and meaning.

As far as the structural ambiguity of the IT work is concerned, the leader's role is to help define what will be done and how it will be done. Specifically, Glen (2003) suggested the establishment of clearly articulated goals for every project, so that there is clear communication of the business, technical, and organizational goals from the start. Clear communication includes the clear articulation of assumptions not only about the business, the technology, and the people involved, but also about the processes

structuring the project. The systematic observation of processes that avoids the extremes of rigidity and flexibility, help IT knowledge workers demonstrate clear team structures, task processes, and risk management skills that allow the project to progress toward its objective – the delivery of technology (Glen, 2003).

Work assignments are the prerogative of the leader. "Once the projects have been selected and processes defined, … leaders define the roles that must be played within a project and test these roles against a number of important criteria to ensure that they make sense" (Glen, 2003, p. 217). Criteria may also include more than technical expertise to determine assignment to a project in a specific role.

Another prerogative of the CIO or leader is to be the final judge of project attributes such as: completion, quality, acceptable IT workers' behavior, individual performance, and the rewards or punishments associated with performance (Glen, 2003, p. 217). These are fundamental tasks associated with the management of task ambiguity.

Trust

"Trust takes longer to develop and stems largely from the authenticity and consistency with which a leader embodies her stories" (Glen, 2003, p. 232). Earning the trust of a group of knowledge workers is independent of earning their respect, which may be associated with technical expertise. However, without trust, leaders are unable to motivate IT knowledge workers through a shared vision that will successfully guide the IT organization into the future. Consistency of narrative associated with the embodiment of the IT organization's values, create the necessary level of trust in the

leader that will allow the IT organization to effectively serve the changing needs of the overall organization.

Summary

In an environment of constant change, organizations have had to take advantage of information technology to maintain their chances of survival. The new reliance on technology has given the function of CIO a new importance - as a key business partner in the maintenance of a competitive advantage.

Another important factor that has changed in the Information Age regards the psychological contract between employers and employees. Knowledge workers no longer devote their loyalty to the organization in exchange for a paycheck, but rather expect that organizations offer them significant opportunities to put their knowledge to work. As far as information systems management is concerned, the transformational leadership behaviors of CIOs may provide culturally diverse followers the exceptional opportunities that they seek in order to commit to the organization.

The intent of the present research study is to report on the leadership characteristics of CIOs, utilizing Kouzes and Posner's (1997) exemplary leadership model, as they strive to achieve organizational goals while working with other organizational constituencies toward the survival of the organization in an increasingly competitive and fluid market place. In the following chapter, the reader will find the methodology that was used to complete this study.

CHAPTER III: METHODOLOGY

In this chapter, details of the methodology used in this research effort are presented. Following the restatement of the problem, including the research questions, there is the description of the research design as a preamble for the discussion of the general characteristics of the study's population. Sampling design and procedures are presented as part of the discussion of the study's population. Afterward, the description of the data collection instrument and a detailed discussion of their parametric characteristics are followed by the outline of data collection procedures. Data analysis precedes the notice regarding the protection of human subjects. The chapter is dutifully closed with a summary.

Restatement of the Problem

In light of the negligible amount of empirical research available on the leadership practices of CIOs, the researcher investigated the leadership characteristics of CIOs in Fortune 500 companies in the United States of America. The aim of this study was to describe the leadership behaviors of CIOs. One of the research assumptions concerning this population is that CIOs work through their companies' IT knowledge workers in an attempt to affect the performance of their organizations, in a rapidly changing and technologically rich environment, toward the attainment of competitive advantage.

Hence, the questions guiding this research study were:

1. What are the leadership behaviors exhibited by the CIOs of the Fortune 500 companies in the United States?

2. What is the relationship between the CIOs' reported leadership behaviors and their demographic characteristics (level of education, major, gender, length of tenure as a CIO, length of tenure with present organization, number of years in the IT/MIS field, belonging to the top management team, frequency of informal interactions with members of the top management team and with the CEO, and having a close relationship with the CEO)?

The purpose of the first research question was to identify the leadership behaviors of CIOs in general and concerning IT knowledge workers in particular. Participants were asked to complete the Kouzes and Posner's (2001) LPI-Self, a self-administered instrument (Appendix A) used to identify leadership behaviors. This instrument is fully described in the Instrumentation section of this chapter. In addition, a set of nine items was added to the LPI-Self to identify leadership behaviors specific to the context of IT knowledge work. These nine items stemmed from Glen's (2003) framework for leadership of IT knowledge workers.

The purpose of the second question was to identify the relationship between the characteristics of CIOs identified in the literature and their leadership behaviors. Moreover, this question was aimed at clarifying the extent to which these characteristics relate to leadership behaviors.

Research Design

This survey research consisted of the collection of data from a randomly selected subset of CIOs of Fortune 500 companies in the United States. Its aim was to describe and assess the leadership practices of these top level IT leaders, thus contributing to the body of knowledge about this population.

Based on the Tailored Design Method (TDM), "a set of procedures for conducting successful self-administered surveys that produce both high quality information and high response rates" (Dillman, 2000, p. 29), this research effort utilized a multiple contact strategy, which took advantage of postal mail and e-mail to deliver surveys. The TDM was chosen because it offers researchers an opportunity to "shape elements of design and implementation in ways that take into account critical differences in survey populations, sponsorship, and content. It then builds on these differences in order to shape the most effective method of achieving a response" (Dillman, 2000, p. 25).

The TDM is based on the social exchange theory of human interaction, which postulates that actions of individuals are motivated by the expected return these actions are to bring based on (a) rewards, representing what individuals expect to gain from an activity; (b) costs, representing the resources expended to obtain the rewards; and (c) trust, representing individuals' expectations that the expected rewards will outweigh the costs they expect to incur (Dillman, 2000, p. 14). Hence, TDM's goal is to reduce overall survey error caused by (a) sampling error, which results from surveying only some (the sample) and not all elements of the population; (b) coverage error, which

results from failing to include all elements of the population in the sample frame; (c)

measurement error, which results from poor instrumentation; and (d) non-response

error, which results from having a significant number of elements of the sample not

responding to the survey when those not responding have different characteristics from

those who actually responded to the survey (Dillman, 2000, pp. 9-10).

Sampling Error

Sampling error is the difference between information obtained from the sample

and information obtained from the whole population. Sampling error is inversely

proportional to the sample size since "sample size and sampling error are negatively

correlated" (Schloss & Smith, 1999, p. 166). According to the formula for estimating the

sample size proposed by Dillman (2000, p. 206), a sample size of 217 is the minimum

required number of responses for a representative sample for a population of 500

individuals that allows for generalizable results within a confidence level of 95% (α =

.05), assuming a .05 amount of acceptable sampling error.

Therefore, given the trend of low response rates over time reported in survey

studies (Boyer, Olson, Calantone, & Jackson, 2002; Klassen & Jacobs, 2001; Sheehan,

2001; Watt, 1997), a sample size of 250 individuals was used. Further, to avoid

systematic bias in the final sample, sample selection and non-response issues need to be

addressed. The sampling procedures are presented in greater detail in the section

entitled "Participants of the Study".

Measurement Error

Issues of measurement error directly related to the survey instrument are discussed in the Instrumentation section. The authors of the LPI-Self have described the questionnaire design and validation procedures (Kouzes & Posner, 1997, 2001) aimed at mitigating this issue.

Non-response Error

Non-response error is perhaps the greatest threat to the data quality of survey research. Non-response error is inversely proportional to the response rate. The literature on research methodology has identified response rates of survey studies to be decreasing over time (Boyer, Olson, Calantone, & Jackson, 2002; Klassen & Jacobs, 2001; Sheehan, 2001; Watt, 1997). Sheehan (2001) analyzed the response rates to 31 academic e-mail surveys and reported an average response rate of 36.86% from 1986 to 2000, which seems to be following the decreasing pattern of survey response rates overall in the United States, perhaps caused by survey fatigue (Gofton, 1999).

Due to low response rates in research studies with similar designs, the TDM was selected as a means to encourage higher response rates through (a) advanced contact, (b) follow up, (c) incentives, (d) personalization, and (e) sponsorship (Dillman, 2000). The TDM has been used in postal, e-mail, and web-based surveys and has consistently contributed to the achievement of response rates higher than 37% (Braithwaite, Emery, Lusignan, & Sutton, 2003; Yun & Trumbo, 2000).

Contact with participants

As discussed in the Data Collection section, advanced contact and follow-up notices were incorporated in the process. Participants received a pre-notification letter (Appendix B) inviting them to participate in the study and offering them an option to receive the questionnaire by postal or e-mail. Following pre-notification, participants were sent the questionnaire (Appendix A) accompanied by a cover letter (Appendix C) with instructions on how to fill out and return the instrument. The cover letter to the questionnaire was also designed to help increase response rates through the intentional use of the university letterhead (sponsorship) and the use of addressees' first and last names in the correspondence (personalization). Following the distribution of the questionnaire and cover letter, participants received follow-up notices (Appendix D), thanking them for their participation and encouraging them to complete the survey if they had not yet done so.

Incentives

There were no monetary incentives to participate in this study. It was the hope of the researcher that issue salience would play a part in motivating participants to respond to the questionnaire. Shannon, Johnson, Searcy, and Lott (2002) reported that lack of tangible rewards would not prevent individuals from responding to surveys, even though MacElroy (2000) seemed to suggest that "surveys that have an [*sic*] known incentive of approximately $20 will probably yield the best results" (¶ 12). Therefore, the only extrinsic incentive offered for participation in this study was an executive

summary of the findings that participants may peruse as they see fit, within the limitations warranted by copyright protection.

Personalization

Personalization was achieved, to the extent allowed by the technology, in the messages and in ensuring that participants got follow-up notices that reflected the true status of their responses. Each hard copy correspondence contained each participant's first and last names. The researcher took advantage of current word processing technology that allowed form letters to be individualized.

In the case where participants chose to receive the instrument by e-mail, each message was addressed to the individual participant as well. All efforts were made to guarantee confidentiality, as a means to assuage participants' concerns about the lack of anonymity (in case they chose e-mail to receive and return the questionnaire), since all data collected through the instrument were reported in the aggregate and not by individual participant (Sheenan & Hoy, 1999). Even though current e-mail software supports functions that can make the returning of e-mail anonymous, this function prevented the researcher from making further adjustments to the follow up strategy (Yun & Trumbo, 2000), which relegated the system for data collection suggested by the TDM useless (Dillman, 2000).

All questionnaires completed on paper were guaranteed anonymity since there are no spaces provided on the instrument for statements to be written. Also, there was no verbal or written request made of the participants to submit written statements on

the front or reverse side of the instrument, or on a separate piece of paper; nor to write

their names on the instrument.

Sponsorship

Sponsorship was used as a tool for pursuing high response rates.

Correspondence (Appendices B, C, and D), was printed on the School of Leadership

and Policy Studies' letterhead. The text contained the name and contact information of

the researcher, the dissertation chair, and of the officer of the Human Subjects Review

Board (HSRB) at Bowling Green State University (BGSU). Additionally, the e-mail

address listed for contact with participants had an ".edu" suffix, which denotes

affiliation with an educational institution. These may have proven to be effective

artifacts toward differentiating e-mail sent by the researcher from spam.

Other Considerations

The advantages and disadvantages of using e-mail during the data collection

process, especially in survey research projects, have been documented in the literature.

Perhaps the most significant advantages are that "response distributions do not vary

according to whether an electronic or traditional survey is used" (Layne, DeCristoforo,

& McGinty, 1999, p. 230); and that survey takers who are pre-contacted are more likely

to respond to the survey instrument (Cook, Heath, & Thompson, 2000).

Cost reduction was one of the premier advantages found in the literature (Quinn,

Robinson, & Parham, 1998; Roberts, 1999; Roselle & Neufeld, 1998; Shannon, et al., 2002;

Sheehan & Hoy, 1999). "[E]mail surveys provide a more efficient alternative to

conventional survey methods, permitting questionnaires to be distributed at greater

speed and less expense" (Best & Krueger, 2002, p.87). Cost reductions not only meant monetary savings, as the cost per response is inversely proportional to the sample size (Watt, 1997), but also meant faster response times (MacElroy, 1999; Medlin & Whitten, 2001; Yun & Trumbo, 2000). Other advantages included the use of e-mail for pre-notification or follow-up purposes (Roselle & Neufeld, 1998; Shannon et al., 2002; Yun & Trumbo, 2000) and data compatibility with existing software packages (Dillman, 2000; Shannon et al., 2002).

Conversely, perceived disadvantages about e-mail surveys included (a) respondents' knowledge of, and expertise with, technology, since individuals less comfortable with the technology would be less likely to respond to the survey; (b) electronic surveys would allow less personalization than traditional mail surveys; (c) respondents would be more likely to make mistakes when responding; (d) responses would be influenced by issues of social desirability; (e) respondents would not complete as many items as they might have had in a pencil-and-paper survey; and (f) concerns that respondents would not respond to sensitive issues or might not even respond at all due to fears about anonymity (Shannon, et al., 2002). These negative perceptions represent valid concerns about threats to the effectiveness of surveys in general, while others are specific to the use of e-mail.

Some of these expressed concerns, however, either have been minimized through a careful research design, or simply do not apply to this study. For instance, respondents' knowledge of, and expertise with, technology is a concern that does not apply to this population nor adversely influence coverage error, since e-mail was only

used as an option (Klasses & Jacobs, 2001). Regarding the concern for respondents making mistakes when answering an e-mail questionnaire, Sheehan and Hoy (1999) reported that on a national and international basis there were relatively few problems with individuals being physically capable of completing an e-mail survey. Again, considering the specific population of this study, it was safe to assume that the ubiquitous nature of e-mail in the business environment where participants operate would enable them to complete the instrument via e-mail without any problems if they so chose.

<div align="center">Participants of the Study</div>

The sample frame for this study was comprised of the CIOs of Fortune 500 companies in the United States, derived from a target population of CIOs working in business and industry in the United States. These senior managers were corporate–level executives, responsible for the overall implementation of the information technology strategies and infrastructure of their companies, who may or may not participate in the top management team of their respective organizations.

The sample was randomly selected from the rank of Fortune 500 companies published in the *Fortune* magazine website in September 2003. Each member of the Fortune 500 rank was assigned a three-digit, consecutive number ranging from 001 to 500 that corresponded to its rank. Hence, the company in the first place in the Fortune 500 rank was assigned number 001. This substitute label allowed for the utilization of a table of random numbers for the selection of companies whose CIOs were invited to participate in this study.

Utilizing a table of random numbers, the researcher selected a random place to start (Schloss & Smith, 1999). Then, the researcher read the first three digits of each number and proceeded from top to bottom, left to right on the table of random numbers (Minium, 1970) until 300 individual companies had been selected. Only three-digit numbers between 001 and 500 were used to select 300 individual companies whose CIOs composed a sample of 250 (the initial 250 were part of the sample while the remaining 50 were reserved for substitution), which is of sufficient size to reduce the sampling error for this population (Dillman, 2000). When a three-digit number from the list of random numbers was greater than 500, the researcher proceeded down the list of random numbers until a three-digit number within the stipulated range was found.

Once the complete list of 250 CIOs was assembled, these participants were invited to join the study, according to the data collection procedures described below. When there was a need to supplement this sample, due to refusal to participate, the researcher replaced individuals in the sample using the reserved lot of 50 CIOs randomly selected initially – thus completing the initial draw of 300 selected individuals.

<center>Instrumentation</center>

The Leadership Practices Inventory Self (LPI-Self), initially developed by Kouzes and Posner in 1988, originated from responses to the Personal-Best Leadership Experience Questionnaire. After securing permission from the copyright owners (Appendices F & G), the LPI-Self's revised version (Kouzes & Posner, 2001) was used as the survey instrument for this study. The 30-item LPI-Self contains five scales, each

measuring one of the following leadership behavior constructs: (a) challenging the process, (b) inspiring a shared vision, (c) enabling others to act, (d) modeling the way, and (e) encouraging the heart.

Each item contains a statement that describes each of the various leadership actions and behaviors on a 10-point Likert-type scale. A higher value represents a more frequent use of the leadership behavior. The ten points are attributed as follows: (1) Almost never do what is described in the statement; (2) Rarely; (3) Seldom; (4) Once in a while; (5) Occasionally; (6) Sometimes; (7) Fairly often; (8) Usually; (9) Very frequently; and (10) Almost always do what is described in the statement (Kouzes & Posner, 2002, p. 3).

Reliability

Reported internal reliabilities for the LPI range from .81 to .91 (Chronbach's alpha), with the reliability for the scales of the LPI-Self ranging from .75 to .87 (Kouzes & Posner, 2002). Additionally, the authors reported that "regression analysis was performed, with leader effectiveness as a dependent variable and the five leadership practices as independent variables – and yielded a significant regression equation ($F = 318.88$, $p < .0001$)" (Kouzes & Posner, 1997, p. 349). Moreover, findings are "relatively consistent across people, genders, and ethnic backgrounds, as well as across various organizational characteristics" (Kouzes & Posner, 1997, p.351). "Test-retest reliability for the five leadership practices has been consistently strong, generally at the .90 level or above" (Kouzes & Posner, 2002, p. 8).

Validity

Kouzes and Posner (2002) reported that "the LPI has excellent concurrent validity, and leadership scores are consistently associated with important aspects of managerial and organizational effectiveness" (p. 15). In a 1997 study, the leadership practices identified in the instrument explained 55% of the variance (adjusted R^2 = .756) around reports' assessment of their managers' effectiveness (Kouzes & Posner, 1997, p. 350). Additionally, "respondents have found the LPI to have excellent face validity" (Kouzes & Posner, 2002, p. 14) since the items on the instrument are related to the statements made by workshop participants about their own and others' leadership practices.

Further evidence of the LPI's construct validity is provided by the instrument's discriminant validity. Kouzes and Posner (2002) reported that the assessment of how well the scores could group managers into various performance-based categories was performed. Utilizing 85% of the sample of the LPI-Observer responses to create a canonical discriminant function resulted in one function that "correctly classified 92.6% of the known cases and 77.8% of the cases in the holdout sample" (Kouzes & Posner, 2002, p. 16).

Additional Items

Pursuant to Glen's (2003) proposition that the leadership of IT knowledge workers was different from the leadership of other workers due to the nature of the work and the unique characteristics of the workers, an additional construct (leadership of IT knowledge workers) was brought into the Kouzes and Posner's LPI in the form of

nine statements. These nine statements were derived from Glen's (2003) leadership of IT knowledge workers' framework. They are:

(a)   I represent the IT workers to organizations and individuals outside the IT division;

(b)   I facilitate the flow of ideas and activities;

(c)   I engage IT workers in open discussions about technical issues, to link the technology and the business sides of the organization;

(d)   I organize IT work into projects that have clear team structures, task processes, and risk management;

(e)   I function as the final arbiter for completion of IT projects;

(f)   I tell compelling stories of coherence and consistency;

(g)   I embody the ideas and values of the organization;

(h)   I define IT project's processes and assign individuals to play roles in them; and

(i)   I assign IT workers to projects based on their initial interest in the technology, the business, or a role in the project.

Each item is associated with a 10-point Likert-type scale identical to the one originally designed by Kouzes and Posner' LPI. Moreover, these additional nine items were not randomly dispersed among the 30 original items of the LPI, but added to the bottom of the LPI.

Content validity for the leadership of IT knowledge workers construct was further ascertained by expert review of the proposed items. Similarly, expert review

was used to establish the content validity of an additional set of nine questions

designed to collect demographic data.

The first item questioned membership in the top management team. Possible

answers were yes and no. The second item questioned to whom the CIO reports. It

listed five options (CEO, Senior VP, CFO, COO, Executive VP), plus a fill-in option in

case participants did not report to any of the above mentioned officers.

The third and fourth items inquired about the frequency with which the CIO had

informal contacts with the CEO and with other members of the top management team,

respectively. Response options were daily, weekly, monthly, few times a year, and once

a year.

The fifth item inquired about the CIO's gender. Options were male or female.

The sixth item inquired about the CIO's level of education and the major. Participants

were asked to mark all that apply (ranging from some Junior College/Community

College to Doctoral Degree, including an open ended option for additional degrees not

accounted for in this category) and to write the name of the major completed at each

level.

The seventh, eighth, and ninth items inquire about the length of tenure of the

CIO in the IT/MIS industry, with the organization, and as a CIO, respectively.

Participants were asked to fill in the number of years that provided the best answer for

each item.

Variables

The dependent variables used in this study were:

Challenging the Process – a leadership behavior in which leaders search for opportunities to change the status quo. Leaders look for ways to improve the organization and embrace risk-taking and experimentation, as well as mistakes and failures, as learning opportunities and as inevitable steps in the promotion of change (Kouzes & Posner, 1997).

Inspiring a Shared Vision – a leadership behavior in which leaders build, shape, and communicate the unique vision of what the organization can become. Leaders relentlessly communicate this vision with the organization's constituencies seeking to build a common direction that meets organizational and individual goals (Kouzes & Posner, 1997).

Enabling Others to Act – a leadership behavior in which leaders foster collaboration and teamwork by involving others in the process, strengthening and enabling others to achieve their best performance. Leaders understand that extraordinary performance can only be achieved in an atmosphere of trust and dignity (Kouzes & Posner, 1997).

Modeling the Way – a leadership behavior in which leaders set standards of excellence and model these standards for others to follow. Leaders establish the ethical principles by which constituents, colleagues, and customers should be treated and the way goals should be pursued. This behavior also serves as a motivator as it removes the barriers of bureaucracy that may impede change, celebrates small successes, and creates opportunity for victory (Kouzes & Posner, 1997).

Encouraging the Heart – a leadership behavior in which leaders recognize contributions to the team efforts, and reward and celebrate extraordinary performance (Kouzes & Posner, 1997).

Leading IT Knowledge Workers – are those that represent the nine leadership behaviors identified by Glen (2003) and described earlier in the *Additional Items* section of the Instrumentation discussion.

The independent variables used in this study were:

Membership in the top management team – true dichotomous variable, with respondents answering "Yes" or "No".

Level of education – is an ordinal variable with seven ranks: "some Junior College/Community College" indicates the lowest rank, followed in ascending order by "Junior College/Community College", "some University/College courses", "Bachelor's degree", ""some Graduate courses", "Graduate degree", and "Doctorate" indicating the highest rank. Additionally, respondents had an opportunity to fill in an additional category to fit their case. The researcher determined the rank of the filled in response accordingly. For the purposes of data analysis, the researcher assigned values to the categories; one for the lowest educational level ("some Junior College/Community College") and seven for the highest level "Doctorate".

Major – nominal scale, but the items were open ended for the respondent. To facilitate discussion, the researcher categorized the major as "technical" or "non-technical".

Gender – true dichotomous variable, with respondents answering "female" or "male".

Length of tenure as a CIO – ratio scale measuring the number of years.

Length of tenure with the present organization - ratio scale measuring the number of years.

Number of years in the IT/MIS field - ratio scale measuring the number of years.

Frequency of informal interactions with members of the top management team – ordinal 5-point scale where respondents were to indicate if they have informal interactions with members of the top management team "daily", "weekly", "monthly", "few times a year", or "once a year".

Frequency of informal interactions with the CEO - ordinal 5-point scale where respondents were to indicate if they have informal interactions with the CEO "daily", "weekly", "monthly", "few times a year", or "once a year".

Reporting to the CEO – nominal scale where respondents were able to indicate if they report to the "CEO", the "Senior VP", the "CFO", the "COO", the "Executive VP", or to "Other" company official whom they are asked to identify. For the purposes of data analysis, this variable was dichotomized into reporting to the CEO or reporting to another officer other than the CEO.

Data Collection Procedures

The concerns expressed in the Research Design discussion informed the data collection procedures described here. Data collection started after the researcher received approval from the HSRB, represented by the Office of Compliance at BGSU.

The researcher used postal and electronic mail for Instrument distribution and communication with participants. All postal mailings were first-class.

As suggested by Dillman's (2000) TDM, the first step in the data collection procedure involved pre-notifying subjects (Appendix B) with an invitation to participate in the study. In the invitation, according to HSRB guidelines, participants were given an opportunity to refuse to participate in the study, as well as the option to receive the instrument by e-mail if they chose to participate in the study and returned the enclosed form where their choices were communicated.

Pre-notification consisted of an invitation to participate in this study that not only explained the purpose of the study and provided participants with an incentive to participate (an executive summary of the research findings), but also reaffirmed the confidentiality of their responses. Those who indicated that they did not want to participate were removed from the list and replaced by those in the pool of 50 randomly selected replacement participants - as described in the Sampling Procedure (Boyer, Olson, Calantone, & Jackson, 2002; Schuldt & Totten, 1999; Sheehan & Hoy, 1999), since surveys suffer from low response rates (Klassen & Jacobs, 2001).

Within a week to ten days of mailing the invitation, the researcher sent out the instrument, the cover letter, and the business reply envelope. Those participants who indicated preference for receiving the instrument by e-mail were sent an individual e-mail message containing attachments with the cover letter, designed for this purpose, and the instrument.

One week after mailing out the instrument, subjects who had not yet indicated their unwillingness to participate in the study were sent a thank you note (Appendix H). "This mailing expresses appreciation for responding, and indicates that if the completed questionnaire has not yet been mailed it is hoped that it will be mailed soon" (Dillman, 2000, p. 151).

A replacement of the instrument was mailed one to two weeks after the thank you notice. The replacement letter and instrument were only mailed to non-respondents, or all CIOs identified in the sample who had neither returned the Pre-notification letter nor the instrument.

A final contact with all non-respondents was attempted two to four weeks after the replacement of the instrument. This final contact was made by priority US mail, and included those participants who had indicated preference for receiving the instrument by e-mail, but who had been identified as non-respondents.

As surveys were returned, the researcher kept a record of them – through the numerical code printed on each return envelope – so that follow-up messages could be tailored to each participant's specific situation (Dillman, 2000). In the event of instruments returned by e-mail, each returned instrument was printed after all identifying markings that could have been added by the respondent had been removed (Best & Krueger, 2002). All returned surveys were kept in a safe and secure place accessible only by the researcher until the completion of the data collection procedures. Additionally, after printing a hard copy of the survey instrument returned by e-mail, the message containing it was deleted from the researcher's e-mail box.

Data Analyses

Microsoft® Excel 2000 and Statistical Package for Social Science (SPSS®) were the software packages used to analyze data. Confidence levels of 95% (α =.05) were set for all statistical tests.

To address the first research question, the researcher utilized descriptive statistics to summarize, organize, and simplify data (Schloss & Smith, 1999; Shaughnessy & Zechmeister, 1997). Further statistical analysis included multiple regressions with Leadership of IT knowledge workers as criterion (dependent variable) and the five leadership behaviors (modeling the way, inspiring a shared vision, challenging the process, enabling others to act, and encouraging the heart) as predictors (independent variables).

Multiple regressions were also used to address the second research question. The objective was to determine "which if any of these independent variables is significantly correlated with the dependent variable, taking into account the various correlations that may exist between the independent variables" (Lea, 1997, p. 2).

Protection of Human Subjects

The researcher complied with all policies and procedures set forth by the HSRB at BGSU. Participants were informed that their participation was voluntary and that their responses would be held in confidence, with results being reported in the aggregate without identification of specific individual participants. They indicated their consent to take part in the study and in the publication of its results as a dissertation and as other subsequent publications or forms of dissemination by reading the

invitation to participate in the study, the cover letter, and by choosing to complete and return the instrument.

Summary

The methodology for this research study was presented in this chapter. It contained (a) the restatement of the problem and the research questions, (b) the description of the research design, (c) a discussion of the population, (d) sampling design and procedures, (e) instrumentation, (f) data collection procedures, (g) data analysis, and (h) the protection of human subjects notice. In the following chapters the results and a discussion of its implications, including recommendations for future research will be presented.

CHAPTER IV: RESULTS

Results from the data collected for this study are presented in this chapter. For improved readability, the chapter is organized according to the research questions guiding this study. These follow a brief summary of respondents' demographics. From the studied population of 500 CIOs, a pool of 300 randomly selected prospective participants (250 for the sample and 50 for replacement) was generated. After proceeding with the data collection procedures described in the previous chapter, 23 usable responses were collected, with a response rate of 9.2%.

From the initial 250 invitations to participate in the study, 38 prospective participants declined the invitation citing reasons ranging from company policy to personal preference. Another group of 12 invitations were returned because (a) the addressee was either no longer with the company (3 invitations); (b) company restructuring had eliminated the position of CIO altogether (2 invitations); or (c) the function had been split between two or more new employees who did not feel knowledgeable/comfortable enough to participate in the study (7 invitations). These refusals were replaced with new names from the replacement pool of 50 names and generated five usable responses.

In order to increase the response rate, the researcher attempted to contact non-respondents by telephone. Attempts to contact a group of 25 prospective participants who had been sent questionnaires and follow up correspondence were made. Of these, 16 refused to participate in the study, five mentioned company policy that prevented them from participating in similar studies, and four mentioned equity issues as a reason

to choose to decline participation in any such studies. These respondents mentioned that they regularly received a high volume of requests to participate in studies and since their schedules prevented them from participating in all of them equitably, then they did not participate in any. The researcher received many good wishes for a successful conclusion of the study, but no actual help in completing it.

Since the response rate of 9.2% (23 usable responses) could not be improved on, the researcher selected another group of non-respondents to follow up on in order to ascertain that the responses gotten thus far were representative of the sample and thus reduce sampling error and non-response error. A group of 50 non-respondents was contacted by telephone and e-mail (five participants). The objective of these contacts was to collect more data over the telephone or email so that a second set of responses could be compared to the initial 23 usable responses to ensure that the researcher was dealing with the same population.

The great majority (36 participants) refused to participate in the study altogether. They made it clear to the researcher, through their administrative assistants, that they were not available to take part in such endeavors either because corporate policy forbade it (21 respondents), or because they were too busy to honor the numerous requests they received that they chose not to participate in any study (9 respondents). The researcher was able to collect one more usable response and is yet to hear from the other five offices contacted for this part of the study. Data from this single respondent were not used in the study since it does not provide enough data to compare with the original 23 usable responses volunteered during the data collection process.

Demographic Statistics

Participants reported varied levels of education. Most respondents had completed either a Bachelor's degree (eight respondents) or a Master's (nine respondents). Additionally, four respondents reported completing some graduate level work; whereas one respondent each reported either having a Doctorate or an Associate's degree.

With regards to college majors, most participants reported having earned a degree in either business (six respondents) or computer science (four respondents). The largest group of degrees came from the technical fields of mathematics or engineering (nine respondents). Only one respondent had a degree in social sciences (education) and there were three questionnaires with no indication of major at all.

Concerning gender, the overwhelming majority of respondents (22 of 23) were males. Gender did not correlate with any other demographic variable in this study. Concerning contact with the CEO or the Top Management Team (TMT), most respondents reported having at least weekly contact with their organizations' CEOs and daily contact with other members of the TMT. Additionally, 16 respondents indicated that they belong to the TMT in their organizations.

Typically, CIOs in this study had eight years of experience in the IT industry ($\overline{X}$ = 19.8, sd = 9.4), with responses ranging from 2 to 35 years of experience. On average, CIOs reported being with their current organizations for about 11 years (sd = 9.7). The most frequently reported tenure with their current organizations was five years (mode), with answers ranging from one to 35 years. As far as their tenure as CIOs, responses

indicated that participants had held the position for an average of 4 years (sd = 2.6, mode = 2), with answers ranging from one to 12 years.

<div align="center">Research Question 1</div>

What are the leadership behaviors exhibited by the CIOs of the Fortune 500 companies in the United States?

This distinct group of individuals also identified some leadership behaviors as framed by the first question. Leadership behaviors consistent with the construct *Challenging the Process* were the primary area of strength of 12 of the 23 respondents. Following, seven respondents identified the leadership behaviors consistent with the construct *Encouraging the Heart* as their primary area of strength. The leadership behaviors consistent with the constructs *Inspiring a Shared Vision* and *Modeling the Way* were identified as the primary area of strength by four of the 23 respondents respectively; whereas the behaviors consistent with the construct *Enabling Others to Act* were identified as the primary area of strength by two respondents.

Conversely, 15 respondents indicated that behaviors consistent with the construct *Enabling Others to Act* constituted an area of their leadership practices that they needed to improve. Behaviors consistent with the *Modeling the Way* were the second highest construct in need of work, with eight respondents. Table 2 summarizes the top rankings.

Table 2

Top Ranked Leadership Behaviors from the LPI

	First	Second	Third	Fourth	Fifth
Challenging the Process	12	7	**3**	-	1
Inspiring a Shared Vision	**4**	7	7	**5**	-
Enabling Others to Act	**2**	**1**	5	8	7
Modeling the Way	**4**	**6**	5	6	2
Encouraging the Heart	7	6	**6**	2	2

Note: Table entries represent frequencies.

With regard to the leadership behaviors identified by Glen (2003), the mode for most responses was "very frequently". When considered individually, 21 respondents indicated that they usually, very frequently, or always represented IT workers to organizations and individuals outside the IT division. Similarly, 22 respondents indicated that they facilitated the flow of ideas and activities within the IT division just as frequently.

As far as engaging IT workers in open discussions about technical issues to link the technology and the business sides of the organization, only four respondents indicated that they did it less than usually, with 12 respondents indicating that they did it very frequently. Likewise, only one respondent reported being able to organize IT work into projects that have clear team structures, task processes, and risk management fairly often, with the remainder (22 respondents) reporting doing so usually, very frequently, or always.

As far as functioning as the final arbiter for completion of IT projects, three CIOs responded that they are able to do so sometimes or fairly often, while 16 reported doing

so very frequently or always. Concurrently, 15 respondents agreed that they tell compelling stories of coherence and consistency either very frequently or always, with the remaining eight reporting to do so usually.

Only one respondent believed to embody the ideas and values of the organization only sometimes, whereas the remaining 22 believe to do so usually, very frequently (11 respondents) or always. As far as defining IT projects' processes and assigning individuals to play roles in them, 21 respondents stated doing so either usually, very frequently (13 respondents) or always.

As far as assigning IT workers to projects based on their initial interest in the technology, in the business, or in a role in the project; 15 respondents reported doing so very frequently. None of the respondents described doing so less frequently than "fairly often".

To further explore the relationships between these leadership behaviors, Pearson product-moment correlation coefficients were calculated and tested at α = 0.05 (two-tailed). Facilitating the flow of ideas and activities was found to be statistically, but moderately, correlated with embodying the ideas and values of the organization ($r = 0.54$; $p \leq .01$), explaining about 26% of the variance between these behaviors. The results are presented in Table 3.

Table 3
Correlation of Glen's Nine Leadership Behaviors

Behaviors	I represent the IT workers to organizations and individuals outside the IT division (Behavior 1)	I facilitate the flow of ideas and activities (Behavior 2)	I engage IT workers in open discussions about technical issues, to link the technology and the business sides of the organization (Behavior 3)	I organize IT work into projects that have clear team structure, task processes, and risk management. (Behavior 4)	I function as the final arbiter for completion of IT projects (Behavior 5)	I tell compelling stories of coherence and consistency (Behavior 6)	I embody the ideas and values of the organization (Behavior 7)	I define IT project's processes and assign individuals to play roles in them (Behavior 8)	I assign IT workers to projects based on their initial interest in the technology, the business, or a role in the project (Behavior 9)
1	1								
2	-0.06	1							
3	-0.03	0.27	1						
4	0.25	0.17	0.27	1					
5	0.27	0.10	0.08	0.77**	1				
6	0.11	-0.03	0.004	0.48*	0.25	1			
7	-0.16	0.53**	0.40	0.23	0.24	0.20	1		
8	0.24	0.16	0.63**	0.27	0.12	0.17	0.29	1	
9	0.24	-0.09	0.27	0.53**	0.59**	0.41*	0.02	0.57**	1

* $p \leq .05$, two tailed
** $p \leq .01$, two tailed

Similarly, another moderate correlation was found between engaging IT workers in open discussions about technical issues to align the technology and the business sides of the organization and defining IT project's processes and assigning individuals to play roles in them (r = 0.63; p ≤ .01, two-tailed), explaining about 40% of the variance between these behaviors. Additionally, defining IT project's processes and assigning individuals to play roles in them was also found to moderately correlate with assigning IT workers to projects based on their initial interest in the technology, in the business, or in a role in the project (r = 0.57, p ≤ .01, two-tailed), accounting for about 33% of the variance between these behaviors.

Organizing IT work into projects that have clear team structures, task processes, and risk management was found to be correlated with both telling compelling stories of coherence and consistency (r = 0.48, p ≤ .02, two-tailed) and assigning IT workers to projects based on their initial interest in the technology, in the business, or in a role in the project (r = 0.53, p ≤ .01, two-tailed). These statistically significant but moderate correlations helped explain about 24% of the variance between organizing IT work into projects that have clear team structures, task processes, and risk management and telling compelling stories of coherence and consistency; as well as about 29% of the variance between organizing IT work into projects that have clear team structures, task processes, and risk management and assigning IT workers to projects based on their initial interest in the technology, the business, or a role in the project.

Assigning IT workers to projects based on their initial interest in the technology, in the business, or in a role in the project was further found to be positively correlated

with the IT leader being a final arbiter for completion of IT projects ($r = 0.59$, $p \leq .01$, two-tailed), and having the IT leader tell compelling stories of coherence and consistency ($r = 0.41$, $p \leq .05$, two-tailed). Once again, these statistically significant but weak correlations helped explain about 36% and 17% of the variance between assigning IT worker to projects based on their initial interest and the other two variables, respectively.

<div align="center">Research Question 2</div>

What is the relationship between the CIOs' reported leadership behaviors and their demographic characteristics (level of education, major, gender, length of tenure as a CIO, length of tenure with present organization, number of years in the IT/MIS field, belonging to the top management team, frequency of informal interactions with members of the top management team and with the CEO, and having a close relationship with the CEO)?

The relationship between gender and the leadership behaviors could not be determined. There was only one female respondent, and therefore, not enough data to calculate a reliable relationship between gender and any of the leadership behaviors.

As far as other demographic characteristics were concerned, multiple regression analyzes and analyzes of variance did not reveal any statistically significant relationships between these characteristics and the reported leadership behaviors due to the low response rate. The statistics concerning (a) level of education; (b) length of tenure as a CIO; (c) length of tenure with present organization; (d) number of years in the IT/MIS field; and (e) the frequency of informal interactions with members of the TMT and with the CEO are summarized in Tables 4, 5, 6, 7, 8 and 9, respectively.

Table 4

Relationship between Level of Education and Leadership Behaviors

Regression Statistics					
Multiple R	0.81				
R Square	0.66				
Adjusted R Square	0.07				
Standard Error	1.13				
Observations	23				

ANOVA

	df	SS	MS	F	p
Regression	14	19.86	1.42	1.12	0.45
Residual	8	10.14	1.27		
Total	22	30			

Table 5

Relationship between Length of Tenure as CIO and Leadership Behaviors

Regression Statistics					
Multiple R	0.77				
R Square	0.60				
Adjusted R Square	-0.10				
Standard Error	2.70				
Observations	23.00				

ANOVA

	df	SS	MS	F	p
Regression	14.00	87.82	6.27	0.86	0.62
Residual	8.00	58.40	7.30		
Total	22.00	146.22			

Table 6

Relationship between Length of Tenure with Organization and Leadership Behaviors

Regression Statistics	
Multiple R	0.81
R Square	0.65
Adjusted R Square	0.05
Standard Error	9.49
Observations	23

ANOVA

	df	SS	MS	F	p
Regression	14	1362.12	97.29	1.08	0.48
Residual	8	720.60	90.08		
Total	22	2082.72			

Table 7

Relationship between Years in the IT/MIS Industry and Leadership Behaviors

Regression Statistics	
Multiple R	0.58
R Square	0.34
Adjusted R Square	-0.82
Standard Error	12.70
Observations	23

ANOVA

	df	SS	MS	F	p
Regression	14	662.71	47.34	0.29	0.98
Residual	8	1290.59	161.32		
Total	22	1953.30			

Table 8

Relationship between Frequency of Interactions with the TMT and Leadership Behaviors

Regression Statistics	
Multiple R	0.76
R Square	0.58
Adjusted R Square	-0.15
Standard Error	0.78
Observations	23

ANOVA

	df	SS	MS	F	p
Regression	14	6.77	0.48	0.79	0.66
Residual	8	4.89	0.61		
Total	22	11.65			

Table 9

Relationship between Frequency of Interaction with CEO and Leadership Behaviors

Regression Statistics	
Multiple R	0.80
R Square	0.64
Adjusted R Square	0.00
Standard Error	0.94
Observations	23

ANOVA

	df	SS	MS	F	p
Regression	14	12.21	0.87	1.00	0.53
Residual	8	7.00	0.88		
Total	22	19.22			

Moreover, no statistically significant difference between the leadership behaviors of CIOs belonging to the TMT and those who did not was found. Similarly, data available for this study did not indicate any relationship between educational major and leadership behavior. That was true when educational major was classified as technical and non-technical; undergraduate and graduate; as well as when computer science majors were compared to all others. Likewise, no statistically significant correlation between level of education and any other demographic variable in the study was found.

Furthermore, six respondents indicated reporting directly to their companies' Chief Operating Officers (COOs), with the second largest number of respondents (5 responses) reporting to their Chief Financial Officers (CFOs). Reporting to the CEO, the Executive Vice-President (Exec VP), or to the Senior Vice-President (Senior VP) were the third most frequent responses reported, with four respondents each.

Summary

This chapter included the results from the data analyses of the leadership behaviors of 23 CIOs in the Fortune 500 companies in the United States. Only one of the usable responses came from a female CIO, which rendered any demographic analyses involving gender useless. Additionally, no statistically significant relationship between demographic factors and the identified leadership behaviors were found. Overall, leadership behaviors consistent with Kouzes and Pozner's construct *Challenging the Process* were identified as the primary area of strength by 12 respondents; followed by *Encouraging the Heart* (identified by seven respondents). Conversely, the leadership behaviors consistent with the construct *Enabling Others to Act* was identified as a

leadership practice in most need of improvement by the majority of respondents; followed by those behaviors consistent with the construct *Modeling the Way*.

Of the nine leadership behaviors identified by Glen (2003), none was found to be more statistically significant than any other. The mode for all nine behaviors was equivalent to "very frequently". The following chapter contains the discussion of these findings and recommendations for future studies.

CHAPTER V: DISCUSSION

Limitations

The most glaring limitation of this study is its response rate. Despite the researcher's attempts to design and carry out a study that would yield a reasonably high response rate, the final pool of usable responses turned out to be too small to warrant any generalizations to the target population, as indicated in the research design section of this document. The low response rate prevented the assumption of a random sample as well as limited the number of observations available for the regression analysis.

Judging from the justifications for not participating in the study, received during the data collection period, the target population of this study seems to suffer from survey fatigue (Gordon, 1999). Any future studies aimed at this population would benefit from a data collection strategy that incorporated either a personal connection to the participants, perhaps in the form of a personal letter from an acquaintance, a celebrity, or a fellow CIO. Additionally, stronger endorsement or sponsorship could be added to the data collection strategy, perhaps a letter from the university's CIO exhorting his colleagues to respond to the questionnaire or embedding the questionnaire in the registration package of an industry event attended by the target population.

Another limitation of the present study is the use of self-reported measures. No corroboration of the reported measures was sought (in spite of the instrument's validity measures) since no data from participants' supervisors or direct reports were collected.

There is a possibility that participants' perceptions of the frequency with which they engage in the behaviors described in the questionnaire differ from what others observe. Another limitation is represented by the lack of reliability over time of the data collected for this study.

<div align="center">Challenging the Process</div>

As companies have turned to technology to maintain their competitive edge, it is reassuring to realize that the majority of CIOs participating in this study indicated *Challenging the Process* as their primary area of strength. Having CIOs who look for opportunities to change, to improve the organization and embrace risk-taking (Kouzes & Posner, 1997) seems a reasonable and desirable trait for CIOs. This is encouraging because, as these results indicate, the majority of respondents are living up to the expectation that information technology will fundamentally affect change in the organization in which participants operate. Further, the results support the assertion that CIOs are operating as agents of change within their organizations through the promotion and implementation of technologies that allow these organizations to operate in a faster and more integrated manner in a global market (Glen, 2003; Larosa, 1995; Stephens, 1995).

As the literature indicated, the relationship between the exemplary leadership behaviors proposed by Kouzes and Pozner (1997) and Kotter's (1995) Change Model (for further details please see Table 1) seem to be true. CIOs who have identified *Challenging the Process* as their primary area of strength seem to be those who have embraced the opportunities to promote change within their organizations. As alluded

to earlier, technology-driven change has not only required companies to adapt by changing, but also precipitated more change. Hence, those CIOs who identified this leadership construct as their primary area of strength may have experienced success in promoting change and have adopted a non-complacent attitude about the promotion of the benefits and effective uses of the technology within the organization. To this end, these individuals must operate in a manner that allows them to be constantly aware of their environment in a manner that allows them to be proactive about new and potentially disruptive technologies as well as about maturing ones. This greater technological awareness, coupled with effective environmental scanning, may help these individuals to be effective promoters of technologies that may impact their companies' competitive edge. Again, this finding supports the characteristics of the CIO discussed in the literature (Armstrong, 1995; Jones, Taylor, & Spencer, 1995).

However, simply being proactive about the impact of new technologies on the organization is not enough. CIOs do not operate in a vacuum nor are they the sole decision makers concerning technology utilization in their organizations. They report to they are participants in their organizations' top management teams (TMT), who are responsible for final decisions. Results from the current study support the literature in the sense that the majority of respondents are members of the TMT where, as the literature suggested (Armstrong & Samabamurthy, 1999; Cahill, 2002; Gottschalk, 2000; Kearns & Lederer, 2000; Wallington, 2001), CIOs must be most effective in promoting the potential impact of these technologies on their organizations. By having access to the TMT as the top decision-making body of their organizations, CIOs can promote

these changes effectively, not only by conceptualizing the potential impact of these

technologies on the organization in terms of the needs of the business, but also ensuring

that strategic decisions are supported by (or at least not negatively affected by) current

and future technologies.

Participants in this study seem to have good communication skills. The majority

of respondents reported having weekly contacts with their CEOs and daily contact with

other members of the TMT. These findings corroborate the suggestions made in the

literature that CIOs must possess good communication skills and political savvy to

mediate relationships with the TMT (Johnson, 2001; Smaltz, 1999) in order to garner

support to their IT initiatives in support of the business (Byrd & Davidson, 2004; Kearns

& Lederer, 2003; Peppard & Ward, 1999; Teo & Ang, 2001; Wallington; 2001, Wood &

Bandura, 1989) that impact both their internal and external constituencies (Hult et al,

2000; Salem, 2002).

<div align="center">Encouraging the Heart, Enabling Others to Act, Cooperative Teamwork,</div>

<div align="center">and Transformational Leadership in IT</div>

Along with the construct *Challenging the Process*, it was not surprising to find the

construct *Encouraging the Heart* as the leadership behavior that the second greatest

number of respondents identified as their primary area of strength. Individuals who

identified this construct as their primary area of strength performed activities that

recognized individual contributions to vision and values by celebrating

accomplishments regularly (Kouzes & Posner, 1997).

According to the literature (Dess et al, 1998, Glen, 2003; Kotter, 1995; Kotter, 1995; Kouzes & Pozner, 1997/2003a), appreciation must blend intrinsic and extrinsic rewards that match the expectations set for both the leaders and their followers as a means of renewing workers' commitment to the organization. By celebrating success and recognizing individual contributions in ways that are meaningful to the individuals being recognized, the leader not only promotes standards of performance but also reinforces key organizational values and celebrates those individuals who embody them. This way, there is a chance to consolidate change by articulating the connection between the successes being celebrated and the new behaviors that characterize change.

The major challenges toward accomplishing a meaningful celebration, however, revolve around two issues: equitably identifying the individuals who deserve to be celebrated and offering them meaningful rewards. As even the television program *The Apprentice* illustrates, cooperative teams have achieved great popularity as the primary form of labor organization in the corporate world. According to the Bureau of Labor Statistics (2006), IT workers "must possess team skills to work on group projects and other collaborative efforts" (¶ 7) inside and outside the IT organization. Consequently, CIOs must have strong team management skills in order to be accepted as a leader of the team so that their selection recognition is meaningful.

Compounding this issue, CIOs must account for a significantly different generation of workers joining the workforce: the Generation X (Gen X) for whom the blend of intrinsic and extrinsic rewards that positively align with their values may be different (Yrle, Hartman, Payne, 2005). This includes individual recognition that does

not negatively impact teamwork cohesion (Montes, Moreno, & Morales, 2005), since team cohesion affects organizational performance while reinforcing the alignment between organizational values and individual workers' values and goals within the constraints of the new social contract between the organization and knowledge workers (Drucker, 1998, 2000).

Therefore, *Encouraging the Heart* plays a pivotal role in ensuring that the benefits of value alignment are accrued by the organization. This particular synergy is the tenet of transformational leadership: the alignment of employee and organization values that allows individuals to voluntarily transcend their own interests and fully commit to the achievement of organizational goals. As employees put forth their best efforts, they realize extraordinary performance (Bass, 1985; Conger, 1999; Howell & Avolio, 1993; Pansegrouw, 1996). Therefore, the key is to figure out what IT knowledge workers care about and make them a part of the reward system used to reward them. These motivators may prove to be more effective in fostering the alignment of knowledge workers' goals with those of the organization than traditional reward systems based on monetary compensation and power symbols.

Given the results discussed above, it may at first analysis appear contradictory that CIOs need to develop competence with the behaviors consistent with the construct *Enabling Others to Act*. These behaviors, according to Kouzes and Posner (1997), indicate the ability of leaders to foster collaboration and teamwork so that team members feel safe in achieving their best performance in an atmosphere of trust and dignity. Leaders enable others to act by actively involving them and demonstrating an understanding

that mutual respect sustains extraordinary efforts. However, I feel confident in affirming that there is no contradiction at all.

Whereas CIOs indicated to be confident in recognizing contributions and rewarding performance (*Encouraging the Heart*), there seems to be no evidence that such recognition is linked to the development of a work environment where employees can achieve extraordinary levels of performance in an atmosphere of trust and dignity – characteristics of the construct *Enabling Others to Act*. If the reward scheme associated with team performance and under the prerogative of the manager or team leader is heavily favorable to the dispensation of contingent rewards, characteristic of transactional leadership practices, then leaders are not being effective in motivating their knowledge workers to achieve extraordinary performance.

Keep in mind that there is an inherent prevalence of transactional leadership practices in reward systems. CIOs, due to the nature of their positions, are expected to be competent in the implementation of these systems. Hence, respondents may feel competent in implementing these schemes due to habit or requirement. On the other hand, the development of a process that strengthens best performances and enables others to achieve them consistently is a more tenuous task that is harder to quantify and more often than not does not belong in the employee's performance evaluation. For this reason, it seems logical to conjecture that CIOs have developed skills in the behavior referent to *Encouraging the Heart*, while lacking proficiency in those associated with

Enabling Others to Act.

Moreover, statistical analyses of this small sample did not indicate any difference in responses between the constructs *Encouraging the Heart* and *Enabling Others to Act*. However, if a subtle difference were to be found it would be indicative that the same leader who feels comfortable in exhibiting transactional behaviors (rewarding group efforts as may be indicated by the construct *Encouraging the Heart*) does not feel likewise in creating a work environment employees trust and within which they can develop with dignity (as indicated by the construct *Enabling Others to Act*). I dare further speculate that outsourcing practices and the general economic recession that was the reality of the period in the IT industry when data were collected may have been a contributing factor in this finding (Tzafrir & Eitam-Meilik, 2005). Another possible explanation to this finding may be the fact that the work environment at the time data were collected reflected great anxiety about the IT job market due to the boom of outsourcing (offshoring) deals. These deals placed the stability of the jobs of a significant number of IT knowledge workers at risk since 2003 had the highest unemployment rate in the IT industry in the 21st century (Bednarzik, 2005, p. 16).

Therefore, if the results reported for this sample were to be extrapolated to the population of Fortune 500 CIOs, it would seem crucial that leadership development opportunities be created so that CIOs could gain expertise in the development of work environments that are more effective. The prevalence of this issue cannot be sufficiently stressed given that CIOs are uniquely responsible for the leadership of knowledge

workers whose work is arranged in cooperative teams (Klenke, 1997), with direct

impact on the companies' competitive advantage (Vargas, Hernández, & Bruque, 2003).

Thus, it seems plausible that a significant majority of respondents identified

Enabling Others to Act as the skill set that needs development. This may indicate another

topic of investigation for future studies.

Another curious result from the present study was the lack of distinction among

the responses to the nine questions formulated based on the nine behaviors identified in

Glen's (2003) leadership of IT knowledge workers' framework. All nine items were

ranked very highly (mode "Very frequently") by respondents. However, under closer

review of the literature, particularly Glen's (2003) work, a possible explanation for this

finding was found. The nine behaviors from which the items were constructed derived

from that author's empirical evidence, collected over more than 12 years of field

experience as a technology management consultant. They reflect behaviors that

successful technology leaders actually already display on the job and should be highly

aligned with the questions formulated.

Consequently, the lack of discrimination among these items simultaneously

validates Glen's claims that these are behaviors exhibited by effective technology

managers and sparks further interest in the investigation of whether IT organizations

that are not being successful also display these with the same frequency. This possibility

is elaborated upon in the following section.

Demographics

It was surprising to the researcher that there were no statistically significant relationships between the demographic data and CIOs' leadership behaviors. This unexpected result may have been caused by the size of the sample, which severely limited such comparisons, as in the study of leadership differences due to gender.

None of the CIO characteristics outlined in the literature (level of education; major; length of tenure as a CIO, with the organization, or in the IT industry; belonging to the TMT; or frequency of interactions with members of said team or with the CEO; and having a close relationship with the CEO) were shown to affect any influence on the leadership behaviors of leaders. Again, this may be a product of the number of respondents. Nonetheless, as indicated in the discussion of the leadership behavior *Challenging the Process,* the only demographic variable of import in explaining some of the findings reported in this study referred to the fact the majority of respondents indicated that they belong to the TMT; a fact advocated by the literature as crucial to the effective performance of CIOs (Cahill, 2002; Enns, Huff, & Golden, 2001; Gottschalk, 2000; Teo & Ang, 2001).

Regarding tenure of the CIO with the organization, results of the present study confirm reports that successful companies prefer CIOs with relatively new skill sets (Prattipati & Mensah, 1997). The most frequently reported lengths of tenure as a CIO was four years; tenure with the current company was five years; and experience in the IT/MIS industry was eight years. These results indicate that experience with legacy systems is not a valuable commodity in the fluid environment of corporate IT. Hence,

companies prefer CIOs who bring new skills and capabilities to the IT organization in order to help them compete. This finding, at least for the respondents, seems to support the literature regarding the new social contract under which knowledge workers operate that does not value loyalty over time (Drucker, 1992; James, 1997; Reich, 2001) since it does not invest in the CIO with a longer tenure. Moreover, contrary to what the literature suggested (Enns et al., 2003), these relatively short tenures indicate that CIOs are already joining companies with the necessary interpersonal skills to influence others.

<center>Recommendations for Future Studies</center>

One of the recommendations for future study is to repeat the present study for the same population but add the other components of the instrument so data about the CIOs can be collected from the perspective of their direct reports and supervisors. It will be advantageous to observe whether the results of direct reports and supervisors of each participant support the self-reported results obtained in this study. Will the same constructs emerge as predominant or in need of development? Will the same relationships with demographic data remain? The dearth of research focusing on this population remains whereas the salience of this topic has increased. Therefore, in order to avoid a response rate as low as the one obtained for the present study, it would be advantageous to either seek sponsorship of one or more CIOs or forge an association with a technology event so that data could be collected as part of the said event. By repeating the study for the same population, with the suggested modifications, some of

the limitations of the study reported here will be eliminated and there will be another valuable contribution to the body of research on this subject.

Additionally, repeating the study with the same population may provide some answers to whether leaders recognize the contributions of individual members to the team effort and reward and celebrate extraordinary performance (Kouzes & Posner, 1997) as a means of promoting extraordinary performance or whether they simply comply with the reward systems established within their organizations. Even though the researcher would like to believe that respondents engage in leadership behaviors supportive of this construct as a conscious effort to promote and support extraordinary performance, as proposed by exemplary leadership models, there is no evidence to support that. Leaders could be engaging in these behaviors because of the management training they received. The relevance of this discussion lies in the fact that these leadership behaviors help institutionalize change and unless the changes that are being celebrated have been embraced by the workers who are orchestrating them it may be fostering greater dissonance between employees' values and personal goals and those of the organization. The problem with increased dissonance, in turn, is that it further dissociates the individual knowledge worker from the organization and reduces the worker's motivation to perform (Amar, 2002; Glen, 2003). Thus, upon reaching critical mass, this dissonance will lead workers to seek a work environment that is in greater agreement with their personal values, thus removing from the organization the knowledge it needs to be successful (Neck, Smith, & Godwin, 1997; Sonnenschein, 1997).

This is not to say that employee turnover is necessarily undesirable. However, by institutionalizing change that distances the worker from the organization, CIOs may be creating a culture within their IT organization that promotes high employee turnover when it is undesirable. This misaligned work environment also has consequences to the level of trust that employees deposit in their leadership and their organization and may help explain why employees who implement leadership behaviors consistent with the *Encouraging the Heart* construct feel otherwise with regards to *Encouraging Others to Act.*

Moreover, it would be beneficial to the understanding of the characteristics of CIO leadership if we were able to compare the leadership behaviors of Fortune 500 CIOs with those of CIOs in middle-market companies. Therefore, a future stream of research could be established by comparing the results obtained in this study with comparable data from the population of CIOs of middle-market companies. Would they be the same? Does company size affect the leadership behaviors of CIOs? If so, what behaviors and in what way?

A third research stream would be to compare the leadership behaviors of CIOs in business and industry, the for-profit sector of the economy, with those of CIOs in other sectors of the economy such as academia, K-12 school systems, and other government agencies. The pervasive nature of IT permeates all aspects of society and gives rise to CIOs in all these environments. Therefore, studying leadership behaviors in non-corporate environments will help develop a better picture of the necessary skills set for success as a technology leader. Would the nature of the enterprise be a significant factor influencing the leadership behaviors of CIOs? How would reports and superiors rate

the behaviors of their CIOs? Would results be statistically different from those of CIOs in other sectors of the economy?

A fourth research stream would be to investigate the effectiveness of non-traditional reward systems in increasing the alignment of employees' goals and objectives with those of the organization. As discussed in the findings, CIOs may be experiencing a hard time in operationalizing the construct *Enabling Others to Act* due to a misalignment of the rewards available in traditional compensation schemes (i.e., power, money, status) and those IT knowledge workers aspire to obtain. The literature on this group of workers suggested that they yearn for a highly evolved environmental application of Theory Y (McGregor, 1966).

Additionally, given some of the high correlations between the different behaviors proposed by Glen (2003), it will be worthwhile identifying the different components of each proposed behavior. Hence, a fifth stream of research would deconstruct and validate Glen's nine effective leadership behaviors of IT knowledge workers and identify which of the components make each leadership behavior effective.

The streams of research outlined above will contribute to the development of a more complete body of research that will help inform institutions of higher education, trade organizations, and enterprises as to the best ways of achieving extraordinary performance from their CIOs. Ultimately, by bridging the dearth of knowledge on the leadership behaviors of CIOs, this researcher hopes to contribute to a better understanding of the field of leadership studies, with particular emphasis on the

development of the field of technology leadership. Such understanding may help us all comprehend how decisions concerning technology impact our lives.

Summary

Competition in an ever-changing world seems to be the premise for a blockbuster. However, it is the reality faced by the majority of CIOs in the Fortune 500 companies in the United States. In this challenging environment, these technology leaders challenge the process so that their organizations promote the necessary changes that will allow it to survive and thrive.

CIOs have gained a seat in the top management team despite their relatively short careers. Perched at the top of their organizations, they have gained access to other decision makers and seem to be doing a good job of convincing them of the benefits that technology brings to the organization. Simultaneously, they attempt to encourage the heart of those laborers who, with their knowledge, support the organization's constant transformation. CIOs need to do a better job of enabling others to act so that they continue to garner their workers' unwavering commitment to extraordinary performance.

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APPENDIX A

THE LEADERSHIP PRACTICES INVENTORY-SELF

& DEMOGRAPHIC QUESTIONNAIRE

LEADERSHIP PRACTICES INVENTORY – SELF (MODIFIED)

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All rights reserved. Used with permission.

DIRECTIONS: For each item please mark an "x" in the column that best matches how frequently you engage in the following behaviors. If you want to change your answer, please remove your old response.	Never	Rarely	Seldom	Once in a While	Occasionally	Sometimes	Fairly Often	Usually	Very Frequently	Always
1. I seek out challenging opportunities that test my skills and abilities.	○	○	○	○	○	○	○	○	○	○
2. I talk about future trends that will influence how our work gets done.	○	○	○	○	○	○	○	○	○	○
3. I develop cooperative relationships among the people I work with.	○	○	○	○	○	○	○	○	○	○
4. I set a personal example of what I expect from others.	○	○	○	○	○	○	○	○	○	○
5. I praise people for a job well done.	○	○	○	○	○	○	○	○	○	○
6. I challenge people to try out new and innovative approaches to their work.	○	○	○	○	○	○	○	○	○	○
7. I describe a compelling image of what our future could be like.	○	○	○	○	○	○	○	○	○	○
8. I actively listen to diverse points of view.	○	○	○	○	○	○	○	○	○	○
9. I spend time and energy on making certain that the people I work with adhere to the principles and standards that we have agree on.	○	○	○	○	○	○	○	○	○	○
10. I make it a point to let people know about my confidence in their abilities.	○	○	○	○	○	○	○	○	○	○
11. I search outside the formal boundaries of my organization for innovative ways to improve what we do.	○	○	○	○	○	○	○	○	○	○
12. I appeal to others to share an exciting dream of the future.	○	○	○	○	○	○	○	○	○	○
13. I treat others with dignity and respect.	○	○	○	○	○	○	○	○	○	○
14. I follow through on the promises and commitments that I make.	○	○	○	○	○	○	○	○	○	○
15. I make sure that people are creatively rewarded for their contributions to the success of our projects.	○	○	○	○	○	○	○	○	○	○
16. I ask "What can we learn?" when things do not go as expected.	○	○	○	○	○	○	○	○	○	○
17. I show others how their long-term interests can be realized by enlisting in a common vision.	○	○	○	○	○	○	○	○	○	○
18. I support the decisions that people make on their own.	○	○	○	○	○	○	○	○	○	○
19. I am clear about my philosophy of leadership.	○	○	○	○	○	○	○	○	○	○
20. I publicly recognize people who exemplify commitment to shared values.	○	○	○	○	○	○	○	○	○	○
21. I experiment and take risks even when there is a chance of failure.	○	○	○	○	○	○	○	○	○	○

DIRECTIONS: For each item please mark an "x" in the column that best matches how frequently you engage in the following behaviors. If you want to change your answer, please remove your old response.	Never	Rarely	Seldom	Once in a While	Occasionally	Sometimes	Fairly Often	Usually	Very Frequently	Always
22. I am enthusiastic and positive about future possibilities.	○	○	○	○	○	○	○	○	○	○
23. I give people a great deal of freedom and choice in deciding how to do their work.	○	○	○	○	○	○	○	○	○	○
24. I make certain that we set achievable goals, make concrete plans, and establish measurable milestones for the projects and programs that we work on.	○	○	○	○	○	○	○	○	○	○
25. I find ways to celebrate accomplishments.	○	○	○	○	○	○	○	○	○	○
26. I take the initiative to overcome obstacles even when outcomes are uncertain.	○	○	○	○	○	○	○	○	○	○
27. I speak with genuine conviction about the higher meaning and purpose of our work.	○	○	○	○	○	○	○	○	○	○
28. I ensure that people grow in their jobs by learning new skills and developing themselves.	○	○	○	○	○	○	○	○	○	○
29. I make progress toward goals one step at a time.	○	○	○	○	○	○	○	○	○	○
30. I give the members of the team lots of appreciation and support for their contributions	○	○	○	○	○	○	○	○	○	○
31. I represent the IT workers to organizations and individuals outside the IT division.	○	○	○	○	○	○	○	○	○	○
32. I facilitate the flow of ideas and activities.	○	○	○	○	○	○	○	○	○	○
33. I engage IT workers in open discussions about technical issues, to link the technology and the business sides of the organization.	○	○	○	○	○	○	○	○	○	○
34. I organize IT work into projects that have clear team structures, task processes, and risk management.	○	○	○	○	○	○	○	○	○	○
35. I function as the final arbiter for completion of IT projects.	○	○	○	○	○	○	○	○	○	○
36. I tell compelling stories of coherence and consistency.	○	○	○	○	○	○	○	○	○	○
37. I embody the ideas and values of the organization.	○	○	○	○	○	○	○	○	○	○
38. I define IT project's processes and assign individuals to play roles in them.	○	○	○	○	○	○	○	○	○	○
39. I assign IT workers to projects based on their initial interest in the technology, the business, or a role in the project.	○	○	○	○	○	○	○	○	○	○

continues

CHIEF INFORMATION OFFICER DEMOGRAPHICS

DIRECTIONS: For questions 1 - 5 please mark an "x" by the best answer. If you want to change your answer, please remove your old response.

1. Do you belong to your organization's Top Management Team? (i.e. the most senior executive group in the organizational hierarchy?)

        ___ Yes   ___ No

2. Who do you report to?

___ CEO   ___ Senior VP   ___ CFO   ___ COO   ___ Executive VP

___ Other (please specify) _____

3. On average, what is the frequency of informal contacts between you and the CEO of your organization?

___ daily   ___ weekly   ___ monthly   ___ few times a year   ___ once a year

4. On average, what is the frequency of informal contact between you and other members of the top management team?

___ daily   ___ weekly   ___ monthly   ___ few times a year   ___ once a year

5. What is your gender   ___ Female   ___ Male

continues

DIRECTIONS: For questions 6 – 9 please fill in the blanks with the best answer. If you want to change your answer, please remove your old response.

6. What is your educational background? (Place an "x" by **all** that apply & record major.)

Category	Major(s) (e.g., Business, Computer Science, Arts, etc.)
___ some Junior College/Community College	
___ Junior College/Community College diploma	
___ some University/College courses	
___ Bachelors degree	
___ some Graduate courses	
___ Graduate degree (MBA, Executive MBA, etc.)	
___ Doctorate (i.e. Ph.D., Ed.D., J.D., M.D., etc.)	
___ Other (please specify) _____	

7. How many years have you worked in the IT/MIS industry? _____ years

8. How long have you worked for this organization? _____ years

9. How long have you held your current position? _____ years

THANK YOU!

APPENDIX B

INVITATION TO PARTICIPATE IN THE STUDY

Bowling Green State University
School of Leadership and Policy Studies

Dear <firstname> <lastname>,

My name is Luis Lima and I need your help to complete my dissertation at Bowling Green State University (BGSU). My research focuses on the leadership characteristics of Chief Information Officers in Fortune 500 companies in the U.S. As the CIO, you are the only one at your organization who can help me identify the leadership behaviors you use to influence IT workers. The information you provide will help in the development of leadership models that represent your practices as a technology leader. Your participation is free, voluntary, and very important!

Your answers will be confidential, and the results of this study will be reported in the aggregate. You will need approximately 15 minutes to complete the survey and return it to me. Additionally, you will not receive any commercial solicitation from me or from anyone associated with in this study. As a token of my appreciation for your participation in this research effort, I will send you an executive summary of the results of this study.

If you do not wish to participate in this research, or if you prefer to receive this survey by e-mail, please fill in and return the enclosed form using the enclosed self-addressed, postage paid envelope. If you do wish to participate, you need not take any action now. Your survey will be mailed within the next few days.

If you have any questions about your rights as a research participant, please contact me at llima@bgnet.bgsu.edu. You may also contact my advisor, Dr. Patrick Pauken, Assistant Professor at the School of Leadership and Policy Studies in the College of Education and Human Development at BGSU at either paukenp@bgnet.bgsu.edu or 419.372.2550; or the Chair of the Human Subjects Review Board at BGSU by e-mail <hsrb@bgnet.bgsu.edu> or by telephone at 419.372.7716.

Thank you for your time and for your participation.

Sincerely,

Luis Lima, Doctoral Candidate   Patrick Pauken, Advisor to Luis Lima
llima@bgnet.bgsu.edu   paukenp@bgnet.bgsu.edu
School of Leadership and Policy Studies   School of Leadership and Policy Studies
College of Education and Human Development College of Education and Human Development
Bowling Green State University   Bowling Green State University
Bowling Green, OH 43403-0250   Bowling Green, OH 43403-0250

SURVEY PARTICIPATION REQUEST FORM

DIRECTIONS: **Complete and return this form ONLY if you would like to receive your survey by e-mail, which is not 100% secure, OR if you do not wish to participate in the study. If you do wish to participate in the study by receiving the survey by postal mail, DO NOT complete and return this form. Thank you.**

Please place a check mark by the OPTION that best describes your intentions:

OPTION ONE

    ___ I DO wish to receive the survey by e-mail at the following address:

    _____
(Print e-mail address here)

OPTION TWO

    ___ I do NOT wish to receive the survey and participate in this study.

Please write your First Name and Last Name at the spaces provided so that I can honor your choice. Thank you!

First Name: _____
(Please print)

Last Name: _____
(Please print)

After competing this form, please return it in the enclosed self-addressed, postage paid envelope.

APPENDIX C

COVER LETTER TO PARTICIPANTS

(Postal Mailing)

Bowling Green State University
School of Leadership and Policy Studies

Dear <firstname> <lastname>:

I am writing to ask for your participation in this research study for my doctoral dissertation at Bowling Green State University (BGSU). The goal of this study is to identify the leadership behaviors of Chief Information Officers of organizations engaged in attaining competitive advantage through the deployment and utilization of information technology. The information you provide will help in the development of leadership models that represent your practices as a technology leader. Your participation is free, voluntary, and very important!

The questionnaire was designed to take approximately 15 minutes to complete. To complete this questionnaire, place an "x" at the appropriate answer column for each question or write the answer that best completes each item where appropriate. Once you have finished, please fold the questionnaire and place it in the self-addressed, postage paid envelope provided and seal it. Please, mail your answers on or before March 20, 2004.

I assure you that all identifying information will remain strictly confidential, and that all responses will be reported only at the aggregate level. Your participation is voluntary, you are free to withdraw at any time. Consent to participate is indicated simply by completing and returning the questionnaire. As a token of my sincere appreciation for your contribution to this research effort, I will send you an executive summary of the results of this study.

If you have any questions about your rights as a research participant, please contact me at llima@bgnet.bgsu.edu. You may also contact my advisor, Dr. Patrick Pauken, Assistant Professor at the School of Leadership and Policy Studies in the College of Education and Human Development at BGSU at either paukenp@bgnet.bgsu.edu or 419.372.2550; or the Chair of the Human Subjects Review Board at BGSU by e-mail <hsrb@bgnet.bgsu.edu> or by telephone at 419.372.7716.

Thank you for your participation.

Sincerely,

Luis Lima, Doctoral Candidate   Patrick Pauken, Advisor to Luis Lima
llima@bgnet.bgsu.edu   paukenp@bgnet.bgsu.edu
School of Leadership and Policy Studies   School of Leadership and Policy Studies
College of Education and Human Development College of Education and Human Development
Bowling Green State University   Bowling Green State University
Bowling Green, OH 43403-0250   Bowling Green, OH 43403-0250

APPROVED – BGSU HSRB
EFFECTIVE   3/4/04
EXPIRES   2/25/05

APPENDIX D

COVER LETTER TO PARTICIPANTS

(Electronic Mailing)

Bowling Green State University

School of Leadership and Policy Studies

Educational Administration and Supervision
Doctoral Program in Leadership Studies
510 Education Building
Bowling Green, Ohio 43403-0250
(419) 372-7377
FAX: (419) 372-8265
http://www.bgsu.edu/colleges/edhd/LPS

Dear <firstname> <lastname>:

I am writing to ask for your participation in this research study for my doctoral dissertation at Bowling Green State University (BGSU). The goal of this study is to identify the leadership behaviors of Chief Information Officers of organizations engaged in attaining competitive advantage through the deployment and utilization of information technology. The information you provide will help in the development of leadership models that represent your practices as a technology leader. Your participation is free, voluntary, and very important!

The questionnaire was designed to take approximately 15 minutes to complete. This electronic version of the questionnaire was e-mailed to you as an attachment as a MSWord document. To complete the questionnaire attached to this message, you will need MS Word. Open the attachment, fill in with an "x" the appropriate answer column for each question and type in the answers, where appropriate. After you have completed the attached questionnaire, please save it as a MS Word document and return it as an attachment to me via e-mail to llima@bgnet.bgsu.edu on or before March 20, 2004 .

I assure you that all identifying information will remain strictly confidential, despite email not being 100% secure, and that all responses will be reported only at the aggregate level. Your participation is voluntary; you are free to withdraw at any time. Consent to participate is indicated simply by completing and returning the questionnaire. As a token of my sincere appreciation for your contribution to this research effort, I will send you an executive summary of the results of this research.

If you have any questions about your rights as a research participant, please contact me at llima@bgnet.bgsu.edu. You may also contact my advisor, Dr. Patrick Pauken, Assistant Professor at the School of Leadership and Policy Studies in the College of Education and Human Development at BGSU at either paukenp@bgnet.bgsu.edu or 419.372.2550; or the Chair of the Human Subjects Review Board at BGSU by e-mail <hsrb@bgnet.bgsu.edu> or by telephone at 419.372.7716.

Thank you for your participation.

Sincerely,

Luis Lima, Doctoral Candidate   Patrick Pauken, Advisor to Luis Lima
llima@bgnet.bgsu.edu   paukenp@bgnet.bgsu.edu
School of Leadership and Policy Studies   School of Leadership and Policy Studies
College of Education and Human Development College of Education and Human Development
Bowling Green State University   Bowling Green State University
Bowling Green, OH 43403-0250   Bowling Green, OH 43403-0250

APPENDIX E

SAMPLE FOLLOW UP CORRESPONDENCE WITH PARTICIPANTS

Bowling Green State University
School of Leadership and Policy Studies

Dear <firstname> <lastname>:

Thank you for choosing to participate in this study. I sent you earlier a copy of the questionnaire about your leadership practices. If your response is on its way, thank you very much for taking the time. The executive summary of the findings and results of this study will be mailed to you by the summer.

If you have not had the time to complete the questionnaire yet, it only takes 15 minutes, I have enclosed another copy for your convenience. Please complete and mail the enclosed questionnaire today. Your participation is very important in the identification of the leadership behaviors of Chief Information Officers of organizations engaged in attaining competitive advantage through the deployment and utilization of information technology. I am looking forward to receiving your response by April 10, 2004 at the very latest. I appreciate how busy you are; so complete and mail the enclosed questionnaire today.

I assure you that all identifying information will remain strictly confidential, and that all responses will be reported only at the aggregate level. Your participation is voluntary, you are free to withdraw at any time. Consent to participate is indicated simply by completing and returning the enclosed questionnaire. As a token of my sincere appreciation for your contribution to this research effort, I will send you an executive summary with the results of this study.

If you have any questions about your rights as a research participant, please contact me at llima@bgnet.bgsu.edu. You may also contact my advisor, Dr. Patrick Pauken, Assistant Professor at the School of Leadership and Policy Studies in the College of Education and Human Development at BGSU at either paukenp@bgnet.bgsu.edu or 419.372.2550; or the Chair of the Human Subjects Review Board at BGSU by e-mail <hsrb@bgnet.bgsu.edu> or by telephone at 419.372.7716.

Thank you for your participation.

Sincerely,

Luis Lima, Doctoral Candidate   Patrick Pauken, Advisor to Luis Lima
llima@bgnet.bgsu.edu   paukenp@bgnet.bgsu.edu
School of Leadership and Policy Studies   School of Leadership and Policy Studies
College of Education and Human Development College of Education and Human Development
Bowling Green State University   Bowling Green State University
Bowling Green, OH 43403-0250   Bowling Green, OH 43403-0250

APPENDIX F

REQUEST FOR PERMISSION TO USE THE LEADERSHIP PRACTICES INVENTORY-

SELF

Dr. Barry Z. Posner
Santa Clara University
Leavey School of Business
500 El Camino real
Santa Clara, CA 95053

Dr. Posner:

My name is Luis Lima and I am a doctoral candidate in the Leadership Studies Program
at Bowling Green State University. I am writing you to request your permission to use
the *Leadership Practices Inventory: Self* (LPI-Self) for my dissertation study entitled
*Leadership in the Information Age: How Chief Information Officers Lead Information
Technology Workers*. Your instrument will assist in the identification of the self-reported
leadership practices of chief information officers.

Dr. George Timmons, a 2002 graduate of Bowling Green State University's Higher
Education Administration Program used the LPI-Self in his study entitled *Exploring
Leadership Practices in Distance Education, the Blueprint for Success: a Correlational Study of
Self-Reported Leadership Practices in Distance Education and Institutional Characteristics*. I
assure you that the content of the instrument will not be compromised in my study.
However, I would need to modify the instrument with the addition of demographic
information that would enhance the quality of my study. Examples of modifications
include (a) indication of the highest degree attained by participants, (b) number of
direct reports, and (c) number of years in the position.

Please note that by allowing me to use this instrument with minor modifications, you
will be contributing to the advancement of scholarly research in the field of leadership
studies, particularly concerning the leadership practices of top management leaders –
an area where current data is limited - and to my advancement as a scholar and future
technology leader. If you have any questions regarding the use of your instrument in
my study before granting permission for its utilization, please contact me at
llima@bgnet.bgsu.edu, or my advisor, Dr. Patrick Pauken, Assistant Professor of the
College of Education and Human Development, at paukenp@bgnet.bgsu.edu or by
telephone at 419.372.2550. Thank you for your assistance.

Sincerely,

Luis Lima
Cc: Dr. Patrick Pauken

APPENDIX G

THANK YOU NOTICE

Bowling Green State University
School of Leadership and Policy Studies

<Date>

Last week a questionnaire seeking your opinions about how frequently you engage in certain leadership behaviors was mailed to you. Your name was drawn randomly from a list of all CIOs in Fortune 500 companies in the United States.

If you have already completed and returned the questionnaire, please accept my sincere thanks. If not, please do so today. I am especially grateful for your help because it is only asking people like you to share your experiences that we can understand how people can become effective leaders.

If you did not receive a questionnaire, or if it was misplaced, please e-mail me at llima@bgnet.bgsu.edu and I will send you another one today.

Luis Lima, Doctoral Candidate   Patrick Pauken, Advisor to Luis Lima
llima@bgnet.bgsu.edu   paukenp@bgnet.bgsu.edu
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