CIOs and IT Professionals as Change Agents, Risk and Stakeholder Managers: A Field Study

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Abstract

This paper summarizes findings on project and organizational roles and responsibilities of eight CIOs, eleven VPs, and seventy-five IT staff members in seven Fortune 500 companies from the manufacturing, defense, financial services, biotechnology and utilities industries. Results confirm studies that show CIOs and IT leaders are increasingly assuming change management, information, and strategic roles in organizations. Our findings also indicate that IT leaders are required to manage and share business risks while orchestrating cultural and political interests of multiple stakeholders to effectively accomplish project and organizational work. Other observed roles and skills of IT professionals are also presented. We conclude by identifying implications from research and our findings for effective IT project leadership.

1. Introduction

The changing roles and responsibilities of CIOs and IT professionals reflect technological, strategic and political changes organizations face. Arnett and Jones (1994) argued that the role of CIO was created to assign accountability to one executive responsible for an organization's information processing needs. Another reason given for creating the CIO position was that it closed the gap between organization and IT strategies [1]. Others argued that the alignment and integration of IT with business goals was crucial to the firm's survival and for achieving competitive advantages [2]. The CIO position emphasized this organizational necessity [1]. Andrews and Carlson [3] argued that the roles of CIOs are now in the 4th wave of evolution. The first wave saw CIOs as "glorified DP (data processing) managers." In the second wave, CIOs were technocrats. CIOs became business executives in the third wave. The 4th wave characterizes CIOs, according to these authors, as technocrats and business executives. Gottshalk [5] recently found that of nine CIO leadership roles (Informational, Decisional, Interpersonal, Chief architect, Change leader, Product developer, Technology provocateur, Coach, and Chief operating strategist), the informational and change leader roles were statistically significant. Newer IT leaders in this study had more responsibility for strategic alignment between IT and business.

The importance and place of the CIO and IT leadership in organizations are still not completely clear. [6] "… CIOs vary greatly in terms of the information systems spending, organizational structure, and number of directly managed in order to achieve IS goals" [6]. One study shows that CIOs are creating operations-centered deputy CIO positions to "run the shop and fight fires so that they (CIOs) can focus on business strategy." [7].

CIO and IT Professional Roles: Current Trends

There is agreement on several evolving trends of CIO and IT professional roles. Varon [8] noted that "Whether at small private companies or large public corporations, the CIO job today is defined for executives who are business strategists first and technologists second. According to a survey, two-thirds of the 500 technology executives who responded are compensated or evaluated for their leadership and for making their companies profitable, rather than for getting projects done on time and within budget…The survey found that they [CIOs] spend almost half of it [their time] communicating with fellow senior executives,

department heads, customers and suppliers, and only 15% of their time learning about technology." Other researchers conclude that CIOs and IT leaders are increasingly aligning IT with business strategies [9]. Moreover, CIOs and IT professionals who do not understand business strategy will become more irrelevant to changing IT as well as organizational requirements [4, 10, 11, 12, & 21]. More research is required to clarify CIO and IT professional roles and responsibilities in enterprise projects and organizational work.

2. Purpose, Scope and Methodology of this Paper

The purpose of the paper is threefold: (1) to report and compare observed roles and responsibilities of CIOs and IT professionals from this field study with existing research; (2) to show ways in which IT leaders' and professionals' roles in enterprise projects are changing; and (3) to summarize implications from our findings for IT professionals' changing organizational and project roles. Our primary goal in the study was to determine whether or not IT leadership roles—as described above—are, in fact, changing; and, if so, how effective the individuals we observed believed they were performing in their changed roles.

This is a qualitative investigation [13] with the aim of exploring work through iterative and interview approaches [14]. The methods are grounded in the area of organizational innovation studies that investigate the nature of the innovation process [15]. A limitation of these types of methods is that no causality can be assumed or asserted. An advantage is that direct observation and interviews with those performing the work under investigation allows for iterative feedback.

We interviewed eight CIOs, eleven VPs of IT, and seventy-five IT staff members who worked in development, operations, architecture, and project management. These professionals work in seven different Fortune 500 companies of which five are Global firms in the following industries: manufacturing, defense, financial services, biotechnology and utilities.

3. Results

In order to identify new and/or roles and responsibilities of IT leaders and staff, without directly asking them, we set up our study as follows. First, we asked all participants to identify what an "Ideal IT department" would look like. We then discussed the meaning of the responses with participants to identify their roles in the new organization. Secondly, we asked

all respondents to identify any differences between the "old" and "new" ways their IT departments and they as IT professionals performed their work. Again, we had respondents then identify their roles and responsibilities from this information. Third, we also asked respondents to characterize their "IT project and work environment" as another way of identifying their roles and responsibilities. Finally, we reviewed project management templates and "roadmaps" participants used in their work. We discussed dimensions from these templates with the participants to identify any different roles they played as IT professionals. The following is a summary of our findings.

The "Ideal IT Department"

We began our unstructured, face-to-face interviews by asking all participant groups (CIOs, VPs and IT staff) to identify what the "Ideal IT department or group" would look like. We found that all groups of participants saw the ideal IT department from their end-users' and customers' (internal and external) perspective (complaints and needs). We collapsed these findings into seven categories as depicted in figure 1.

	CIO (8)	VPs (11)	IT Staff (75)
IT group does not understand our business.	100%	92%	65%
IT group does not understand how we do things.	65%	47.%	53%
IT group does not take into account our business needs.	72%	67%	30%
IT group does not understand our culture.	47%	54%	58%
IT group does not understand our political pressures.	37%	63%	65%
IT fails to communicate with us.	67%	91%	85%
IT costs are too expensive.	63%	72%	57%

Figure 1: CIO, VP, and IT staff self-reported problems from their customers/end-users (End-user perspective from IT professionals' experience)

All groups across companies reported somewhat consistently that their customers do **not** believe their IT group/department: (1) understands their (end users') business, (2) understands their culture and political pressures, (3) fails to communicate effectively with them, and (4) believe IT software, hardware, and solutions are too expensive. These self-reported findings suggest that the roles of IT professionals at all three levels are business, politically and culturally oriented, and involve a need to understand customers' work related issues. The data also suggest several other

interpretations: that CIOs hear more about strategic problems from their end users; VPs hear more about costs and overall issues; IT staff deal more with day to day problems and hear more about political and cultural issues. It may also be that the technology solutions provided or suggested are not seen as effective or cost beneficial. As one CIO suggested to us, "Not all IT people are always sensitive or able to communicate non technical issues well with their customers." Also, figure 1 may reflect conclusions from studies cited earlier in this paper, i.e. IT leaders and staff may be overwhelmed with their work and are unclear on their cross-functional, changing roles and responsibilities.

It is interesting to note that all CIOs were more emphatic in reporting that their end users believed they (CIOs) did not understand end users' business; and, that the CIOs generally failed to communicate with them. These results may indicate that CIOs are involved in more complicated and politically sensitive business and strategic relationships than are either VPs or IT staff members. These findings may also confirm what Chabrow [16] found, namely, that only 78% of CIOs see understanding their company's business strategy as important.

While these findings are not statistically reliable, they do corroborate with Luftman's findings [17] regarding "business-IT alignment maturity"; namely, that "…experience with 25 Fortune 500 companies indicates that over 80% of the organizations are at Level 2 [next to the lowest of 5 levels] maturity…." Some of the roles and competencies we found above were used by Luftman [17] and Luftman, Papp, and Briar [18], e.g. communication; business perception of IT value; IT understanding end users' business; social, political, trusting environment. It is not surprising, then, that the respondents in our study rated their end users' experience of the IT groups low in these competency areas.

Based on our discussion of these results with members from the three respondent groups, we concluded that both Luftman's and our findings may reflect the overall lack of IT/business alignment of the entire company than the IT professionals' reported incompetence. One CIO told us, "IT managers must justify IT expenditures to the CEO and show its return and immediate impact first." An IT consultant in one of the companies told us, "As a consultant, the first thing I ask an internal customer is 'What do you do?' and I haven't met a person yet who can give me in-depth information on the organization's reason for existence. Typically, they can only identify the industry and their place in it." An IT professional in our study said,

"Many non-IT people see IT as a separate 'Holier-than-thou organization. For IT to implement they must obtain buy-in and this is sometimes a roadblock." These and other clarifying comments suggest that the organizations generally lack top-down, bottom-up IT/business alignment. If this is the case, it is not unusual to observe that the roles of IT leaders and staff would take on importance in the areas of communication, business problem-solving, and the need to understand and negotiate political and cultural issues of end users. The roles played by IT leaders and staff we identified from this part of our study include: (1) political and cultural negotiators; (2) business problem-solvers; (3) project sellers (including the ability to identify and explain cost/benefits of IT offerings); and (3) interpersonal and cross-functional communicators.

"Old" versus "New" IT Departments

We next asked all respondents to identify and compare "old" versus "new" or "changed" ways in which either their current or previous IT departments had functioned (i.e. the focus of their departments/work, with whom they worked the most, and the emphasis of their work). We note that all eight CIOs had at least 4 years previous experience as an IT leader; 7 of 11 VPs had worked over 4 years in IT departments or as an IT professional; and 57 of the 75 IT professionals had over 4 years experience in one or more IT departments. We included these individuals who had 4 more years and could compare changes in their departments' focus and experience. Figure 2 summarizes major themes repeated from interviews and structured discussions.

Old	New
Functional, business unit focus	Enterprise, business unit focus
Service/maintenance roles	Strategic and technical roles
Meet technical internal needs	Meet strategy/business needs
Accelerate routing processes (e.g.order entry, inventory control)	Add value through competitive advantage
Provide latest and greatest	Enhance sales and market share
Technology focused	Solve business problems
Work with business functions and technology integration	Business, political, cultural, and technology integration
Identify technical risks	Manage/share business risks
Manage functional team interfaces	Manage internal and external customers

Figure 2: Changing IT roles and responsibilities

Results confirm what previous studies discussed earlier show: IT leaders' and professionals' work and roles have become more (1) strategic and enterprise focused than maintenance and functional area oriented; (2) external and internal oriented; (3) customer focused; (4) business problem-solving oriented; and (5) more cross-functional, external stakeholders are involved in projects. Two noteworthy findings in this section are, first, IT leaders were called on to share and manage business risks with internal and external customers; and secondly, more external stakeholders were involved in the projects. As one CIO noted, "When the IT organization involves itself with a customer's business, it learns the risks, requirements, and challenges involved. The solution, then, is seen as shared--not a 'black box,' quick-fix. Service, follow-up, and some guarantees are asked for." Another CIO stated, "To be successful with a project, a cross-functional team is established with internal and external professionals. When designing an RFP (request for proposal), key vendors and suppliers were brought in to help develop the system." IT leaders and professionals, then, are called to be stakeholder and risk managers in their work. Risks here include product/service quality, political, and organizational as well as technical.

IT Project and Organizational Environments

We next asked all respondents to identify elements in their "IT project and organizational environments" and the roles they played in these environments. Our purpose was to identify new and/or different roles they assumed. Several respondents portrayed in pictures or graphics their environments; some made lists; and several discussed project metrics, deliverables, and groups with whom they worked. Figure 3 is a composite of responses from our sample (including their graphics, lists, and interview responses). We summarized repeated major themes under the headings "customers/partners, 3rd parties, metrics, and business/IT deliverables." Several themes relevant to our research topic were drawn from this exercise: first, the IT environment is integrated with the strategic and business units of the organizations. Also, there is a shared view of the CIO and IT departments with the business areas of the firms. "Joint goals and projects" were repeated discussed. Second, a wide range of stakeholders (partners, customers, consultants, vendors, suppliers, regulatory agencies, strategic alliances) were involved at all phases of a project, as was previously discussed. Third, many of the metrics and

IT Project Environment

Partners / Customers
- CEO
- Customers
- Decision Makers
- CFO, COO
- End users
- Teams

Metrics
- Time to market
- Balances scorecard
- Cost / benefits
- Product / service innovation
- Percentage cost / sales
- Safety, legislative mandates
- Customer satisfaction
- Enterprise system implementation

3rd Parties
- Strategic Alliances
- Stakeholders
- Competitors
- Regulatory Agencies
- Vendors
- Suppliers
- Sub-contractors

Business / IT Deliverables
- Joint goals delivered
- Joint projects achieved
- Business solutions solved
- Operational support
- New customers served
- Strategy / technology integration
- Change successfully managed

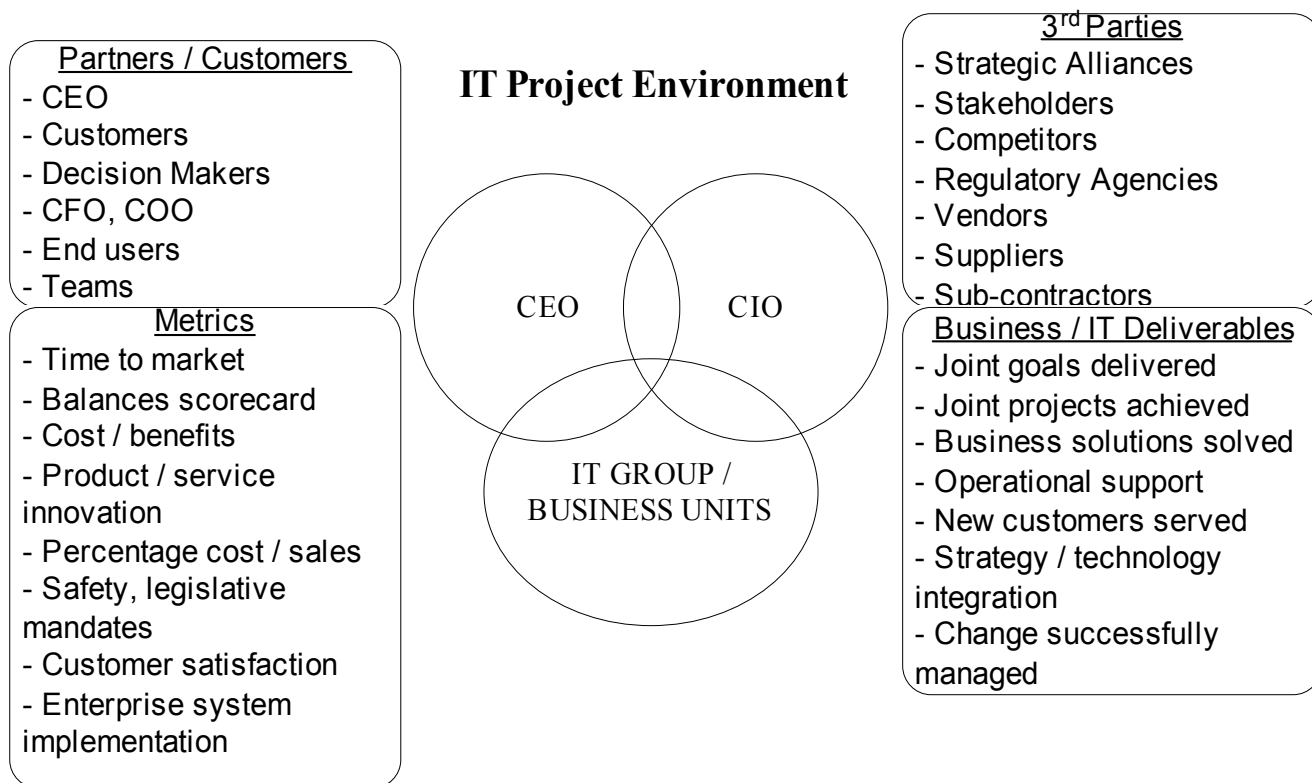Circles: CEO, CIO, IT GROUP / BUSINESS UNITS

Figure 3: IT Project Environment

measurements of success in the IT project and organizational environment are also those for the business: a balanced scorecard approach (which includes organization-wide indicators, including "learning" and financials as well as business objectives); time-to-market; product/service innovation; and customer satisfaction. There is definitely a blurring of enterprise, business and strategic elements along with the technological dimensions seen in the IT environment by the IT professionals in this study.

Project Life Cycle

IT Project Lifecycle

Phase 1
Plan-to-Start
- Identify business needs
- Coordinate IT/business solutions
- Define project vision, goals, and deliverables
- Identify relevant stakeholders
- Develop change management plan
- Select methods /approaches / roles

Phase 1I
Pre-implementation
- Define master plan & WBS
- Identify team players and stakeholders
- Define risks, change, quality, and service
- Confirm resource requirements
- Product / update work and budget plans
- Communicate schedules to all teams

Project Management Lifecycle

Phase 3
Manage-to-Control
- Implement change management
- Implement risk management
- Implement quality control
- Manage cost / deliverables
- Evaluate control activities

Phase 4
Execute
- Implement all plans

Phase 5
Close / Audit
- Close all projects / contracts
- Complete stakeholder satisfaction evaluation
- Transition all support services
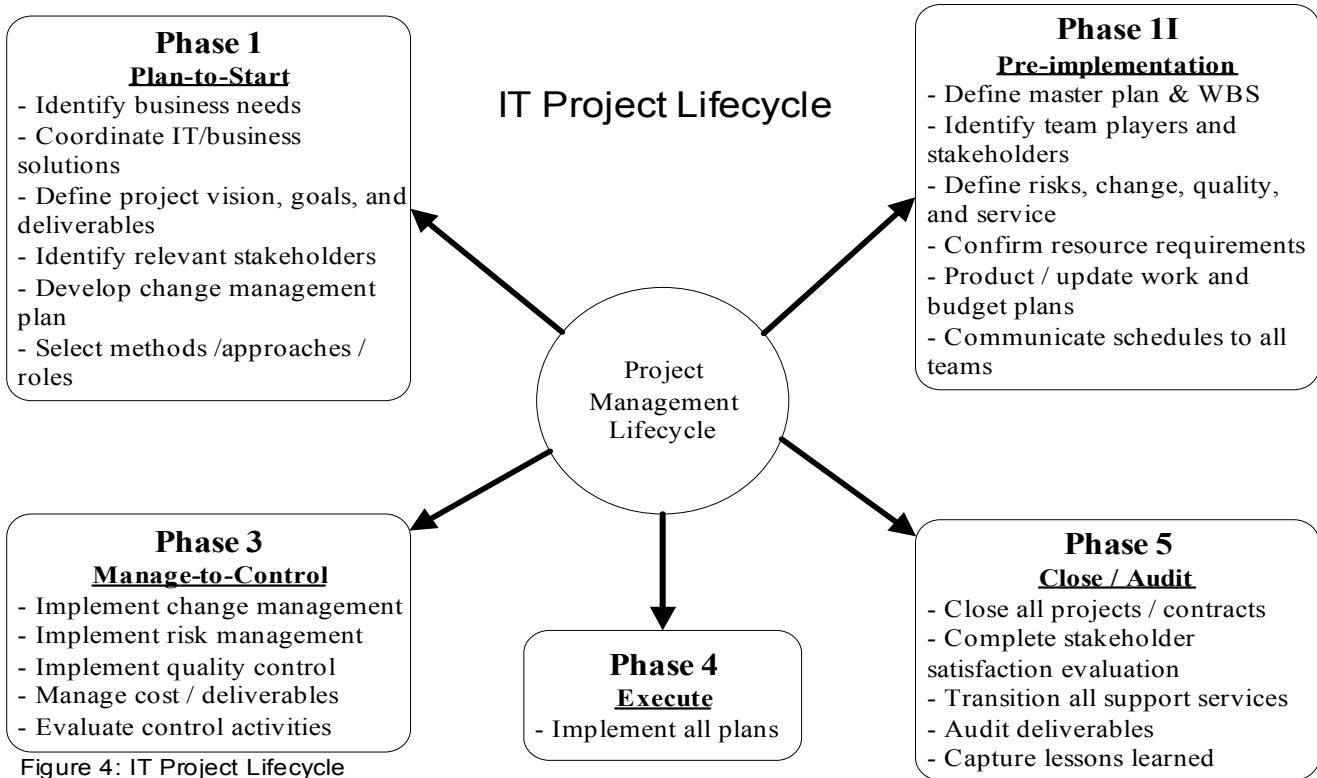- Audit deliverables
- Capture lessons learned

Figure 4: IT Project Lifecycle

Finally we reviewed respondents' current project life cycle templates and guidelines, and asked what roles they played in planning and implementing IT projects. Figure 4 illustrates a composite of repeated themes of several templates from the seven organizations in our sample. We observed was that no organization used only one project life cycle template. Some projects plans were adopted from outside consultants; others were developed in-house. Our italicized text in figure 4 represents the project work that requires different roles from IT professionals that the traditional command, control, and monitoring roles. Consistent with our earlier findings in this study, technical professional roles included (1) understanding a customers business needs; (2) providing business/IT solutions; (3) identifying and managing relevant stakeholders; (4) managing risks (political, business, and technical) to the client's satisfaction; and (5) identifying and managing change. Other elements in project plans included terms such as "user centered," "knowledge management" (as a competitive differentiator), "defining project success with the end user," and "continuous communication with all stakeholders."

4. Conclusion & Implications for IT Leaders

Our findings confirm previous findings that the roles of IT leaders are more strategically and externally focused and involve change management and business problem-solving skills [6, 8, 9, 12, & 20]. We also found IT leaders and professionals assuming the following roles--but not, according to their self-reported experiences, effectively: (1) risk managers who must understand, communicate, and share risks of IT/business projects with customers [17]. This role involves a demonstration of excellent political, cultural, and business savvy communication. It also involves understanding the financial, organizational, and social consequences and impact of projects affecting

customers; (2) stakeholder managers who must quickly read complex environments to assess supporters and non-supporters of initiatives and be able to strategize buy-in options for needed constituencies [19]; and (3) change agents who must collaboratively initiate, mobilize, and involve internal and external stakeholders on critical projects. These are sophisticated skills that were previously practiced by different individual leaders and specialists in companies. Now, CIOs, IT managers and professionals are expected to be expert risk managers, stakeholder strategists, and change leaders when called upon.

Implications of our findings include the following: first, the complexity and demands of many IT/business organizational and project environments—especially in large firms-- requires leadership dyads (e.g. CEO/CIO and CIO/Assistant CIO) and teams to accomplish projects and assignments. Many firms continue to expect individuals to perform team tasks. Secondly, customer demands for IT to share business risks with new technologies requires more coordinating and decision-making authority between CEOs and other business officers in a firm. Companies that do not demonstrate top-level alignment between business and technical executives can expect failed and/or unsuccessful IT/business projects. Third, alignment of IT/business leaders, strategies, and professionals throughout a company continues to be problematic. Benchmarks, structured processes, competencies, and studies exist regarding both conceptual and practical IT/business alignment know-how [5]. Still, gaps remain regarding how to make strategic and operational alignments effectively work. Using expert facilitators to assess and develop IT/business alignment, joint training and project management coordination can be useful.

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