Evolution of the Role of Change Agent for CIOs during Their Time in Office

Arnaud Gorgeon
Groupe ESC Clermont, arnaud.gorgeon@esc-clermont.fr

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Evolution of the Role of Change Agent for CIOs during Their Time in Office

Completed Research Paper

Arnaud Gorgeon
Groupe ESC Clermont
Graduate School of Management
4, Blvd. Trudaine, 63037 Clermont-Ferrand
France
arnaud.gorgeon@esc-clermont.fr

Abstract

Information Systems research has investigated what roles CIOs should play but has paid very little attention to when these executives are more likely to be effective in their various roles. This paper focuses on the role of change agent, and proposes a three-stage model (“Conquest,” “Exploration,” and “Settlement”) describing what combinations of change agentry models CIOs follow during their time in office. The model suggests that CIOs predominantly follow the “advocate” model of change agentry at the beginning of their tenure, and combine both the “advocate” and “facilitator” models as they progress in their position. As they reach the end of their tenure, CIOs mainly adhere to a balanced combination of “facilitator” and “traditionalist” roles. The combinations of change agentry models CIOs tend to follow are explained by the patterns of evolution of five key characteristics: commitment to a paradigm, task knowledge, information diversity, task interest, and power and influence.

Keywords: CIO, change agent, change agentry model, tenure
Introduction

During the last few decades, the roles of Chief Information Officers (CIOs) have dramatically changed (Chun and Mooney, 2009; Ross and Feeny, 2000). Technologists with little discretion in the early days of computing, CIOs are now members of most top management teams, and increasingly participate in the setting of the strategic direction of their firm (the State of the CIO Survey, 2009¹). Information Systems (IS) research has focused so far on what roles CIOs should play and what factors make CIOs effective in these roles (Applegate and Elam, 1992; Earl, 1996; Gottschalk, 1999; Grover et al., 1993; Karahanna and Watson, 2006; Rockart et al., 1996; Ross and Feeny, 2000; Smaltz, 2001). Interestingly, however, we still know very little about when CIOs are more likely to be effective in their various roles.

Among the various roles CIOs have to play, that of change agent has been recognized as being critical (Markus and Benjamin, 1996). In dealing with IT-related change, CIOs may follow three ideal models of change agency or a combination thereof: the traditional IS model, the facilitator model, and the advocate model (Markus and Benjamin, 1996). Effective CIOs are those able to follow the most appropriate model or combination of models of change given the nature of the environment (Markus and Benjamin, 1996). The management literature suggests, however, that the time CIOs spend in office may affect their ability to manage change (Boeker, 1997; Miller, 1991; Musteen et al., 2006). Reasons for these temporal effects are discussed by Hambrick and Fukutomi (1991), who propose that as top executives spend more time in the same position they develop a more conservative attitude and behavior toward change, which may be explained by the patterns of evolution of five key characteristics: their commitment to a paradigm, their task knowledge, the diversity of their information sources, their task interest, and their power.

In this study, I ask the following question: how and why does the role of change agent evolve for CIOs as they progress in their tenure in office? Specifically, I explore the temporal relationships between CIOs’ five key characteristics (per Hambrick and Fukutomi, 1991) and their approaches to manage, lead, and implement IT-related change. Drawing from the Management and IS literature, and an empirical study of university CIOs, I propose a three-stage model that discerns three main phases in typical CIOs’ tenure, and propose that within each phase CIOs’ evolving key characteristics combine in ways that render the use of a combination of change agency models more natural to follow.

The Three Models of Change Agency

Markus and Benjamin (1996) reviewed the practitioner, organization development, innovation, management, and change politics literature and proposed three models of change agency: the traditional IS model, the facilitator model, and the advocate model. Each model specifies the change agent’s attitudes, beliefs, and behaviors toward IT-related change.

“Traditionalists” believe that technology causes change. They are agents of change because they design and build the systems enabling the organization to change. “Traditionalists” help the organization to achieve its objectives but are not responsible for setting or achieving them. “Traditionalists” are experts in technological matters, not in business matters, or organizational or behavioral matters related to the use of Information Systems. Unlike “traditionalists,” “facilitators” believe that change is brought about by people and not technology. They help create the conditions for people in their organization to make informed choices based on valid information. “Facilitators” are impartial in their views of and solutions to technical and business issues. “Facilitators” also serve the interests of their clients as a whole to the detriment, if need be, of the individual or even themselves. “Advocates” also believe that people, not technology, cause change, and that they cannot create change alone, but through the actions of many others. “Advocates” have a clear vision of what should be done differently and how change should be brought about. They openly and steadfastly champion their ideas and do not hesitate to use persuasion, manipulation, power, or even outrageous actions to get acceptance, but they will let the organization make the changes itself. “Advocates” work for the best interests of their organization, even when their personal or professional interests conflict.

In dealing with IT-related change, CIOs would ideally follow a combination of the three models (Markus and Benjamin, 1996). The nature of IT projects may favor the use of a specific role—for instance, the “facilitator” role may be most useful when choosing and implementing black-box technologies (such as Personal Digital Assistants),

¹ www.cio.com
whereas the “advocate” role may be most needed for IT infrastructure projects (Markus and Benjamin, 1996). Whichever change agent roles CIOs choose to follow, however, they need the capabilities to follow the role. CIOs may indeed have the right beliefs about and attitudes toward change but may not be able to behave the desired way simply because they lack the abilities to do so. For instance, a CIO may have a clear vision of where his or her organization needs to go with IT but may have little power or influence to realize his or her own ideas, and find it difficult to play the “advocate” role.

Although Markus and Benjamin’s model has been established for more than a decade, there is surprisingly little empirical evidence supporting it. There is evidence of how the model plays out for IS specialists in general (Binbasioglu and Winston, 2003; Paré and Jutras, 2004) and IT consultants in particular (Winston 1999), but none for CIOs. Moreover, neither Markus and Benjamin (1996) nor the IS and Management literature I reviewed address how the change agent role may evolve with CIOs’ tenure. One theoretical model, proposed by Hambrick and Fukutomi (1991), may offer the theoretical foundations for explaining why CIOs would follow different models of change agentry as they progress in their tenure in a particular position. I discuss this model next.

The Evolution of CIOs’ Key Characteristics during Their Tenure in Office

Hambrick and Fukutomi (1991) suggest that as top executives spend more time in office they develop a more conservative attitude and behavior toward change. The authors propose that the executives’ attitude and behavior toward change may be explained by the patterns of evolution of five key characteristics: their commitment to a paradigm, their task knowledge, the diversity of their information sources, their task interest, and their power. Next, I discuss in turn how these characteristics may evolve for CIOs in office.

Commitment to a Paradigm. To apprehend the complexity of their environment, CIOs rely on a simplified model of reality or paradigm (Hambrick and Fukutomi, 1991). CIOs’ paradigms are based on two distinct but related elements: a schema and a repertoire. CIOs’ schemas are the set of preexisting knowledge, preconceptions, beliefs, inferences, and expectations the executives bring to their work environment and decision making. Schemas are derived from cultural, educational, familial, and work experience. CIOs’ repertoires represent their executive tool kit or abilities. For instance, CIOs with an IT background may be better at assessing complex technologies, whereas non-technologists may have a better grasp of the business processes that pertain to the CIOs’ functional areas of origin. As with schemas, repertoires are derived from previous experiences and personal aptitude. Hambrick and Fukutomi’s model (1991) would suggest that CIOs enter their new position with a moderate commitment to a paradigm. The mere fact of having been selected for their new position lets CIOs believe that their established paradigm is potent and valid (Vancil, 1987). At the outset of their tenure, CIOs should thus have confidence in their vision of the role IT should play in their new organization. As CIOs learn and experiment, they may “open up” and broaden their mindset, redefining their views of their environment and the ways of operating in it. During this period of transition, learning, and discovery, CIOs may relax their paradigm, aligning it with a better understanding of the realities and demands of their organization. After this period, CIOs will gradually and increasingly get recommitted to a paradigm, which may be the initial or a revised one. At this stage of their tenure, however, CIOs have been socialized enough (Van Maanen and Schein, 1979) that their paradigm is likely to reflect a shared understanding among the organization of what and how things should be done.

Task Knowledge. As CIOs enter their new position, they have to learn about their tasks: the facts, trends, contacts, and procedures that pertain to the successful performance of the CIOs’ roles in the organization (Hambrick and Fukutomi, 1991). Experienced CIOs may be at less of a disadvantage but will still be confronted with unfamiliar actors, terms and norms, etc. Similarly, a CIO who has been promoted from within his or her own organization may have a better network for information exchange (Kotter, 1982) but will still have to learn many dimensions of his or her new job. Two other types of knowledge are critical: strategic business and strategic IT knowledge (Armstrong and Sambamurthy, 1999; Smaltz, 1999; Stephens et al., 1992). Strategic business knowledge refers to the CIOs’ understanding of their organization’s competitive forces and strategies, and is a prerequisite of new IT assimilation and a catalyst for the integration of CIOs in the top management team (Armstrong and Sambamurthy, 1999; Stephens et al., 1992). Strategic IT knowledge refers to the CIOs’ awareness and understanding of current and emerging technologies and their relevance for the firm. An understanding of the inner workings of the firm should also help CIOs promote IT innovations allowing the executives to break rules and get through their organizations’ bureaucracy when needed (Heng et al., 1999). At the outset of their tenure, CIOs will exhibit low overall task knowledge but will learn rapidly. After a few years in office, CIOs will tend to engage in more incremental and routine learning (Gabarro, 1987), and their task knowledge will reach a plateau (Katz, 1980).


**Information Diversity.** Hambrick and Fukutomi (1991) suggest that top executives tend to rely on narrower and more filtered sources of information as the executives progress in their tenure. With tenure, general managers have been found indeed to rely more on internal sources of information than external ones (Aguilar, 1967; Katz, 1982). With time, information filtering occurs also not only by top executives themselves, who tend to ignore information that does not fit their paradigm, but also by their peers and subordinates, who learn with time the executives’ information preferences—the information format, timing, and even content. As executives, CIOs are likely to suffer from information filtering, but unlike other executives, CIOs are less likely to narrow their sources of information. Watson’s (1990) study of 47 Australian IS managers, although dated, provides interesting findings about IS executives’ information scanning behavior. Watson (1990) found, for instance, that IS managers tend to scan sources close to the IT industry and that the managers are most influenced by their peers. He also found that the most influential sources of information were, in decreasing order, management conferences, discussions with colleagues in other professions, internal training sessions, industry seminars, and visits to other organizations. He also found that IS executives spend about 7.5 hours per week, i.e., about 15% of their total working time, on scanning for information to maintain the currency of their knowledge. Heng et al. found that senior IT executives who were also recognized IT champions tended to maintain a broad network of contacts and scanned their technological environment regularly (Heng et al., 1999).

**Task Interest.** Newly appointed CIOs have great interest in the demands of their jobs; novelty reigns. As the CIOs spend more time in a particular position, their level of task interest tends to decrease. This is not to say that they will come to dislike their job, but rather that they will feel more comfortable in their role and less excited about and stimulated by their tasks as the routine settles. As Jerry Gregoire (2002), former CIO of Dell, puts it: “If you’ve been in the same CIO job for 10 or so years and you’re not bored, you’re either an extraordinary person or lucky enough to be in extraordinary circumstances.” Many parts of CIOs’ jobs are indeed recurring: budget planning, staff evaluations, clients’ needs survey, etc. These may be stimulating and novel at the beginning, but less interesting with time. CIOs may even get accustomed to the most demanding and challenging tasks and responsibilities, and find them less interesting and exciting (Katz, 1980: 104). CIOs’ perception of the time they have left in their current position (e.g., retirement is looming or they are looking for another job) may have also significant motivational effects. Socio-emotional selectivity theory (SST) maintains that when time is perceived as open-ended people tend to focus on goals that are more preparatory, focused on gathering information, on experiencing novelty, and on expanding breadth of knowledge (Carstensen, 2006). When time is perceived as constrained, however, people tend to emphasize goals that can be realized in the short-term, sometimes in their very pursuit.

**Power.** Formal power (authority) and power of influence (Enns et al., 2003) are both essential to the CIOs’ ability to perform their roles. CIOs’ authority flows down the hierarchical ladder and directly affects their direct subordinates. Influence is more multidirectional and serves CIOs to persuade actors at all levels of the organization, from subordinates to colleagues and superiors. Influence is important for CIOs because it helps them to create a shared understanding and vision about the role of IT in their organizations, increasing the chances of aligning IT projects with the overall strategy of the firm, a critical component of success (Chan et al., 1997; Earl and Feeny, 1994). Influence is also of particular importance when CIOs have little authority, which is often the case when IT is largely decentralized. Newly appointed CIOs have some authority but are unlikely to have a lot of influence; however, both should increase with time (Hambrick and Fukutomi, 1991). An increase in authority will stem, for instance, from CIOs’ reconfiguration of their management teams. CIOs’ influence also builds up as they establish closer relationships with their community. Tenure is also recognition of success, and a successful track record may also be a source of power. Of course, some CIOs may be brought in to “turn around” specific situations, and will be given a lot of power at the outset to perform their tasks. Poor mid-tenure performers may see their power decrease.

In summary, typical CIOs should see their characteristics follow specific trends over their tenure in office. At the beginning of their tenure, CIOs will have a strong commitment to a paradigm, which decreases as they become more open minded, and gets stronger again as they progress in their position. CIOs’ information diversity and power will diminish over time, and their task interest will be high initially but will decrease slowly with time. To explore how these characteristics may evolve with CIOs’ tenure and how they may explain the type of change models CIOs follow, I conducted an empirical study which I present next.

**Research approach**

The empirical study I conducted investigated the CIOs of a large public university system in the United States. The system consists of 10 campuses that share, under a common governing body, a common institutional and
technological environment, but nevertheless maintain the freedom to adapt and respond to the demands of their local environments. These public universities provided a good context for studying how CIOs manage, lead and implement IT-related change. These organizations are notoriously slow in their dealings with change and are not driven by quarterly results, which makes their change processes easier to study and interpret. CIOs of public universities also tend to have longer tenures than their counterparts in other industries (the latest State of the CIO Survey in 2009 shows that CIOs are in office for 5 years on average\(^2\)), which allowed me to explore the effects of a broader range of tenure lengths.

To maintain anonymity, I gave each university a letter name. The 10 universities represent a wide spectrum of research foci and vary considerably in size and operating budgets. Appendix A provides details about each university (size, age, population and operating budget) and its IT organization (size and operating budget). At the time of my interviews, University B did not have a CIO and was conducting a search. All the CIOs I interviewed were male and contrasted widely in their tenures in office, their educational backgrounds and work experiences (see Appendix B for a summary of these characteristics). I conducted a combination of “focused” and structured interviews with 12 CIOs (some universities distinguished between academic and administrative computing and had two CIOs). Interviews lasted an hour on average and were all tape-recorded and fully transcribed. The structured part of the interview aimed at gathering information about the CIOs’ educational backgrounds, their work histories and their IT organizations. In the “focused” part of the interview, I sought to explore the CIOs’ subjective experience in dealing with IT-related change during their time in office. I chose a “focused” approach to minimize directing and to allow the interviewee to discuss and explore matters of significance to him rather than those imposed by me (Merton and Kendall 1946; Spender 1989). This approach was essential to capture the CIOs’ beliefs about and attitudes toward change and maintain the discussion at a high-enough level of abstraction to avoid entering into the operational and technical details of specific projects. I started the interviews by clearly stating my research interests: to understand how the CIOs lead, manage and implement change. I followed a broad interview guide to remind me of the topics I wanted to cover. During the questioning, however, I concentrated on listening to the content of what was said, rather than follow a specific interview protocol, improvising whenever necessary and calling for retrospection and exploring feelings. Table 1 below provides a sample of the questions I asked during the interviews.

<table>
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<tr>
<th>Table 1. Examples of questions asked during the interviews</th>
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<tr>
<td>Could you tell me about your background, starting from when you graduated?</td>
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<tr>
<td>Could you describe your IT organization?</td>
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<tr>
<td>Could you tell me about the biggest IT-related change episode you went through as a manager?</td>
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<td>What were the hardest and the easiest things for you in managing this process?</td>
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<tr>
<td>Could you tell me about the decisions you have made?</td>
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<td>How much do you communicate with your peers in the system?</td>
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Interview analysis

I fully transcribed and analyzed the interviews to reconstruct the CIOs’ educational backgrounds and work histories, and determine the evolution of their key characteristics and the models of change agentry the CIOs followed during their time in office.

CIOs’ backgrounds and work histories. To maintain anonymity and facilitate reading, I gave the CIOs a name starting with their university’s letter; for instance, Ken is CIO of University K and Dave CIO of University D. The CIOs’ work histories span the period between their graduation from university and my interview. Appendix C details the CIOs’ work histories, and specifies the time they have spent in their current and other positions. The CIOs’ tenures ranged from 6 months to 18 years, which I grouped into three main periods: early tenure or 0-3 years, mid-tenure or 4-7 years and end of tenure or 8-18 years. Two-thirds of the CIOs had spent most of their working lives in a university environment, and of the 12 CIOs I interviewed, only 5 had a computer science background; the others majored in fields as diverse as Linguistics, Electrical Engineering, or American and Latin Studies. The CIOs’

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\(^2\) www.cio.com
work histories also allowed me to distinguish among CIOs who were recruited internally (seven) and those who were recruited externally (five) (see Appendix B for more details).

CIOs’ key characteristics. I read all transcripts line by line and identified all excerpts that discussed directly or indirectly any of the five key characteristics specified by Hambrick and Fukutomi (1991). The specific content and context of each excerpt allowed me to provide an assessment, on a simple low(1)-moderate(2)-high(3) scale, of the level of a specific CIO’s characteristic at a particular time. Whenever the evidence justified it, I also characterized the level of the characteristic as increasing or decreasing. Appendix D provides an example of the coding scheme I used to analyze the interview transcripts. I next give examples of CIOs’ comments reflecting the evolution of some of the CIOs’ key characteristics. Kent (CIO of University K), for instance, revealed a high level of “Task Interest” at the onset of his tenure at University K:

“When I came here, one of the reasons I did was [because] I needed to be professionally fulfilled in a way that also tied into my personal objectives. My wife is a public high school teacher. My kids are in public schools. We went to public universities. I’m at University K as opposed to Stanford or MIT for a reason. The public mission is a big part of why I’m here. So it’s been very effective for me at matching my professional objectives with my personal objectives.”

On the other hand, Ron, CIO of University R for 18 years, who had already spent 26 years at University R, showed less enthusiasm for his current position (I coded his comment as low on his “Task Interest” characteristic):

“And I’m actually at an age, I’m 48, and I’m hoping that I’m going to work for 10 more years, I’d like to work for 10 more years, and I’m thinking about how do I want to spend those last 10 years.”

Vincent, who just joined University V, discussed his strategies to develop his influence (I coded his comment as low but increasing on his “Power/Influence” characteristic):

[About getting the stakeholders on board] “A big part of it is what I’ll call the walk-around model. It’s just basically meeting with them, getting names of other people to meet with. The second thing is to get groups of faculty together to actually discuss directions, and sometimes, people use committees to do that as just a way to get them to talk.”

Finally, Ken, who had spent all of his experience as a CIO in the corporate world before joining University K, reflected on realigning his paradigm with the realities of his new environment (I coded his comment as low on his “Commitment to a Paradigm” characteristic):

“If you run on a treadmill and you run really, really, really fast and then you step onto a treadmill that’s really, really, really slow, you can’t do it. It’s too hard. So the question for me is how do I get off the fast treadmill and speed up the slow treadmill so that you get it to a better pace.”

Because of time constraints, my discussions with the CIOs tended to focus more on their present experiences than their past ones. The collected body of evidence thus did not always allow for an assessment of the CIOs’ characteristics over the whole of their tenure, only at particular points in time. Because the short-tenured CIOs’ experience was more current and relatively shorter, the evolution of their characteristics was better documented; some of the characteristics, however, did not receive enough or strong enough evidence to be assessed at any particular level. For instance, I didn’t find any supporting evidence in the interview transcript of the “Task Interest” characteristic for the 4- to 7-year period. In contrast, longer-tenured CIOs received an incomplete picture of the evolution of their characteristics, the interviews providing in general more supporting evidence about the CIOs’ present situation than about the early stages of their careers.

CIOs’ models of change agency. To identify the models of change agency the CIOs followed during their tenure, I read all transcripts line by line and sought instances in the CIOs’ discourse of their beliefs, attitudes and behaviors that revealed the CIOs’ adherence to a particular model of change. I provide in Appendix E an example of my coding a CIO’s tendency to adopt a particular change agency model from his interview transcript. CIOs “advocate” tendencies were revealed by statements of strong and clear convictions of what had to be done in their organizations, descriptions of proactive approaches to rally stakeholders to given courses of action, explicit formulations of will and desire to promote and initiate change, and instances of involvement in the politics of their organizations. For
instance, I interpreted Dave’s (CIO of University D for 11 years) comment as representing his “advocate” tendency at the beginning of his tenure at University D:

“When I came here, I said that everything we do is going to be Web-based. This was 1996. No more client server. No more mainframe. Everything— I mean from a user perspective.”

CIOs’ “facilitator” tendencies were revealed by acknowledgments of the importance of involving and consulting the various stakeholders in decisions-making and change processes, descriptions of collaborative, helping and neutral approaches to serving and managing stakeholders. Ron’s (CIO of University R for 18 years) consultative approach revealed his “facilitator” tendencies:

“We sat around for months with representatives, in this room actually, with humanities, arts and social sciences, engineering, physical sciences, and we got them to agree that everyone would use one Web interface to capture their publications per that schema. That is hard, that took four or five months.”

Finally, CIOs’ “traditionalist” tendencies were revealed by descriptions of their responses to the direct demand of their universities and statements about their attitudes and beliefs about IT. For instance, I interpreted Dennis’s (CIO of University R for 18 years) description of his managing the demands of his stakeholders as his traditionalist approach to change:

“One of the ways we determine how we’re going to change, technically, is we conduct an annual survey of our customer...there’s a section of it that’s called the wish list. We call it the wish list, informally. And basically we get them to tell us or to request of us new facilities or major upgrades of old facilities.”

The amount of transcript material (measured in number of words) used to identified CIOs’ model of change agentry represents on average 6% of the total amount of available transcript material (excluding questions). I measured, for each tenure period and each CIO, the assiduity with which a particular model of change had been followed by calculating the relative number of discourse excerpts that supported the model. For instance, I found four excerpts supporting Vincent following the “advocate” model and one excerpt supporting his following the “traditionalist” model, resulting in my giving him a relative distribution of change agentry models as 80% “advocate” and 20% “traditionalist.”

Findings and interpretation

Results of my analyses are shown in Figure 2a and 2b. We note that, on average, CIOs start in their new position with a high commitment to a paradigm, and remain highly committed to this paradigm for the remaining duration of their tenure. CIOs’ initial high and continuing commitment may be explained by the fact that most were recruited internally and spent the majority of their work histories in a university environment.

The only exception to this general finding was Ken. During his first year as CIO of University K, Ken rapidly revisited his initial paradigm to realign it with the realities of his new environment. Ken had spent all his experience as a CIO in the corporate world, and although he had spent three years at University K before becoming its CIO, his paradigm was heavily colored by his corporate experience. On average, CIOs’ task knowledge rapidly increases in the early part of their tenure, to reach and remain at a high level for their remaining time in office. This is true for all CIOs, but the CIO of University I, Ian, who started in his office with a high knowledge of his task. Ian, indeed, had spent all of his work history (18 years) at University I in the very IT department of which he became CIO. The CIOs’ information diversity appears to remain high for the most part of their tenure, becoming less diverse toward the end. Results also suggest that, on average, CIOs start their time in office with a high interest in their task, but this interest wanes with time. An interesting exception to this case is Felix, whose task interest in the early part of his tenure was measured as moderate. Felix, co-CIO at University F, had been in office for only 6 months but had spent all of his working life (26 years) at University F. Although Felix was excited to be in his new position, his enthusiasm was mitigated by a big concern: retirement was looming. Finally, on average, CIOs’ power and influence increase steadily during their time in office. Francis, co-CIO at University F, was the only CIO who started his new position with a high level of power and influence. Francis was recruited internally after having spent 33 years at University F in various high-level managerial positions (the latest as Director of Human Resources).
Turning now our attention to the results concerning the CIOs’ models of change agentry, the results show that CIOs tend to follow a specific combination of models according to the time they have spent in office (see Figure 2b). In the early stages of their career (0-3 years), the CIOs predominantly follow the “advocate” model (79% of all supporting excerpts on average), dedicating little attention to the “traditionalist” role (16% of all supporting excerpts on average) and almost ignoring the “facilitator” role (5%). During mid-tenure (4-7 years), the CIOs seem to combine the “advocate” (57%) and “facilitator” (43%) models. The absence of the “traditionalist” role at this stage is interesting and requires further investigation given that the CIOs follow this model at the beginning and the end of their tenure. At the end of their tenure (8-18 years), the CIOs rely less on the “advocate” model (20% of all supporting excerpts on average) and mainly adhere to a balanced combination of the “facilitator” and “traditionalist” models (both 40%).

Based on these findings, I propose a three-stage model describing how CIOs’ characteristics and their evolution may explain the type of change agentry model they follow as they progress in tenure in a particular position. Because the model hinges on the study of a small group of CIOs from an American public university system, the limitations that ensue should be kept in mind during its interpretation.

The Three Phases of CIOs’ tenure

In this section, I combine Markus and Benjamin’s (1996) model with that of Hambrick and Fukutomi (1991) into a three-stage model showing how CIOs’ evolving key characteristics combine in ways that render the use of a combination of change agentry models more natural to follow. The model consists of three stages I labeled metaphorically “conquest,” “exploration,” and “settlement.”

Figure 1 graphically shows how CIOs’ characteristics evolve with tenure and presents the evolution of the distribution of change models CIOs follow during that time. The trends shown in the figure are merely indicative, and the figure’s only purpose is to help the interpretation of a complex set of dynamic phenomena. To complement this graphic representation, I present the following narratives that describe how and why CIOs’ characteristics may
affect the model of change agentry the CIOs follow. These narratives have no ambitions but to provide the foundations for the formalization of a more complete, operationalizable, and testable theory.

Figure 1. The three phases of CIOs’ tenure in office. Evolution and distribution of CIOs’ characteristics and change agentry models over time

Conquest

Newly appointed CIOs have to conquer not only their new job but also their organization. They must learn new tasks, and acquire the relevant business and technical knowledge that will allow them to understand and operate within their new environment. New CIOs also have to build their credibility, legitimacy, and political strength to perform their roles as leaders and managers of their IT organization. Newly appointed CIOs also have to meet many expectations: they have a mandate to fulfill and a job to justify. Highly committed to their new tasks and confident in the validity of their paradigms, CIOs strive to expose, defend, and diffuse their visions for IT. Recruited for leadership, CIOs also have to behave as leaders. At the onset of their tenure, CIOs thus find the “advocate” model of change agentry the most natural model to follow. Although CIOs predominantly follow the “advocate” role, they also play the “traditionalist” and “facilitator” roles, but to a lesser extent. CIOs find in the “traditionalist” model a means to rapidly obtain recognition among their community by satisfying some of the most pressing technological needs, tackling those low-risk highly visible projects that were initiated before their time. This approach, however, remains opportunistic and punctual. It is unlikely indeed that such a passive approach be tolerated for long by any organization, unless of course the organization chose to appoint a figurative CIO it wants to control. During the conquest phase, CIOs are also less likely to play the “facilitator” role. They still rely on their established paradigm to inform their decisions, and are thus not prone to showing impartiality in their advice for their community about IT. They build their power and influence to persuade rather than provide advice. CIOs also still rely on many sources of information: they listen proactively to their stakeholders, and consult the network they have established in their previous positions. The “conquest” stage should be the most challenging and risky period for CIOs who have to spend a lot of energy and time to establish themselves and learn about their new environment. Their surviving the “conquest” phase should signal success and acceptance by their community. At this stage, CIOs should feel less pressure to perform and less threatened about losing their job. Successful CIOs move on and enter the second phase of their tenure: “exploration.”

Exploration

Having conquered their new job and their organization, CIOs engage in more exploratory activities. They understand their environment better, they have sharpened their strategic business and IT knowledge, and they have
established stronger relationships with key stakeholders. CIOs have acquired enough credibility and legitimacy to feel more comfortable in their role and ready to strengthen their commitment to their original paradigm, or align it with their new understanding of reality. More open-minded and still highly interested in their tasks, CIOs are more inclined to listen to the needs of their organization and help make informed decisions about IT-related change. During this period of exploration and reflection, CIOs are thus more inclined to follow the “facilitator” model. They do not, however, relinquish their “advocate” approach to managing change, mainly because they are in a better position than ever to follow this role. At this stage of their tenure, CIOs have acquired enough power and influence, sufficient knowledge about their job, their organization, and its needs, to sell their vision for IT with a relatively high chance of success. Why then would CIOs use a balance of “advocate” and “facilitator” models, and not exclusively adhere to the “advocate” role? The reason may be due to the fact that, through their socialization during the “conquest” stage, CIOs have aligned their vision for IT with that of their organization, and commit to the paradigm that is shared across the organization. CIOs also still need to convince using their power and influence, but they have to do it less aggressively and frequently, carefully managing the social capital they have built. During the “exploration” period, CIOs have few if no opportunities to follow the “traditionalist” role. CIOs have indeed enough power and influence, energy and interest in their task to either take the time to listen proactively to stakeholders and provide impartial advice and guidance, or to take the lead and persuade. The “exploration” period should probably be CIOs’ most gratifying period in office, but the danger at this stage is to fall into complacency, which may well occur as CIOs move to the last phase of their time in office: “settlement.”

Settlement

During the final stage of their time in office, CIOs settle into their role and their organization. They have acquired a lot of power and influence, but the very power and influence they have built are anchored in the close relationships and trust they have developed with their peers and colleagues over the years. CIOs are thus careful not to disturb the established status quo by over-playing the “advocate” role. They still have to play this role, however, because they are still expected to behave as technological leaders, ensuring, for instance, that their organization keeps up with the latest technological advances. Failure to do so may signal their organization that time has come to find their replacement. With time, CIOs also see their task interest wane, and with it their motivation and energy to defend, diffuse and implement new visions for IT. During their many years in office, CIOs have learnt a great deal, and they may feel that they have seen it all already. For many, the French adage “plus ça change plus c’est la même chose,” that is, “the more things change, the more they remain the same,” rings very true. As boredom and disillusion settle in, CIOs slowly fall into complacency and increasingly follow the “traditionalist” role, reacting and responding to the demands of their organization rather than leading it. CIOs also carry on following the “facilitator” role, but to a lesser extent. The “facilitator” role is indeed a good alternative to the “advocate” role for CIOs who have less energy and task interest but more task knowledge. The “settlement” phase should be the most tranquil period in CIOs’ tenure. It is a good place to be for those reaching retirement, and a signal that time has come to move on for those with further career growth perspectives.

Exceptions and Variations

The descriptive model presented above is an over-simplification of CIOs’ common tendencies to adopt a particular type of change agent role according to the time they have spent in office. Some exceptions and variations to this ideal model may occur, and I discuss those that can be easily anticipated next.

Factors that may create exceptions may be considered at three different levels: environmental, organizational, and individual. Environmental factors such as competitive rivalry and uncertainty (Porter, 1980) and technological discontinuities (Tushman and Anderson, 1986) may force CIOs to start and continue their tenure within a particular phase. At one extreme, CIOs of firms operating in a low-turbulent environment where IT and new advances in IT play a small role may feel little pressure and incentive to lead their organizations on IT-related matters. These CIOs may rapidly reach the “settlement” phase and remain there, predominantly following a combination of “facilitator” and “traditionalist” roles. At the other extreme, CIOs of firms operating in a highly competitive and turbulent environment where new IT and its fast adoption are critical may be continuously challenged. These CIOs have to regularly update their visions for IT, and diffuse and implement new technologies rapidly and repeatedly. In those circumstances, CIOs are unlikely to ever reach the “settlement” phase, but may cycle through the “conquest” and the “exploration” phases. Institutional forces may also play a role (DiMaggio and Powell, 1982; Teo at al., 2003). A high degree of industry isomorphism (particularly mimetic pressures) may encourage CIOs to follow rather than lead and set them rapidly into the “settlement” phase.
At the organizational level, the business strategy of the firm may force CIOs to play specific roles and remain within specific phases. Firms with different strategic orientations have different technological needs and require different roles for their CIOs (Karimi et al., 1996). Prospectors (Miles and Snow, 1978), for example, aggressively pursue new products and markets development, and CIOs of these firms are expected to (1) spend more time scanning their firms’ environment for new developments in IT, (2) scrutinize the internal environment for opportunities to use new IT innovations, (3) link IT management strategies to their firm’s business strategy, and (4) develop solid relationships with the senior management team (Karimi et al., 1996). CIOs of prospectors are thus likely to feel the need to remain in the “conquest” phase and predominantly play the “advocate” role. Reactors (Miles and Snow, 1978), on the contrary, have no distinct competitive strategies, and simply react to their environments; they are unlikely to devise aggressive strategies for their IT needs. CIOs of these firms may play a small role beyond running the firm’s IT assets, and should rapidly reach, and persist in, the “settlement” phase.

Finally, at the individual level, some CIOs’ personality traits may be strong enough to play a moderating or even overriding role. Of the “Big Five” (Digman, 1990), openness and extraversion have been found to be positively associated with CIOs’ creativity and innovativeness (Li et al., 2006). CIOs high on openness are more adventurous and curious about their environment. CIOs high on extraversion feel comfortable with uncertainty, proactively seek change opportunities, and have the charisma to rally others to their vision. CIOs high in either or both of these traits are unlikely to be satisfied with the status quo, and may thus never reach the “settlement” phase but persist in the “conquest” phase and follow the “advocate” role. There is of course a litany of other personality traits that could be considered. Hambrick and Fukutomi (1991) list, among others, the need for achievement, tolerance for ambiguity, and internal locus of control. Because all these personality traits are likely to be permanent and consistent over CIOs’ lifetimes (Clarke, 1997), the traits’ actual influence could be well confounded in CIOs’ paradigms and difficult to discern independently.

Variations to the ideal model may also occur. CIOs may, for instance, cycle several times through the three phases during their time in office. The appearance of disrupting technologies (Bower et Christensen 1995) or radical changes in top management teams at several points during CIOs’ tenure may cause CIOs to “reset their tenure clock” and initiate this cycling process. CIOs’ entry conditions may also affect CIOs’ evolution through the various stages. CIOs who have been in the same organization for a long time and promoted internally may have already acquired substantial power, influence, and task knowledge, shortening their “conquest” phase and accelerating their move to the following ones. Although variations to the general case are expected, they are likely to be rare but will provide interesting cases to explore in future research.

**Contributions**

Drawing from Hambrick and Fukutomi’s dynamic of executives’ tenure in office and Markus and Benjamin’s model of change agentry, this study proposed a three-stage model explaining how and why CIOs follow different combinations of change agentry models as the CIOs progress in their tenure in office. This model and future developments should contribute to research and practice in several ways.

**Contribution to research**

This study, although specific to a particular type of executives, provides, to my knowledge, the first empirical data supporting Hambrick and Fukutomi’s model.\(^3\) Findings show that, in accordance with Hambrick and Fukutomi’s model, key CIOs’ characteristics evolve with the time they spend in office. The theoretical developments presented in this paper are also important because they provide the foundations for exploring new questions about CIOs’ effectiveness and ultimately that of their organizations. IS research has indeed paid very little attention to when CIOs are more likely to be effective in their various roles. If CIOs are to be strategists, educators, architects, etc. as the literature suggests (Smaltz, 1999; Smaltz et al., 2006), then the question remains whether there is a time during their tenure in office when they are better or worse at these roles. For instance, do CIOs always have the “credibility” to build strong and strategic partnerships with functional areas, a key criterion for ERP implementation?

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\(^3\) This claim is based on my reviewing all papers (published at the time of writing this article) quoting Hambrick and Fukutomi’s (1991) article. I searched the EBSCO database and found 100 papers citing the original article. I read the abstract of the 100 papers, and, whenever in doubt, read further some of the articles in full.
success according to Willcocks and Sykes (2000)? Knowing which CIOs’ characteristics evolve with time and how should help address questions such as this one.

This study also contributes to our little understanding of the role of change agent for CIOs. Findings of this study suggest that CIOs naturally tend to follow specific combinations of change agency models depending on the time they have spent in office. These tendencies may limit CIOs abilities to choose the appropriate combination of change agency models according to the nature of the change project they deal with (Markus and Benjamin 1996), reducing thereby their effectiveness as change agents. CIOs effectiveness as change agents could thus be seen as the disparity between the combination of change models they tend to follow naturally given their time in office and the combination they should ideally play given the nature of the IT related change projects they face. Understanding and measuring this disparity exists could bring new answers to the fundamental question of why some IT projects fail while others succeed.

**Contribution to practice**

Practically, this model should offer several practical insights into CIOs and their organizations. It should help organizations to answer critical questions such as when or whether to innovate, providing a tool to assess the risks and challenges associated with specific IT-related change projects. For instance, an ERP implementation project headed by a CIO in the “conquest” phase may be seen as more risky than one headed by a CIO in the “exploration” phase, simply because in the “conquest” phase the CIO has not yet developed enough understanding of his or her organization, nor has he or she acquired enough power and influence.

CIOs’ knowledge of their standing in a particular phase should help them make better decisions about their career and how to best contribute to adding value to their firm. The “settlement” phase is of course the most worrisome, because in this stage CIOs may increasingly rely on the “traditionalist” model of change, which may not only hurt their credibility but also lead to dramatic consequences for their organization (Markus and Benjamin, 1996). CIOs reaching this phase may thus well decide the time has come to move on to new ventures, providing their organization has not made this decision for them already. By being aware of where they stand, CIOs also would have the opportunity to fight their natural tendencies to follow a particular model of change agency. They may consciously try to operate within different frameworks, or choose to delegate some of their roles to members of their team who are more apt to follow the appropriate model of change agency.

The model may also help organizations better manage the CIO position, and assist them in deciding whether and when recruiting new ones. Organizations that know where their CIOs stand are in a better position to avoid them reaching a particular phase (e.g., “settlement,” by removing them from office or finding creative ways to reignite their original fervor) or to maintain them in a specific one. Organizations should also be in a better position to decide whether to recruit their CIO internally or externally. The model suggests that outsiders may need time to reach the “exploration” phase, and may thus not be a good choice for implementing radical change rapidly. Insiders, on the contrary, will have the benefit of reaching the “exploration” phase more rapidly, but they may also reach the “settlement” phase too soon.

**Conclusions**

Although still in its infancy, the model presented in this study provides the foundations for exploring further the temporal dynamics of the relationships between CIOs’ roles and their tenure in office, a research area that deserves more attention from a theoretical and empirical perspective. CIOs indeed are playing increasingly important roles in organizations, and as their position becomes more institutionalized, they will see their average tenure in office lengthen, and with it the period of time during which they will have to perform their various roles effectively. How effective CIOs are in their various roles, including that of change agent, as they progress in their tenure in office also remains a central question that was not directly assessed in this study, a limitation future research should address. Here, the patterns of evolution of the five CIO key characteristics should provide some initial guidance about what factors may influence CIOs’ effectiveness over time.

**Acknowledgments**

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References


### APPENDIX A. Universities ‘characteristics’

<table>
<thead>
<tr>
<th>Campus</th>
<th>Founded in</th>
<th>Campus Size (acres)</th>
<th>Campus Operating Budget ($Millions)</th>
<th>Academic Staff</th>
<th>Of which: Faculty</th>
<th>Professional and Support Staff</th>
<th>Senior Management, Management and Senior Professionals</th>
<th>Total Student Enrollment</th>
<th>IS Organization 6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>1919</td>
<td>419</td>
<td>3,588</td>
<td>10,166</td>
<td>3,326</td>
<td>25,647</td>
<td>1,561</td>
<td>37,221</td>
<td>40</td>
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<td>B</td>
<td>1944</td>
<td>989</td>
<td>638</td>
<td>3,461</td>
<td>1,054</td>
<td>6,114</td>
<td>276</td>
<td>21,016</td>
<td>n/a</td>
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<td>D</td>
<td>1960</td>
<td>2,040</td>
<td>2,156</td>
<td>6,582</td>
<td>1,471</td>
<td>15,923</td>
<td>932</td>
<td>25,938</td>
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<td>F</td>
<td>1873</td>
<td>178</td>
<td>2,640</td>
<td>4,973</td>
<td>1,686</td>
<td>13,071</td>
<td>1,094</td>
<td>4,174</td>
<td>Acad.: 50-75</td>
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<td>1965</td>
<td>1,489</td>
<td>1,446</td>
<td>5,178</td>
<td>1,400</td>
<td>10,187</td>
<td>606</td>
<td>25,024</td>
<td>Acad.: 85</td>
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<td>1868</td>
<td>1,232</td>
<td>1,599</td>
<td>8,326</td>
<td>1,950</td>
<td>11,441</td>
<td>882</td>
<td>33,558</td>
<td>Acad.: 10-15</td>
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<tr>
<td>M</td>
<td>2005</td>
<td>910</td>
<td>66</td>
<td>69</td>
<td>89</td>
<td>291</td>
<td>59</td>
<td>878</td>
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<td>190</td>
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<td>834</td>
<td>29,637</td>
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<td>Z</td>
<td>1965</td>
<td>2,000</td>
<td>432</td>
<td>2,100</td>
<td>614</td>
<td>4,620</td>
<td>231</td>
<td>15,012</td>
<td>250</td>
</tr>
</tbody>
</table>

---

4 Data are for FY 2006-2007, compiled from Universities’ Websites.

5 The Senior Management Group is composed of the senior leadership positions at the campus requiring the exercise of a high degree of independent judgment in the development of University or campus policy and program direction and acceptability for long-term results. The Senior Management Group includes academic deans. Management and Senior Professional (MSP): Positions provide leadership to major campus units, programs or fields of work, and frequently involve responsibility for unit or program policy development and the management of resources through the direction of others. Incumbents possess a high degree of autonomy in their work and make significant contributions to the University.

6 Headcount and Operating budget figures are rough estimates and for comparison purpose only.

7 For information purpose only: University B did not have a CIO at the time of this study and was not considered.

8 Projections
## APPENDIX B. CIOs’ characteristics

<table>
<thead>
<tr>
<th>CIO</th>
<th>Years in current organization</th>
<th>Years in current CIO position</th>
<th>Recruited</th>
<th>Educational Background and Work Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vincent</td>
<td>0.5</td>
<td>0.5</td>
<td>Externally</td>
<td>M.A. in Linguistics; Director of Computer Facility, Executive Director of the other High Tech. Center, Director of Academic Information Technology at major University; CIO of other major University.</td>
</tr>
<tr>
<td>Felix</td>
<td>26</td>
<td>0.5</td>
<td>Internally</td>
<td>M.A. Health Administering and Planning, Ph.D. Sociology; Professor of Medicine and Health Policy; Associate Director of Institute for Health Policy Studies at University F.</td>
</tr>
<tr>
<td>Ken</td>
<td>4</td>
<td>1</td>
<td>Internally</td>
<td>B.A., American Studies and Latin American Studies; Senior Manager, Director of IT major software company; Senior Director, CIO major communication company.</td>
</tr>
<tr>
<td>Francis</td>
<td>33</td>
<td>1.5</td>
<td>Internally</td>
<td>B.A. English Literature, M.B.A.; Director of Affirmative Action Office, Assistant Director and Director of HR at University F.</td>
</tr>
<tr>
<td>Zach</td>
<td>9</td>
<td>4</td>
<td>Internally</td>
<td>B.A. and M.B.A.; manager and consultant in organizations providing support and direction in areas of institutional investment management, economic analysis and corporate planning; IT consulting for major University; Associate Professor of Information Systems, Associate Dean of the Faculty of Management, and Associate Vice-President of Administration at other major University.</td>
</tr>
<tr>
<td>Mike</td>
<td>5</td>
<td>5</td>
<td>Externally</td>
<td>B.S. Electrical Engineering, M.S. Computer Science; researcher and system engineer for major IT corporation; systems programmer, manager of systems services and director of systems and operations at major University; Director of technology services, Chief IT architect at other major University.</td>
</tr>
<tr>
<td>Ivan</td>
<td>6</td>
<td>6</td>
<td>Externally</td>
<td>B.A., M.B.A.; programmer, computer lab manager M.B.A. program; Assistant Dean of Medical School for Information Technology at University D; IT Assistant Director, Assistant Vice-president at University system J; Director for Administrative Computing at university I.</td>
</tr>
<tr>
<td>Alan</td>
<td>7</td>
<td>7</td>
<td>Externally</td>
<td>B.S., M.S. and Ph.D. Chemical Engineering; faculty member at major research university; interim CIO position at major University.</td>
</tr>
<tr>
<td>Ian</td>
<td>18</td>
<td>7</td>
<td>Internally</td>
<td>B.S. Computer Science; system administrator, various managerial roles, Associate Director, Director of Computing Services at university I.</td>
</tr>
<tr>
<td>Dave</td>
<td>11</td>
<td>11</td>
<td>Externally</td>
<td>Ph.D. Management; Director of Administrative Information Systems at university A.</td>
</tr>
<tr>
<td>Ron</td>
<td>26</td>
<td>18</td>
<td>Internally</td>
<td>B.A. Political Science, M.B.A.; technical sales/unit management IT and peripherals hardware companies; Finance Dept., CIO University R.</td>
</tr>
<tr>
<td>Denis</td>
<td>33</td>
<td>18</td>
<td>Internally</td>
<td>Computer Science degree from University D; programmer, mainframe consultant, manager User Services, and Director of Academic Computing Services at University D.</td>
</tr>
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</table>
APPENDIX C. CIOs’ work history

<table>
<thead>
<tr>
<th>CIO name</th>
<th>Graduation year</th>
<th>No. of years in current position</th>
<th>No. of years in current university but in other position</th>
<th>No. years in other university than current</th>
<th>No. of years in a non-university environment</th>
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<td>0</td>
<td>24</td>
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<td>0</td>
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<tr>
<td>Ken</td>
<td>1985</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>17</td>
</tr>
<tr>
<td>Francis</td>
<td>1973</td>
<td>1.5</td>
<td>31.5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Zach</td>
<td>1968</td>
<td>4</td>
<td>9</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Mike</td>
<td>1965</td>
<td>5</td>
<td>15</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>Ivan</td>
<td>1980</td>
<td>6</td>
<td>20</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Alan</td>
<td>1981</td>
<td>7</td>
<td>18</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Ian</td>
<td>1977</td>
<td>7</td>
<td>21.5</td>
<td>0.5</td>
<td>0</td>
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<td>Dave</td>
<td>1987</td>
<td>11</td>
<td>8</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Ron</td>
<td>1980</td>
<td>18</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Denis</td>
<td>1973</td>
<td>18</td>
<td>25</td>
<td>0</td>
<td>0</td>
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</table>
APPENDIX D. Coding of the evolution of Dennis’ characteristics from his interview transcript

1. “So that is worrisome in that we, you know, we have solved some problems. And people point to things as problems that I don't see as problems. You know, I think the things that were problems before were worse problems. And I worry that we'll go back and revisit some of these, you know, it's the reliving of history kind of things. So I do worry about that. And-- but on the other hand, in the area of technology, and the embrace of technology, many of these older VCs were not fans of technology. They saw it, as was traditional in their era, as a black hole, a sink for money, not a very good use of the money. You know, on and on. I think the newer generation thinks IT is a valuable thing to have, can be used for a lot, leads to productivity, and while it isn't cheap, it's necessary. So I think that there could be some good changes with respect to that.”

2. “Well, so I know how the campus is organized very well. And I know the history. In fact, you know, one thing I tell the staff a lot of the time is those that don't learn the lessons of history are doomed to repeat them. And quite often, we'll be talking about something and I'll say, well, you know, the reason we don't do it that way is back in year such and such, it was done that way, and it created these problems. And we don’t want to create those problems again. Those problems have been solved. But, you know, with a lot of management, or with a lot of managers who are not seasoned, they just change to change. And they don't change to improve. So having that history keeps us-- gives us some perspective about what will work and what won't work. And so I think that's been useful.”

3. “Our students, of course, bring us ideas all the time. And one of my managers was-- is young enough to be a user of instant messaging. And she started using it with her staff….And so one of the things we did is we gradually opened that up to the whole department. Now the whole department uses instant messaging.”

“…in terms of instruction, we the faculty really-- we really drive the truck. And what they do is they induce us to change by suggesting a new piece of software or something like that.”

4. “And I'm, you know. I’m late enough in my career that it’s hard for me to-- I have a certain cynicism about those games, you know, or those exercises. And having been through a lot of them in early years where they were just ignored by the management. I get weary and I'm afraid the staff will get cynical if we, you know, if we don't deliver a product as a result of these.”

5, 6, and 7. “And so when I became director, I was reporting to this faculty member who was the head of the office of academic computing. He became a dean, and he began to give me more autonomy. But there-- I guess I have to take a small drift and say one of the ways we determine how we're going to change, technically, is we conduct an annual survey of our customer base. That process, at that time, in 1989, was evaluated by a committee...But it's extremely difficult to report to a committee. Even when you have a boss who-- my boss at the time was not hands-on with things. So in about 1993, the university hired a new university librarian. And he had some IT background. And so there was a reorganization that ended up having me report to the librarian. Now, what was good about that was I had a boss that was engaged. What was bad about it was I was down a layer in the organization financially. So that was hard. He was here for five years. And towards the end of that time, we got a new vice chancellor of academic affairs...But as this librarian was leaving, she moved us so that I report partially to her and partially to a direct report of hers who is-- his title is assistant vice chancellor for programs and planning. So that change was by far, for me, the biggest one because I was much closer then to the academic-- the strategic academic planning that was going on. And so that interaction has been quite good from my point of view in that it was-- while it's informal, he will call me and say this is happening, what do you think? So I have a lot greater voice and a lot greater participation in things at the highest level of academic affairs.”

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CP: Commitment to a paradigm TK: Task Knowledge ID: Information Diversity TI: Task Interest P/I: Power/Influence

CIO’s characteristic level

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**APPENDIX E. Coding of Alan’s change agentry models from his interview transcript**

<table>
<thead>
<tr>
<th>Change agentry model</th>
<th>Tenure phase</th>
<th>Evidence from interview</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Traditionalist</strong></td>
<td>0-3 years in tenure</td>
<td>“Well that was exactly the first step, was to build nothing more, that was my first step was just simply to build some credibility in a tangible way. So it actually was not so hard to find some opportunities; see that was the interesting thing. So there were two that I seized upon almost the moment I got here and they weren't hard decisions because they were things going south pretty quickly.”</td>
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| **Advocate**         | 0-3 years in tenure | “That was the first thing, that was the very first thing that was tackled in an organizational manner, so I did not go after reporting lines, I did not try to build up staff quickly, I did not do any of those kinds of things to start. I started down the path of just nothing more then let’s put a governance structure in.”
“I mean it was very clear that the campus needed to have some systematic way to talk about IT from an institutional perspective. It had no way to do that so it was needed no matter what. But secondly, from the point of view of someone that's new and without any definition, the first place that fell to me that I could have some impact was to start what was the governance process. It actually proved to be in true in hindsight because that actually was the best move of all was to focus attention and resources on just building the governance process, because that served to bring people together, that served to build credibility, that served to get me involved with lots of different groups and what they were doing and etc., etc.” |
| **Facilitator**      | 4-7 years in tenure | “…another point of influence is simply neutrality; credibility and neutrality are probably the biggest - what's the word? That's what gives us our capacity to do things, neutrality and credibility. So there can be lots of fighting and tension, and competition, and all these sorts of things, and so we time after time step in and us the governance process or we use our neutrality to help sort the situation out and that - so this is kind of a program management office component combined with a governance process component, literally spending much of the time doing that but that's actually proved to be the most powerful component in all of this.” |
| **Advocate**         | 4-7 years in tenure | “I tend to believe - well believe is the wrong word. I know that the operational stuff can fall into place if you get the directional stuff well defined and the buying in the right place and so I prefer to work in that level of discussion and prefer to delegate the operational aspects…” |