

CEO's Role in IT Involved Organisational Change

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Abstract

*This qualitative study involving interviews with Australian CEOs sought to gain a deeper understanding of what chief executives perceived as their role when facing organisational change significantly affected by information technology. How did they provide leadership when dealing with issues beyond their area of technical expertise? How do they perceive they influence the effective use of IT? It was found that while the CEOs acknowledged their lower level of IT expertise, they felt they effected leadership by providing the **context** for IT development. This has implications for the way IS managers interact with chief executives, and for the education and training of future senior managers.*

Keywords

Chief executives, Chief Executive, information systems, organisational change, qualitative research.

INTRODUCTION

The problem of how to improve information technology's organisational effectiveness lies at the heart of a significant number of studies in information systems, (Checkland and Holwell 1998; Davenport, Hammer, and Metsisto 1989; Dur 1992; Pitt, Watson, and Kavan 1995; Watson et al. 1997). While the focus of Information systems research has tended to approach the problem from the point of view of what can be done by information professionals to improve systems, technology, and operations, other stakeholders in the organisation have the different types of power to affect technology outcomes. Studies of user satisfaction, user expectations, and user participation, exemplify recognition of the influence of 'others' in evaluating system performance and goal attainment (McKeen, Guimaraes, and Wetherbe 1994; Pinsonneault and Rivard 1998; Pitt, Watson, and Kavan 1995) as does the soft systems approach (Checkland and Holwell, 1998). This paper concentrates on the CEO as the stakeholder that represents the formal "project owner." Their technological ignorance has been cited as minimising their control of projects and thus in some cases as inhibiting the success of IT implementation and effectiveness (Keen 1991; Levine and Rossmoore 1993; Wang 1994). Do CEO's agree that their lack of technical competence is a weakness in their role as "project owner?"

This paper will argue that CEO's do not perceive their lack of IT specific knowledge as being an important issue in their organisations using the technology effectively. Rather they see their role as being to ensure the parameters and context for the IT project remain foremost in

the IS professionals thinking. This did lead to tensions between CEOs and technical staff when those staff did not allow the CEO to control the context of the development either through the use of "jargon" or through trying to submerge the CEO in what the CEO thought were technical issues.

This is an important issue not only because it is likely to re-occur in many organisational settings, but as advice to IS professionals to allow stakeholders to fully play their role rather than to subsume them with their own technological criteria.

THE LITERATURE ON CEO'S ROLE IN IT DRIVEN ORGANISATIONAL CHANGE

"Given the inflated perception of their position in relation to other organisational participants, CEOs are often credited with being the sole agent of organisational change. Success or blame is attributed to them alone." (Brewer 1995:14).

While few would disagree with the heuristic notion of centrality and the power of chief executives to influence change, well known change researchers see the role in slightly different ways. Schein (1994:326) discusses the necessity of CEOs to act as 'change agents' by disconfirming the present state of the organisation, that is, acknowledging that what used to work, doesn't work anymore. Kanter (1992:377) sees CEOs as 'change strategists', responsible for identifying the need for change and 'crafting' a vision of the desired outcome.

Previous research by Watts (2000) found that chief executives perceptions of organisational change were consistent with the actions of both change agents, by disconfirming the technological state of their organisation, and change strategists, by identifying impending technological change and having a vision of how IT could be used to achieve organisational goals. Having identified the threat of organisational change and set the change process into motion, the CEOs were seen to be taking responsibility for ensuring the success of information technology enabled organisational change. That IT is driving a need for large changes is not in doubt.

"... there's going to be huge -- there's going to be a bloody revolution, I reckon. And we won't be able to stop it." Excerpt from CEO interview (Watts 2000).

The role of the CEO before any changes take place has been studied by Mintzberg (1973). He found that in their roles of project owner the chief executives acted as nerve centres for their organisations. Formal lines of authority were bypassed to obtain tangible bits of information. CEOs were free to 'meddle' in affairs by virtue of their positions. Networks of contacts were used for the purposes of gathering data on performance. The impending organisational change could be seen as the catalyst for CEOs to also act in the disturbance-handler role and take charge of providing unexpected stimulus.

A problem may arise if the CEOs' lack of technical expertise inhibited their change leadership for IT related changes. The popular and academic press, especially emanating from the United States, frequently portrays CEOs as deficient in IT knowledge and skills (Keen 1991; King 1995; Lear 1993; Violano 1989; Wang 1994), and therefore lacking the capacity for effective strategic management of IT in the organisation.

"At a ... technology boot camp for chief executives, a Fortune 500 big-shot took a seat in front of a Windows-based PC. He admired the color graphics on the screen and hit the space bar a few times. Nothing happened. Then he noticed something that looked like a plastic foot pedal. He looked around, placed it on the floor and stepped on - the mouse." (King 1995)

Geisler (1993) agrees that the growing literature on corporate failures of information technology management has placed the blame at the feet of top managers who are said to have misunderstood IT and its strategic significance mainly through ignorance, fear, neglect and delegation of responsibility. Dixon and John's (1989) forecast of technology issues for the 1990s, targets CEO competence as being especially significant in constructing the new paradigm of line responsibility for managing the business use of technology. Keen (1991:9) asserts that senior business executives lack a well-established management process for taking charge of IT. Schein's (1994:338) studies, on the other hand, produce evidence that many CEOs were knowledgeable about and experienced in the use of information technology.

Many writers argue that CEOs are blatantly deficient in IT knowledge and skills (King 1995; Lear 1993; Violano 1989). Argyris' (quoted in Er 1989) work with executives following the introduction of computers in the 1970s. Argyris found that executives experienced feelings of psychological failure, a feeling of being in a double bind, concerns that leadership that was based more on competence than formal power, and decreased feelings of essentiality. While the literature on leadership reveals that leaders do experience feelings of failure and insecurity (Gardner 1995; Kets de Vries and Miller 1989; Kets de Vries 1993; Kets de Vries 1995; Quinn 1996; Sarros and Butchatsky 1996), the more prevalent portrayal is one of inner direction and self-assurance (Bennis 1989:49; Gardner 1995; Kets de Vries 1993; Kotter 1990; Zand 1997). One CEO (Watts 2000) suspected that communication difficulties between executives and IT specialists could be attributed to business people feeling "uncomfortable talking to people who were specialists unless they were specialists themselves." He further surmised that CEOs hesitated to get involved in technology decisions because they either felt incompetent or were incompetent in computers and information technology.

Watts (2000) found that CEOs' deficiencies in IT knowledge and instances of defensiveness, appeared to have little effect on the CEOs' ability to have an IT vision, or to establish a course of action to advance the effective use of IT in the organisation. Interviewed CEOs' self-assessment of IT knowledge revealed that they were not only aware of their limitations, but tried to use them to advantage. CEOs interviewed did not appear to be posturing themselves as being overly knowledgeable about IT. To the contrary, they appeared forthright in claiming the limits of their technological expertise.

"I should add that I am not overly computer literate, and I have found that to be not a particular disadvantage, nor an advantage, but it does afford me the opportunity then, of pretending to be even more illiterate than I am and asking questions that force people to respond in everyday terms, rather than some of the arcane technology of the IT industry."
Excerpt from CEO interview.

"... we were looking at new computers, I'd sit in on the first meeting invariably to get things started, and five minutes into the conversation, I'd stop it and say, "Hey now listen, you know, I don't know much about computers. You're going to have to talk my language, or you might as well leave right now because we're wasting our time." *Excerpt from CEO interview.*

For chief executives to be unfazed by their technological illiteracy is not an inappropriate response in these times of flat organisational structures and a trend towards the use of teams and groups to achieve corporate objectives. To be undeterred by having a deficient knowledge base in a specialist area is in keeping with the model of the generalist chief executive supported by specialist subordinates (Mintzberg 1973). The concerns expressed by CEOs interviewed were more about the requisite knowledge being present in the skill base of the organisation; or if not present, then at least readily available.

So what role do CEOs see themselves having when "supported" by a technical staff? Ansoff (1990:262) has made some suggestions:

"The appropriate role for top management is a blend of providing central guidance and encouraging local initiative. Top management should provide a clear vision of the organization it wants and delineate the steps to the realization of that vision. The electronic conference agreed on the following specific guidelines for the role of top management.

"-Set policy regarding where to introduce information technology and how to establish priorities for competing project, -Develop understanding of the capabilities and limitations of IT, -Establish reasonable goals for IT systems, -Exhibit a strong commitment to the successful introduction of IT, -Communicate the corporate IT strategy to all employees."

This study wanted to learn if, when asked indirectly, CEO's of Australian companies used this type of explanation so of their role.

RESEARCH METHOD

The population for the study was selected using the following criteria: (1) Australian owned private or public sector entities; (2) information technology is vital to corporate operations; (3) the organisation facing significant organisational change; (4) the chief executive is an Australian citizen or permanent resident; (5) the chief executive is the top operational decision-maker. To identify organisations who were registered companies, listings were obtained from the Australian Stock Exchange, Australia's Top 100 1996, The Business Who's Who of Australia, Australia's Top 500 companies 1996-97 (Australian Stock Exchange Limited 1996; Beck 1997; Bevan 1996) to identify organisations registered and operating in Australia. Public sector organisations were identified through government information sources.

To understand what a chief executive officer thinks and does when confronted with the option of using information technology to bring about organisational change, one had to, as much as possible, enter the actor's world and hear the actor's voice. The system for analysis of the data also needed to ensure that the subjectivity of the researcher could be acknowledged while not obscuring the CEOs' perceptions of reality, or descriptions of the CEOs' actions around IT-enabled organisational change. Another challenge to be considered in the research design was the problem arising from listening to actors' espoused theories without having enough data to infer their theories-in-use (Argyris, Putnam, and Smith 1985:110).

Deciding how best to achieve the objective of the study given access limitations, was also a dilemma. The search for the most effective way to glean information was complicated by the portrayal of CEOs as 'technologically-challenged', 'techno-phobes', or 'technological illiterates' by the popular and academic press. To ask chief executives open-ended questions about technology topics about how they used IT to leverage organisational change, would be putting them on the spot.

A postal survey of CEOs had been attempted in Australia, similar to the UK study, but had resulted in only 33 valid questionnaires being received out of an original 500 targeted CEOs (Pervan 1997:4). This confirmed that the direction of this research should be to use interviews to gain a deeper understanding of CEO behaviour around technology and organisational change. The person holding the top management decision-making position in the organisation, by whatever name, was the targeted executive. The criterion was established through reference to annual reports and other public media.

In order to cope with the problem of access to CEOs, some studies (Raghunathan 1992; Jones & Arnett 1994) use a surrogate to respond on behalf of the chief executive. While the availability of chief executives and their willingness to participate, were likely to be limiting factors in the researcher's ability to collect data, it was nevertheless determined that personal interviews with CEOs were the only way to gain insights into their thoughts and actions, or to incorporate aspects of the critical incident technique. It seemed that achieving a better understanding of 'CEO influence on the use of technology to bring about organisational change' was worth the risk.

It also seemed unwise to lead with broad, unbounded questions about technology that would give CEOs no clues about the range of technological issues that might be useful for discussion. Knowing that chief executives are used to dealing with a wide variety of problems (Mintzberg 1973), it seemed a better strategy to ask about specific technical topics that would give them a frame of reference. These narrowed topics then, might lead to recall of associated 'incidents' or 'episodes'. To arrive at the technical topics to select for discussion, was then a matter of referring to a topic that would be familiar, i.e. the well known "Key Issues" studies (Brancheau, Janz, and Wetherbe 1996; Brancheau and Wetherbe 1987; Galliers, Merali, and Spearing 1994; Pervan 1994; Watson 1989; Watson and Brancheau 1992; Watson et al. 1997). It was perceived that the Key Issues studies, being items identified as critical or problematic by information systems managers around the world, would provide the right focus. These items were most likely being addressed in their respective organisations by their senior IT/IS professionals. If they weren't being addressed, it was likely to be just as important to discover why.

The 'Key Issues' also had the benefit of being well researched, established, and recognised for their importance to information systems managers, particularly for the issues on the interface between the organisation and the technical department. Thus the 'Key Issues' were chosen as the mechanism for eliciting discussion around specific topics and concrete examples, in order to surface the desired objective of uncovering CEOs' perceptions and actions.

The interviews were conducted at the premises of the chief executive and taped recorded when agreed. The 'evolved' format for subsequent interviews consisted of three parts: (1) a discussion about the organisational change challenges facing the CEO, (2) questions that use the Key IS/IT Management Issues for eliciting information about their perceptions and actions regarding the use of IT for organisational change, and (3) questions about their perceptions of their most critical information systems. To elaborate on the interview component using Key Issues, Chief executives were asked to categorise the top 20 Key Issues (as ranked by averaging the rankings of Information Systems managers and chief executive officers, using the most recent longitudinal study done in Australia (Pervan 1997)) according to CEOs' perceptions of high, medium or low priority for their organisation. To facilitate this process and to insure that CEOs had a common understanding, buff-coloured 'cards' were used with the name of each Key Issue followed by three or four dot points taken from IS researchers' definitions (Pervan 1998) to illustrate the concept. CEOs were then asked to separate the cards into three piles representing whether they saw the issue as either high, medium or low priority for their organisation. For each of the Key Issues in their 'high priority' pile, CEOs were asked four questions.

The first question 'Why did you choose this Key Issue as a high priority' was to lead off the questions in a logical sequence designed to facilitate the recall of incidents. The second question, 'What lead you to think about that' was intended to probe the CEO's memory for descriptions of episodes or critical incidents. The third question, 'How do you influence that

Key Issue' was designed to give CEOs the opportunity to describe the actions they took (or they perceived they took) with regard to the technology or system under discussion. The question was changed to "How DID you influence Key Issue?" in order to find out as much as possible what was actually done, rather than what they wanted to portray as having been done. However, this proved to cause some confusion, so the question was asked both ways: How DID you ... ? How DO you ... ? The final question, "Have you ever considered other things that you could do to affect the outcome?" was intended to probe their understanding of alternatives - to plumb the depth or range of their technical knowledge. After these four questions were covered and discussion on priorities concluded, CEOs were asked if they were interested in the rankings of the issues by IS managers. If they were, they were instructed to turn the cards over; to see the IS managers' ranking (indicated in the upper right hand corner). Refinements were made to the interviewing process as lessons were learned.

While this research design was intended to obtain data about CEO perceptions, and gather data to assist the process of disclosing theories-in-use from what CEOs say they do, it is acknowledged that espoused theories constitute the majority of the interviewee data. The data, sorted by Key Issues, and grouped according to themes such as "the CEO's role in leading information technology", 'the CEO's view of information technology specialists', comprised the final round of coding.

FINDINGS

In this section the authors thought it important that the words of the CEO be heard. Thus a series of quotes under various categories is presented. Some conclusions will be presented at the end.

"... I think ... at this time in our industry, this is a key role of CEOs. It is getting organisations to understand what the environment is leading to and what it requires of them, and getting them to feel challenged by it, but not totally defeated --. sometimes shaking people out of complacency. This is the pointy end of leading change."

"The way I am involved in that (key issue) is by first of all, saying that it is important to the organisation. Secondly, saying that we want to position ourselves in a certain way in the industry in terms of what is going on, and that is basically that I would like to be in the first wave but not first. And by putting a framework on it that is about integrating (operational) with management resources. So if information systems are going to deliver in (this industry) what they potentially could, then it's got to be that as someone put it, that you manage what you measure.... So setting that kind of framework for it, is at a very broad philosophical level, really, is what I think I do about that - and let other people figure out how."

"By very much hands-on management. Yes, hands-on management is what it is all about. There is no substitute for 'management by walking around'. And the secret of doing that is that you must never, ever give instructions. You must just listen."

"There is a task force in place that reports directly to me though one of my senior executives, but the ultimate decision on major issues like that are always made by me."

Following Basic Principles of Management

"I believe management is very simple, and there's only half a dozen ingredients. There's planning, leading, organising, controlling, motivating, and delegating. Always has been and it always will be."

Setting Direction and Strategy

"I feel that I (influence) do that at a very broad level - 'this is the direction'. I'm not involved in anything really about how to make it happen. I find it tedious in the extreme."

"I think strategic planning, the word strategic, it is probably the single, most important word in business. Because head offices are going to get smaller and smaller and they are going to have to focus on strategy. The doers are out in the operating division."

"The way that I am influencing that is to ask the (divisions) to develop in their strategic planning process, and require them to develop as part of the strategic plan, how they propose to use information technology as a strategic tool going forward."

"... just insisting that we have and we move towards common IT systems across our various business units. The phase we're now in, which is seeking for competitive advantage, ... is to ask the business units to develop in their strategic planning process, and require them to develop as part of the strategic plan, how they propose to use information technology as a strategic tool going forward."

"We've got a process underway developing a strategic plan, and I guess the main way in which I influenced it was to establish a context that it needed to be a strategic plan for (industry segment) within the (geographic region) rather than just for my organisation."

"By setting objectives of the key managers, and then ensuring that they have got sufficient support to carry out their functions. I set priorities in advance which are approved by the Board. So all the people in this organisation know what the objectives are, and what has got to be achieved."

Thinking

"I basically come from the position in IS that the last thing you do is throw lots of dollars or lots of people at a problem. What you need to do is have a good think and go back to the basic of what you are trying to achieve. And we have saved ourselves, I believe with that approach, countless millions of dollars, and we continue to do that, will continue to do that, hopefully."

"I talked about that fifteen -- nearly twenty years ago probably -- the necessity to have a system that did that."

Delegated Authority & Use of Specialist Expertise

"I hired in a new (CIO) who reports directly to me. That's a signal I'm sending throughout the whole company. I want IT to report to all of the (business) managers, not always to their finance managers which is the usual way of doing it."

"I'm not awfully literate in the area,... But I take a particular interest in the applications that come to me to approve for purchasing, and by working closely with my (CIO), we have a very clear understanding as to what I need to see, both on a functional point of view from an operating to a competitive advantage point of view, and a cost point of view."

"It was really just asking some consultants to come in and review where we were and where they saw us in terms of the implementation of a common system across the organisation."

"... use ... specialised consultants in specialised areas. We have done this on a number of occasions. Some with more success than others. We don't hesitate to in-source people with

particular skills, in a particular area, particularly to help us to put together a proposal that goes to me or perhaps the Board. This is very selective though."

"I requested that we do (an external audit of IT), because it became clear that although we implemented (new common systems) into various parts of the business, ... we couldn't just automatically determine how much we were buying from (suppliers) I asked that we get in some consultants to audit the effectiveness of what we were doing...."

Challenging the thinking of Subordinates

"... I influence it by asking the question all the time, whenever I get a proposal, a business proposal, a budget review, a management meeting, 'Tell me how you are going to gain a competitive advantage over your competitors?'"

"By insisting on their (Executive Support Systems) use and at the same time, insisting that if their conclusions, the conclusions drawn from them, don't accord with reasonable expectations and common sense, well, we go back to square one and start again."

"By saying to them, if you can't explain to me what this is all about (education of senior managers), and you are only delivering it secondhand through your IT people, then they are both not going to be able to make the right decision."

"Trust your own intuition" rather than accepting computer-generated information blindly. If it doesn't seem right, check it!"

Leading by Example

"I think you influence it by the sort of person you are."

"Everybody has access to my screen (Executive Information System), when I say everybody, (the senior executive team) has access to my screen. By designating what I want to look at. I think it flows down in a pyramid fashion. So if I watch (designated) things, that means that my executives have probably got to watch (what CEO watches plus supporting information), and that means that their people have got to watch (what executives watch plus more detailed information), and so it moves down from that basis Everyone in the organisation knows what I'm looking at. If they know what I'm looking at, they're all getting it ten minutes before me."

Setting Standards

"And that is a bit like the banking business, you have got to really be on top of that trying. So it was then, the determination to get that excellence, "

"By establishing a culture that says there's some pretty good tools out there. How can we make best use of them?"

"By fostering a culture of excellence in the exploration process particularly. So it's a matter of asking: ... what data wasn't sourced the last time around; what more can we get; And by fostering that culture of continual search for more data and particularly the more relevant data."

Establishing Systems and Structures

"Predominantly through those structures and again the requirement that it be part of the system. It's really those two things together with, I guess, the insistence on common or at the very least, compatible IT across the organisation."

"I think my greatest influence is going to be having established that framework, to support it, and require improvement in performance there, as we do in financial performance, or productivity, or safety, or any of the other issues that we monitor."

Insisting on Business Value

"The quality of the information and the timeliness of the information is a factor that is very hard to put a value on, and are some of the most important benefits of any computer system. But I guess I always tried to put a dollar value on them, any new computer system that we were going to install, to determine what the savings were going to be. And I expected to see some or I would be very doubtful about going ahead with it."

"By insisting that they have their objective clearly in mind, and that's an economic business objective, not just an elegant software objective, that the economic business imperative is there."

"I think ... encouraging the acquisition of all data to feasibly improve the business decision. Once again establishing that culture which says "disregard data at your peril!"

Influencing the Business Environment

"Trying to contribute to driving the central government agenda which is generally a fairly frustrating exercise because of the lack of control that you've got. The return on your time seems pretty low. It's sort of 'managing the environment' really."

This CEO takes a broad, conceptual approach to influencing this KI, preferring to influence the environment rather, than micro-manage IT specific functions such as systems and technology selection and implementation.

Focusing Attention and Resources on the Issue

"And so, right at this point in time, that rates number one and captures my attention."

"How do I personally influence that? Once again by encouraging, well, not much encouragement is required, but certainly supporting the technical professionals who want to continue their leading edge software development. They never need much encouragement but certainly supporting them in their desire to improve their tools."

CONCLUSION AND DISCUSSION

The above quotes clearly indicate that the CEOs do not have, nor think it appropriate they have a high level of technical expertise. This contrasts with much of the IS literature. The analogy with being able to drive a car when not able to fix it was anticipated and supplied. They had no trouble in thinking you can direct something you don't fully understand: as Mae West said, "He would say that wouldn't he!" Most people would agree with the CEOs' comments to some extent, which is why the motor car analogy is so attractive. If the analogy was: I don't need to understand women in order to know how best to use them, then many people would object. A car is very simple compared to a corporate communication, information and thus organisational system.

IT is not unique in raising the question about having “doing” experience in order to provide knowledgeable decision-making. The organisational learning literature suggests any learning experience requires both doing and thinking in order for learning to take place. There is also a larger management topic of whether you need “industry” knowledge in order to run a business. Increasingly, managers do ask for industry knowledge in very senior managers. So, sometimes specific knowledge is required.

The definition of ‘technology’ also needs careful consideration. If it refers to ‘the payroll system’ then clearly in a ‘systems’ sense this is a sub-system not critical to competitive advantage. However, this may not be true of strategic level systems for example, with what happened to the bankrupt radio-valve companies not responding to the silicon chip development, also as with Swiss watches. Here the CEOs failed to make long term strategic assessments about their industry, partly because they under-estimated the rate of change of the functionality and cost of silicon chips. At a “middle systems” level there are issues of productivity and flexibility savings from using the technology to provide different work contracts with service functions, suppliers, and customers. Without understanding the deep-routed compared to the transient limitations of the technology, CEOs may be put at a disadvantage in designing the optimum organisational structure. Of course, with many CEO decisions it is like stopping a super-tanker at sea. It takes along time to find out if they were making the right decisions years earlier.

On the other hand, many IS managers would agree that some stakeholder and decision-makers need not be blinded by the “widget functionality” for its own sake. Many 1960s UK firms failed because they had an excessive engineering senior management culture. The 1980s saw too much of a “marketing image culture” that also failed. As ever, it most likely a matter of getting the right balance. Everything should be in balance, everything maybe except balance, which should be done to excess!

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