The rule of next generation managers Strategic IS\IT manager

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Abstract. In their roles as senior managers, Chief Information Officers (CIOs) are often responsible for the initiation and implementation of information systems (ISs) that are vital to the success, and even survival of the firm. In so doing, CIOs must exercise influence successfully in order to attain these objectives. The strategic role of the CIO is becoming ever more complex, requiring an expansion of the organisational and structural possibilities for filling that role. This research examines CIO role in Iranian organisations. In this paper, results from a survey of Iranian CIOs are presented. Iranian CIOs have on average worked in the current organisation for eight years, have worked in information technology (IT) for 12 years, report mostly to the financial director, have 11 people reporting to them. A large percentage has at least a master's degree. Also, formal IS planning tended to be adopted by organisations with higher annual revenue, larger number of total employees, and broader span of control (i.e., the number of people reporting to the CIO). Higher CIO reporting level was also associated with greater extent of information systems plan implementation.

Keywords: information technology, information systems, strategic management, Chief information officer

1 Introduction

The potential for the Chief Information Officer (CIO) (Alter, 1993)^[1] to play a critical role in the strategy and change processes of firms is arguably greater today than ever before. Among other things, CIOs are often responsible for the initiation and implementation of information systems (ISs) that are vital to the success, and even survival of the firm. In so doing, they are frequently required to attempt to influence others in the organization. For instance, CIOs spend much of their time attempting to convince other top managers to commit to strategic IS initiatives (Lederer et.al 1988)^[7], share in a vision for IS (Earl et.al 1994)^[4], and allocate resources to IS projects (McKinney et al 1997)^[8]. This research examines the characteristics of the CIO role in Iran and its relationship to strategic information systems planning in their organisations. The paper is organized as follows. First, literature on strategic management, the role of the information systems department, the role of the manager, and the role of the CIO is reviewed. Then, research methodology and research results of a survey of Iranian CIOs are presented. Finally, future research is discussed with focus on the role of these CIOs.

2 Literature review

2.1 Strategic management

Refers to the art of planning your business at the highest possible level. It is the duty of the company's leader (or leaders). Strategic management focuses on building a solid underlying structure to your business

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that will subsequently be fleshed out through the combined efforts of every individual you employ. Strategic management hinges upon answering three key questions: What are my business's objectives? What are the best ways to achieve those objectives? What resources are required to make that happen?

2.2 Review of IS department rules

The role of the IS Department is to serve the organization by providing ICT solutions that are reliable, secure and appropriate to meet the needs of the many functions of the organization and its external stakeholders. As such, the IS Department is accountable for the prudent management of its departmental budget, which is only part of the total ICT resources of the organization, for the development and maintenance of an ICT Strategic plan and its associated Business Plan and Operational Plan. As the benefits are accrued outside the IS Department, the actions needed to ensure that these benefits are actually captured require the active participation and commitment of entities over which the IS Department has no control or authority. This strategic plan identifies five areas of activity for which executive management support is an essential requirement.

These are:

- Implementation of several of the External Auditor's most important recommendations for improvement;
- Manage ICT assets through formal portfolios and architectures;
- Effective governance (including policies, compliance, organizational change);
- Organizational readiness Information management skills and adequate end user skills.

Implementation of the external auditor's recommendations for improvement The survey undertaken by the External Auditor in 2002 identified several weaknesses in the way ICT was managed and delivered in the Union. The report called for improvements in the management of resources, projects and expenditures. It also recommended a reorganization of the IS department to improve existing services. The management of the IS Department is addressing those issues that are within its control. It should be noted that the budget for 2004-05 was prepared before the definition of an ICT strategic plan. The approval of the strategic plan and the identification of new projects to deliver its planned benefits will require a review of resources and possibly a realignment of priorities to achieve new projects within existing resources. This will require senior managers to take appropriate action in the context of ICT governance. Manage ICT assets through formal portfolios and architectures: Accounting practices deal well with tangible assets, such as the ICT infrastructure implemented in an organization. At the same time, these accounting practices are at present unable to treat information systems and the data they contain as assets. Portfolio management provides a well-proven methodology to prioritize resource and review the information assets of an organization. Complemented by formal project management methodologies, it has proven to be a highly effective approach to cost containment and clarity of purpose for ICT organizations. Architectures are used to develop a strategic view of preferred technical platforms and development methodologies. Such architectures reduce diversity and complexity, thus reducing the cost and risk of ICT and help reduce incompatibilities between data structures and data exchanges between systems.

2.3 Review of CIO rules

The CIO role is a relatively new position. An indication of this is that the CIO often does not take part at company board meetings. It also means there is little literature written about this role. The theory research in this thesis was therefore concentrated on research on documents found in databases. The focus of the theory investigation was made on the system and the organization part of the IT department. The system part concerning quality attributes often used in architectural design of software. The organization part concerning more of human resources related issues, together with strategy and management. Two case studies were performed. The main source of information was collected through interviews with the respective CIO, but also through company specific documentation. The chief information officer (CIO) role emerged in the 1970s as a result of increased importance placed on IT. As a manager of people, the CIO faces the usual human resource roles of recruiting, training and retention, and the financial roles of budget determination, forecasting and authorization. As the provider of technological services to user departments, there remains a significant amount of work in publicity, promotion, and internal relations with user management. The CIO is

thus concerned with a wider group of issues than are most managers (Jordan, 1993)^[6]. The CIO role also divers from the role typically referred to as MIS manager. The CIO operates as an executive rather than a functional manager, and often reports to either the CEO or one of the CEO's direct reports. The CIO's daily activities are also more reflective of executive work in that they engage in more numerous, shorter duration tasks and spend more time away from their office/ organisation. CIOs and CEOs spend one-third of their contact time in the office, while MIS managers spend most of his/her time there. MIS managers are seldom outside the organisation, while CIOs to some extent and CEOs to a large extent spend time with customers and contacts outside the organisation. MIS managers have more unscheduled meetings than CIOs and CEOs. In addition, the CIO plays an active role in strategic planning of information resources (Stephens, Ledbetter, Mitra & Ford, 1992)^[10]. Creation of the CIO role was driven in part by two organisational needs. First, accountability is increased making a single executive responsible for the organisation's information processing needs (Arnett & Jones, 1994)^[3]. Second, creation of the CIO position facilitates the closing of the "gap" between organisational and IT strategies which has long been cited as primary business concern (Stephens et al., 1992)^[10]. Alignment of business and IT objectives is not only a matter of achieving competitive advantage (Stephens & Loughman, 1994)^[2], but is essential for the firm's very survival. In the table which is listed below you can see the six leadership new rules.

Table 1. IS leadership roles

1	The chief architect designs future possibilities for the business.
2	The change leader orchestrates resources to achieve optimal implementation of the future.
3	The product developer helps define the company's place in the emerging digital economy.
4	The technology provocateur embeds IT into the business strategy.
5	The coach teaches people to acquire the skill sets they will need for the future.

3 Methodology

The objective of this study was to examine the role of the CIO and the use of strategic information systems planning. A CIO in Iran is typically called 'IT-chief' (IT-chief). The sample was comprised of the 127 private and public member firms. A data diskette was obtained from the society containing organisation address, telephone number and name of contact person of the member firms. The contact person could be the CIO, but an initial test call of the first 20 firms showed that only one-third of the contact people were actually CIOs. Since the desired informant in this research was the CIO, telephone calls were made to all the 127 organisations to get the names of the CIOs. It was possible to obtain the names of the CIOs in 95 of the organisations which represent 74% of the original population. In addition to the 95 CIOs identified from the corporate database, 63 CIOs were added to the sample.

Table 2. Sample breakdown by industry

Primary activity	Percent
Service	16.6
Industry	14.6
Public administration	12.7
trade	12.5
Bank/finance/insurance	8.7
Transport	2.8
Other	31.0
Not reported	1.1
Total	100.0

4 Results and discussion

A number of descriptive data were collected. A variety of titles surfaced describing the highest ranking information systems executive in these firms. Several of the titles may be classified as that of CIO or equivalent, while many others indicate that the person has either greater or lesser responsibility than a CIO (which is a deferent issue than the issue of CIO reporting level). The breakdown of these responses is illustrated in Tab. 3. Compared with previous CIO research, this research is concerned with small and medium-sized organisations. These organisations had on average 48 people employed. On average, 11 people were reporting to the respondents. Among the respondents, 34% had a master's degree as their highest education completed; while 24% had a bachelor's degree, and 35% had other education (7% did not provide information on education level). Education, though examined in previous studies, seems to be a less important factor because of the amount of time that has passed since obtaining the degree (Applegate & Elam, 1992)^[2]. In this survey, the respondent had been in the organisation an average of 8 years, but not necessarily as senior IS professional all the time. This is particularly interesting since the respondents in this survey had also been with the organisation on average for 8 yr, suggesting either differences due to region or organisational size (large vs. mid-sized).

Table 3. Responses by executive responsibility

responsibility	Titles	Respondents	Percent
CIO	IT-manager(59),IT chief(37),IT responsible(7),IT leader(6),etc	195	41.4
Less than CIO	Project manager(4),IT-consultant(4),DP consultant(4),etc	134	28.5
more than CIO	Managing director(25),director(6),senior executive officer(5),etc	115	24.4
Missing		27	5.7
total		471	100.0

Among the CIOs reporting to a CEO's direct report, the number of senior-most IS executives reporting to the top finance officer was 32%. Compared to earlier studies, the CIO position, and consequently strategic information systems planning, seems to be gaining importance among firms. As previously noted, some firms operate without a formal IT strategy. Several distinctions can be seen between organisations with a formal IT strategy (yes-cases) and organisations without a formal IT strategy (nocases) (Gottschalk, 1998). On average, yes-cases have higher annual revenue, a larger number of people in the organisation, and a larger number of people reporting to the respondent than the no-cases. Two possible explanations for this are offered. First, strategic information systems planning positively impacted these firms, leading to larger, higher revenue firms. Conversely, this larger size in terms of revenues and number of people may have necessitated the need for formalized planning methods. A content characteristic of formal IS/IT strategy has been previously shown to correlate with extent of strategy implementation (Gottschalk, 1998)^[5]. The most important implementation predictor of IS/IT strategy was responsibility. If responsibility for implementation of the strategy on time and within budget is defined, then the extent of implementation increases. Of the CIO characteristics examined, only one was significantly related to extent of implementation.

Table 4. Respondent characteristic

Respondent characteristic	Formal IT Plan		Respondent characteristic	Formal IT Plan	
	Yes (190)	No (281)		Yes (190)	No (281)
Annual revenue	370	60	Professional background		
People in the organization	1633	292	Years in the organization	9	8
Reporting structure			Years in IT	12	12
Number of people reporting to respondent	16	7	Educational background		
Reports to managing director	43%	52%	Bachelors	24%	27%
Report to financial director	25%	17%	Masters	45%	31%
Reporting to other title	32%	31%	Other	31%	42%

Firms with a higher CIO reporting level (i.e., fewer levels between the CIO and the CEO) had greater extent of implementation. These agrees with previous research showing that closer reporting relationship between the CEO and CIO encourages direct two-way relationship between the CEO and the CIO, which in turn elevated the attention to information systems planning in the organisation (Watson, 1990).

5 Implications and future research

The CIO function is a continuously evolving role (Stephens, 1993)^[9]. The present research provides a snapshot in this progression. Identifying these trends in information systems leadership has implications for both research and practice. First, educators can use this information to develop management programs. Second, these roles and trends represent important guidelines for practicing CIOs. The senior IS executives must be able to bring both a business and IT perspective to the position. More definitive role expectations could also help reduce the relatively high turnover rate among CIOs and aid in career planning (Applegate & Elam, 1992)^[2]. Finally, clarifying the CIO role also has implications for office technology design and use. Studies continue to show the executives' preference toward verbal communications (Stephens, 1993)^[9]. These studies also point to relatively limited use of the technologies that these managers purvey. One possibility is that this limited technology use is due in part to limitations in the technologies themselves. Identifying these limitations could improve executive acceptance of these systems. However, the survey data do not show us what technology the CIOs use.

6 Conclusions

Chief information officers have the difficult job of running a function that uses a lot of resources but offers little measurable evidence of its value. This paper discussed the CIO role, and the conducted survey sheds some light on the role by providing descriptive data. For example, the most frequent reporting relation for the CIO is to the CEO in Iranian organisations. However, the greater complexity of the role of the CIO will be investigated in future research.

References

- [1] A. Alter. CIO survival: study gives new view. *Computerworld*, 1993, **40**(27): 84.
- [2] L. Applegate, J. Elam. New information systems leaders: A changing role in a changing world. *MIS Quarterly*, 1992, **16**(4): 469–490.
- [3] K. Arnett, C. Jones. Firms that chose outsourcing: A profile. *Information and Management*, 1994, **26**(4): 179–188.
- [4] M. Earl, D. Feeny. Is your cio adding value. *Sloan Management Review*, 1994, **35**: 11–20.
- [5] P. Gottschalk. *Content characteristics of formal information technology strategy as implementation predictors*. Tano Aschehoug publishing, Norway, 1998.
- [6] E. Jordan. Executive information systems for the chief information officer. *International Journal of Information Management*, 1993, **13**(4): 249–259.
- [7] A. Lederer, A. Mendelow. Convincing top management of the strategic potential of information systems. *MIS Quarterly*, 1988, **12**: 525–534.
- [8] McKinney, R. Mason, D. Copeland. Bank of america: The crest and trough of technological leadership. *MIS Quarterly*, 1997, **21**: 321–353.
- [9] C. Stephens. Five CIO's at work: Folklore and facts revisited. *Journal of Systems Management*, 1993, **44**(3): 34–40.
- [10] C. Stephens, W. Ledbetter, et. al. Executive or functional manager? The nature of the CIO's job. *MIS Quarterly*, 1992, **16**(4): 449–467.
- [11] C. Stephens, T. Loughman. The CIO's chief concern: Communication. *Information and Management*, 1994, **27**(2): 129–137.
- [12] R. Watson. Influences on the IS manager's perceptions of key issues: Information scanning and the relationship with the CEO. *MIS Quarterly*, 1990, **14**(2): 217–231.