Chief Information Officers' roles and responsibilities in the Greek Industry

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Abstract
The extraordinary growth of the importance of the IS within business organisations compelled the original role and the responsibilities of the CIO to be changed and evolved. The CIO's role has evolved to reflect both the infrastructure and the strategy of a firm. During the last decade, the current marketplace is demanding the CIO's role to be ever more strategic, requiring an expansion of the organisational and structural possibilities for filling that role. A survey in fifty large industrial plants from a broad range of Greek industries reveals that CIOs in Greece act more as MIS managers with more functional rather than executive duties. Nevertheless, the current study emerges a positive tendency of the Greek CIOs to upgrade their role and turn into C-level executives and business visionaries.

Keywords: IT Management, Chief information officer, Industrial plants

JEL classifications: M15, M16, L20

Introduction

The amazing growth of the importance of the Information System (IS) within business organisations, the advances in e-business, the increasing accountability of the organisations for the information processing and the created gap between organisational and IT strategies showed the way to the creation of a single executive responsible for IT, known as Chief Information Officer (CIO)(Arnett and Jones, 1994; Stephens et al., 1992; Enns, Huff and Golden, 2003). CIOs have the demanding job of running a function that uses a large amount of resources, but that offer little considerable evidence of its value (Earl and Feeny, 1994). In additional to knowledge of the technical-engineering function, the CIO was expected to understand the business aspects of the organisation, to reduce costs, and to add to the value of the IT resources of the firm (Weill and Ross, 2004). The CIO's role is becoming ever more strategic, requiring an expansion of

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the organisational and structural possibilities for filling that role (Robson, 1997). According to Hoffman (1998) the firms reshape the IS executive role itself and many of them looked for outsourcing solutions (Applegate and Elam, 1992).

In this study, a survey took place in order to indentify the role, the responsibilities and the nature of contacts of the CIO in the Greek industry. Throughout this survey, primary data from several interviews and observations were gathered from fifty large industrial plants in Greece.

Theoretical Background

The internal need of the companies to develop capabilities through the integration of their technical resources; and also, the external new competitive business challenges and opportunities have motivated business executives to count on the IS executive to use the IT resources of the company for driving strategic change. Thus, the extraordinary growth of the importance of the IS within business organisations compelled the original role and the responsibilities of the IS manager (more likely data processing-technology manager) in the 1950s and 1960s to be changed and evolved.

The role of the CIO

In the beginning, IS managers worked in major companies as functional heads and their role was more technology-centric, closely to the role of a computer educated technician. In the end of 1970s, the MIS (Management Information Systems) had been even more matured and the role of the MIS managers had been connected with the measures of system efficiency and cost reduction (Ives and Olson, 1981). By the beginning of 1980s, MIS managers exhibited tendency for providing the CEOs with important information regarding the adaption of the organisation to new technologies (Rockart, 1980). Then in the mid-1990s, the title of CIO was introduced to describe a new type of IS executive in a C-level position. The CIOs became strategic partners for aligning IT with business and many studies revealed that an increasing number of CIOs reported directly to the CEO and over half became senior managers (Feeny, Edwards and Simpson, 1992; Chun and Mooney, 2009). CIOs had begun to undertake activities to achieve the objectives of the organisation (Robson, 1997). Eventually, their role differed from the role typically referred to as MIS manager and they operated more as executives rather than functional managers (Stephens et al., 1992). Furthermore, Jordan (1993) stated that CIO is concerned with a wider group of issues than are most managers. In the 2000s, the CIOs turn into business visionaries initiating businesses to change processes and strategies with the use of IT (Rockart, 1980; Enns, Huff and Golden, 2003; Feeny, Edwards and Simpson, 1992). CIOs began to diversify their responsibilities and they came closer with the business units in order to take advantage of the opportunities in the marketplace.

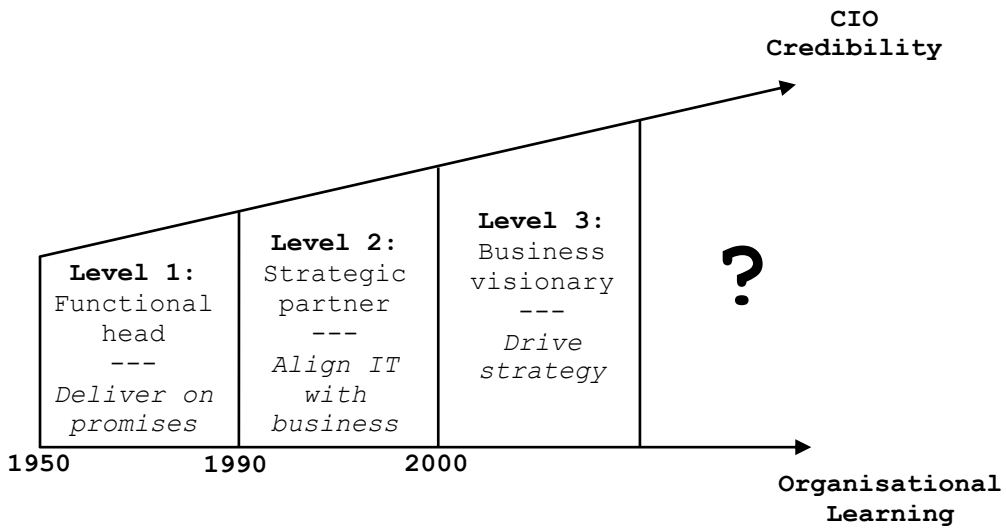

Figure 1: The evolution of the CIO's role

The whole evolution of the CIO's role is illustrated in Figure 1. This model was first proposed by Hirschheim *et al.* (1988), subsequently developed by Fenny (1997) and then, many researchers reused it (Ross and Fenny, 1999; Chun and Mooney, 2009). Figure 2 shows our adapted version, which includes the time division.

Main domains of responsibilities of the CIO

CIO is not only a provider of technological services to user departments, but is a manager of people, as well. According to Robson (1997), managers undertake activities to achieve the purposes of the organisations. Mintzberg (1994) noticed that many authors emphasised one particular part of the manager's job and exclude the others. Some of them say that good managers are really leaders, others that are doers, others that are thinkers and some others that are essentially controllers. Perhaps, together cover the greater part of the whole job of managing.

Hence, CIO needs to be characterised by a number of capabilities in order to be successful with its role. Figure 2 illustrates the IS capabilities that compose the role of a CIO and they have been grouped into three main domains of responsibility (business, technology, service). Feeny and Willcocks (1998), based upon interviews with 61 CIOs, identified nine IS capabilities that the CIO's role requires within the above three main domains of responsibilities: leadership (integrating IS/IT effort with business purpose and activity), business systems thinking (combining the business strategy and technology application), relationship building (bridging the culture gap of all parties between business and technology domains), architecture planning (developing responsive blueprint for present and future business needs), making technology work (satisfying timely business needs by trouble-shooting problems), informed buying (managing the IS/IT purchasing or outsourcing strategy according to business needs), contract facilitation (guaranteeing the success of existing contracts for IS/IT services), contract monitoring (protecting the business's contractual position) and vendor development (identifying the potential added value of IS/IT service providers). In addition, Sobol and Klein (2009) mentioned that relationships exist between CIO characteristics and the IT

infrastructure of a firm, as well as with the financial performance of a company.

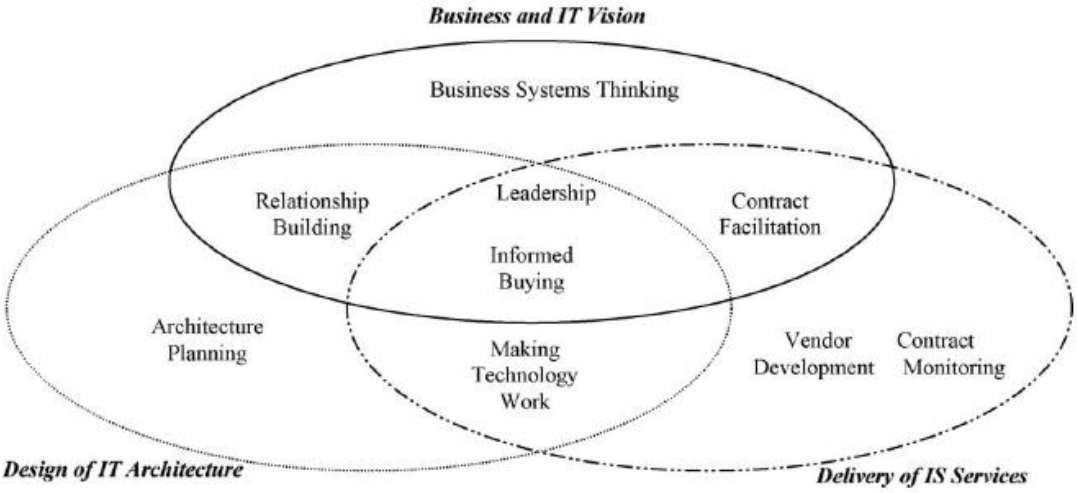

Figure 2: The three main domains of CIOs' responsibilities and the included CIOs' needful capabilities (Feeny and Willcocks, 1998)

Methodology

Taking into consideration the above-mentioned theoretical background, an integrative survey was designed and took place in fifty (50) Greek large industrial plants (Table 1). The objective of this study is to examine thoroughly the responsibilities that the CIOs undertake in the Greek industry and to focus on the final form of their role.

Table 1: Profile of the firms

Employees			
	Frequency	Percent	Cumulative Percent
Less than 100	22	44.0	44.0
100 to 199	20	40.0	84.0
200 or more	8	16.0	100.0
Total	50	100.0	
Experience in their field			
	Frequency	Percent	Cumulative Percent
Less than 5 years	4	8.0	8.0
5 to 10 years	22	44.0	52.0
More than 10 years	24	48.0	100.0
Total	50	100.0	

The survey was conducted by in-depth interviews with the CIOs and/or system administrators and afterwards by several observations on the spot. A first contact type of e-mail with an attached automated-electronic form was sent to many CIOs, system administrators and IT consultants in Greece. The particular electronic form informed the receivers about the subject, the questions and the purpose of the interview. Then, each company completed the form and sent it back to the author by e-mail. After the first data gathering by e-mail, several interviews (some of them by telephone or net-meeting

communication, due to the big distances) with the CIO of the firms were arranged in order to illuminate every obscure corner of the study. The interviews and the observations provided primary data on the CIOs' perspective, their interpretations of their current role and responsibilities, and outlooks on the attributes required to be successful in the role. Eventually, all the collected data (gathered by e-mails, interviews and observations) were structured, tabulated and encoded by two different statistical software applications in the Process Simulations and Statistical Analysis Labs, at the Department of Petroleum Technology, of Kavala Institute of Technology (KIT).

Results and discussion

The examined sample included fifty (50) CIOs from a broad range of Greek industries (construction, service, petroleum, agricultural). Approximately, half of the examined CIOs were IT graduates and they hold a higher degree than a Bachelor (Table 2).

Table 2: CIOs' educational background

IT Graduate			
	Frequency	Percent	Cumulative Percent
No	26	52.0	52.0
Yes	24	48.0	100.0
Total	50	100.0	
Education			
	Frequency	Percent	Cumulative Percent
Bachelor	31	56.0	56.0
Master	19	38.0	94.0
Doctorate	3	6.0	100.0
Total	50	100.0	

The examined CIOs were asked to identify the nature of their contacts and allocate the time they spent on them in a daily base. Then, the contacts were categorized by media and location and the time was computed as a percent of eight (8) working hours per day. According to Table 3, most of the CIOs' daily working hours were spent on schedule meetings and telephone calls; and more than the half percentage of their daily contact time was spent on their own offices and rarely, they were outside the organisation. In contrast, Stephens et al. (1992) observed that CIOs spend more time away from their offices/organisations and less time on their offices, while MIS managers allocate their daily working time vice versa and they also spent around the half of their time on scheduled meetings.

Table 3: The nature of CIO contacts

Media	**Time allocation of CIOs (%)**
Telephone calls	30
Scheduled meetings	57
Unscheduled meetings	9
Tours	4
Total	100
Location	**Time allocation of CIOs (%)**
Own office	56
Other's office	5
Plant	15
Conference room	20
Away from organisation	4
Total	100

During the interviews, the CIOs were asked to identify their role and their attributes, and to describe how they spend their time in a typical month. According to the evidence took out from the interviews with the CIOs, the extracted information was encoded and categorised, regarding its theme, into the nine IS capabilities. Thus, capabilities with occurrences below 35 were categorised as "weak support", capabilities with 35-84 occurrences were categorised as "some support" and capabilities with 85 or more occurrences were categorised as "strong support". The frequency of the CIOs' activities was estimated by counting the recorded occurrences and eventually, the empirical support of the CIO's capabilities is shown in Figure 3. Three of the nine IS capabilities are strongly supported by the examined CIOs: relationship building, making technology work and contract facilitation. In general, these responsibilities were delegated to lower-level IT managers (Chun and Mooney, 2009). Furthermore, the IS capabilities: business systems thinking, architecture planning and leadership receive some support by the sample of CIOs; however, the occurrences of these capabilities are 83, that is very close to the lower limit of the "strong support" level. The above empirical results reflect the fact that the CIO's role in the Greek industry is more a technology-centric role, but it emerges a positive tendency to upgrade to the third stage of CIO's role evolution, which is a role that belongs to C-level executives or to business visionaries.

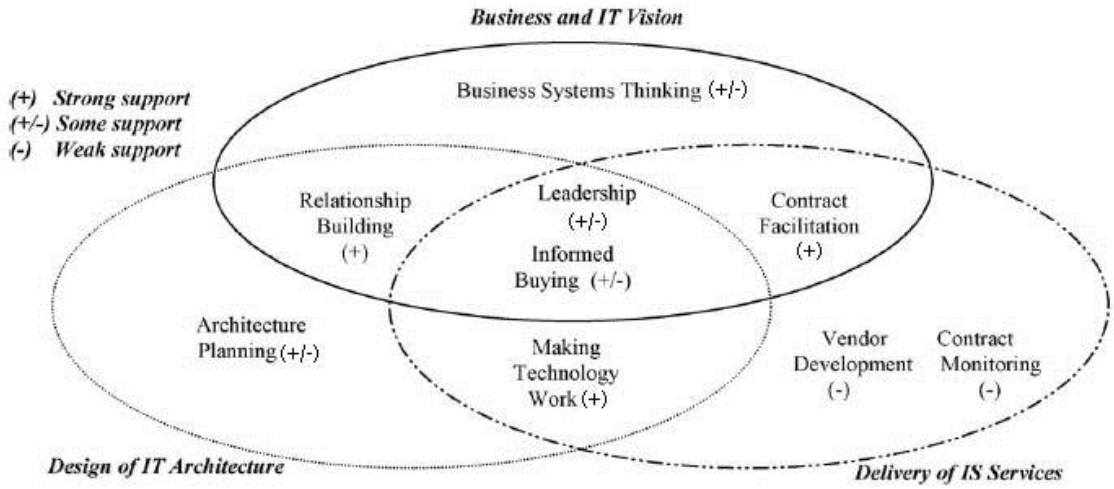

Figure 3: Empirical support of CIOs' capabilities by our sample (Feeny, Edwards and Simpson, 1992)

Conclusions

Taking everything into consideration, several useful and remarkable conclusions could be drawn from the current survey. The today CIOs' role in the Greek industry represents the role of CIOs in the end of 1990s, which was more functional and technology-centric role than a strategic one. It seems that CIOs in Greece act more as MIS managers with more functional rather than executive duties. However, the current study emerges a positive tendency of the Greek CIOs to upgrade their role to the third stage of CIO's role evolution, which is a role that belongs to C-level executives or to business visionaries. A better allocation of the Greek CIOs' daily working time and perhaps, the development of new IT departments, which would be dedicated to specific duties, would alleviate the CIOs' burden and make them more productive, efficient and eventually, business visionaries.

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