Analysis of the CIO Figure: Competencies and Cultural Aspects

José Ángel Cuadrado Mingo, Roberto Esteban Santiago

Departamento de Informática

Universidad Carlos III de Madrid

Madrid - España

{joseangel.cuadrado, roberto.esteban}@uc3m.es

Abstract: *The new technologies are absolutely necessary for all companies, and especially for IT companies. These technologies allow that a company can innovate and grow in its sector, and obtain economic benefits. To achieve this alignment between business and new technologies is necessary to have a CIO figure. In this paper, we show the main skills and competencies of the figure that can bring many benefits for its company.*

Keywords: *CIO, company, competencies, cross-cultural, alignment.*

1. Introduction

There are millions and millions of companies around the world. Each one of these companies has different organizational structures, but, in general, all companies have a similar approach. The classic system of the organization of a company is a hierarchy in which there are many departments. Thus, the person responsible of each department can lead several people and must report the results to his or her boss.

However, there is also another system of organization of a company. In this case, based in a horizontal approach and oriented to processes. This kind of approach has some strengths [1] like "promote flexibility and rapid response to changes in customer needs, direct the attention of everyone toward the production and delivery of value to the customer, each employee has a broader view of organizational goals, promote a focus on teamwork and collaboration and improve quality of life for employees by offering them the opportunity to share responsibility, make decisions, and be accountable for outcomes". But the horizontal approach has also some weaknesses, like "determining core processes is difficult and time consuming; require changes in culture, job, design, management philosophy, and information and reward systems; traditional managers may balk when they have to give up power and authority; require significant training of employees to work effectively in a horizontal team environment; and can limit in-depth skill development".

In any case, in both approaches there are different departments -which have its own responsible- with different functions. Normally, the person responsible for directing the company is the CEO (Chief Executive Officer). The CEO is the person that manages the company, makes decisions and serves as leader for all employees. The CEO must be a person with multitude of skills: business strategy and management, communication, motivation, organizer, etc. On the other hand, the COO (Chief Operating Officer) has responsibilities similar to those of the CEO. This person must manage the operations of the company and control the daily activities. Sometimes, COO is the person who replaces the CEO when he/she leaves his/her occupation due to the close relationship between both and their similar functions (an example of this is Tim Cook, when he replaced Steve Jobs in Apple Inc. during his illness and after his death).

There are other important departments with their different responsible, like the CFO (Chief Financial Officer) as the person in charge of the finances of the company, the CLO (Chief Legal Officer) as the person who manages the legal problems of the company and its employees and products, the CMO (Chief Marketing Officer) as the person responsible for the advertising and marketing of the company and its products, and the CTO (Chief Technology Officer) as the person in charge of technology in the company, inter alia.

Apart from these positions, there is another important responsible in the company, especially in IT companies. This position is the CIO (Chief Information Officer). With respect to strategic leadership of the IT organization, the CIO must be able to foster adaptive change among IT staff and promote the principle that optimal solutions will change over time as technology and the organization's needs change [2].

The scope and complexity of the CIO role broadened significantly over the past decade. [3]. Thanks to the work of the CIO in the IT companies, is expected to achieve alignment between business management and technology section, increasing the profits of the company.

The purpose of this paper is to describe the work of the CIO in an IT company and analyze its competencies, so that this study can help to know how it works and can be used by other IT companies for improving its alignment. The paper is structured as follows: section 2 defines the CIO position, studying its skills and its relationships in the company; section 3 analyzes its competencies; section 4 studies how CIO communicates with people from different cultures; and section 5 concludes with the observations presented in this paper.

2. The CIO figure

The CIO was a member of the team that had great technical knowledge, some great skills in technology management. Then, this figure reported to the COO or to the CFO and was typically responsible for managing a division that was perceived as a cost-center. In this role they were responsible for leveraging the organization's existing technology infrastructure to reduce cost [4]. Thus, CIOs are becoming executive-level leaders rather than mere service providers [4]. Nowadays, the CIOs have become someone who has increasing business management skills and which has a broad technological knowledge, but more superficial, and who knows how to combine both skills.

The CIO is a person who must constantly be updated and aligned to new technologies and changes that exist in society. Today's CIOs are deeply embedded in business organizations, helping CEOs strategize and business unit leaders to implement strategies [4].

First, one must wonder what a CIO is worried about. On the one hand, *the alignment of TIC with business objectives*, also the *talent management* within the department that has a complicated issue in moments in which the rotation in the labor market are very high. Another worry is *strategic planning*, CIOs are increasingly more involved. Furthermore, *agility of implementation of the strategy* and *demonstrate the value of TIC*. One of the biggest worries of the CIO, is *security*, from many points of view, not only worrying that hackers attack software, but also have to worry about hardware security. Finally, *cost reduction*, as TIC departments pursue a cost reduction across the enterprise.

The CIO in an enterprise must be a person with leadership ability, must be able to influence their peers seeking the benefit of the company. Some researchers have focused on the difference between authority and influence, therefore to clarify the CIO-peer influence context, it is important to distinguish between influence and authority. By Oxford Dictionaries define authority as "the power or right to give orders, make decisions, and enforce obedience", while influence is defined as "the capacity to have an effect on the character, development, or behavior of someone or something, or the effect itself". The distinction between authority and influence is important at the times where CIOs do not have authority, in these moments the CIOs have to try and influence to affect the thinking and behavior of their peers.

On the other hand, the effective CIOs must skillfully apply their powers of influence to encourage other functional heads to become partners with them and embrace ownership of these initiatives [5]. Furthermore, a critical part of CIO's strategic role is to provide thought leadership to other top executives, making them aware of the potential for information systems to support and enhance the strategy of the firm [6]. To perform these tasks, it is necessary to have certain skills when dealing with top executives. Also, CIOs require skills at applying lateral influence, in order to convince their peers in other functional areas to commit to SIS initiatives [7].

3. Competencies

In the previous section, an overview of the CIO figure was shown. After reviewing its origin and its function into the company, the competencies of the CIO will be analyzed. Studying papers from other researchers, it has been found some interesting skills that CIO figures should have.

Debra Hust Allison [2] analyzed 14 competencies of the CIO figure for its higher education. The following skills have been found:

- Adaptive communication

- Capture opportunities

- Change agent

- Effective collaboration and partnerships

- Emotional intelligence

- Financial management

- Institutional perspective and understanding

- Operational management

- Organizational innovation

- Principled negotiation and vendor management

- Project management

- Risk management

- Strategic vision

- Trusted relationships

In another paper [8], six different dimensions of the CIO have been described in relation to its abilities, knowledges and experiences. According to Zhen Shao et al., the competencies of the CIO are interpersonal communicative ability, political skills, dynamic leadership, strategic IT knowledge, strategic business knowledge and IT management experience.

In the case of [9], he briefly described the CIO competencies. In this report, Peppard mentions that a CIO must be visionary, strategic thinker, relationship builder, diplomat, deliverer, able to reading the Market and have leadership.

A dossier of Deloitte [10] about CIO contains a framework that comprises eleven disciplines and five support perspectives, covering the full range of IT capabilities, from strategic planning and innovation to delivery, procurement and government. In Figure 1, it can be observed these disciplines and perspectives (in Spanish).
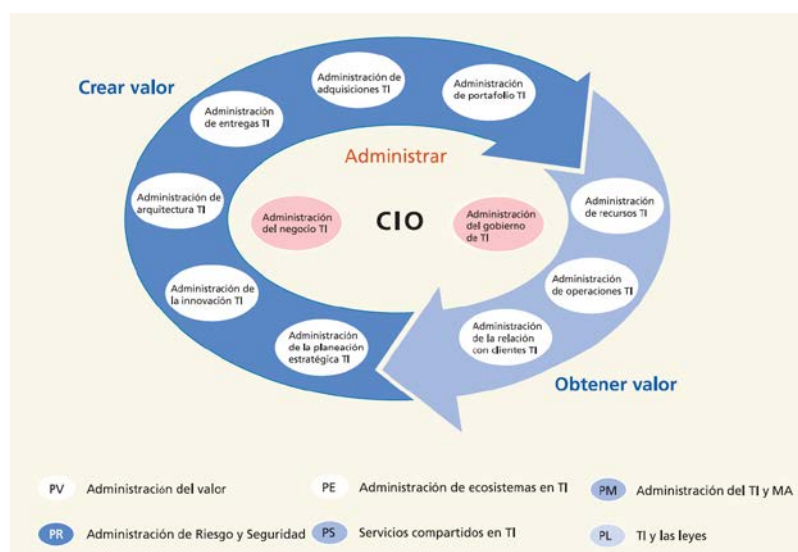

Figure 1. Disciplines and perspectives of the CIO figure by Deloitte.

Combining the different points of view of the previous authors, five common factors have been observed. We considered these five factors as essentials for a CIO. This figure must have some required competencies that are described below:

- **Leadership**. The CIO must be a person that knows how to handle a team and the different stakeholders. Also, this figure must know how to lead and how to manage an IT section within a company.

- **Strategy**. The CIO must have a strategic vision that allows the success of the organization through the accomplishment of IT goals and IT investments. For this, the CIO must know all the elements related with the business and IT section.

- **Communicative**. The CIO is a person who knows how to relate with other people, inside and outside the company. Thus, the CIO can use this for establish good relationships with other departments of the company, and even with other companies. It is also important for communicating the value of IT and innovation in the business of the company.

- **Visionary**. A CIO must be able to view opportunities for improving and innovating its company. Likewise, the CIO must also be able to view the new technologies and to profit from them.

- **Management**. The CIO must also know how to handle and manage the different aspects of a company (operations, risks, projects, etc.), and especially those related with IT. In this point, the CIO must be able to adjust the interests of the company with the interests of the IT section and convince the first that the alignment is good and necessary for both.

This approach is based in the papers of other authors, although Debra Hust Allison has done the most complete work. In Table 1, it is possible to observe which authors talk about each competence that we described before.

4. Cross-cultural communication

The cross-cultural is an aspect that is related to CIOs, since they must know how to manage their behavior with their peers depending on the culture that peers have. This is because in the case that a company is working with people from different cultures, the CIO, when dealing with each of them, should know how to do it. The need to examine Information Systems (IS) in a cross-cultural context arises from the growth of global businesses and the global use of IS as a strategic capability [11].

To make cross-cultural studies, it is necessary to ensure that the other factors do not influence peer, i.e. there must be equivalent to the observed differences can be attributed to cultural differences.

Research has provided evidence that differences in national culture may influence differences in the effects of IS management [12-15] and numerous researchers have called for research that integrates IS and national culture [16-18].

Hofstede [19-20], based on surveys of over 120,000 respondents from over 50 countries, suggests that national culture can be conceptualized along five dimensions: individualism/collectivism, power distance, uncertainty avoidance, masculinity/femininity, and long-term orientation.

	D. H. Allison	Z. Shao et al.	J. Peppard	Deloitte
Leadership		X	X	
Strategy	X	X	X	X
Communicative	X	X	X	
Visionary	X		X	X
Management	X	X	X	X

Table 1. Reference matrix between authors and CIO competences

Hofstede's Cultural Dimension	. Definition
Individualism/Collectivism	Degree to which culture emphasizes individual needs as opposed to group needs and members prefer to act as individuals rather than as members of a group.
Uncertainty Avoidance	Uncertainty avoidance is the level of ambiguity tolerated by the culture as evidence by rule obedience, ritual behavior, labor mobility, and the degree of comfort with ambiguity.
Power Distance	Degree to which large differentials of power and inequality are accepted as normal. Power distance will condition the extent to which employees expect and accept that power is distributed unequally.
Masculinity/Femininity	Degree to which gender inequalities are accepted. Masculine cultures emphasize work goals such as earnings, advancement, competitiveness, performance, and assertiveness. Feminine cultures tend to emphasize personal goals such as friendly atmosphere and a comfortable work environment, quality of life, and warm personal relationships.
Long-Term Orientation	Degree to which culture focuses on persistence and thrift as opposed to personal stability and respect for tradition.

Table 2. Definitions of five cultural dimensions by Hofstede

In Table 2,the definitions of the five cultural dimensions by Hofstede [21] can be observed. These five cultural dimensions must be taken into account by the CIO, because if the CIO know how managed well coworkers, makes these work more comfortable and thus increase business performance.

5. Conclusions

In this paper, we analyzed the CIO figure and all the elements around this person. Firstly, we viewed the function of the CIO in the company and who reported the results of its work and its skills. In relation to the skills of the CIO, we also analyzed the main competencies of this figure. We observed the work of different authors and concluded that the main competencies for a CIO is leadership, strategy, communication, vision and management. Finally, we can see how the CIO figure communicates with people from other cultures.

After analyzing this data, it is possible to say that the CIO figure is very important for the IT companies for helping them to obtain the alignment between business and technology and innovation, and thus, obtain economic benefits.

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