Marie Bia and Michel Kalika, "*Adopting an ICT code of conduct. An empirical study of organizational factors*", Paris Dauphine University, France

Introduction

There is often a discrepancy between how designers and decision-makers think about normal and effective use of technology and how employees actually use it ("espoused technology" vs. "technology-in-use"). How then can managers encourage employees to use ICT according to organizational goals? In the literature, two main types of regulatory actions can be identified. On the one hand, there are methods that technically restrict the possibilities of use. On the other hand, there are actions that facilitate or orient the appropriation process and the development of employee's perceptions of appropriate ICT usage. This second category includes some managerial actions such as training, awareness campaigns, user interface design, technology-use mediation, or formalization and diffusion of a code of conduct among employees. While much research deals with user training or interface design, the question of ICT codes of conduct has received much less attention to date. Nevertheless, several studies show that a growing number of organizations are introducing ICT codes of conduct.

Role and impact of codes on user behaviour

A literature review reveals that adopting a code of conduct specific to the use of ICT can meet several concerns of managers:

- Improving efficacy and appropriate use.
- Deterring illegal behaviour and abuse such as software piracy, and heightening user awareness of computer security issues.
- Formalizing "bilateral" ethical guidelines related to the use of ICT, and more specifically to issues such as electronic monitoring, use of resources for personal purposes, and privacy. In this case, the code institutes a sort of moral contract between employees and employer.

A code therefore clarifies the rights, duties and responsibilities of technology stakeholders and specifies the scope of an acceptable and efficient use of ICT.

Content differs according to the type of organization and the department initiating creation of the code:

- Degree of guidance varies from very specific to vague references to the use or abuse of technologies. Codes mostly deal with security and efficiency issues.
- Ethical concerns, such as respect of employees' privacy, are rarely addressed.
- In some cases, codes deal exclusively with Internet technologies, in others, they aim to control the use of all computer and telecommunication tools.

Acceptance of the code and its influence on user behaviour

In order to preserve their feeling of autonomy, users prefer their employer to issue general guidelines rather than formal rules of use. Users also accept rules better when they are negotiated and introduced in a consensual way than when they are imposed from above.

However, previous research shows that code of conduct influence on individual judgment and behaviour is limited.

Organizational factors of the diffusion of a code[1]

A structural factor: the extent of standardization

Creating and implementing a code of conduct specific to the use of ICT can be regarded as a means of standardization. By restricting freedom in the way ICTs are used, managers seek to control and stabilize the way users behave.

We assume that *the diffusion of an ICT code of conduct is positively related to the degree of standardization of the organization.*

Factors related to the technological context of the organization

The decision to formalize a policy of acceptable use is not related to how long a company has been using the technologies. Generally, it occurs when the organization has experienced problems, conflict, damage, or loss because of improper ICT use.

More relevant than the mere level of equipment, the degree of virtualization is an indicator of the extent to which ICTs are integrated into employees' daily tasks. We propose that the need to control ICT use increases as the employees' working environment becomes more virtual.

IT can add value to a firm only if the organization is able to conceive, implement, and exploit it in an efficient way. We propose that the greater the strategic importance placed on ICT by the organization, the more the organization will tend to take managerial actions aiming to improve ICT use benefits, such as formalization and diffusing an ICT code of conduct.

A cultural factor: the nationality of the parent company

- The level of ICT equipment varies from one country to another because of differences in economic development and culture. Thus, we can expect ICT codes of conduct to be more widespread in companies from countries, such as the US, that adopted ICTs early and profit from a more important experience feedback in the ICT use.
- Individuals from different countries do not have the same cultural attitude towards rules. The institution of organizational rules is more or less widespread, and is adapted according to the cultural characteristics of the country.
- Differences in the legal environment can make self-regulation by internal rules more or less necessary.

Demographic factors

It appears that improper uses of technologies and information systems are proportionately more frequent in large organizations than in small ones. In addition, it appears that large organizations implement more counter-measures intended to deter abuse.

The degree of equipment and of ICT use varies from one industry to another. Moreover, it has been shown that some sectors, such as finance, are more exposed to the risk of abuse than others because of the strategic and sensitive nature of information.

Study's results and conclusion

This study of ICT codes of conduct reveals the emerging and current nature of the practice in France. In 2003, 33 percent of companies in the survey said they had diffused a code, compared with 25 percent in 2002.

As expected, the results confirm that the desire to control ICT use by a code of conduct is influenced simultaneously by structural, technological, cultural, and demographic factors.

---

[1] The following chapter mention the hypothesis tested in the conducted research. A summary of the result is presented in next chapter.

However, whereas industry sector and parent company nationality were useful indicators of the diffusion of codes in 2002, the practice now appears prevalent in all firms, indiscriminate of country and sector.

Nevertheless, several limitations should be noted:

- Other factors can affect the decision to control ICT use. It can also be influenced by organizational culture or experiences in ICT use, good or bad.
- The composition of the sample means that the results should not lightly be generalized to other countries (the study was carried out in France).

Finally, the diffusion of a code can be accompanied by other types of regulatory measures such as awareness campaigns, training, mediation or adaptation of interfaces.

Hypothesis	Result	Observation
The diffusion of an ICT code of conduct is positively related to the degree of standardization of the organization.	Validated	
The diffusion of an ICT code of conduct is positively associated with the degree of virtualization of the end-users' working environment.	Validated	
The diffusion of an ICT code of conduct is positively related to the strategic importance placed on ICT by the firm.	Validated	
The diffusion of an ICT code of conduct is related to the parent company's nationality.	Not Validated	In 2002, we note a significant relationship between the adoption of an ICT code of conduct and the nationality of the parent company. This practice was more developed in American companies than in French companies or European companies in general. However, there was no longer any significant difference in 2003.
The diffusion of an ICT code of conduct is positively related to the organization's size.	Validated	
The diffusion of an ICT code of conduct is related to the organization's industry sector.	Not Validated	In 2002 this practice seemed to be limited to certain specific sectors, such as the financial sector and telecommunications services. By 2003, in contrast, there no longer seems to be any significant difference from one sector to another. A phenomenon of imitation seems to have been at work. Thus, codes are gradually being adopted by companies of all sizes, from all sectors and countries.

Table 1. Summary of results