ANALYSING CULTURAL IMPACTS OF COMPUTER-MEDIATED COMMUNICATION IN ORGANISATIONS

HEEJIN LEE AND RICHARD VAREY
BNFL Corporate Communications Unit
The Management School
The University of Salford, UK

1. Introduction

As the use of computer-mediated communication (CMC) has grown markedly, research on CMC is also increasing. Most research on CMC is concerned with the issues of media choice and media effects. There are three theories in the mainstream of the former: information richness (Daft and Langel, 1984), social influence (Fulk et al., 1990) and symbolic meaning in messages and media (Trevino et al., 1990). In the latter, we find reduced social cues (Sproull and Kiesler, 1992), information overload and other effects such as democracy, centralisation and decentralisation. Rudy (1996) sees two main faults in the existing research on CMC. First, most of the work fails to consider the context into which CMC is introduced. This criticism comes from contextualism whch insists that the context affects its use and effects. Second, particularly for media effects research, little has been done on the effects at an organisational level; most of the work deals with individuals and groups.

From the viewpoint of Rudy's contextualist criticism, the theme of the conference is quite relevant and opportune: "how do diverse cultural attitudes shape the implementation and use of CMC technologies?" In addition to the lack of research at an organisational level, we will add another aspect which needs to be addressed in CMC research. CMC not only concerns itself with communication behaviour (media choice and effects directly related to communication behaviour), but also affects our everyday life, in particular, in work places. Although the study of these elementary changes is fundamental for understanding and predicting our life in the 'information age', little research has been done yet. This aspect of changes in everyday life is also closely related to the theme of CMC use in national contexts in that our everyday life behaviour and artefacts are culturally (nationally) constructed. The changes in everyday life might look trivial, but it can provide a clue to understand, for example, why some communication technologies are preferred in some cultures while they are avoided in other cultures.

In our research in progress, we study how CMC affects culture in office life. By culture we mean here our way of life in general and thus our way of working in work places. We will investigate impacts of CMC on the way we work in offices. In the next section we will explain the meaning of culture used in this research in detail and present evaluation framing (Stamper, 1988) as a conceptual framework.

2. Culture

Culture is a controversial term in organisational studies. There are three levels of culture (Schein, 1990; Robey and Azevedo, 1994):

- The deepest level consists of patterns of assumptions that organisational members hold without awareness.
- The intermediate level refers to the values and beliefs of organisational members, which are readily articulated by members in their normative statements.
- The surface level is concerned with the organisation's symbols and artefacts, its routines and practices (Robey and Azevedo, 1994, p. 27).

In this project, we address the surface level of culture, in particular the way we work in organisations. We base our concept of culture on Hall's idea of primary message systems (1959) and this study of cultural impacts is built upon Stamper's evaluation framing (1988).

According to Hall, culture is not constituted as a simple whole. There are ten areas of human activities that combine to produce culture (Table 1). These he calls 'primary message systems'. They are closely connected to each other. We can not only investigate each separately, but also examine how they work together to form a culture as a whole system.

Table 1. Hall's primary message systems.

Interaction	Temporality
Association	Learning
Subsistence	Play
Bisexuality	Defence
Territoriality	Exploitation

All things that people do involve *interaction* with something else or somebody. One of the most elaborated forms of interaction is speech. *Association* refers to conventions that govern the groupings of people and the roles that people play; rank and hierarchy, class and formal organisation, etc. *Subsistence* means the processes by which a society satisfies the basic physical needs of daily life and the attitudes towards such matters as food, drink and work. *Bisexuality* is

concerned with both the way the sexes are distinguished and the relationships which are permitted between them. *Territoriality* refers to conventions which govern the division of space between people and its allocation for different purposes. *Temporality* is concerned with conventions which govern the way that time is constructed and used. These conventions govern when to do things, in what order to do them, and how much time is allowed for doing each of them. *Learning* refers to the conventions that govern being taught and teaching. *Play* is concerned with whatever a society regards as entertaining, for example, painting, music, literature, sports, games, etc. *Defence* refers to protective activities or techniques which the individual and the community need not only against potentially hostile forces in nature but against such forces within human society. *Exploitation* is concerned with how to develop and make use of resources.

3. Evaluation Framing

When a new technology is introduced into an organisation, it is difficult to analyse its impacts. These are not limited to technical and economic aspects but reach out to social and cultural ones also. The technology does not exist separate from other elements of an organisation. Once introduced, it interacts with the rest of organisational components.

To recognise the effects which a new technology has upon people and organisations, Stamper (1988) devised 'evaluation framing'. It is based on primary message systems and provides a systematic method of analysing impacts of an innovation such as a new product, any change to an organisation, or a new information and communication system. It suggests that the ten primary message systems be examined in turn when we attempt to predict the impacts of an innovation.

Suppose that a new communication system is put into use in an organisation. A new communication medium, e.g. electronic mail, provides a possibility of a new pattern of *interaction,* e.g. less dependent on face-to-face or telephone for certain tasks. CMC can also affect interpersonal relationships. Electronic access leads to the emergence of new communication networks. Rice and Case (1983) found that within five months of the installation of an integrated office system, 43% of managers surveyed reported exchanging messages with people whom they had not previously been in touch with. The network could develop into a so-called 'virtual community', which is a new *association*. Within the organisation, the use of the new system may require new skills which are rare among the older (and higher status) members of the organisation. Consequently, a new hierarchy may develop based on new skills and knowledge on new communication media, conflicting with the existing one. For *subsistence*, work

practices will adjust as the job specifications for the new system change. The new job specifications may generate a new division of labour by *gender*. A new pattern of association by gender may also emerge based on the use of the new technology; for example, males may be more likely to use the new communication system readily than are females.

A new system may require a new arrangement of computers and therefore a new layout of the office (*territoriality*), which in turn may cause a new pattern of physical encounters and thereby a new interaction. Furthermore, space is not just space in organisations. It implies much about social relations. For example, executives have larger rooms than middle management, which in turn occupy more space, private or working whatever, than their subordinates. There are three principles relating the concept of territory to organisational status:

1. persons of higher status will have more and better territory
2. the territory of higher-status people is better protected than that of lower-status people
3. the higher a person's status, the easier it is for him or her to invade the territory of lower-status people (Fisher, 1993, p. 221).

What then will happen in 'virtual organisations'? What is the equivalent there of territory? How can higher-status people in virtual organisations maintain control of 'their' space, which is an integral part of their power? These questions lead to another question of 'how can we design a virtual organisation which maintains such ownership of territory?'

A new communication technology can affect the organisation of working hours (*temporality*). It may open a possibility of transforming events happening in a polychronic way into events occurring in a monochronic order, or vice versa (Lee, 1997).

While some new systems require more formal training, others function better through informal *learning* from colleagues, as social influence theory implies (Fulk et al., 1990). A communication medium often provides users with new means of entertainment (*play*) such as 'web surfing'. Some people will sit longer in front of their computers surfing the Internet for amusement and mediated interaction than in a public coffee area, which has again something to do with territoriality. The new system also raises problems of data security, e.g. access and privacy in information systems (*defence*). It can also extend the organisation's capacity for *exploitation* of resources.

In summary, evaluation framing based on primary message systems can show the likely cultural consequences of a new technology. It aims to provide a systematic method to analyse cultural impacts of organisational innovations such as information and communication systems.

4. The Way Ahead

We are conducting a case study in which a newly implemented CMC system is investigated in terms of its impacts on the primary message systems. The research design is being developed and the appropriate methods for data collection are being adopted (interview, observation and document analysis).

As for the scope of the project, we will not address all of the ten categories. We will cover those aspects which we think are most relevant to the development of CMC. For example, one would not expect any meaningful change in diet and sleeping habits to be caused by a new communication medium. We are initially focusing on interaction, association, gender, territoriality and temporality. The latter two factors will be especially emphasised because space and time are the essential dimensions of human existence.

From this research, we expect two matrix tables as results; one from the literature review and the other from the case study. In examining various studies on the effects of CMC, the literature review will provide a matrix showing the effects of each CMC technology on the five selected streams. The case study is expected to produce a matrix which shows various impacts of a specific CMC on working life in a real organisational context. Both will allow us to draw a picture of possible and actual cultural changes in organisations caused by a new CMC technology.

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