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Abstract: A changed vision of management has, in the last decades, placed more emphasis on culture. It is seen as an important instrument for management of organizations. There is also interest for the cultural context of information systems (IS). This arises from the fact that culture influences human actions in organizations, and doing so culture also influences IS. These systems are, ultimately, instruments for supporting human actions. The relationship between IS and culture is extremely complex. Culture, as objective reality, determines the development, implementation and use of IS. On the other hand, IS, as symbolic construct and as designer of reality, exerts an influence on culture.

Key words: Information systems, organizational culture, context, reality construction, power

Introduction

Before the Desert Storm began, we briefly believed that Iraq had the third biggest army of the world. For a while that was our reality. The propaganda in the Golf War is an example demonstrating the result of using information systems (IS) such as mass media. Taking a look at the definition of propaganda,
we can single out two aspects on which insufficient light has been shed within the field of IS. These are the influence and guidance of human actions and the power relationship.

Propaganda can be defined as "Publicity that is intended to spread ideas or information which will persuade or convince people" and "Ideas or statements that are intended as publicity for a particular (political) cause but are (often) presented as being unbiased" (Oxford Dictionary 1989). Though IS can be and have been used to promote propaganda as so defined here, they are seldom seen in the context of influence and guidance of human actions.

The current approach to IS is dominated by system thinking. Information systems are used to disseminate "innocent" information. This approach is based on the principle that human actions have a rational nature.

In this paper we adopt a broader view. An IS will mean more than just the automated system: the combination of hardware, software, procedures and activities, which initially come to mind. A broader vision of IS includes such things as the newspaper, library, bulletin board, company newsletter, and Management Information Systems.

To begin with, we ask ourselves: what is the actual function of an IS? It is to support human actions. The complexity of these actions must and will always be related to the system. Davis and Olsen (1985) point out: "The fact that they are human artifacts means that they reflect characteristics and objectives of human systems". These actions can be interpreted as our collective life and activities. Human actions are influenced by culture; at the same time culture also influences the IS. Walsham (1990) correctly observes that culture is an important factor in the development and use of IS. It is remarkable that though IS literature does point out the importance of the social-cultural context of IS, an actual elaboration is not fully attempted. Apart from a few exceptions no attention is given to the manner in which norms and values are dealt with in the development and use of information systems (Lyytinen and Hirschheim 1988). For a more overall approach we will have to broaden our vision. In this paper we propose to address some aspects of IS in social-cultural context by culling ideas
from anthropology and sociology.

This paper will endeavour to start off a discussion of the question:
"What is the relationship between IS and the social context? The emphasis will be on the management of culture and on power relationships."

A changed vision of management has in the last years emphasized culture as an instrument for managing organizations. Another facet of organizational life closely interwoven with culture is power. Power, being a structural characteristic of human relations, plays a central part in the everyday interaction within the framework of which culture is produced and reproduced (Tennekes and Wels 1990). It follows that culture and power are two important aspects of the social context of IS.

When we talk of culture, we are in fact referring to the process of reality construction which enables people to see and understand events, situations and actions, but above all to put these into words (Morgan 1986, Walsham 1990, 1991). Moreover the process enables people to shape culture themselves. Information systems support this process by providing a tool to represent and create reality. Understanding reality therefore also means understanding the development possibilities of IS and the effect they have on reality.

The paper is organised as follows: It starts with a changed vision of management, to be followed by corporate culture. Next the origin of culture will be briefly dealt with. Culture is also determined by the interaction pattern and interaction presupposes communication. The relationship between communication and reality is discussed. Communication plays an important part in human actions. The social approach to IS, which is subsequently given, takes this line. Then we consider the relationship between IS and corporate culture. The importance of the context is given; the emphasis here is on culture, with power and dependence as important determinants. This line of thought is projected onto the use of IS. This is followed by a discussion on information manipulation and we end with a concluding section.
Vision of Management

According to Huber (1984), the present and future society or, as he calls it, the "post industrial society", can be characterized by an increase in knowledge, complexity and turbulence. Technological development is continuing, organizations are growing, and economical and political developments are constantly evolving. The result is that the vision of management is changing. Several decades ago, the prevalent view was that management was decision making (Simon 1977). Organizations were and are still seen as machines, within which the tasks of the management are planning, co-ordination and control. The current trend is to perceive executives as coaches and counsellors in the decision process, rather than decision makers (Mastenbroek 1991), or, as Wrapp (1984) aptly phrases it, "Good managers don't make policy decisions. They explore, combine and integrate". An example of this is an article in the Dutch newspaper Trouw (5th October 1991) reporting on a conference of the Dutch Christian Employers’ Organization: "The manager of the future will be more of a coach rather than a boss. In the past, investments and products were the focus. Nowadays, it is people. Other qualities are needed for this than in the past. There is no longer room for authoritarian management. Intelligent employees are in no way inferior to their managers."

Therefore, the search is on for methods to improve the management of organizations. A term that has been heard of a great deal lately is corporate culture. Management literature suggests that corporate culture is seen as an important aspect for organizational success (Peters and Waterman 1982, Schein 1987, Deal and Kennedy 1988, Zijderveld 1988, Tennekes and Wels 1990). Schein (1987) even states that "There is a possibility that the only thing of real importance that leaders do is to create and manage culture." Heng and Koh (1992) argue that "The most challenging task of a manager is not to make decisions (as Herbert Simon would see it) but to transmit the desired vision." The issue is the management of norms and values. The trend is more emphasis on how people work together in organizations.
Corporate Culture

When studying culture, two aspects are important:
- The cognitive dimension of culture (culture as knowledge),
- the inextricable relationship between culture and power.

Proceeding from the cultural anthropological tradition, culture as knowledge can be described as a coherent whole of meanings that a human being orientates on the reality in which he lives and which gives him an understanding of what life is all about, and which norms and values should direct his life. In addition, culture is described in terms of "knowledge" or "information". After all, culture includes everything a person needs to know if he is to function adequately in the situation in which he is placed. Culture is directly connected to behaviour. Culture does not only provide a familiarization with reality, but also a model of life. Culture can also be seen as both a model of reality and a model for behaviour.

Culture informs a person not only about the reality in which he lives, it also programs the way in which that information is applied in human actions. It is, both an information supplying and an information processing mechanism.

Besides the approach of "culture as knowledge", culture cannot be seen as separate from power. Power can be interpreted as the acting strength which actors have at their disposal in a relationship. Proceeding from this context, one cannot speak merely of the "corporate culture" of an organization. One must always ask oneself "whose culture", "whose game" and "whose rules". It is a fact that some social groups are more powerful than others and therefore capable of manipulating the complex of cultural meanings. The official culture of an organization is, therefore, often a reflection of the dominant norms and values of the top of the organization.

By definition an organization has a culture. The culture of an organization is shaped by the meanings (the rules, values, conceptions and symbols) that:
- refer to the work that is done within the organization and the manner in which the work is organized socially,
- are produced and reproduced within the framework of the interaction structure
of the organization involved.

Large organizations are often very differentiated internally; all manners of subculture exist within one single organization. It is often difficult to grasp the all-embracing category of an organization’s culture. This can be a source of breakdown in communication in organizations.

Above all, culture is acquired and it is relatively stable. For some reason or other, a culture only adapts itself slowly to changing circumstances. Norms and values and especially the “taken for granted assumptions” are very much embedded in people.

An organization’s culture can be represented as an onion made up of several layers, with from the inside to the outside (van Hoewijk 1988, Schein 1987):

1 - basic assumptions,
2 - norms and values,
3 - myths, heroes, symbols, stories,
4 - codes of behaviour, rituals, procedures.

Culture is experienced by people as an objective reality. It is not visible to insiders. Culture is to people what water is to fish. Above all, culture is a very influential construct. “Culture is stronger than life and stronger than death” (White 1990).

Within the scope of this paper, we would not attempt to give a definition of culture. A choice has therefore been made for one of the 166 prevailing definitions of culture. A workable and frequently adopted definition of culture is in (Smith and Peterson 1990): “agreed ways of interpreting signs, symbols, artifacts and actions”.

If we wish to manage organization culture, it may be useful to understand its origin, which is the subject of the next section.

The Origin of a Corporate Culture

According to van Hoewijk (1988), two approaches can be clearly distinguished regarding the origin of a corporate culture.

1. The standard-integration theory ascribes the origin of a corporate culture to
the process of mutual adaptation by the norms and values system of the organization and the norms and values that the organization members "bring along", namely their home cultures. The culture of a Japanese company is therefore both specifically Japanese and characteristic of the company concerned (Hayashi 1988).

2. The social-learning approach conceives the organization as a learning organism that teaches a specific way of thinking and acting through specific mechanisms (Schein 1987). In this way, an external danger can be propagated, such as the Japanese competition, which can lead to a more competitive orientated culture.

If culture is to be changed, it must be realized that people can have a personal interest in the continuation of the existing culture. For example, because they happen to be good at the things that matter in that culture. Changes to the cultural code threaten the position of power they have built up in the organization. There is always a real chance that decisions and changes will meet resistance. It is important to know to which informal networks the various actors belong, and what the possibilities are for mobilizing support with the help of these networks or for possessing information which others do not have.

With culture-intervention it is of utmost importance to develop conceptions of the culture one has in mind, which are clear, ingrained in the world of human experience and therefore easily transferable. For this it is necessary to know the means of communication with which one can transfer this vision to the members of the organization. Symbols, rituals and myths may play a part in this. In this way, an information system in itself becomes a symbolic construct.

With culture-intervention using IS there are two dilemmas that must be taken into account, although they will not be elaborated upon here.

- The problem of ethics. Is management allowed to bend norms and values intentionally? Isn't this a matter of brainwashing?
- Planned culture changes normally take a long time and are difficult to set in motion.

The development of a corporate culture is also determined by the inter-
action pattern in the organization. A culture change cannot be realized if there is no change in the social structure. Consider the formal organization scheme and the actual formal and informal interaction structures. These structures presuppose communication, and communication is not possible without a common framework of meanings. The cultural reality models and interpretation frameworks are produced and reproduced in communication between human actors. It can be stated that cultural meanings change constantly under influence of what the actors say and do not say, contend and withhold, do and do not do. But the basic assumptions do not change so quickly. These are more deeply embedded in culture.

Communication has, therefore, an important function in the production and reproduction of culture and as such also shapes reality. In the next section the relationship between communication and culture will be discussed further.

Communication in the Context of Culture and Reality

Communication is only possible when there is shared-situation-definition, on the basis of a shared pool of knowledge, which has the status of uncomplicated background knowledge. When we talk about shared-situation-definition, on the basis of a shared pool of knowledge, we are in fact discussing culture. Communication is therefore dependent on culture, but with communication we also create culture. Communication (especially through language) is the basis of production and reproduction of culture. Lyytinen and Hirschheim (1988) observe that "through the use of language, mutual understanding about the world is achieved. This, of course, presupposes the existence of a shared pool of background assumptions and beliefs". Understanding and knowledge of culture is therefore a requirement for effective communication.

Culture is the pool of knowledge or, in other words, the background knowledge that is available in an organization. According to Habermas, this knowledge is related to:

-the subjective world of wishes and emotions (subjective nature of man),
-the objective world of facts (objective nature of his environment),
the social world of power, interest, positions, ties, roles, etc. (nature-in-itself) (Koningsveld and Mertens 1986, McCarthy 1989).

These three worlds correspond with the three reality domains of Schein (1987).

- "individual reality". This implies personal experiences of matters which are experienced as real because of this,
- "external physical reality". Those matters that are empirically determined through objectivities and scientific tests,
- "social reality". Those matters that the group members are in agreement about.

In the social sciences two fundamentally different movements can be discerned in the ontological assumption of social reality. This can be experienced as an objective fact (Durkheim) or as a subjective fact (Weber). In more recent approaches both are integrated into one theory, such as the Theory of Structuration of Giddens (1984). The theory presupposes that in social reality both subjective and objective dimensions can be discerned. To be more specific, this means that culture is on the one hand (Objectivist) experienced as an objective reality, in which people are born or find themselves, but on the other hand (Subjectivist), culture is constructed and reconstructed in common actions. Culture therefore can be and is also influenced by human actions. In an organizational setting this means that within these three realities referred to in the previous paragraph, criteria are formulated which determine what is seen as relevant information. Culture, as an objective reality, determines which facts are processed in the IS and finally presented as relevant information.

Current IS in organizations cover only a small part of the communication process and therefore also the reality. Most information systems are only concerned with administrative processes. With the development and implementation of IS a much larger part of reality will have to be looked at. Not only will the verbal communication have to be taken into account, the non-verbal communication is certainly just as important. "In face-to-face communication, more than half of the information may be communicated by nonverbal body language" (Davis and Olsen 1985). A great need for personal contact will always remain.
Kiesler (1986) anticipates problems in this area with the use of computer-networks. In this view computer mail limits the information communicators get about the social context. This can cause problems for both the sender and the recipient. The sender does not know if the message has been properly received. The recipient remains deprived of the non-verbal communication. This renders it difficult to estimate the value of messages. The interpretation of information, which is very context-related, is therefore extremely difficult. The anthropologist Edward T. Hall distinguishes between "high-context" culture and "low-context" culture. In high-context cultures events, and also communication, can only be understood in their context. In low-context cultures events have a distinct universal meaning (Pinto 1990). An example of information that is very context-related is the whistle of the train conductor before the departure of a train. This signal can only be interpreted in its context. After all, the whistle in a football match is something entirely different.

Because of the specific function of communication, it is one of the most important pillars of every organization or social construct in general. Working (or living) together is impossible without communication. Foerster (1980) remarks "that communication is the glue which transforms a mere collection of individuals - an 'ensemble of independent elements' as one would say in thermodynamics - into a 'society', i.e., into a coherent whole." According to Foerster a system must not be examined by looking at the various parts it is made up of. Instead, one must look at the glue that keeps the whole together.

Communication can only be effective when information is being transferred. This transfer of information, in the broadest sense of the word, depends on the social context. If the communication is to continue effectively, it must be structured. This structuring is partially reflected in the use of IS. The way in which formal facts flow through the organization is recorded within. Besides this, these systems indicate how data should be combined and interpreted. But above all, how this data should be presented as relevant information. Information systems have, therefore, a dominant role in organizations. In the next section a social approach to IS is given. An IS within this context is seen as an intermediary in
the communication process.

A Social Approach to Information Systems

An IS may be seen as an institutionalized form of communication referring to a limited number of subjects. In this context, information can be defined as:

"A unit of communication in which something meaningful is communicated in language between two social actors (Lyytinen and Hirschheim 1988)"

In using IS in the context of communication, people enter into a significant symbolic interaction. Information can then be seen as both the source and the result of this interaction. Giddens (1984) says that "In this role IS serves as one of the authoritative resources by which social relations are perpetuated across time and space". Information systems gather, store and transmit information, which is important for the production and maintenance of social relationships. Information systems are used for the structuring and institutionalization of this process.

From this point of view, the traditional definition of information as uncertainty reduction is insufficient. Most information in an IS has little or hardly anything to do with uncertainty reduction. One need not search far to find examples. Take newspapers, for instance, the contents of which have not much to do with uncertainty reduction. However, information has in many cases a high symbolic charge; it refers to something other than its literal meaning. Feldman and March (1981) see information as a symbol and a sign. A rationalistic approach to information is therefore often incorrect.

When we regard information in the context of power, the gathering and use of information can be interpreted as a ritual or a symbolic act to legitimize the decisions made. It is advanced that the actions have been rational because information relevant to every possible alternative has been examined.

That these legitimized rituals have an important function can be concluded from the fact that organizations are often judged on their ability to gather and process information. Seen in this light, information is not the foundation for action. "It is a representation of competence and a reaffirmation of social virtue"
(Feldman and March 1981). Asking for and combining information, as a symbolic action, are ways of giving a meaning to the social reality and accepting it. According to Berger and Luckmann (1967), this type of symbolic action has an important function: "Belief in the appropriateness of decisions, the process by which they are made, and the role played by the various actors involved is a key part of a social structure. It is important not only to decision makers that they be viewed as legitimate; it is also vital to society. Ritual acknowledgement of important values celebrates a shared interpretation of reality."

Hofstede (1991) argues that administration plays a special part in the culture of a society. Administration and information systems are products of a culture, they reflect and record fundamental cultural presuppositions. From a cultural point of view, accounting systems in organizations are rituals that avoid uncertainty. They fill a cultural need for certainty, simplicity and truth in a confusing world, whether that truth has any objective grounds or not. A great amount of accounting information only serves as a later justification of decisions that were initially made for irrational reasons. The main function of accounting information is to keep up morale in an uncertain world. The bookkeeper and the accountant allow a society to live with itself, by means of the reassurance that its models and facts pass for the truth.

From the above mentioned point of view, information systems cannot be divorced from their cultural context. This context determines the manner of development, implementation and use of IS. Conversely IS manipulate the social context. When studying the relationship between IS and culture, we must distinguish between IS as a symbolic construct and IS as a designer of reality. But in both cases it is a product of, and also for, culture.

Information systems as symbolic construct have a direct influence on culture. As designer of reality, the influence takes place through the communication process. Where there is an indirect relationship. In both cases human actions are influenced. It is possible to influence the behaviour of people with the help of IS. This conceals a powerful management tool.

In the next section the relationship between IS and corporate culture will be
discussed further. But the following line of thought also refers to the more all-embracing term of culture. A choice has, however, been made to examine IS in an organizational setting because this is the social context for most systems.

**Information Systems and Corporate Culture**

The relationship between IS and corporate culture is extremely complex. It is a question of mutual influence. The cultural context determines in the end what the system will look like and in what form it will be used. Cultural characteristics are always found in the system. Information systems ultimately remain a representation of the reality and therefore also of culture. These systems channel the flow of data and present it as valuable information. The information which is given or not given says something about the corporate culture. Control in this data flow may mean a change of what is experienced as important in the organization. In other words, a change in the pattern of norms and values.

In doing so the management shapes the social reality. This possibility is not only set aside for the top management but also for anyone who can manipulate the information system. Those people who develop and control these systems determine for a large part the interpretation process. Because of this, information technology has an important place in the organizational business and in our entire social culture. Orlikowski and Robey (1991) argue that information technology provides a means of representing reality through its set of concepts and symbols, and by doing so, it is a medium for the construction of social reality. Thus information technology makes it possible to institutionalize the interpretation frameworks. This institutionalization occurs by formalizing the interpretation frameworks, recording them and raising them to an accepted standard, one which is taken for granted.

In this way, organizations construct their own reality. In some cases one can even state that when an organization assumes that the external environment is unanalyzable, an entirely different strategy will apply. The organization to some extent may create the external environment. Daft and Weick (1984) go so far as to state that in both cases "The interpretation may shape the environment more
than the environment shape the interpretation. The interpretation process
determines how we see the social reality. In other way round, social reality
determines, as objective construct, the interpretation process. Organizations as
information processing systems have, to a certain extent, the disposal of an
interpretation process of their own. In a very turbulent and non-transparent envi­
ronment, the organization will create a reality of its own, which forms the basis
of potential decisions. This is a reaction to the increased uncertainty regarding
potential decisions.

An example of this process of reality construction is provided by accounting
systems. These systems give information about past results, the current situation
and a projection of the future. They are used as a basis to set goals and to iden-
tify and correct differences. But accounting systems are only one way of looking
at an organization, resulting in the institutionalization of specific boundaries and
the emphasis on certain numerical data. Because of this tunnel view, there is less
attention for other aspects in organizations. These systems give financial informa-
tion a dominant position in the way we look at organizations (Walsham 1991).

Because organizations construct their own realities, they become an instituti-
on in themselves, which the actors experience as an objective reality. Daft and
Weick (1984) state that "Individuals come and go, but organizations preserve
knowledge, behaviours, mental maps, norms, and value over time". What is
introduced into an organization ultimately acquires a life of its own. This is espe-
cially true for information systems.

It is quite possible to have different, possibly conflicting, goals and ideologies
within one organization. It is not the organization that sets the goals and
processes information, but the individual actors. They send and receive informa-
tion and carry out the interpretation process. As a result of these individual
actions, there are often conflicting goals and ideologies within organizations. The
result is that there is almost always a question of a game of power.

Pfeffer (1981) and Mastenbroek (1991) consider power and dependence the
most important determinants of organizational behaviour. The development,
implementation and use of IS should be seen in this context. Information systems
are in all probability seldom the result of carefully considered rational actions, but rather the outcome of a compromise in a negotiation process. The more an organization is seen as a group of detached units, in which common actions are based on negotiations, the more each implementation strategy will have to emphasize the mobilization of coalitions to obtain support for innovative proposals (Keen 1981). It is difficult to see IS as unrelated to (social) power which is used to obtain personal goals. "In fact, information systems are one of the crucial media on which organizational power rests" (Lyytinen and Hirschheim 1988). This power is based on the position in the organization which gives access to an IS and on the special skill in the use and interpretation of the output of the IS. The struggle over who operates the computers and sources of information has become a visible conflict within almost every organization in both the profit and non-profit sector (Turban 1990).

The power structures in organizations have come under considerable pressure as a result of the technological developments in the field of computer-systems. The type of information technology used in an organization is both a reflection of the goal and ideology of the coalition which has built the system and keeps it in use, and of the organization itself. "Such information technology will embody the shared meaning, values and goals of that coalition by internalizing and reinforcing the dominant ideology of the organization" (Orlikowski and Robey 1991).

Either as symbolic construct or as designer of reality IS are a powerful management tool. Information systems can and are used to influence human actions indirectly. This holds a key to the changed view of management, in which a direct form of management is slowly being supplanted. These systems are also used to support and streamline communication. A carefully considered IS is a basis for an efficient and effective cooperation.

Information systems are therefore more than just a technical construct. Information technology helps us steer the behaviour of organization members. What is or is not possible in an organization is often formalized in the IS of the organization. This control takes place by manipulation of the interpretation
process. In this way the social reality in which the actors work and live is shaped.

Though understanding IS in the social context is of utmost importance this is not an easy task. An answer will have to be given to the question: how is the social context interpreted and what are its most important aspects (Lyytinen and Hirschheim 1988)? The social sciences can perhaps help. In these sciences there are many models to help obtain an understanding of the social reality. An example is the party model used by Pfeffer (1981) to describe the organizational process. The unit of investigation in this model is the grouping within an organization with their own interests. This in contrast to system thinking in which the emphasis is placed on the organization as a whole with specified functional requirements. The disadvantage the party model is that it is one-sided. Too much emphasis is placed on conflicting parties within an organization. An interesting model is the Theory of Structuration of Giddens (1984) who combines the ideas of structuralism and functionalism with those of the action-theorists. The theory has been used by Walsham and Han (1990) and Orlikowski and Robey (1991) as the model to analyze and investigate the rich social and organizational dimensions of IS. A point of criticism is that Giddens approaches his theory from the rational tradition. While human actions are often irrational. An alternative model is the combined party and system model (Voets 1987, Lammers 1989, Mastenbroek 1991). This model does not reject the system approach to IS. In addition to the system view of IS, it draws attention to power and dependence. These aspects are the most important factors of human actions, which are seen as limited rational. As has been mentioned before, there are many views of reality, just as there are different models of analysis. Depending on the context, a choice of model will have to be made.

Much has already been written about information systems as seen from the system model. It is interesting to shed a light on the other side of social reality of IS, not the least for a change, in which power and dependence play an important part. In the next section IS is looked at in an unconventional manner. We shall investigate the manipulation of information to realize goals. These can be the goals not only of an individual, but also of a group or even an organization.
Gaining influence through information need not always be related to value judgement. Just as there are different views of reality, there will be dissimilarities in goals and ideologies. The problem is that manipulation has a negative flavour. There are just more negative examples than positive ones. Therefore, information manipulation as described below shows the negative side more than the positive side. This choice is intentional, to show the impact of information manipulation.

**Information Manipulation**

An powerful method for shaping reality is the use of information manipulation. Through systematic manipulation of the information flow, it is possible to focus and direct human thoughts and actions. Ultimately this leads to a changed view of reality and possibly a change in the norms and values pattern.

Information systems, as a medium for information manipulation, have a considerable influence on human thoughts and actions. This is confirmed by the lavish use of propaganda. "To live in America today is to endure more propaganda in twenty-four hours than our ancestors faced in a lifetime (Rohatyn 1990)". It is not going too far to fear that this may also be the case in Europe.

We are flooded with propaganda in the mass media. Mass media is a collection of information systems such as newspapers, magazines, radio and television. Controlling mass media is, therefore, a considerable source of power. Organizations are also aware of the role of such media. It is used externally to create a positive corporate identity or for obtaining external support. Internally every large organization uses company magazines, notice boards, selective newspaper cuttings and speeches to shape the thinking process of its employees or the corporate culture in general (Heng and Koh 1992). In the very near future computer networks will (can) be used for this.

In the use of propaganda lies a contradiction. On the one hand, a democracy cannot allow people to be manipulated by propaganda. But on the other hand, a democracy cannot prohibit propaganda because in a democracy, freedom of speech is one of the highest ideals (Rohatyn 1990). This is a problem almost
every company will have to face. An answer will have to be given to the question: to what extent can one allow human behaviour to be manipulated by the use of information systems? Proceeding from a party model, it can be stated that information which is generated does not always have to be reliable. Or, as Feldman and March (1981) put it, "If most received information is confounded by unknown misrepresentations reflecting a complicated game played under conditions of conflicting interests, a decision maker would be curiously unwise to consider information as though it were innocent." When we consider that information is often ambiguous and allows for more than one interpretation, it is not surprising that the interpretation process is often subject to manipulation. In organizations it is often impossible to determine the value of information and whether it is objective. "Most information that is generated and processed in an organization is subject to misrepresentation. Information is gathered and communicated in a context of conflict of interest and with consciousness of potential decision consequences. Often information is produced in order to persuade someone to do something. It is obvious that information can be an instrument of power...." (Feldman and March 1981). It seems that no avenue of human activity is immune to information manipulation. Even in scientific research, there are occasional reports of how some researchers "massage" data, or invent data, to buttress a scientific claim. Though totally rejected and discredited, this short-cut to fame, research grants, position and power has never been actually abandoned.

In general it is extremely difficult to transfer information without distortion in an organization. Even in the most ideal situation, there is a considerable chance of noise in the communication between the different actors. The more links in the communication chain, the greater the chance that the information will be distorted (Huber 1982). It is often to the actors' advantage to manipulate the information in the communication chain. "Individuals in power hierarchies tend to screen out information passed upward, and to withhold or refrain from communicating information that is potentially threatening to the communicator" (Huber 1982), with the purpose of adjusting the decision process in their favour.
Downs (1966) observes that "Each official tends to distort the information he passes upward in the hierarchy, exaggerating this data favourable to himself and minimizing those unfavourable to himself". The communication process within organizations is a complex issue. This is precisely what makes manipulation of the decision process possible.

Control over the available information determines for a great part which decisions are taken in an organization. This control can be exercised by manipulating various aspects of the IS. According to Huber (1982), a distinction can be made in organizations between:
- "Routing", how the information flows through the organization,
- "Delaying", the time between the sending of information by one actor and the reception of it by another actor,
- "Modification", changes that are made to the information,
- "Summarization", summarization of information in order to simplify the sending.

March and Simon (1958) place more emphasis on the concrete action context, in which the decision making by individual members of the organization is the centre point. The management will create such an environment that decisions will be made which correspond with their own goals or those of the organization. This situation will be stipulated by the organization, either by determination or manipulation of the premise of decision making, "these premises are to be found in the 'vocabulary' of the organization, the structure of communication, rules and regulations, standard programs, selection criteria for personal, and so on, in short, in the structural aspect" (Perrow 1986). Besides this, Simon distinguishes two more ways of manipulating decisions (cited in Perrow 1986):
- in a direct, fully visible manner, by means of a message, supervision and rules;
- in an indirect, partly visible manner, by means of bureaucracy (specialization, standardization and (anticipation of) hierarchy).

Pfeffer (1981) emphasizes the first point. Discussing the problem from a political-actions and power point of view, he distinguishes three aspects which manipulate the decision process:
- control over the premise of decision making,
- control over the relevant potential alternatives,
- control over the information concerning the alternatives.

A more subtle form of manipulating people is to use the "taken for granted assumptions" to the advantage of the manipulating actor. This is used by many a propagandist (Rohatyn 1990).

In organizations there is not only a question of manipulation from above, but also from below. Rijks (1991) indicates that managers can often be misled by so-called hard data. He asks the question: Although 'intuition' plays an increasing part in management decisions, we observe at the same time that managers trust "hard" computer data more and more. How "hard" are these data? In this case, "hard" data means: information which is translated by computer models in "hard data" on the basis of which management decisions are made. These data, following in line of information, are based on figures, which explains the term "hard data". These so-called hard data are, in actual practice, not really so hard. There can be errors in the models used. Another possibility is that the data in the computer models is manipulated. The above mentioned increasing trust in hard computer data can ultimately lead to wrong decisions being taken in the organization (Rijks 1991).

A probably more obvious example is the presentation of information which may be done in such a way as to influence the interpretation:
- One-sided presentation of data,
- the wrapping of the message, especially the choice of words,
- relating a piece of information to other information,
- the circumstances in which information is given,
- the form in which information is presented, for example books, magazines, television etc.

Especially recently, it seems that the presentation of information has become more important than the information itself. This is truly a case of "the medium is the message". Reports these days are highly finished, especially when they have been made with the use of laser printers and special lay-out kits. The reason for
this is obvious: it enhances the credibility of the information. But it also offers the opportunity to cloak the information in such a way that the message is presented to its best advantage.

Conclusion

As a result of the changed vision of management, the spotlight has moved onto culture as an important instrument to manage organizations. It is a question of how people cooperate in the organization. The manager of the future will no longer be a boss but a coach. His task is no longer in the first instance to make decisions, but rather to support the decision process.

This changed vision will create an interest in IS in the context of (corporate) culture. The vision presented in this paper should be seen along this line.

Culture is an important attribute of the social context and power is a structural characteristic of it. It has been shown that there is a compelling relationship between IS and the social context. The culture and therefore the power game in the organization determine the development, implementation and the use of IS. These systems are closely intertwined with human actions. Power and dependence are important aspects of human actions and therefore also of culture. When this is translated to IS, the development, implementation and use of these systems is seldom the result of rational actions. It is more in the manner of a compromise as a result of the negotiation process. When the dominant group in the organization is able to exercise a great deal of influence on this process, the eventual system will be a representation of that group’s norms and values.

But IS also influence the social context. It is not only a question of a direct, but also an indirect relationship. The influence on culture of IS as a symbolic construct is direct. Indirectly, culture is influenced because IS shape reality using the support of the communication process. Information systems can ultimately be seen as the formalization and institutionalization of a part of the communication between people. The reality is not only an objective fact, but we can also manipulate this reality. This process of reality construction offers many perspecti-
ves. Human behaviour is moulded by the picture people have of reality. As a model of reality and as a model for behaviour, culture can therefore manipulate human actions. With this complex process, information systems can influence human behaviour. This is therefore a powerful management tool.

Information systems can never be seen as separate from their social context, in the context of human actions, within the framework of cultural reality.

The approach discussed in this paper is only one of the many aspects of IS. We have attempted to gain broader and deeper insights of the information phenomena vis-a-vis organizational culture by drawing on anthropology and organizational sociology. The product of the exercise may be a bit confusing. To increase our knowledge regarding the IS, a more extensive research is suggested. We can drink from the wells of other related disciplines, for example, mass communication. This field of study has built up a body of knowledge in information systems (TV, newspapers, etc) in the context of influence and manipulation. An integration of these disciplines within information systems is likely to be rewarding.
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