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A Case Study of Information Culture and Organizational Climates

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"Communication is absolutely essential to organization." Simon (1945)

ABSTRACT

The paper presents results from a case study of information behaviour within a pharmaceutical company. The study is part of a project involving different organizations as cases for a set of research questions related to concepts like information culture, organizational climate, information behaviour, policy and learning in organizations. In the first part of the paper a theoretical background and research questions are discussed. In the second part a case study, mainly from a large multinational company is described and finally survey data are presented indicating positive interrelations between information culture, information service quality and performance.

I. Introduction

Issues related to knowledge management and organizational learning are today appearing frequently in the academic literature as well as in the more popular management magazines. People involved in library and information services however, have since long expected that the information services provided by company libraries and information officers are of importance for the performance of individuals as well as organizations. In the literature of library and information studies it has been suggested that corporate management have not appreciated library and information services enough, considering the potential value of library and information services. Today it is suggested that the role of external information is greater than before, since more people will be involved in use of information for work and learning. Learning is a key concept for all kinds of staff.

There are today several arguments for broadening the view on input of external information. One such argument is the shortened lifetime for knowledge. The development in some areas implies that there will be a need for learning more continuously. The demands on knowledge and competence among the employees have increased. Zuboff (1988) writes about a new division of learning:
Learning is no longer a separate activity that occurs either before one enters the workplace or in remote classroom settings. Nor is it an activity preserved for a managerial group. The behaviours that define learning and the behaviours that define being productive are one and the same. Learning is not something that require time out from being engaged in productive activity; learning is the heart of productive activity. To put it simply, learning is the new form of labour. (s.395)

Different approaches have been tried to show that the value of information and information services is really substantial. The results are seldom quite convincing and of course information services have little inherent value in themselves except from the case when they really deliver useful information. In current complex organizations there is a need to find and combine information from various internal and external sources. A modern information centre may have a role as navigator, supporting more or less integrated information systems. Information technology can offer support through sophisticated information systems, but in practise it is very difficult to integrate all information systems in large companies. Of major importance will always be the human interpretation and use of information retrieved. In human information processing as well as in decisions on information systems the attitudes and values attached to information within the corporate culture may have a significant impact on behaviour.

An increasingly complex information environment has inspired to numerous studies on information behaviour and information use in organizations. Ginman (1988) suggests in her book that we should study more in detail how information and knowledge is processed and transformed into products and value in organizations as part of a process (es) called the transformation of intellectual resources. In this case with professionals within a pharmaceutical, research based company, this is part of an extremely complex process involving interrelations between individuals, organizational aspects, ideas and physical as well as cognitive resources of many kinds. Information and communication activities are part of the process most of the time. In studies conducted in Finland (Ginman 1988), United Kingdom (Wilson 1996) and Norway (Olaisen 1990) it has been suggested that the existence of a corporate culture emphasising information issues will be positively related to company performance.

Ginman writes about this using the concept "information culture". Olaisen (1994) also suggests that commitment to quality is closely related to communication. Service quality is to a great degree dependent upon communication and information strategies in a company (Olaisen 1994). It is not possible to deliver the described functional and technical quality (Grönroos 1984) if the communication between individuals, teams and departments do not work.

While the importance of knowledge and information for successful enterprises is seldom argued against, theoretically reasonable as it appears, it is of interest to consider the relationships suggested in the studies mentioned above more closely in a Swedish case study. With data from a large organization we can also use quantitative evidence and have the possibility to explore relationships between "information culture" and organizational climates, information use and performance indicators.

During a number of decades there has been published many studies on information needs and uses. So called "user studies" is an important specialisation within the field of library and information studies. The early adopted name "user studies" also
indicates a library and information service perspective where the user tended to be looked at from a library or information service point of view. The results from research suggested that this kind of perspective tend to prevent a more complete understanding of information behaviour. During the 1980's a new paradigm was introduced, focusing more on the individual, the subjective reports and micro-behaviour. This was probably a sound reaction to many superficial user studies, often utilising quantitative methods, little theory and unsophisticated analysis. However this new trend may also have contributed to set aside some earlier findings that were never questioned. For example the impact of a broader social or organizational environment was not really at focus in the new paradigm. Bridging and synthesising results from these different perspectives seems to be a challenge for research in the near future.

In studying information behaviour in a social or organizational context broad concepts like corporate culture or organizational culture offer one way to grasp and be able to talk about complex processes. Of course culture – like information is a broad concept, rather difficult to define. Yet they are both heavily used words signifying current society and inspiring research in several disciplines.

Mariam Ginman (Ginman 1987) and Tom Wilson (Wilson et al 1996) as mentioned above, have discussed the concept of "Information culture". The expression was also used in our project, which initially gave rise to a number of working papers trying to define and describe information culture and its relation to organizational culture or climate. During these exercises it became obvious that we were dealing with a number of broad and vague but eventually also fruitful theoretical concepts. Besides the obvious ambiguity of 'information' and 'culture', which increases when they are taken together, we talked about 'service quality', about 'business performance', about 'organizational learning' and a number of related concepts from recent research. Each of these concepts has been defined in several ways and they also seemed very difficult to measure or catch in empirical research. The task for this paper is to illustrate how this type of concepts might be related and to discuss their application in the study of information seeking and use among professionals in a research based company.

II. A case study in a pharmaceutical company

The case study can be said to have started with visits, interviews and surveys a number of years ago with the initial ambition to understand the use of professional information among professionals within R&D in a pharmaceutical company. In 1998 a new data collection was initiated as part of a broader project. This new data collection consisted of a limited number of interviews and a survey among eight companies served by the same information service. A sample of 373 employees was taken from journal circulation lists. Half of the sample was from research oriented companies and the other half from companies devoted to sales, manufacturing etc. The response rate was 68 percent. Some of the preliminary findings from this survey are discussed below.
The first series of studies showed that there was a rather high awareness of information sources and several hours a week were devoted to reading (Höglund, Persson 1985). Some informants witnessed that the possibilities to read clearly exceeded what they earlier experienced as university professors. Some of the staff interviewed were a little concerned about the restrictions to communicate results, but a lot was also published and discussed within a rather academic atmosphere. Communication was especially intensive along the R&D-development line – which may be called the value chain in this case. Starting with more or less pure chemistry, drug development will follow a sequence of test and development involving specialists from different fields. During this process the probability of success, i.e. a new or revised drug, will increase gradually. I found that the use of formal information sources tended to decrease as the process developed and the degree of uncertainty decreased. This was also theoretically linked to a movement from rather basic to more applied research (Höglund L 1980).

The information services consisted of a library, a well-developed system for circulation of journals and printed tools for current awareness like Current Contents, abstract journals etc. Handbooks were used to some extent but the major input was through journal articles. There was clearly an awareness of the importance of environmental scanning and in some departments there was also a known division of labour and systematic exchange of discoveries from the literature. However it was also found that there were many informal contacts and a structure where gatekeepers exposed to many formal as well as informal sources were the most frequently contacted. This in turn tended to increase the difference between those with a large amount of information and influence and those with a lower exposure to information sources or personal contacts. Some people with extensive knowledge of information sources but not at the centre of informal networks also reported that their resources were not fully exploited.

The information culture – a concept not invented by then – also included supporting stories. One of these was based on the fact that the head of R&D had about 100 journals sent to him through the circulation system and the rumour told that he knew most of their contents, implying that neglect of research findings might quickly be discovered.

The library also offered help with the recently launched service based on Medlars, which was accessed online. This new tool for information seeking was even used as a support and encouragement for external MD:s involved in clinical tests and by then many did not have access to a similar service. Contacts with the library were normally either by internal mail orders, phone calls or visits.

During the years between the first and the second data collection the company has developed enourmously and is now a major company on the stockmarket. The organization of the company has also changed through divisionalization. Information technology has contributed to increased access to several internal and external databases including full-text as well as general Internet access. The use of these resources is however still supplemented by a large amount of journals in hard copy.

Even the general corporate culture is exposed through the Internet, describing the major values of “The ..Company way..” These include a stress on knowledge
development, responsibility and decentralisation. The size of the company prevents this limited case study from all claims to be statistically representative. The sampling and results as reported here are not intended for statistical inference to a larger population.

The results from early studies of this organization showed a number of regularities in information behaviour supported also by other research. For example there were indications that interest in more than one specific area correlated with productivity. However there were also differences between positions in the research groups and between disciplines and departments. These were interpreted as supporting a theoretical model based on uncertainty (in tasks, for example as indicated by the R&D-dimension) availability of information, individual resources and needs. All of these combined tended to affect information seeking activity and innovation/publishing productivity.

A early model of basic influences on professional information use

There are numerous studies on information needs and uses. Many of them suggest information seeking and use to be related to several factors which may motivate it, trigger it or cause it to stop.

The basic conditions which influence the professional use of information, however, are rather general in nature I would suggest, and consist of an interplay between the individual and the information system, where the individual is confronting a specific problem or situation within a broader social and organizational context. In addition there are several studies showing the importance of information availability, of individual skills, specified aspects of the situation as in my own model where task and subject area were interpreted with concepts like uncertainty and the basic-applied dimension. In a model by Wilson (1997) also individual aspects like stress and coping strategies are highlighted. In a more recent review McCreadie and Rice (1999) present a framework that includes a large number of aspects of the information seeking process and influences or constraints affecting this. They group variables related to physical, cognitive, affective, economic, social and political aspects of influences on access to information. They also stress that different perspectives are related to different conceptualizations of information as well as various conceptualizations of access. In spite of this it can be argued that there is at some general agreement on a number of variables influencing information behaviour and use, even if the specific models suggested differ. In this paper the model used is modified to fit the available variables in the case study which also gave empirical support to the model in the first data collection of the case study.

We have also seen that there is a covariance between interpersonal contacts and the use of written information such as professional literature, and that communication and “performance” seem to be rather closely correlated. Such fundamental correlations would seem to be plausible enough, and some of them are perhaps even self-evident. If so, this is an advantage, since it enhances the possibilities for constructing a fundamental model based on the kinds of results cited in the examples above.
Individual studies may sometimes be flawed, but when a number of independent studies find similar tendencies, despite major differences in their methods and in the groups studied, a pattern may be fairly said to exist. The results from early evidence from the case discussed here and from other professional groups were analysed using a simple model summarising categories of variables related to a few key aspects described further below:

![Diagram](image)

**Figure 1. Some key influences in a model for studying the use of information and its effects. Modified after Höglund-Persson 1985 (p. 94)**

The model may be looked upon as partly overlapping similar models and is based on early empirical evidence within the field and used in the first series of analysis of the current case.

First, there is a problem situation (1) which in general may be described in terms of the specific task, the organization to which the individual belongs, and a number of variables which taken together tell us something about the problem and the situation. Uncertainty is a key property of the problem situation—it may be a specific
when information seeking is viewed as a process of sense making in which a person is forming a personal point of view, an alternative to the narrow single incident is revealed for study. The individual is actively involved in finding meaning that fits in with what he or she already knows which is not necessarily the same answer for all, but sense making within a personal frame of reference. The person seeks meaning, rather than a right answer, and views information as a way of learning and finding meaning or as a process of construction.

The concept of culture in organizations

Research on the concept of culture related to organizations and business management has increased dramatically since the above model was originally drawn. Alvesson (1991) suggests that organizational cultures work in a way similar to individual constructions of reality. Important aspects of organizations are the definitions of reality, the attitudes, values and interpretations that are common to a group. These common values are central to the structures that contribute to a relative stability in organizations.

Organizational culture has according to Schein (1988) three aspects. The first involves artefacts. It can be the physical environment, technology, actual behaviour of the individual members etc. The second aspect concerns the values within the organization. Values may be imbedded in and a part of formal as well as informal policy as well in practices and stories told. Some values are more basic ideas of reality and behaviours in conflict with these may be considered unthinkable. However, an organization will have many different subcultures and even if there are some common traits each individual may have values more or less different from those of others. According to Miller (1992) there are a number of subcultures often based on a mix of four basic cultural models:

1. The Rational Goal Model (Rational) emphasises the leader as oriented towards results and motivating through competition and goal achievement. The focus is on the environment of the organization.

2. The Human Relations Model (the group model) encourages more spontaneous behaviour and focus is more on the internal environment. Leadership motivates through affection and participation.

3. The Internal Process Model (Hierarchic model) is more oriented towards predictability. Motivation is achieved through orders, regulations and by stressing values of conformity, co-ordination and efficiency.

4. The Open System Model (development model) stresses flexibility and change and focus on the external environment. Motivation is stimulated through the emphasis on growth, resources, creativity and adaptation.

According to Miller there must be a balance between the different cultural models described above. I consider them as ideal types in the sense used by Weber.
1920). The organization will in practise contain a mix of all these traits and the problem is to keep a balance with all of them more or less involved. There is the danger that the group culture may become a country club; flexibility becomes turmoil; control becomes rigidity. The way people receive, value and seek information may also differ between different types of culture. Considering the theoretical models above you may find that model two and model four imply a more open communication climate than the others. At the same time model one and three especially are described as stressing efficiency and goal achievement more. This is in line with our findings in the current case study. The major division was between perceptions of the organizational climate as more open and democratic, supporting communication and another type of climate perceived as more bureaucratic and closed.

The organizational climate was assessed using a cluster analysis based on a survey scale strongly modified and reduced in size from Miller (1992). The instrument used was a 12-item question where the staff could include the words describing the organization.

The cluster analysis resulted in a rather straightforward split with two clusters. It became clear that the organization was considered both open and rather closed. However the number of persons in the “open” cluster stressing co-operation and communication was larger than in the “closed” cluster where a somewhat more rigid and closed atmosphere was perceived.

Table 1. Two organizational cultures in a company. Values for cluster centres. N=238

<table>
<thead>
<tr>
<th>Organizational Characteristics</th>
<th>Cluster: &quot;Bureaucracy&quot; (Closed climate)</th>
<th>&quot;Co-operation&quot; (Open climate)</th>
<th>a-b</th>
</tr>
</thead>
<tbody>
<tr>
<td>Openness</td>
<td>1,1</td>
<td>1,9</td>
<td>-0,8</td>
</tr>
<tr>
<td>Hierarchy</td>
<td>1,4</td>
<td>1,0</td>
<td>+0,4</td>
</tr>
<tr>
<td>Co-operation</td>
<td>1,3</td>
<td>1,8</td>
<td>-0,5</td>
</tr>
<tr>
<td>Creativity</td>
<td>1,1</td>
<td>1,6</td>
<td>-0,5</td>
</tr>
<tr>
<td>Guarding special preserves</td>
<td>1,3</td>
<td>1,0</td>
<td>+0,3</td>
</tr>
<tr>
<td>Shared values</td>
<td>1,1</td>
<td>1,3</td>
<td>-0,2</td>
</tr>
<tr>
<td>Sense of belonging to group</td>
<td>1,2</td>
<td>1,6</td>
<td>-0,4</td>
</tr>
<tr>
<td>Stress on performance</td>
<td>1,3</td>
<td>1,4</td>
<td>-0,1</td>
</tr>
<tr>
<td>Participatory</td>
<td>1,1</td>
<td>1,5</td>
<td>-0,4</td>
</tr>
<tr>
<td>Individualistic</td>
<td>1,3</td>
<td>1,1</td>
<td>+0,2</td>
</tr>
<tr>
<td>Bureaucratic</td>
<td>1,4</td>
<td>1,1</td>
<td>+0,3</td>
</tr>
<tr>
<td>Academic</td>
<td>1,4</td>
<td>1,5</td>
<td>-0,1</td>
</tr>
</tbody>
</table>

n  75  163

In looking more closely at the data it is obvious that the perception of different cultural climates is spread across different types of departments. The same department will have individuals and small groups belonging to different clusters. Of course this is
still a crude measure which should be further developed through qualitative studies using more interviews as well as observation and documents available. It must be recognised however that organizations of this type are not easy to access for long periods of time. The general attitude among managers was that the researchers should not be disturbed and there was also indicated clearly that the total cost for answering questions might be very high.

Since the two clusters seem to refer to climates which can be expected to facilitate or restrict communication they might be related to performance. The measurement of performance is difficult however. An exception is the statistics on new drug approval, which can be used if you have many companies (c.f. Koenig 1992). Since climate seems to be related to individuals and small groups differently a simple indication of performance was to ask for group performance compared to other similar groups. There is a significant difference between estimated group performance between the two clusters as can be seen from the diagram below.

![Diagram showing percentage evaluating group performance as good or exceptional compared to other groups within the two clusters (n=238)](image)

Information culture

While the literature on organizational culture is burgeoning, "information culture" is a less frequently used concept. Mariam Ginman (1988) introduced this concept suggesting that organizations, which value effective use of information and environmental scanning, tend to perform better. Information culture should be considered as part of the corporate culture. A simple indication of a perceived information culture was a straightforward question whether information seeking and environmental scanning was highly valued activities in the work place. A majority agreed with this
statement and it was also correlated positively to the clusters showing different organizational climates.

Service quality and performance

Since it has been suggested that the quality of information may be important for performance a company devoted to quality will also more likely pursue quality in information handling. The library and information service will be responsible for parts of the total information. Service quality can be defined and measured in various dimensions but the essence of the concept is based on consumer satisfaction. In this study we used the reported satisfaction with quality of library and information services as an indication of service quality. This made it possible to connect some of the concepts hypothesised to be related: information culture, service quality and performance using the subjective indicators from the questionnaire. The degree to which information seeking was valued in the work environment and the satisfaction with present information service quality were clearly related to group performance (Table 2).

Table 2. Perceived service quality, value attached to information in work group environment and relative performance. (N=206)

<table>
<thead>
<tr>
<th>Satisfied with information service</th>
<th>Rather</th>
<th>Much</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information seeking and environmental scanning valued high</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

| Percentage in groups with high or exceptional performance | 38 | 64 | 46 | 77 |

| n       | 21 | 74 | 11 | 103 |

effect from information culture as indicated above = 0.285
effect from service quality = 0.105
Sum = 0.389

The results indicate that local information culture in the work group is strongly connected to the performance measure. Partly independent from this there is also a connection between perceived quality in the information services and performance. However it has also been shown a relation between corporate culture or climate and "information culture" indicating support for the general idea of an open communication climate. Openness was also found to be the most important of a number of variables related to productivity in a study by Koenig (1992). This in turn is also in line with the general idea of hierarchy as detrimental to communication. On the other
hand in order to work in a positive way, openness also presupposes a basic motivation and some sense of a shared mission, which the organizational culture can support. This is an important interpretation that should be added to the aspects highlighted and measured in this study here.

Conclusion

This brief report describing a case study within a pharmaceutical company illustrates the application of the concept information culture and related concepts to organizational information behaviour and performance. Indications are found that information culture and quality in information services are positively related to performance. A measure of organizational culture is tested showing a division between perceptions of the culture or climate in work environment as either rather "closed" or "open". Organizational climate measured this way was also correlated to performance and "information culture". This is presented against the background of a model including factors influencing use of professional information by individuals in organizations. The integration of cultural aspects into such a model is suggested in light of the results. However in both cases there is a need for reduction into neat models where the most pertinent variables and concepts are kept. This case study show the possibility of using simple indicators to analyse complex concepts and their relationships.

In the theoretical background for the project several aspects of corporate culture, information culture and their relationships to service quality and performance were discussed. All of these refer to extensive literature and are difficult to define and measure. In order to be able to study the interrelations between these concepts considerable reduction in complexity is needed. By doing this the hypothesised positive relationships have been indicated in this case even if there should be some warnings attached to the limitations in data, which naturally prevents generalisations beyond the case. The next step would be to expand the complexity of the basic concepts used here again and try to specify empirically—if possible—the mechanisms involved in the "transformation of intellectual resources" leading to performance. This need for bridging the abstract or general with knowledge of real world activities calls for close participation, observation and interviewing in ongoing organizational work. This is partly done in other studies of the research program and also a challenge for continued research efforts.

Literature


Dervin, B & Nilan, D (1986) Information needs and uses. I *Annual review of information science and technology*, vol.21, s.3-33.


