USES AND GRATIFICATION THEORY IN VIRTUAL NETWORK ANLYSIS

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ABSTRACT

The changes of the conditions in the society that we have experienced during the last twenty years are extensive. The transition is characterized by the conversion of our materialistic culture into a new technological paradigm dominated by information technology. There are several important characteristics for the societies that are created by the new technology, such as for example digitalization, miniatyrization and deregulation. Another important characteristic is that networks of different kinds are created within most different areas. To compete with other entities, many companies cooperate in networks when they find that their own resources are insufficient. Geographical distances between the companies in a network are less important than cultural or organizational proximity to develop social practices. There are many advantages with cooperation in networks. The cooperation offers a possibility to share costs and risks and facilitates the work to keep a jour with constantly new information. The networks also have a role as door keepers. It is advantageous to be part of the network, but it is increasingly difficult to survive outside the networks. The basic entity is thus no longer an individual company but a network. My focus in this paper is on specific kind of virtual network, Solution Sharing Networks. In such networks organizations share knowledge and resources around a solution to a specific problem in their environment. The problem is thus a central demand that serves as a basis for the social practices that are formed within the network. But what is it really that encourages people to cooperate in a Solution Sharing Network? Uses-and-gratification-theory may be used to explain how people use different media to complete their needs. The theory may be seen as a paradigm that originally was used within media and communication research to determine motivation by studying the use of mass media, but some researchers have also suggested that the theory may be used to clarify how people use electronic communication environments to fulfill their needs. Several aspects of needs have been presented, such as for example cognitive needs, affective needs, personal integrating needs, social integrating needs and tension releasing needs. Cognitive needs may be one of the most important motivation factors to take part in the cooperation of a virtual network. This means that the kind of information available in the network as well as its quality must be a most important success factor for the cooperation in the network. But the evolution of the network may also lead to that other kinds of needs may also be fulfilled. The purpose of this paper is to take uses-and-gratification-theory as a basis for analysis of cooperation in s Solution Sharing Network. Using that analysis some models illustrating the cooperation will be presented.

Keywords: Virtual network, Solution Sharing Network, collaboration

INTRODUCTION

The changes of the conditions in the society that we have experienced during the last twenty years are extensive. According to Castells (2000), the end of the 20th century has demonstrated a revolutionary transition. This transition is characterized by the conversion of our materialistic culture into a new technological paradigm dominated by information technology. The paradigm has been developed because of the new technical possibilities offered by IKT concerning production, communication, business organization and even living. The basis for the new paradigm was mainly founded in the USA during the 1970's where California and Silicon Valley played an important role. (ibid)

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Castells (2000) denotes the society that has been created by these occurrences the *informational society*. Other denotations for this society are *information society, knowledge society* or *post industrial society*. Catells (2000) however stresses that it is impossible to talk about *one* information society. Even if the informational societies (or network societies) all are based on informationalism and restructured capitalism, the new information technology combined with cultural, economical, social and contextual factors has resulted in differences not only in how information technology has been used in different societies but also differences between societies in social practices.

Even if "the new society" has many names there are certain common trends that are pointed out by several authors. Höglund and Persson (1985) for example write that on opinion that is frequently presented in literature is that information and service sectors have grown rapidly (ibid) and this is emphasized by Castells (2000) when he sais that it is no longer the production of different products that is the main goal for the development as in the industrial society. The informational society instead aims at technological development.

One important trend in the informational society is the global perspective that is covered by several authors (for example Castells, 2000; Giddens, 2003), a perspective that has created great consequences for individuals as well as for companies and organizations. The market has become global and a new world class economy has been created (even if certain regions are excluded from the global economy). The global trend made possible by information technology has created a great change in a large part of company markets but also when considering the change in social practices.

To compete with other entities, many companies cooperate in networks when they find that their own resources are insufficient (ibid). The networks are often complex containing entities from several different cultures. The concept *culture* includes different subgroups within a specific culture, subgrups with differences in values and social

practices. Geographical distances between the companies in a network are less important than cultural or organizational proximity to develop social practices.

There are many advantages with cooperation in networks. The cooperation offers a possibility to share costs and risks and facilitates the work to keep a jour with constantly new information. The networks also have a role as door keepers. It is advantageous to be part of the network, but it is increasingly difficult to survive outside the networks. The basic entity is thus no longer an individual company but a network.

In the informational society it is thus essential to handle information effectively. The purpose of this paper is to take uses-and-gratification-theory as a basis for analysis of cooperation in a specific kind of network, Solution Sharing Networks, and to create an understanding of how people use different media and share information to complete their needs. I will also identify and discuss different kinds of needs in relation to Solution Sharing Networks that is described below.

SOLUTION SHARING NETWORKS

Solution Sharing Networks can be said to be part of a family of networks called *Solution Groups*. (Movement as Network, 2005) Such networks can include many different kinds of networks but all of them have an aim to solve some kind of problem. There are however different types of Solution Groups.

In a *Solution Cooidinating Network* organzations with *different* solutions cooperate and use their different solutions to reach a common goal. These types of networks last generally a rather short time and are difficult to maintain because of competition between the members.

Solution Distribution Networks instead distribute solutions to the audience.

In *Solution Sharing Networks* organizations share information and resources around a solution to a specific problem in their environment. The problem is thus a central demand that serves as a basis for the social practices that are formed within the network. But what is it really that encourages people to cooperate in a Solution Sharing Network? Uses-and-gratification-theory may be used to explain how people use different media to complete their needs.

Participation in a Solution Sharing Network must create some kind of added value for the members. Otherwise the members will not be motivated to participate and the added value will also influence the social practices. The added value may consist of increased profit or decresed costs but may also consist of reduced development time. Some values may not be directly measurable but the added value must be experienced by the participators which add a subjective dimension to participation in Solution Sharing Networks.

An important characteristic for a Solution Sharing Network it thus the sharing of information between different members in the group.

INFORMATION SHARING IN SOLUTION SHARING NETWORKS

Information sharing has been described by many authors. Talja (2002) describes in her study four different types of cooperation for information seeking and information use in academic groups. The contextual factors that may influence information sharing may include:

- Strategic – Information sharing is a conscious strategy to maximise efficiency in the group
- Paradigmatic – Information sharing is a tool to establish a new or identifiable research area or research strategy within a certain discipline or over several disciplines
- Leading – Information sharing takes place for example between teachers and students
- Socially – Information sharing as a relation building activity; information sharing contributs to build and maintain a certain group

It is possible to relate Talja's factors to information sharing in a Solution Sharing Network. The base is *Strategic Information Sharing*. The activities are controlled from a conscious strategy to exchange information to solve different problems related to design solutions. Depending on factors like the size of the networks and the level of development, the social practices are handled in different ways. (Lind, 2005)

Paradigmatic Information Sharing can be observed in Solution Sharing Networks when the network expands its area of interests and solutions of another kind than previously are developed.

Leading Information Sharing occurs when an expert is called in to the network to share his or her knowledge to the members of the network. Talja (2002) stresses that for this kind of information sharing it is important that information exchange is mutual – two way communication, not one way.

Social Information Sharing is important in all kinds of groups, also in Solution Sharing Networks. The term that is used to relate to the information exchange may not be the best – is not for example sharing of information always social? An extinguishing aspect of this kind of information sharing is however that it is not strictly directed towards a specific goal (Erdelez & Rioux, 2000 i Talja 2002). I think that this type of information sharing may be compared with Tönnies (2002) concept of *Gemeinschaft* where personal and emotional relationships are important, whereas the strategic information sharing could be related to the characteristics of a *Gesellschaft*.

SUCCESS FACTORS AND BARRIERS FOR COLLABORATION

An important aspect for a well functioning cooperation is a common vision. Hara et al (2003) writes for example that it is important for the participants in a network to be aware of a mutual goal and the benefits of sharing knowledge. It is however difficult to find methods to determine peoples visions (Elkjaer, 2001).

A way to characterize the work with the mutual vision is the concept commitment. Hooff & Weenen (2004) talks about three different kinds of commitment:

- *affective commitment*, that relates to the degree of connection between the member and the organization and the degree of participation that the member experience; affective commitment gives the member a feeling of wanting to continue the interaction in the network
- *economical commitment*, that relates to the costs that are connected to leaving the organization compared with the benefits that a continued commitment gives; economical commitment makes the member feel forced to stay in the network
- *Normative commitment*, that is connected to a feeling of duty towards the organization; normative commitment gives the member a feeling of obligation to remain in the network.

These commitment kinds should not necessary be regarded as three separate forms of commitment. A normative commitment may create an affective commitment.

The research of Hara et al (2003) also identifies other important aspects for a well functioning collaboration. Such aspects include for example that the member's different expertise areas complement each other, that people are interested in the thoughts and ideas of other members and that these have a value that can be shared by all members in the network. One member may for example possess extensive theoretical knowledge, whereas another member has great practical experience. By combining these skills it is possible to reach an understanding beyond what each individual could reach. Another important aspect for successful collaboration is that the participants should have access to each other. This can be solved through geographical proximity that makes it possible for the members to share and become aware of each others work. Geographical proximity is also considered to increase the possibilities for collaboration and it also has a positive influence on personal relationships. A third aspect is that it is important that the participants start their work at about the same time. Shared experiences facilitate strong relationships. (Hara et al, 2003)

The importance of the geographical proximity can however be questioned. The new technology may instead have created necessary conditions to facilitate interaction over long distances. Katz & Martin (1997) also write that collaboration between actors of the same rank is more common than between actors with different ranks. An interesting question is therefore if the organizational and social proximity today is more important than geographical proximity.

What is said above shows that collaboration demands concordance as far as different important characteristics are concerned. Different stages of the collaboration may however probably be related to different success factors. In the beginning of the work working routines, writing styles and priorities correspond. But as the cooperation develop, other factors also become important. It could for example be management questions and attitudes towards a mutual knowledge area. As time goes on the personal relationships and friendships become increasingly important.

USES AND GRATIFICATION THEORY

Uses-and-Gratification Theory may be seen as a paradigm that originally was used within media and communication research to determine motivation by studying the use of mass media, (Stafford, Stafford & Schkade, 2004). When Uses-and-Gratification Theory was presented during the 1970's meant a focus change in mass media research from production to audience and the dominating question was if the audience used a certain media to fulfil their needs. The theory was based on that there are many different responses to media messages and that people are able to determine by themselves what they are willing to accept respectively reject. People are also using media of different reasons and one individual may use the same media for different reasons at different occasions. (Watson, 2003) This shows that the audience is seen as active.

Two well-known representatives for uses-and-gratifications theory are Blumer and Katz (1974) who believe that it is especially important to observe the influence of media on the cultural and social base creating the needs that the audience wants to fulfil. Some of these needs in relation to the TV media are (McQuail, Blumler & Brown, 1972):

- *Diversion* – is related to the need of people to escape from their problems and the daily routines (ibid). This is hardly something that is in focus for cooperation in Solution Sharing Networks. It is sooner that the cooperation aids people to solve their every day problems rather than escaping from them.
- *Personal relationships* – this means that the user learns to know the participators in the specific media (ibid). For a Solution Sharing Network this means that we can learn to know people in the virtual environment without meeting them in the real world. In that sense it is of course also possible to develop personal relationships in a virtual environment. The development of personal relationships in a virtual environment often however has specific characteristics that cannot be found in relation to other media and that have a strong influence on the relationship that is developed. In the virtual environment there are possibilities for two-way communication that enables fast feedback from the receiver. Many other media are characterized by one-way communication.
- *Identification* – occurs when we take part of specific media content and is influenced by the norms and values that are expressed and make those to our own. In that way we can get support to solve our own problems by projecting them to the situation of the media characters. (ibid) This aspect can of course be connected to a Solution Sharing Network. Such a society is built on values and

conventions. These are expressed in the social practices that are characteristic for the activities in the society.

- *Surveillance* – Surveillance means to acquire information. In many cases people use different media to get information about what happens in the world. (ibid) For people cooperating in a Solution Sharing Network to exchange information this aspect is of dominating importance. The whole idea behind networks is to create a platform for sharing information to other members in the network and also to take part of their information.

Sangwan (2005) identifies five categories of user benefits:

- *Cognitive needs* – These represents the wish to acquire information to create knowledge and understanding in our information compact society.
- *Affective needs* – These needs instead represent our emotional experiences and our wish for entertainment.
- *Personal integrating needs* – Such needs arise from the person's wish to be regarded as trustworthy, secure and with a high degree of self esteem, needs closely connected to personal values.
- *Social integrating needs* – These needs are related to the need for inclusion, to be permitted to belong to a group and be regarded as a part of the group.
- *Tension solving needs* – Such needs are related to our escapist wishes and needs to be diverted from problems and routines.

If we compare Sangwan's categories with the aspects presented by McQuail, Blumler & Brown we can see that cognitive needs correspond to surveillance whereas affective needs in some respects can be compared with identification. Social integrating needs correspond to personal relationships and tension solving needs correspond to diversion. Personal integrating needs have no direct correspondence in the aspects presented by McQuail, Blumler & Brown.

Sangwan (2005) refers to that previous research has shown that the fulfilment of cognitive needs is one of the most important motivation factors for interaction in a virtual community. This means that information and the quality of available information must be of outmost importance for the success of the network. A virtual knowledge society may develop to fulfil also other needs, needs that may be related to the affective needs of the user (ibid).

Many researchers have also suggested that Uses-and-Gratification theory may be used to clarify how people use electronic communication environments to fulfil their needs (Stafford, Stafford & Schkade, 2004). People are of course motivated to use IT artefacts from external factors as for example rules, laws, agreements and traditions as well as from internal factors as personal goals and wishes. Generally it is however possible to identify two different reasons for people to use an IT artefact: due to the content that is delivered by the artefact and due to the simplicity that is connected to the use of the artefact. (Stafford, Stafford & Schkade, 2004) Stafford et al (2004) however also identifies a third possible motivation factor for people to use IT artefacts as for example

Internet in the possibility that Internet has to create a social environment. But Hooff & Weenen (2004) mean that IT artefacts only permit limited possibilities for social interaction. This can be related to the limitations to observe non verbal communication.

Sangwan (2005) instead lists the following motivation creating factors: the quality of the content, emotional aspects connected to the relationships created through the interaction in a virtual environment and contextual needs connected to the specific expectations and experiences of the user that can not be connected to content or relationships.

Korgaonkar and Wolin (1999) identify in their survey some different factors that influence the use of Internet:

- *Social escapism* – The Internet is used to escape from reality
- *Transaction based fear for security and privacy* – frequent Internet users are more concerned with a high degree of security and that safekeeping of personal information
- *Information* – the information must be relevant, easy and fast to access
- *Interactive control* – the iteration between the website and the user gives the user a greater experience than with one-way communication.
- *Socialising* – even if the main purpose initially is information seeking, the feeling to belong to a community becomes important; the fellowship with others is important
- *Non-transaction based fear for privacy* – this does not only concern fear for spam and cookies but also for example selling of customer databases
- *Economy* – it is convenient and often economical to use the Internet for example buying
- *Demographical aspects* – the authors examined the factors sex, education level, age and income and found that sex had no significant importance for Internet use, whereas education level, age and income had a significant importance.

There is thus a unanimous opinion between different authors concerning certain needs that are of importance for how users experience the benefits of an IT based network. I believe that the categories mentioned above can be used as an analyzing tool to create an understanding for the information needs that arise in the Solution Sharing Network. It is however important to consider that the information needs can be described on different levels – the virtual network as a whole has certain needs, often expressed in goal documents, whereas individual members have different needs at different occasions. It is also important to be aware of that other needs than what is mentioned above may be identified.

RESULT

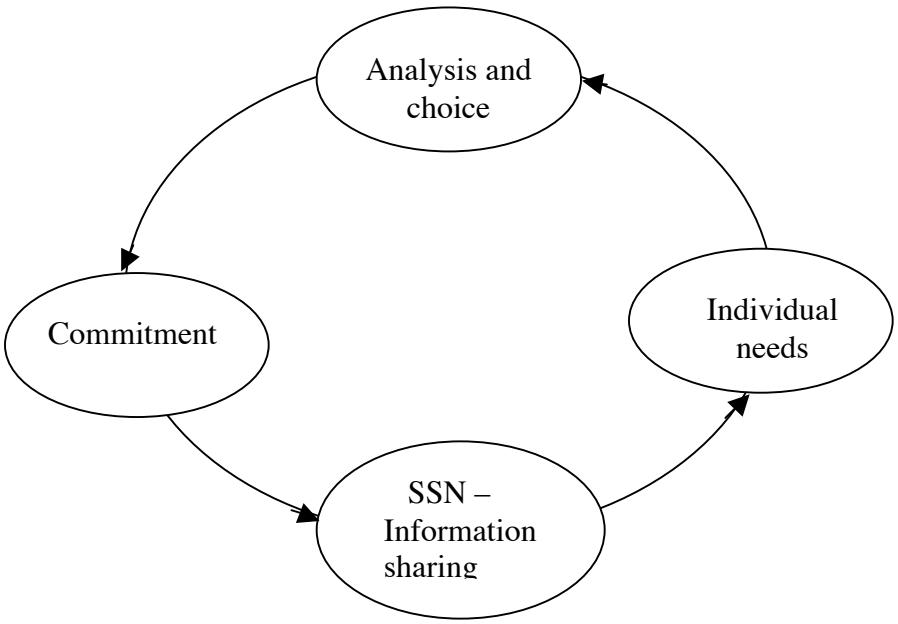


Figure 1: A cybernetic loop for information sharing in a Solution Sharing Network

The cybernetic loop illustrates that individual members will analyze how information sharing in an SSN will fulfill their needs. The analysis will result in a choice of commitment to the SSN.

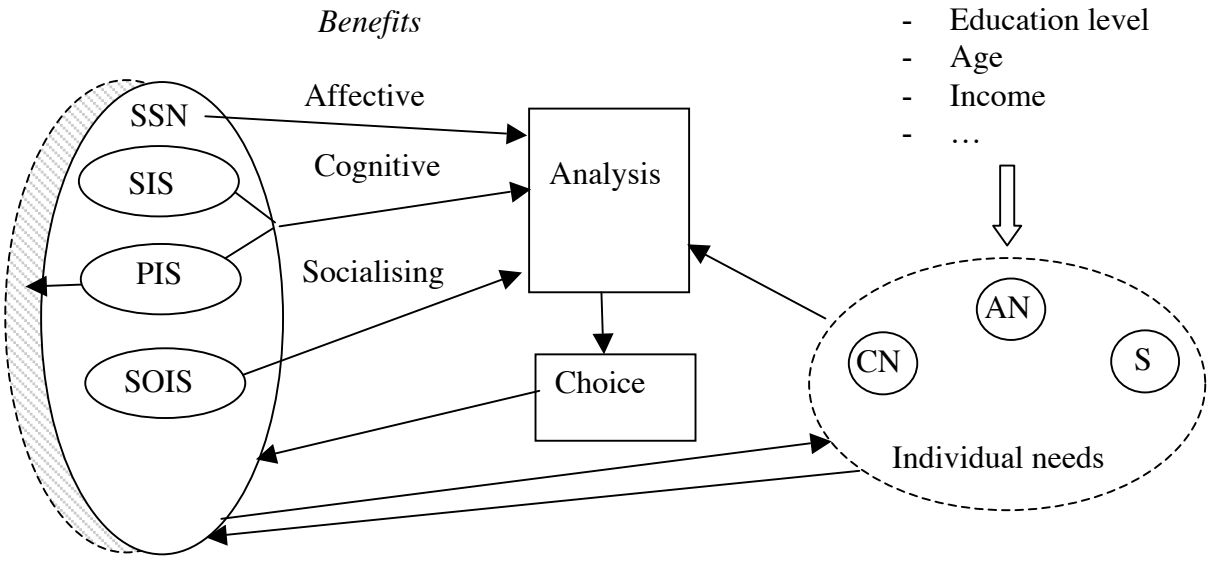
In virtual networks individuals thus share information and use different media to fulfil their needs. Following needs are especially important in relation to Solution Sharing Networks:

- *Cognitive needs* – These represents the wish of surveillance and to acquire information to create knowledge and understanding in our information compact society.
- *Affective needs* – concerning identification and other emotional experiences such as user fear for security and privacy
- *Socialising* – concerning personal relationships and the social integration in the network; it is important for the user to feel akin to a group and be seen as part of the group.

- Analysis and choice will take place based on how the individual needs are expected to be fulfilled. The commitment that the individual member may feel could be of economical, affective or normative nature. Economical commitment is related to the cost connected to leaving the network compared with the benefits that a continued participation gives.

Affective commitment is related to the degree of personal relationships between the members that defines the feeling of wanting to participate in information sharing. Normative commitment is related to a feeling of duty that gives the member a feeling of obligation to remain in the network.

The relationship between individual needs and information sharing in a Solution Sharing Network are analyzed further in the next model below.



Legend:

CN – Cognitive needs
AN – Affective needs
S - Social needs
SSN – Solution Sharing Network
SIS – Strategic Information Sharing
PIS – Paradigmatic Information Sharing
SOIS – Social Information Sharing

Figure 2: A model of member individual needs controlling information sharing in a Solution Sharing Network

The model shows that the individual needs of a specific member will be used together with benefits from information sharing in the Solution Sharing Network to analyze participation in the network. The needs are influenced by different factors such as for example education level, age and income. Depending on the result of the analysis the member chooses how to take part in the information sharing. Strategic and paradigmatic

information sharing will create benefits that may fulfil cognitive needs. Strategic information sharing will focus on exchanging information to solve different problems related to design solution. Paradigmatic information sharing will also expand the network's area of interest and solutions of another kind than previously. This will cause an evolution of the network. Social information sharing occurs when the information exchange is not directed to a specific goal but more to create and maintain relationships between different members in a specific group. This will cause socializing benefits. Affective benefits are created as a result of all information sharing activities since information sharing will create emotions. The Solution Sharing Network may also develop to result in more affective benefits. Individual needs from several members will also influence the network since information sharing will be directed towards creating benefits that will fulfil the needs. The character of the network will also influence individual needs. When the network evolves and new areas of interest are developed, the members can identify a new set of needs.

CONCLUSIONS

Several aspects of needs have been presented, such as for example cognitive needs, affective needs, personal integrating needs, social integrating needs and tension releasing needs, however for a Solution Sharing Network the most important needs are cognitive, affective and social integrating needs.

Cognitive needs may be one of the most important motivation factors to take part in the cooperation of a Solution Sharing Network. Strategic information sharing is therefore important and the kind of information available in the network as well as its quality must be a most important success factor for the cooperation in the network. The evolution of the network through paradigmatic information sharing may lead to that a new set of needs can be fulfilled.

Social needs can also be fulfilled through information sharing in a Solution Sharing Network. Social information sharing form groups of member where personal relationships may be developed. Affective needs can be fulfilled through all kinds of information sharing since emotions are involved in the process.

A specific member can be committed in different ways. In my paper I have identified commitments depending on economical factors, emotions and obligations. These obligations will influence the information sharing activities in the Solution Sharing Network. Through information sharing the individual member will be able to fulfil his or her needs. When experiencing to what degree the needs have been fulfilled, the customer may choose to adjust his or her commitment to the network. A cybernetic loop has been constructed to illuminate that.

I have also presented a model that more clearly presents the relationships between individual needs and the benefits reached through information sharing in a Solution Sharing Network.

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