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**ELECTRONIC COMMUNICATION IN  
STRATEGIC NETWORKS**

**WORK-IN-PROGRESS PAPER**

by

*Edith Andresen, Anette Bergman, and Lars Hallén*

Mid Sweden University, Dept. of Social Sciences, SE-85170 Sundsvall, Sweden, and  
Uppsala University, Dept. of Business Studies, Box 513, SE-75120 Uppsala, Sweden

Email: [edith.andresen@mh.se](mailto:edith.andresen@mh.se), [anette.bergman@mh.se](mailto:anette.bergman@mh.se), [lars.hallen@fek.uu.se](mailto:lars.hallen@fek.uu.se)

## Abstract

The email communication in a strategic network of small and medium-sized firms in the Stockholm metropolitan area is analysed on the basis a classification model for communication reasons. Support is found for email use according to information richness theory, as the dominant use of email was information dissemination. However, email was also used for tasks not typical for lean communication media, e.g., the expression of emotions. Still more striking is the strong impact of social behaviour and expectations as a precondition for the actual use of email. Although the strategic network is built up around a web-based platform, email is only marginally used for communication in the network as an effect of low coherence in the network and limited computer experience.

## 1 Introduction

Strategic networks are alliances between firms purposefully designed by a company or a group of companies, a public agency, or some other organisation or individual in order to help firms to reach their goals by providing them with resources such as information, technology, markets, or knowledge (Jarillo, 1988). Through the strategic network, its members may coordinate resources, reduce uncertainty, increase capacity, and obtain higher flexibility (Child & Faulkner 1998). Informal interpersonal relations have been found to be important for the formation of strategic networks (Ring & Van de Ven, 1994).

Many different kinds of strategic networks can be included in this broad definition. Some may be formally organised as a joint company owned by the members and operating with an independent budget. Others may be supported by local municipalities, and still others may be very loosely organised, perhaps only manifest as a mailing list in the computer of the person performing the role as the hub of the network.

Thus, strategic networks may develop from private groups where strategic issues that are relevant for the network participants are discussed in a social context. When the strategic network becomes formalised, e.g. through the institution of a procedure for defining membership, new requirements for communication emerge. Information about activities is to be communicated regularly and reliably. More systematic information must be obtained about what the members of the strategic network want to achieve through their membership. In some strategic networks, business deals may be concluded between its members, and in other cases the strategic network as a whole may act as a contract partner for its members in relation to other business partners. Such activities create much business communication.

Modern information technology such as email has facilitated the step from informal oral communication in social networks to more frequent and systematic communication in strategic networks. The informal character of email allows easy and unpretentious communication (Simonsen, 2002), which may be well suited to the rather loose and informal ways of acting in many strategic networks. Consequently, email communication can be expected to play an important role in strategic networks.

Strategic networks share characteristics of both business networks and relationships. Thus, general purposes of information exchange in business networks, such as coordination, knowledge development, and exerting influence, are valid in strategic networks. But also communication

purposes that are relevant in interfirm relationships play a role for information exchange in strategic networks.

As strategic networks are purposefully created by its initiators, they have a formal organisation structure. Some networks are set up as legally defined entities, whereas others may be more loosely organised as voluntary associations. Typically, however, strategic networks are built around a centre, often called a hub, made up of a few persons working full- or part-time for the network, sometimes in parallel with other jobs in the regional or local administration or in the private sector. The members working in the hub are responsible for achieving the objectives of the strategic network and are accountable for the use of the funds provided by public national or international agencies and by membership fees. Together with other stakeholders, such as local government, research institutes, or industry associations, they are responsible for acquiring renewed funds for the strategic network.

The business volume and interfirm contacts in a strategic network are often not very strong initially, as a typical purpose for setting it up specifically is to create relationships between its members in order to generate business where cooperation opportunities else would not be exploited to their full potential. Purposeful communication is often seen as a means to create such contacts, and email may be a tool for this.

However, systematically collected data pertaining to how the actors in the hub in these networks use email are rare. Knowledge of how email is used in strategic networks also has valuable practical implications, since this may benefit the actors establishing and working in networks. Markus (1994) states that understanding how and why these media are used in organizations is central to our ability to prescribe and predict organizational arrangements and outcomes in today's turbulent world. To find out how actors in strategic networks use email communication we analyse the actual messages that are sent by email and what these convey in order to understand how email communication may contribute to the objectives of the strategic networks.

## **2 Information in networks**

The gathering of information is a crucial activity in any organization. The firms in a network are closely linked for the sharing of information (Lorenzoni & Baden-Fuller, 1995; Mohr & Spekman, 1994). Open and honest information is important for the creation of close ties between the actors. An effective flow of information is also important inside the firms in the network. It is especially important in the hub because of its special mission to coordinate the actors in the network. An important task of the hub is to structure the information and to funnel it to recipients who need it. Members that specialize in a particular function get access to others in the network that are performing similar tasks and share their knowledge. This gives the opportunity for the members to focus and encourage the development of competitive advantages (Lorenzoni & Baden-Fuller, 1995).

The information required is often dispersed throughout the network, and to obtain competitive advantages the actors often specialize in different areas, which makes the information more dispersed (Gadde & Håkansson, 1993). Information flows irregularly and is diffused all over the network (cf. Hayek, 1945). Information that flows through the network is often richer in details than information in the market, and it may be more freely accessible than information in hierarchies (Lorenzoni & Baden-Fuller, 1995). This is what makes the communication through the hub especially important.

There are potential gains from the information creation processes that arise from the multiple sources within the network. The information exchange does not only deal with hard data about best practice, but also ideas, feelings, and thoughts about customers, other suppliers, and general market trends. The interaction between the members leads to new routines (Lorenzoni & Baden-Fuller, 1995). These new routines indicate that learning has taken place, and this is often the purpose behind creating a strategic network. This depends critically on a scheme of interactions, which in part can be mapped through an investigation of the email communication of the actors.

The generation of new information has to emerge; it cannot be planned. To achieve this the network hub has to design a structure that provides an environment, which allows for interaction and for generation of new information (Lorenzoni & Baden-Fuller, 1995). The actors in the network need to create an effective information system. When implementing information systems in organisations, the users' attitudes towards the implementation are crucial for the success. The individual perceptions of an information system are influenced by objective characteristics of the system, individual differences such as experience, the extent of use of the system, demands and procedures and level in the organization (Rice & Aydin, 1991). The information system will have an impact on the actor structure in the network (Gadde & Håkansson, 1993). Through the information system the relations can get deeper or change direction. The actors' different positions against each other can also get influenced.

Critical information in strategic network is often guarded and not shared. Actors are either afraid of being exploited or having a desire to exploit the power they have through their knowledge. Even in traditional systems information is often passed to the centre for filtering before being shared. This can make the process of collecting and distributing information slow, and the power to manipulate the information can be accidentally or intentionally misused by a small central group (Lorenzoni & Baden-Fuller, 1995).

### **3 Email communication**

More and more firms, especially those that are large and geographically dispersed, are turning to electronic communication such as email. The use of this medium for intraorganizational coordination is by many practitioners as well as researchers believed to increase personal and organizational productivity.

In a stream of research based on information richness theory (Markus, 1994), managers are assumed to rationally attempt to match the communication media at their disposal to the requirements of their communication tasks in order to achieve personal and organisational effectiveness. The term richness refers to the ability of information and media to change human understanding, overcome differing conceptual frames of reference, or clarify ambiguous issues in a timely manner. Rich media have the capacity to support communication tasks high in ambiguity (also known as equivocality), whereas lean media lack this capacity. Based on inherent media characteristics, distinctions are made between *oral/written media* (e.g., face-to-face and phone vs. reports and mail) and *synchronous/asynchronous media* (i.e. those that provide immediate feedback such as the phone and those that interpose delays between the communication and its completion like mail). In traditional communication media these two dimensions are totally correlated: oral media are synchronous and written media are asynchronous. Consequently, there is little ambiguity in the ranking of these media in terms of information richness: face-to-face communication is richest followed by phone and personal written communication. Formal written communication is at the lean end of the richness dimension. Using too lean media is ineffective, and using too rich media is wasteful.

Email, however, is a medium with new characteristics. It is defined as a medium that “uses computer text-processing and communication tools to provide a high-speed information exchange service” (Sproull & Kiesler, 1986). It seems to be an especially effective way of quickly involving many recipients (and even in different time zones) in complex interaction stretching outside of normal business hours. While transmission speed in email may be nearly instantaneous, timeliness of response is not inherent in the medium, but depends critically on the behaviour of the recipient. Email is not always the most convenient medium and one problem is the need to type out the message. Typing long messages in email can be time-consuming and awkward. On the other side, messages that are sent by email can be saved and retrieved for later reference.

Like regular mail, email is a written and asynchronous medium, but it is much faster than paper-based written communication, which brings it closer to synchronous media. Together with face-to-face meetings it shares the feature of *multiple addressability*, i.e., the ability to reach many persons simultaneously; although multiparty telephone conferences are technically possible the phone is clearly inferior in this respect. Combined with the unique feature of its *computer-searchable memory* this provides email with capabilities not found in traditional media giving it great potential value in equivocal communication despite its lack of richness. Email would clearly rival, and might even exceed, traditional communication media like the telephone, which however has an advantage compared to email in transmitting social cues. This social dimension is often crucial in ambiguous matters and it is a consequently a feature which provides information richness to phone communication which email may have difficulties to provide.

Email is regarded as the primary medium of internal work-related communication, appropriate for any task that does not involve private, social, work-related interpersonal, or personnel subjects. The telephone is seen as the primary medium for maintaining social relationships at work. Personal and situational factors, such as typing skill, the desire for convenience, the accessibility of the recipient, and the desire for closure of a specific task also influence the use of media, sometimes in the direction of the socially defined appropriate behaviours, other times not.

Combining multiple addressability with the written/oral and synchronous/asynchronous dimensions (where the latter ones are assumed to correlate according to information richness theory), we obtain a two-by-two diagram instead of the one-dimensional information richness hierarchy of traditional media. Face-to-face meetings and reports are still assumed to represent the end points from rich to lean media, but phone and email add on other features that offset the relative lack of information richness of these media.

Table 1. *Classification of communication media*

	High multiple addressability	Low multiple addressability
Oral and synchronous	face-to-face meetings	phone
Written and asynchronous	email	interoffice mail, reports

Source: Based on Markus (1994).

How communication media are used is not only a matter of communication technology but also of the social definition of the media. Fast communication via a medium requires that communicators routinely respond quickly to the communications initiated by others. The pattern of responsiveness in the use of a medium is an important part of what makes the medium rich. This is not technologically but socially determined. When deciding which medium to use, the sender will have to consider which medium the receiver uses. It is beneficial to have a medium in which anyone in the organization can be reached (a universal access medium) because this reduces overhead such as tracking the media through which partners can be reached or using multiple media to convey a single message to different parties. Although many organisations have adopted

email it is not yet the case that most employees of these organizations use email. An important factor for making email a universal access medium – in addition to the access to computers – is typing skill. It is sometimes claimed that senior managers as well as managers of small companies might lack such skills.

According to Yates et al. (1999) members in a social unit are believed to develop shared norms about how and why a technology should be used. Also in institutional theory appropriateness evolves from social organisation rather than from the behaviour of the individual. Different perceptions and uses of a technology tend to converge over time when social units interact or participate in the same culture. Uses of media will therefore differ across social units.

## 4 Reasons for using email

Markus (1994) states that “even lean media (such as text-based electronic mail) can be used for complex communication; richer media (such as face-to-face meetings) are not necessarily preferable or more effective than leaner electronic media. It is not the media per se that determine communication patterns but rather the social processes surrounding media use. Even lean media can be used in rich ways if the organization encourages and supports rich use”. She refers to Trevino & Daft (1987) and others for numerous examples of reasons for choosing media extending the information richness theory. Three categories are specified: *content reasons*, i.e. equivocality and uncertainty reduction, *situational reasons*, i.e. time and space constraints, and *symbolic reasons*, i.e. desire to convey authority.

Markus (1994) specifies six items in each of these categories. Adapting her framework to strategic networks, we have added one item (“to question”) to the content category and deleted three items from the situational category, whereby we obtained the taxonomy represented in table 2.

Table 2. *Classification of email communication*

Content Reasons	Situational Reasons	Symbolic Reasons
<ul style="list-style-type: none"> <li>• To convey confidential, private or delicate information</li> <li>• To describe a complicated situation or proposal</li> <li>• To influence, persuade, delegate or sell an idea</li> <li>• To express feelings or emotions</li> <li>• To keep someone informed</li> <li>• To follow-up earlier communication</li> <li>• To question</li> </ul>	<ul style="list-style-type: none"> <li>• To respond to a straight-forward telephone message</li> <li>• To respond to a complicated email message</li> <li>• To communicate the same thing to many people</li> </ul>	<ul style="list-style-type: none"> <li>• To be casual, informal</li> <li>• To convey urgency</li> <li>• To convey personal concern or interest</li> <li>• To obtain and immediate response, action</li> <li>• To show authority, status, position</li> <li>• To show that the communication is official</li> </ul>

Source: Adapted from Markus (1994)

## 5 The empirical studies

Two pilot studies of a strategic network made up of small and medium-sized companies in the manufacturing industry were conducted in 2001 and 2002. The strategic network in these studies was initially built as a virtual organisation, but it did not reach this status despite an investment of SKr 2mn. Still, 85 % of the actors in the network used email at least once a day and 80 % regarded the Internet as a natural part of the business world today.

The email communication in this strategic network was analysed with respect to content and purpose of communication in order to obtain a description of the activities of the strategic network. The emails were grouped into three categories described by Gadde & Håkansson (1993): technical, administrative and commercial information. The studies showed that the persons in the hub primarily used email to send administrative information. They did not use email as frequently in order to send technical and commercial information.

On a more detailed level, the actors' use of email was also classified as a means of governing, delegation of responsibility, basis for decision-making, creation of awareness of certain issues, performance follow-up and legitimating. The classification showed that email was primarily used to provide awareness of certain issues and to co-ordinate the actors and activities in the network. Email was frequently used also for social purposes.

The pilot studies indicated a need of a more extensive and distinct classification of email communication. In the third study, which is the focus of the present paper, we have studied a strategic network including small and medium-sized companies in the manufacturing industry in the Stockholm metropolitan area. The board of the strategic network has made a policy decision that email should be used for communication between its members, and all members have got a computer by now. We have focused on the outgoing email communication from the three persons working in the hub of this strategic network.

The primary data of our study consists of 549 messages sent through email during six months in 2002 and 2003. We had access to all emails in full text. These emails were analysed both quantitatively and qualitatively and classified according to their content.

These emails were supplemented by five retrospective interviews with the actors in the network hub (3 interviews) and in two companies (1 in each). These interviews were carried out during two days in March 2003. Each interview lasted for an hour and a half. Two people took notes in parallel.

Below, the observations based on the interviews are reported first, followed by a quantitative summary of the analysed email communication.

## **6 Empirical findings**

### **6.1 The hub functions**

The management group of the strategic network of the main study – the network hub – consists of three persons: the project leader, an administrator and a marketer. The project leader considers himself an “engine” for network development. His assignment is to explore the needs and develop solutions that in the end will generate business. He sees his job as project leader as more complex than that of business managers due to the lack of governing tools. The management group in the hub emphasises the development of the virtual organization, although the lack of social interaction impedes the development. In his opinion, communication in the network is crucial to success.

The administrator is mainly occupied with traditional office tasks and has no managerial responsibility. He claims that he may give suggestions but he has no part in governing. The aim is that all communication will take place through email and that all actors will use the computer on a daily basis.

The marketer has a coordinating, and not governing, role and his aim is to market the name and concept of the strategic network. His tasks also include identifying customer needs which he will communicate to the members of the strategic network. Another assignment is to make the members acquainted with each other.

## **6.2 Communication in a hub perspective**

The communication intensity between the hub and the members of the strategic network varies over time. Still, phone communication dominates, but the project leader believes in the potential of email. Email operates better in the communication between the hub and outside actors, and the project leader feels that the strategic network would be controlled in a better way if its members used email to a higher extent. However, email use has increased in the strategic network although only marginally. The project leader expects that email use in the strategic network will increase when its members have got to know each other better.

In a normal week, 20 % of the communication from the hub is made up of contacts outside the strategic network, and the remainder is internal to the network. The project leader uses email primarily for information purposes: to distribute meeting agendas, meeting times, reports, and plans. Additionally, a lot of email spam is circulated, which is considered quite problematic.

The administrator claims that about 70 % of his communication deals with the strategic network. Although all members have got a computer of their own, the telephone is still used as the main communication medium. The administrator believes that this basically reflects a generation gap. Another reason may be that the members still do not know each other particularly well. He considers that it will get easier for the members to communicate via email after they have met face-to-face a couple of times and started to build relationships. He uses email mostly to inform the members of various activities and to confirm participation.

The marketer uses about 75 % of his time for communication activities. Of this, about 65 % concerns communication within the strategic network and the remaining 35 % contacts with external actors. He explains the low use of email within the strategic network with the low experience of using computers of many of its members and with some tendencies to information overload. He estimates that only 25 % of the network members can be said to have reached computer maturity.

## **6.3 Classification of the email communication**

The 549 emails sent from the hub of the strategic network during six months in 2002 and 2003 are classified in table 3 according to the adapted version of the model used by Markus (1994) (cf. table 2). As the respondents have reported that they have not deleted any job-related emails, the content of their outboxes can be expected to be a good representation of typical communication behaviour in the strategic network.

As most emails have been classified as having more than one communication reason, the total number of registered reasons exceeds the number of emails.

Table 3. *The use of email in the hub of the strategic network*

	Project leader	Admini- strator	Marketer	Network members	TOTAL
Number of emails	413	115	6	15	549
<b>Content Reasons</b>					
• To convey confidential, private or delicate information	2	-	-	-	2
• To describe a complicated situation or proposal	6	1	-	-	7
• To influence, persuade, delegate or sell an idea	13	4	2	1	20
• To express feelings or emotions	78	18	-	2	98
• To keep someone informed	323	84	6	7	420
• To follow-up earlier communication	54	23	1	5	83
• To question	53	27	1	3	84
<b>Situational Reasons</b>					
• To respond to a straightforward telephone message	9	-	-	-	9
• To respond to a complicated email message	18	16	-	8	42
• To communicate the same thing to many people	8	13	2	5	28
<b>C. Symbolic Reasons</b>					
• To be casual, informal	37	5	-	-	42
• To convey urgency	5	10	-	3	18
• To convey personal concern or interest	48	4	-	-	52
• To obtain and immediate response, action	48	26	1	5	80
• To show authority, status, position	-	1	-	-	1
• To show that the communication is official	-	-	-	-	-
Average number of registered reasons per email	1.7	2.0	2.2	2.6	1.8

## 7 Discussion

The empirical results indicate that the hub of the strategic network primarily uses email to keep members informed. This is what could be expected both with respect to the choice of communication medium, the purposes of the strategic network and its development stage. Still, emotions and reactions are more frequent in the emails than one might expect, considering the low information richness of the medium. Following up previous communication, putting questions and requesting immediate response were also frequent reasons. This is in line with what could be expected from email, which – although asynchronous – allows for quick reactions due to its high transmission speed.

Email use in order to convey private and confidential information was infrequent, and there was only a single email example of showing authority. This is also in line with what can be expected from information richness theory. Richer media are normally used for such purposes. The characteristics of the strategic network are also such that communication of this character is generally infrequent.

Mass emails were only rarely sent out during the six months analysed (28 emails). This could either indicate a reluctance to use the potential of multiple addressability, but it could also be a sign of an ambition to use email to build individual social contacts in the strategic network. This latter interpretation is supported by the not insignificant number of emails registered as having the symbolic reason of showing personal concern or interest.

A clear difference between the email uses of the three hub members can be observed. The project leader sent 75 % of the emails during the six months, which reflects his greater experience and strong belief in email. The emails also show that most of the email communication of the

hub members is directed to recipients outside the strategic network. This is certainly related to the low use of email by the network members.

Communication speed often depends more on social behaviour than on the medium itself. This is clearly demonstrated in this case. To function well, a communication medium must have reached the status of a universal access medium. In the strategic network of our study email has not reached this stage, although the strategic network is purposefully designed around a web-based platform and although considerable investments in computer equipment have been made. Social behaviour and expectations have to be changed as well. A major task of the hub is to create social relations between the hub members as a basis for such a development.

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