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Marko Forsell
University of Oulu, marko.forsell@oulu.fi

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23P. Dialogue Model for Media:
Analyzing computer-mediated communication in organizations

Marko Forsell
Oulu Business School, University of Oulu
marko.forsell@oulu.fi

Abstract

Computer-mediated communication research focuses on media richness and naturalness in communication tools and their correlation for communication effectiveness. The underlying idea is that the more similar the medium is to face-to-face communication, the richer it is. The more equivocal a task in the organization is, the richer medium is required for communication. This approach has two problems. First, it focuses on the richness of the medium used not the process of communicating. Second, as for the medium, it is the support for richness that is expected, not their support for the process of communication. This paper presents a tentative Dialogue Model for Media that aims to support the communication process. The model is based on central elements that are required to support the communication process.

Keywords

Dialogue, Communication process, Media, Dialogue model for media, Computer-mediated communication, Electronic communication

1. Introduction

Our daily life in organizations is filled with communication through different media with different kinds of people all over the world. We spend a good deal of our lives in organizations (Mintzberg 1989). Organizations start to materialize when rationales for them become communicated and shared, while the resulting organizations exist largely in our minds (Weick 2001; Weick & Bougon 1986). However, the world around us is changing faster than anticipated and we hear that "we live critical times"[1]. What is really new in fact is that the world has shrunk (Friedman 2005). We can travel physically within a day to almost anywhere in the world. Digitally we can be "anywhere anytime" or "all the time everywhere", presuming the technology is in place. The smaller world and globalization mean that encounters between people with remarkably different backgrounds are more frequent even within the organization. However, there seems to be tension all around us between different kinds of groups within one organization, between organizations and even between countries. The root cause for these issues can probably be found in communication failures and cultural misunderstandings (Schein 1993). We need a way to avoid these misunderstandings, which envolves communication (Schein 1993; Isaacs 1999; Köchler 1997). In organizations we communicate through a number of media and thus communication becomes increasingly computer-mediated.

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[1] See e.g. Minzberg (1994, pp. 203-209) for a very entertaining passage.

Media richness theory (MRT) is a very widely used theory to explain media usage and selection in organizations. This theory argues that task performance improves in an organization if media richness is matched with the task. According to MRT the more equivocal a task is, the richer media is required. According to media richness hierarchy developed by Daft et al (1987) the richest medium is face-to-face communication and the leanest medium is an unaddressed document, e.g. a standard report. MRT has been scrutinized in multitude of tests and the results are, at least, non-conclusive (see summaries e.g. Dennis & Valacich 1999; Te'eni 2001; Kock 2005). To overcome MRT's problems there are two options: to extend existing theory to overcome shortcomings, or to try to develop a new theory to explain the phenomena. The first option was chosen, for instance,. by Carlson and Zmud (1999) who extended MRT with the channel expansion theory. Timmerman and Madhavapeddi (2008), and D'Urso and Rains (2008) have found support for the channel expansion theory. Kock (2005), and Dennis and Valacich (1999) have chosen the second option by developing new theories. We also follow here option two and formulate a new theory and introduce a new model called dialogue model for media.

This article is structured as follows: in section two a short literature review is presented. It introduces the main existing theories of media selection in organizations. In section three we formulate and propose a dialogue model for media which is built on the idea that the the medium of communication should be selected based on the communication purpose and the medium's support for the communication process. Finally, in section four we give our conclusions, outline the limitations of the study and propose some directions for further research.

2. Literature Review

The fundamental question behind the research of the use of communication in organizations is: Why organizations process information? Daft and Lengel (1986) offer two answers based on literature. The first answer is that organizations process information to reduce uncertainty. Uncertainty basically means lack of information, and as information increases, uncertainty decreases. The variations in organizational form are based on the amount of information that is needed to be processed in order to complete the task at hand. The more information a task needs, the more organizational communication is needed to reduce uncertainty in performing it. The second answer offered by the literature is to reduce equivocality. Equivocality can be seen as uncertainty, however, it also presumes multiple even contradictory interpretations of information. New data may not resolve anything, it may even increase equivocality. The old information may need to be re-interpreted in the light of new information.

Computer-mediated communication tools have become major media in organizational communication (Te'eeni et al. 2001). MRT by Daft and Lengel (1986, 1987) is one of the most widely applied theories of media choice and use in organizations (see Dennis & Valacich 1999; Suh 1998; Te'eni et al. 2001; D'Urso & Rains 2008; Timmerman & Madhavapeddi 2008). MRT proposes that communication media vary in their capability to process rich information; face-to-face communication being the richest and a paper document the least. MRT works quite well with traditional media (e.g. telephone, memos and face-to-face communication) but there are problems with modern communication tools, such as e-mail and voice mail (Carlson & Zmud 1999). To correct this Carlson and Zmud (1999) presented the channel expansion theory where they introduced the need to take into account experience. They argued that the user's experience with the channel, messaging topic,

organizational context, and communication co-participants adds richness to a given medium. Their results supported this partially. The experience with the channel and the co-participants of communication seemed to be most explanatory.

MRT and channel expansion theory are both rooted in social psychology (Robert & Dennis 2005). To offer a different point of view Robert and Dennis (2005) argue that the cognitive-based view could explain some of the difficulties that are faced with media richness theory. The ognitive-based view allows assessing how the media effect a change in the receiver's understanding or how media facilitate understanding. Kock (2005) also gives a novel view of computer-mediated communication. Kock's media naturalness principle offers an evolutionary-based theory to assess media. Kock argues, based on evolution theory, that face-to-face communication is the most natural way of communicating.

The above mentioned research is valuable and it raises our awareness of how to use, assess and choose different computer-mediated communication tools in organizations. However, the argumentation in these theories claims that face-to-face communication is the most natural or richest form of communication; hence we have to look for richness or naturalness from the media. This argumentation has two problems in it.
1. In communication the question is not about the richness or naturalness of a medium or message. *The question should be what the aim of the communication is?*
2. Examiningthe richness or naturalness of a medium does not get us far. It does not assess the medium's support for communication. *The question here should be how a medium supports the purposes of communication?*

Robert and Dennis (2005) conclude that we have to direct our attention from media richness and social presence toward how media evokes change in understanding. Te'eni (2001) stated that current technologies affect the way we communicate and what we communicate. Te'eni suggests that we have to move as a research community away from our 'current preoccupations with the medium of communication to a view that assesses the balance between medium and message form' (Te'eni,k 2001:251). Te'eni continues that the research should take into account the process of communication. Here we follow these suggestions and advice. Next we take a closer look at the media and its inherent nature and role in communication, and then explore the central components of effective communication process.

3. Developing and Applying a Dialogue Model for Communication

This study has two goals. First, we want to understand what contributes to effective communication in organizations. Secondly, it is worth looking at how different media support effective communication. As for the first question most of the studies have ignored it (Robert & Dennis 2005). A very good approach to correct this lack of research is presented by Robert and Dennis (2005) in their cognitive-based view for communication and how they examine people's motivation and ability to process information. Te'eni emphasized this same by hoping more research on the process of the communication (2001).

To address the second question most studies look analyze the spatial and temporal (e.g. Innis (1950)[2]) features of different media (c.f. Robert & Dennis 2005). This categorizing does not give firm ground for analyzing how we use media since the networks and computers have changed considerably in communication media and media usage patterns. Place is not significant factor any more as synchronous conversation in the "same digital space" all over the world can be initiated easily. Secondly, computer-based media also blur temporal considerations as communication can be started synchronously and move smoothly to asynchronous way of communicating. For example, in Skype one can use a video call but can end it any time and start using the chat option. What is more meaningful is to examine the inherent features of the medium.

Another research approach answers the second question by examining media richness. Research has shown that this kind of approach is time-bound (Robert & Dennis 2005) and it seems to be in trouble with new technologies. In addition, this approach forgets that media is only means to achieve an end.

In the following subsections we develop our dialogue model for media. First, in subsection 3.1 we discuss the role of communication (or dialogue) in organizations and its central components.. In subsection 3.2 we examinethe role of medium in communication and argue that we may have given medium a more central role than it should have. Finally, in subsection 3.3 we evaluate a few media and see how they support dialogue, and develop our tentative dialogue model for media.

3.1 Components of Generative Dialogue

The goal of communication according to Te'eni (2001) can be divided into four categories: (1) instruct action, (2) manage interdependent action, (3) manage relationships, and (4) influence. There is a tendency to look at communication in terms of an individual agent who speaks and acts. This is unfortunate since one of the central features in communicating is relationship. Robert and Dennis (2005) suggest that we analyse direct media's ability to evoke a change in the understanding. This is why we concentrate on dialogue and argue that it is dialogue and a medium's support for it that should be in the center of communication research.

Gergen et al (2004b:7) define *dialogue* as discursive coordination in the service of social ends. Dialogue can be seen as the process of relational coordination (Gergen et al. 2004a). Since dialogue has quite a number, often normatively charged, definitions, Gergen et al. (2004a) also offer the following elements to describe dialogue:

1. *Dialogue originates in the public sphere*. Dialogue should be seen as inter-subjective connection and these public actions are derivative of private meanings.
2. *Dialogue is a form of coordinated action*. Dialogue's foundation is in relation, which means that dialogue is an outcome of joint-action, or the coordinated actions of the participants.
3. *Dialogic efficacy is bodily and contextually embedded*. The efficacy of spoken (or written) words is fastened to the simultaneous movements of speakers' bodies, tone of voice, and physical proximity.

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[2] To Innis Internet would be space-biased rather than time-biased media. It has instantaneous reach of millions all around the world. Innis's examples of space-biased media are television and news papers, among other things. However, information in internet does not probably last thousands of years and thus is not time-biased as are stone tablets or Homer's oral stories.

4. *Dialogic efficacy is historically and culturally situated.* Dialogue is always bounded by the cultural context and previous, related dialogues.
5. *Dialogue may serve many different purposes, both positive and negative.* Dialogue or dialogue as a form of coordinated action is neither good nor evil; it may have multiple ends that it serves.

The idea that dialogue is a process of coordination is supported by transaction cost theory (Coase 1937; Williamson 1975). According to transaction-cost theory organizations exist because they can mediate economic transaction at lower costs than a market mechanism can. According to this view the coordination of the actions of the employees can be done more efficiently by organization. Thus, one of the main reasons to build organization is to coordinate tasks. Organizations can process and disseminate information more efficiently inside them than individuals can between each other. What is also needed in order to coordinate tasks inside an organization is to create shared meanings about the tasks and their means and ends (see Ouchi 1980). Dialogue can be used to create shared meaning and it can be used to coordinate action. Seeing dialogue as a process of coordination is closely linked with uncertainty and equivocality.

If we accept dialogue as the process of relational coordination, we should also identify the elements that create and sustain dialogue. It is important to identify what the elements are that create dialogue, or, in other words, what are the *moves* that are needed to create this kind of generative dialogue. Gergen et al. (2004a) identify four central elements that contribute to generative dialogue:
1. *Affirmation*. Meaning is borne in relationship and a person's lone utterance has no meaning. Thus utterance must be affirmed by another person. Affirmation can be, for example, nodding the head or asking a question.
2. *Difference*. It is important that affirmation does not signal continuous agreement but that there are signs of deliberating the issue. Another person cannot agree on everything in generative dialogue since this would mean nothing. New meanings are created when new information is considered, added, or associated with existing ideas.
3. *Coherence*. Dialogue needs coherence in order to have meaning in context. Coherence can be achieved by repeating the conversational topics, offering relevant comments to a topic, and providing answers to preceding questions. Topics and ideas can be further developed by referring to them and adding them as a part of our own suggestions and propositions.
4. *Temporal integration*. When dialogue unfolds it leaves behind a repository of discourse and associated action. Moreover, existing history can be brought into dialogue by referring to it and tying it in current topics of dialogue.

The above mentioned four elements are central in creating generative dialogue that builds effective organization. There are certain undermining actions for dialogue, which are negation and individual blame. In addition,each of the elements that build up a dialogue can work against it if negated. (Gergen et al 2004a.)

3.2 The Role of Medium in Communication
 "Media is the message" is the slogan popularized by McLuhan (1964). To McLuhan media is a synonym for any kind of medium and technology. *Media* (singular medium) are the storage and transmission channels or tools used to store and deliver information or data (Wikipedia, "medium", 14.10.2009). So media fulfill two roles. First, they are *carrier* of information. Second, they are *storage* of information. A medium has both of these features but may

emphasize one or the other feature. . For, example telephone is used more as a carrier than storage even though it naturally stores voice for the time of transmission.. A book, however, is more of a storage since it stores the text which will be read later on. However, electronic media have blurred this categorizing. We have three archetypes for media: (1) Carrier-like (e.g. Internet-phone, video-conferencing), (2) Storage-like (e.g. Wiki, e-mail), (3) Both, i.e. the user's choice (e.g. Chat, and even video-conference can be saved to database).

Another point to remember is that computer-mediated information is digital. Messages can be easily saved, retrieved, and forwarded, even for masses. Information once created can be disseminated easily and almost without costs. For example, teleconferences can be easily recorded and saved, and if there is a need to deliver some parts of the communication for masses, this can be easily done. Besides, we can go back into archives and see what really was discussed in an email thread. We have to remember that digital conversations have long memory and that they can be easily mass-communicated.

Examining the medium's role in communication in organizations should support the aim of coordinating knowledge creation and actions. In order to decide what kind of media to use in each situation we have to know what we are trying to achieve with our communication. Are we trying to achieve coordination of knowledge or action, or do we need both?

3.3 Applying Dialogue Model for Communication

To enhance communication the media must support the central elements of generative dialogue. We will next look at a few media through these four elements (i.e. affirmation, difference, coherence, and temporal integration) and see the medium's capabilities to create generative dialogue. The computer-mediated communication media we look at are email, wiki, and online chat. However, we start with face-to-face communication although it is not computer-mediated. The reason for this isits familiarity and it will provide common ground for the analysis.

3.3.1 Face-to-face meeting

In face-to-face communication affirmation is quite naturally done. One can look at the other person and nod every now and then, and say something like "Yes" and "Aha" to affirm that s/he is listening. Difference can also be shown in multiple ways, e.g. furrowing or shaking ones head. It is, of course, always possible to say out loud that one disagrees with what was said. Coherence in face-to-face communication must be created mutually by referring to the themes and topics that are under discussion. However, it is very disturbing if we all of a sudden bring up a totally unrelated topic, it can even bring the whole dialogue to a halt. Temporal integration can be done by relating the current topic to existing topics in the organization, common past, or other issues that are going on in a wider context. The best temporal integrations are, of course, those that are known to both parties.

3.3.2 Wiki

Wiki is a website that uses wiki software, allowing the easy creation and editing of any number of interlinked Web pages, using a simplified markup language or a WYSIWYG text editor, within the browser. Wikis are often used to create collaborative websites, to power community websites, for personal note taking, in corporate intranets, and in knowledge management systems. (Wikipedia, "Wiki", 13.10.2009.) Affirmation in wiki happens by commenting on or correcting the existing text. If agreeing with the text without comments, one usually does not comment on it. This can feel frustrating since there is no way of knowing whether all agree with the topic or not. Difference of opinion can be easily stated by

typing a comment or correction to the web page. The basic rule of operating is that anyone can edit wiki-pages and the pages are immediately available to every web-user. The latest information is always at hand. Coherence is fairly well kept since wiki pages are about one topic and related discussion can be found from the talk page. There is ongoing improvement of topics and every now and then some topics are combined and larger ones split as knowledge about the topic adds up. Temporal integration can be done easily via links to related topics.

3.3.3 Online Chat
Online chat can refer to any kind of communication over the Internet, but is primarily meant to refer to direct one-on-one chat or text-based group chat (formally also known as synchronous conferencing), using tools such as instant messengers, or Internet Relay Chat. The expression 'online chat' comes from the word 'chat' which means "informal conversation". (Wikipedia, "Online chat", 13.10.2009.) Affirmation happens by typing an answer message and thus is very easily done. In case of a larger audience there may be "free riders" who do not follow the chat keenly because in multi-user chats the statements cannot be affirmed all the time by all. Difference of opinion can be stated by typing and sending disagreement. In online chats it is not possible to use subtle cues of gestures to hint to other person about your feelings. Coherence is created by chat history and can be scrolled if needed. Coherence is usually not created by retyping sentences since it tends to be laborious and slow (compare e.g. with speech). Temporal integration is also laborious to create since all references must be typed in real time and this might create a barrier for temporal integration.

3.3.4 Email
Email is a fairly well known medium for most of the Western organizational workers and it is heavily utilized in business. Email cultures differ by user, company, and culture. Affirmation is never quite sure unless you get a reply message. If you are sending an email for the first time to a person, you cannot know what has happened to the message until you get a reply. What is a real drawback in emails is that different people have different ways of working with them. Getting an answer from another person may take minutes or weeks (sometimes maybe even months). And of course one should always take into account that sent email maybe deleted by junk e-mail filters. Difference of opinion can be stated by reply message. Coherence can be created by writing reply and leaving the existing mail-thread at the end of the reply. In addition, as emails are not in real time one has very good chance to ponder the issue and even consult other material if needed. Thus both coherence and temporal integration can be fairly easily created and traced in emails.

3.3.5 Summary and tentative dialogue model for media
Based on the discussion about media, dialogue, and how central elements of generative dialogue are present in different computer-mediated communication media, we can propose the following two steps when selecting the right medium for communication:
1. The communicator must decide the purpose of communication. Is it to coordinate action, knowledge creation, or both?
2. The communicator must select computer-mediated communication medium based on its support for the communication purpose.

The selection of the right medium for communication starts by identifying the communication purpose. Is our aim to coordinate action, knowledge creation or should we assist both? Naturally, if   rapidness is required from the communication we have to select a medium which allows us to conduct real time communication. If we have to coordinate action

we have to make sure whether we need authority and that this authority is acknowledged. In action coordination we should probably select a medium which allows a somewhat quick affirmation, e.g. from the media discussed above we could select online chat. On the other hand, if we are coordinating knowledge creation we should have good means to welcome difference of opinion, and also to follow related topics and existing knowledge and possibly integrate them in our solution. In these cases tools that allow people to ponder upon questions and allow time to consult other sources for information are the most suitable. From among the above mentioned tools, wiki and email would be good choices. The third option is quite often the case in organizations. We do not have all the needed information, but we still have to coordinate actions. In these cases from among the above mentioned tools face-to-face communication suits best. The second best would probably be email.

4. Conclusions

The earlier models in the research of computer-mediated communication focus on media richness and its correlation for communication effectiveness. These approaches have two problems. First, they focus on the tool and its features. Secondly, they focus on the richness of the communication with the assumption that face-to-face communication is best and a yardstick to other media. We had two research goals in our study. First, we wanted to understand the elements that contribute to effective communication in organizations. Secondly, we wanted to find out how different media support effective communication. We presented the dialogue model for media to assess different media. The model looks at the use of medium from the point of view of the elements which comprise generative dialogue. We examined four different media through these elements, namely face-to-face communication, wiki, email and online chat.

The dialogue model for media suggests that the selection of medium should proceed in two steps. First, the purpose of communication must be identified: is it to coordinate action, knowledge creation, or both? Second, the medium should be assessed based on the central elements of generative dialogue and make sure they support our communication purpose. If the purpose of communication is to coordinate action the selected medium should allow good means for affirmation. If the purpose is knowledge creation the medium has to offer good means to state difference of opinion, create coherence and temporal integration. Thirdly, if purpose is to coordinate both the action and knowledge creation, the medium should support all the central elements of generative dialogue. The dialogue model for medium addresses the challenge put forward by Robert and Dennis (2005), which is to *consider media's ability to effect a change in understanding*, and Te'eni's (2001) suggestion to *pay more attention to the process of communication than the communication tool*.

The current study has the following limitations. First, this article presents a tentative model and it should be further elaborated and validated with empirical studies. Secondly, our point of view is Western, and the author's cultural background is in Scandinavia, which is a low-context culture (c.f. Hall 1976). The conclusions for high-context culture may be different.

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