Perceptions and use of electronic media: Testing the relationship between organizational interpretation differences and media richness

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ABSTRACT

How do managers perceive and use media? Media richness theory (MRT) appears to provide persuasive answers to this, but does it work when electronic media is used? Surveys of Japanese managers showed that the perceptions of media, including electronic media, did not contradict MRT. But, even so, the use of rich media was found to be influenced more strongly by whether the media was traditional or electronic, with respect to organizational interpretation of its environment. The perception and use of electronic media may not correspond, though they have generally been assumed to do so.

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1. Introduction

Media richness theory (MRT) states that the use of communication media in organizations is a rational process that strives to achieve a match between the requirements of communication tasks and the capacity of the media. It has been found that managers' perceptions and use of media do not contradict predictions drawn from the theory.

MRT originally examined only traditional communication media, however, as new technologies have been introduced, attempts have been made to include electronic media in MRT.

Using the framework of the original MRT presented by Daft and Lengel [2,3], we focused on how managers in Japanese companies perceived the differences in media and how they used them, in order to consider the extension of MRT to electronic media. It became clear that even when electronic media was perceived as rich, the richness was not necessarily related to its use, and that organizational interpretation of the environment had an important effect on the use of rich media.

2. Background

2.1. Richness as a media attribute

MRT discusses the reduction of equivocality that occurs in organizational communication, from the standpoint of media use. It proposed that the use of media which met IS requirements was essential for ensuring organizational effectiveness. Gradually, however, it has changed to describing the rational process of media choice and use on the individual level [4]. Yet the basis of MRT – achieving a match between the requirements of communication tasks and the capacity of the media – has not changed.

Media richness is defined as the capacity of media to develop shared meaning, overcome different frames of reference, and clarify ambiguous issues in a timely manner; thus can be understood as its ability to: (1) facilitate rapid feedback, (2) handle multiple information cues simultaneously, and (3) establish a personal focus [18]. On this basis, face-to-face interaction is the richest medium. In order of decreasing richness, the traditional media are the telephone, addressed documents, unaddressed documents, and numeric documents. Generally the richness level is higher in oral than in written media and in synchronous rather than in asynchronous media.

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2.2. Organizational interpretation differences and media use

Daft and Lengel postulated that achieving a match between the information-processing requirements and the capacity of the media was essential for organizational effectiveness. They attempted to understand information-processing requirements by combining the standpoint of equivocality reduction proposed by Weick [31] with the standpoint of uncertainty reduction proposed by Galbraith [10]. Reduction of equivocality is aided by rich media. Uncertainty involves the difference between the amount of information required to perform a task and the amount of information already possessed. Reduction of uncertainty occurs when media are available to process a large amount of data. For example, meetings and personal contact facilitate reduction of equivocality; well-defined rules and computer-based information systems facilitate reduction of uncertainty.

Weick and Daft [32] and Daft and Weick [5] proposed models of organizations as interpretation systems. In their second model, two variables were used to describe organizational interpretation differences: (1) organizational assumptions about the analyzability of the external environment and (2) the extent to which the organization intrudes into the environment to understand it. Organizations can be categorized as assuming the environment to be analyzable or not. When the environment is difficult to penetrate, managers will see it as less analyzable [22]. Organizations can also be categorized as intruding into the environment actively or passively. Daft and Weick felt that understanding the organizational interpretation behavior was important because the interpretation was a critical element distinguishing human organizations from other systems, and that numerous organizational variables (such as strategy formation and decision making) were influenced in some way by the organizational interpretation process.

Using this model, Daft and Lengel pointed out that the information-processing needs and the type of media used changed depending on the organizational interpretation differences: making assumptions about the environment was related to reduction of equivocality and organizational intrusiveness was related to reduction of uncertainty. When the environment could not be analyzed, equivocality was high and managers should discuss, debate, and ultimately agree on a reasonable interpretation. In organizations that assumed a high degree of difficulty in analyzing the environment, rich media was required. In contrast, when the environment was perceived as competitive or rapidly changing and was searched actively for answers, uncertainty was high and managers had to gather a great deal of data about it. In organizations characterized by a high degree of intrusiveness, media that could process a large amount of data were required.

Individuals could not be separated from the organizational context in which they were embedded. Because of their shared context, even different individuals who held different opinions on the same matter and who were motivated by conflicting interests could end up with negotiated meanings for the same action and even choose the same way to act [21]. Hence organizational interpretation differences could explain the media use of individuals in organizations, at least partially.

2.3. Management and media use

Generally, higher level managers must deal with tasks possessing greater equivocality than at the operational level; therefore they should use richer media. Managers rationally attempt to match their needs to the equivocality of the communication task.

I found this also in my survey of 1500 managers and other employees of Japanese companies [11]. Managers preferred media with a higher richness level than other employees; the more aggressively organizations used computer-based IS, the stronger this tendency. In empirical research on American companies, the choice of media was also found to be related to the organizational level [24].

On the whole, MRT has developed into an explanation of managers' rational use of media. Managers, in order to achieve personal and organizational effectiveness, rationally attempt to use media with a richness level appropriate to the equivocality of their communication tasks. The perception and the use of media have been expected to correspond. With respect to traditional media, the empirical research supports this assumption.

2.4. Media richness of electronic media

Can electronic media take the place of traditional media such as face-to-face interaction and the telephone? To answer this, the framework of MRT has had to be expanded to include electronic media as the object of MRT research (becoming an "expanded MRT").

Electronic mail, for example, uses mostly text processing to provide high-speed information exchange, but it is both written and asynchronous; which suggests that it is relatively lean media. Therefore e-mail must be rated somewhere between media richness of the telephone and non-electronic written communication [28]. Similarly, voice mail should be rated somewhere between the telephone and e-mail. Teleconferences are capable of transmitting more information than the telephone, and thus should be rated somewhere between face-to-face and the telephone [15]. It has become clear that electronic media are used in different task conditions [23]. It also became obvious that multimedia representation was instrumental in reducing equivocality [19].

Zmud et al. [35] performed a study with the managers and professional staff at a large firm that used 14 types of media. To examine richness, they proposed three criteria: immediate feedback, cue variety, and personalization. Their findings, however, confirmed only immediate feedback as a dimension for differentiating media richness. D'Ambra and Rice [6] distributed, on one plane, managers' preferences for 11 types of media. They found that voice mail was close to face-to-face and written communication, but was separate from electronic mail and the telephone. They concluded that electronic media cannot be understood solely in terms of richness. Markus [20] suggested that understanding such situations required a new look at the dimensions of richness. If richness is an attribute related to reduction of equivocality in the organization's information processing, then it was possible to create a new concept that included multiple addressability, external recording, and computer-processable memory, which did not exist in traditional media.

2.5. New frameworks for the use of electronic media

MRT proposed that richness was an intrinsic objective property of media and managerial use of media. However, if electronic mail is a lean medium used at the operational level (as predicted by the expanded theory), managers should not like to use it. Yet managers at higher organizational levels do as Markus suggested. And voice mail was not preferred to electronic mail for ambiguous situations [7]. Some research (e.g., [25]) suggested that the emphasis should be placed on the message-level as well as the task-level.

In the search for a new framework, researchers have addressed factors related to contextual constraints (e.g., distance between communication partners and the number of message recipients) (e.g., [30]); social factors and experiences in using the media as follows.