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# Electronic Mail and New Methods for Measuring Media Richness

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## Introduction

Media richness has been defined in the literature in terms of four objective characteristics. A rich medium is one that allows for communication of multiple cues through multiple channels, language variety, immediate feedback and a high degree of personalness (Lengel, 1983; Daft and Lengel, 1986). When this concept is applied to traditional forms of communication, face-to-face interaction is considered to be the richest, followed by the telephone, a letter, a memo and a flyer/bulletin (Lengel, 1983; Trevino, Lengel, Bodensteiner, Gerloff and Muir, 1990). With the acceptance and general use in recent years of electronic forms of communication, such as electronic mail, it is of interest to examine where along this continuum of media richness the new electronic forms lie. This is important to ascertain because the so-called "richness imperative" suggests that high-rich media are necessary for the effective handling of equivocal situations, while low-rich media are sufficient for situations that are low in equivocality (Trevino et al., 1990). Thus, it is useful to know which media are rich and which are not in determining how to apply the above rule.

Electronic mail (E-mail) is a commonly used electronic communication medium. It can be classified as a relatively low-rich, or lean, medium according to the four characteristics of richness. In using E-mail, one is not able to communicate through multiple cues or multiple channels, use of much language variety is limited, immediate feedback may or may not be possible depending on the availability and inclination of the communication partner, and based on the required use of a computer and the written word, it is not generally viewed as a personal mode of communication. However, according to some recent studies in the literature, there is some evidence that E-mail is perceived by its users to be a richer communication medium than its objective characteristics would indicate (Fulk, Schmitz and Ryu, 1995; Kydd and Ferry, 1992; Markus, 1994; Lee, 1994). This suggests that there may be subjective factors involved in determining the richness of a medium in addition to the objective characteristics. Thus, we need a way of capturing these subjective factors that will allow us to understand why E-mail (and perhaps other communication media) is perceived to be richer than that dictated by the definition of richness.

The purpose of this research is two-fold. First, we suggest that the way in which richness has been measured in the past is not sufficient to allow us to truly understand why E-mail and other electronic media are viewed as either rich or lean. Second, we develop and test an instrument for measuring media richness based on the original definition and description. Lengel (1983) originally used a 100-point scale to measure the richness of traditional communication media such as the telephone, a formal memo and a letter. Trevino et al. (1990) used the same scale to measure the richness of electronic mail and found that it was rated at approximately 75. Unfortunately, this tells us nothing about why respondents evaluated E-mail richness as they did. Is it personalness, feedback, or some other dimension? This research attempts to develop a more robust instrument for measuring richness directly by measuring the four characteristics specified in the definition. There is a precedent for this in Fulk et al. (1995), who took the first step in measuring richness in this way by asking one question per characteristic. We propose a fuller instrument that includes several items per characteristic which can then be folded into a composite measure of media richness.

## **Methodology**

A study was completed with 69 individuals who worked for a regional utilities company. Each individual was asked to complete a questionnaire which measured demographics, and perceptions of the richness of electronic mail and other communication media. Richness was measured two ways. The first was on a 100-point scale, similar to that used by Trevino et al. (1990); the second was through use of a 19-item instrument which focused on the four characteristics of media richness (see Exhibit 1). The familiarity with E-mail varied across the sample. Position within the company ranged from Vice-President down to administrative/clerical staff.

## **Results**

Results of this study indicated that E-mail was found to be of average richness, having a mean score on the 100-point scale of 53.324 (S.D.=25.386). Further, E-mail's richness was not significantly different than a letter, voice mail or a memo. This calls Trevino et al.'s results into question which showed E-mail to have a mean of 75.3 (S.D.=7.44), and to be more rich than a letter or a memo (see Table 1). Based on the large standard deviation associated with the mean in this study, the data was split into categories of low versus high experience using E-mail. Low experience was defined as use of E-mail for six months or less, while high experience was defined as E-mail use for more than six months. This information was self-reported by the subjects. These results are shown at the bottom of Table 2, and indicate that those people with more experience perceived E-mail as having higher richness, although not as high as Trevino et al.'s sample (which included only very experienced users). When the responses to the 19-item instrument were analyzed in a similar manner, perceptions of richness were also higher in the "high-experience" group (see Table 2). This is similar to the finding by Fulk et al. (1995). Use of this more extensive instrument further enables us to understand how the two groups perceived richness differently. For example, the high-experience users perceived E-mail

to be more personal and able to provide more immediate feedback than the low-experience users.

## **Discussion**

The results of this study suggest several things. Although media richness is supposed to be an objective characteristic, it is clear that perceptions of richness vary, and may depend on experience with the media. Further, and because of this, a better way of measuring richness is needed. A 19-item instrument is suggested here for measuring the four characteristics of richness individually. (Research regarding the validity and verification of this instrument is on-going and will be reported at the conference).

### Exhibit 1. Items Used to Measure Richness

#### Multiple Channels

1. Extent to which can communicate through spoken words.
2. Extent to which can communicate through written words.
3. Extent to which can hear voice inflections and intonations.
4. Extent to which can communicate through body language.
5. Extent to which can notice facial/nonverbal expressions.

#### Language Variety

6. Extent to which express ideas through non-word symbols.
7. Extent to which can use a large pool of symbols.
8. Extent to which can use stories, metaphors, similes.
9. Extent to which can use non-word sounds or utterances.

#### Immediacy of Feedback

10. Extent to which know immediately what others think of your ideas.
11. Length of time for others to receive your reaction to their ideas.
12. Length of time for you to get others' feedback.
13. Extent to which you can provide immediate feedback.

14. Length of time must wait to give others your feedback.

Personalness

15. Extent to which partner's presence is felt.

16. Extent to which medium is sociable.

17. Extent to which medium is warm.

18. Extent to which medium is personal.

19. Extent to which medium is sensitive.

Table 1. Mean Richness Ratings on 100-point Scale

			(Trevino et al. 1990)	Current	Study
Medium	Mean	S.D.	Mean	S.D	
Face-to-face	100.0	0.00	97.36	7.56	
Telephone	85.9	6.98	81.85	15.78	
E-mail	75.3	7.44	53.32	25.38	
Letter	67.1	15.3	53.61	26.68	
Memo	54.0	19.87	45.36	25.75	
Flyer/bulletin	13.8	18.07	22.68	24.67	

Table 2. Mean (S.D.) Richness Ratings on 19-item Instrument by Experience (measured on a 5-point scale)

E-mail:	High User	Low User
	n=45	n=23
Multiple Channels	1.893 (.35)	1.676 (.55)
Language Variety	2.361 (.74)	1.964 (.76)
Feedback	3.082 (.83)	2.610 (.9)
Personalness	2.606 (.69)	1.952 (.77)
Combined Mean Score	2.485	2.039
Richness Rating on 100-point scale	59.33	40.73

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