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Multimedia and Its Effect in Persuading

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Study Purpose

The essential nature of decision-making to the well-being of the organization provides incentive and justification for determining whether multimedia presentations affect the decision outcome by influencing or persuading the decision maker (Huber and McDaniel, 1986) during the processing that occurs in forming attitudes or opinions. This issue will be addressed in this proposed study by investigating both multimedia's affect on decision makers having different characteristics and its ability to advance a poorer decision alternative over a better quality alternative based upon the presentation format. The proposed study examines the persuasive effect that a multimedia presentation format may have in influencing a decision maker in his/her selection between two possible solutions to a decision problem. It also investigates whether such a persuasive effect is more likely to occur in individuals who are considered as less likely to use cognitive abilities in discerning the best solution. The specific research questions that will be addressed by this study can be stated as:

1. Will a multimedia presentation persuade or influence a decision maker to make a less optimum choice when one alternative is presented via a multimedia mode of presentation and the second alternative is presented via an alternate format? In this case the alternate format is an overhead slide mode of presentation.
2. Will a decision maker's rating in Need For Cognition (NFC) be a factor in whether the decision maker is persuaded by a multimedia mode of presentation as described above? NFC ratings will be predetermined through the use of a survey administered prior to the experiment.

This integration and increasing use of alternative presentation formats is, of course, not an entirely new concept. Mason and Mitroff (1973) correctly predicted that alternative, more personalized methods such as stories, drama, art, or graphics might be used as a means of presenting information and could possibly be more effective than current (ca. 1973) methodologies. Multimedia techniques and capabilities can be viewed as an extension of this concept and the current trend for implementing it.

The belief that multimedia has the potential to influence individuals (T. C. Taylor, 1994; Bottoms, 1994; Hotch, 1994) can be viewed as a logical extension to earlier studies of presentation modes (Mason and Mitroff, 1973; Watson and Driver, 1983; Kosslyn and Chabris, 1992). Furthermore, the concept of multimedia as a method to influence or persuade individuals can also be grouped with other studies that investigated the use of graphics (Lucas, 1981; Ives, 1982; DeSanctis, 1984; Lehman et al., 1984; Kosslyn and Chabris, 1992) or graphical and color enhanced presentations (Benbasat and Dexter, 1985; Benbasat et al. 1986) and their effects on decision makers. This study differs from prior work, however, in that the concept of multimedia as a means of *persuading a decision maker in a decision-making task* receives a more extensive consideration.

Multimedia Definition

Multimedia, for the purpose of this study, is defined as the combining of various elements such as three-dimensional animation, stereo sound, brilliant photographs, graphics, full-motion video and text-and-touchscreen control into information systems (Wood, 1994). It is multimedia's unique attribute of allowing users to read, hear, and see information that sets it apart from more traditional methodologies and which creates the increased demand for multimedia products within business organizations (Wilson, 1993). The use of multimedia techniques to influence consumers and business decision makers is predicted to be normal business practice in the near future. In fact, multimedia computing is being proclaimed by some as the third age in computing (Haynes 1994). But while it is easy to believe that multimedia, with its media richness, can somehow impact or affect individuals (e.g., better inform, teach, influence or persuade users),

there have been few studies other than Ottinger (1993) and Paradice (1994) that have actually documented either its effectiveness or potential in any areas other than those of learning and/or informing.

Multimedia's ability to influence a decision maker is predicated on its use as a peripheral cue. This concept is based on attitude theory's Elaboration Likelihood Model (ELM) which provides a framework for organizing and understanding the basic processes affecting the effectiveness of persuasive messages. Multimedia elements such as audio, video, animation, etc. are expected to influence a decision by acting as a simple cue(s) that does not require careful examination of the central merits of the issue-relevant information being presented or by affecting the extent or direction of argument elaboration. Ottinger's (1993) study already demonstrated that multimedia factors of vividness, message quality, and user satisfaction can act in this manner in affecting a positive attitude change in individuals with either high or low issue involvement. This study proposes that this peripheral route to persuasion, in accordance with the ELM theory, is more likely to be used by individuals rated as being low in NFC than it is by individuals rated as being high in NFC (Petty and Cacioppo, 1982, 1984, 1986).

Need For Cognition

A topic mentioned several times in earlier paragraphs is the idea that individuals are often affected quite differently by persuasive attempts. Many times this is caused by differing interest levels or involvement with the issue. Yet another reason, one that concerns this study, is an individual's propensity or inclination to invest effort in and to participate in cognitive thinking regarding the subject. Referred to as *need for cognition*, this characteristic describes "a need to structure relevant situations in meaningful, integrated ways. It is a need to understand and make reasonable the experimental world." (Cohen et al., 1955, p.291).

Cacioppo and Petty (1982) reasoned that there existed certain dispositional factors that would direct message processing and, thus, would also affect persuasion. These dispositional factors act somewhat similarly to certain situational factors such as distraction and issue involvement which increase the probability that individuals will think about and elaborate on externally provided message arguments (Cacioppo et al., 1983). Cohen et al.'s (1955) study on need for cognition provided initial evidence for the validity of the concept that individuals high in need for cognition are likely to view communications more intensely and to be affected by its cogency. A second study (Cohen, 1957) provided further proof that individuals high, versus low, in need for cognition are more apt to organize, elaborate on, and evaluate information concerning the issue or problem being encountered. This route is routinely referred to as the central route of the ELM model. The alternate route in which little cognitive effort is expended is referred to as the peripheral route.

Cacioppo and Petty (1982) ultimately developed a need for cognition scale (NCS). The NCS is based upon questions designed to discern a person's reaction to requirements for effortful thinking in a variety of situations. These situations were ones in which individuals could actively choose to practice activities that indicate a high or a low need to gather information, analyze evidence, organize thoughts or ideas, abstract from past experiences in order to develop new ideas, or to otherwise engage in activities that use cognitive skills or abilities.

Cacioppo and Petty (1982) validated that the NCS was a capable means to distinguish between individuals who are predisposed to participating in effortful analytic activity and those who are not predisposed to engage in such a manner (see Cacioppo and Petty, 1982 for details). The development and validation of the NCS provides an added dimension to both Petty and Cacioppo's earlier conceptualization of the elaboration-likelihood. Individuals viewed as being high in need for cognition, as determined by the NCS, will be inclined to use the "central route since they are "dispositionally" predisposed toward thinking about issue-relevant information. Such a dispositional determinant is likely to affect persuasion efforts every bit as much as important situational determinants such as message recipient involvement; i.e., - high personal involvement with an issue results in greater rational processing of information whereas low personal involvement results in greater dependence on peripheral cues or heuristic processing activities (Petty and Cacioppo, 1979, 1981b; Chaiken and Maheswaran, 1994).

Later studies (Cacioppo et al., 1983) yielded results that fully support this concept. Individuals who were rated as being high in need for cognition in accordance with the NCS were inclined to differentiate between strong and weak arguments, be affected by message quality when forming impressions, to recall more message arguments, and to derive their attitude through a considered evaluation of the arguments central to the recommendation. Most importantly, the overall results supported the viewpoint that need for cognition affects how people react to persuasive efforts by affecting how they process messages and arguments

Thus, the implication of need for cognition to this study is that a multimedia presentation will have varying effects for individuals rated as being low versus high in need for cognition. The ability to persuade a decision maker through the use of a multimedia presentation format is likely to be somewhat dependent upon the individual's need for cognition level. It might be presumed that multimedia's heavy emphasis on what some consider heuristic (or peripheral) type cues will have a greater influence on low in need for cognition individuals.

Description of the Decision Problem

Another important issue for this study is the dependent variable, in other words the selection of an appropriate decision problem. The choice of the specific decision problem for this experiment is based on two factors. First, it was preferred that the decision problem be applicable to real life and second, that it be meaningful to the subjects participating in the study. The availability of the Texas A&M Corps of Cadets as the study's source for subjects and the researcher's own standing as an officer in the US Army made the selection of a military retirement plan as the decision problem a logical choice. A high level of realism was added since several recent attempts to modify the current military retirement system are currently being considered by a congressional panel (Maze, 1995a, 1995b). Prior to the experiment actually taking place, a financial evaluation will be conducted to determine which plan is actually the best plan. Subjects will not be provided with this information but will be shown both distinct military retirement plan alternatives. One will be presented via a multimedia presentation format and the other via an overhead presentation format. Each presentation will provide message arguments that support the plan being presented. The subjects will choose the plan they would prefer for their own future military retirement after viewing both alternatives. The dichotomous nature of the decision is also realistic since many decisions are made in this manner.

In fact, the type of decision task that is addressed in this proposed study is specifically referred to as a preferential choice problem - a problem that deals with tasks in which a decision maker chooses one from among a set of alternatives, each of which is described by a common set of attributes (Todd and Benbasat, 1992). Multimedia's persuasive influence as a peripheral cue are likely to occur during the decision-making processes associated with decision making. It is during the decision-making processes that events such as sensing, exploring, and defining opportunities occur (Huber and McDaniel, 1986) and it is during this phase that multimedia, with its rich media format, is expected and capable of providing information in a manner that emphasizes and intensifies acceptance of an alternative. If this is true, a multimedia presentation will affect attitude formation (i.e., persuade the decision maker) to a much greater extent than some other presentation format such as overhead slides. This study addresses this issue in its investigation of multimedia's affect in persuading the decision maker in the decision between two possible solutions. It is relevant because the focus is on influencing a decision maker toward a specific selection, alternative, or decision, rather on investigating how the decision process occurs.

Contributions

This proposed study extends Ottinger's (1993) work by continuing the investigation of multimedia's persuasive affects when compared to alternative presentation formats and in individuals with different characteristics. It also will further existing MIS theory by providing organizations information about multimedia's potential role in their organization as a persuasive tool in decision-making. Organizations, as they incorporate multimedia capabilities into their information systems, are going to need a more complete understanding of both its impact and its potential uses.

The investigation of multimedia as a persuasive tool that affects decision-making opens new theoretical avenues for traditional MIS research. Study results should also have implications for such theoretical areas as social psychology, management science, cognitive science, and decision sciences and, thus, extend their individual and integrated bodies of knowledge. But there are several practical implications as well. The importance of determining whether these types of factors influence decisions cannot be stressed enough. The rationale for such research is that computer presentation software represents an investment in both time and money to organizations. The potential benefits of this investment include the ability to inform, instruct, and persuade. The latter aspect of their usage, the capability to shape or form an impression in order to persuade a decision maker toward a particular decision or choice, requires consideration as a competitive advantage.

Furthermore, many day-to-day advertisements and business presentations can be viewed as an attempt by companies to encourage decision makers to choose their services or products. Thus, as multimedia production packages incorporate more technological advances and become more available and readily accessible to users, they will likely be used on an ever increasing basis to influence decision outcomes. This ability to effectively portray your specific position, product, or service in a more favorable way than your competitor is, unarguably, a method of persuasion. Determining whether or not multimedia provides such an advantage will be of interest to organizations which plan to purchase or which are currently using multimedia products.

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