Organizational Impacts of New Communication Technology: A Comparison of Cellular Phone Adoption in France and the United States

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This study tests the multi-cultural applicability of Huber’s technological imperative framework by comparing the effects of the adoption of a new telecommunication technology, cellular phones, on the behavior of the sales force in several industry sectors in France and the U.S. The study investigates three areas of interest. First, the study finds that, though the sales strategies are the same in both countries, the actual behavior of the sales force to attain these strategic goals differs. Second, a comparison of these differences with the variables in Huber’s theory shows that the differences in the variables are consistent with the sales representative behavior in the two countries. Third, the study asks what effect the use of cell phones has had on sales force behavior. Analysis on all the data combined shows the predicted results of new technology adoption—a shortening of decision making time occurs in both countries. When the data is stratified by country, however, changes in variables in the U.S. support Huber’s theory, those from France do not. These results indicate a cultural bias in the generation of theory that has important implications for cross-cultural research.

Organizations in recent years have been inundated with new information technologies that change the nature of communication and affect such important organizational variables as organizational structure, standardization, and formalization (Hirschheim, 1985; Huber, 1990; Markus and Robey, 1988; Orlikowski and Robey, 1991). This study investigates the effects of the adoption of one type of telecommunication technology, cellular phones, in two different cultures (France and the United States).

As the world becomes more accessible through telecommunication and other technology, our concern about the universal application of theories to diverse cultural groups intensifies. Each researcher who develops theories may be influenced by his or her own cultural biases. It is important to know if this occurs. It is also important to validate theories in multi-cultural situations. When theories are validated in diverse cultural settings, they lend themselves to the establishment of universal traits that can then be used to predict behavior with added certainty in other settings. This study sheds light on the important area of cross-cultural research through the study of multi-cultural adoption of technology.

The study also tests another question of interest to researchers with a cross-cultural orientation. This question concerns the validity of theories across cultures. Theories specifically developed to apply to multiple cultures are assumed to be valid in many cultural settings. In this way, researchers have investigated the adoption and use of technology assuming adoption across cultures to be the same (Rogers, 1995). It is also usually assumed that theories developed within one culture are applicable in that culture. Thus,
organizational researchers have investigated the ways technology affects organizations within one culture (Damanpour and Evan, 1984; Huber, 1990; Yates and Orlikowski, 1992). What about the applicability of theories developed in one culture to other cultures? Do these theories remain valid? Huber (1990) has developed a theory that states that technology affects organizational variables in a specific manner. Testing Huber’s theory in two cultures gives us the opportunity to test a specific instance of technology adoption across cultures. This study is a test of Huber’s framework in two different cultures. Its purpose is to determine whether Huber’s variables (both dependent and independent) are relevant in a multi-cultural environment.

Literature Review

This study investigates the relationship between the adoption of information technology and organizational change in two cultural settings. It draws upon two bodies of established literature: the cross-cultural research literature and the organizational change/technology adoption literature. These sets of literature are examined below.

Cross-cultural research

The understanding of cross-cultural diversity is critical to the development of international business strategies and to the management of multi-cultural organizations (Cox and Blake, 1991). While the need for both cross-cultural and multi-cultural studies is high, their implementation attains a level of complexity that has resulted in a dearth of these studies. This situation is the result of two converging forces. First, the research is methodologically difficult, and second, researchers cannot agree on whether comparisons across cultures are meaningful and valid.

The methodological difficulties involved in doing cross-cultural and multi-cultural studies include language barriers, differences of interpretation due to cultural biases, and questions about the transferability of measures (Riordan and Vandenberg, 1994). Other obstacles include the North American positivist approach with its emphasis on rigorous quantitative methods which sharply contrasts with the need to accommodate context found in international studies (Adler, Campbell, and Laurent, 1989; Graham and Gronhaug, 1989). Adler (1984) suggested using collaborative multi-cultural teams to meet these challenges. Cost, time commitment, and methodological challenges have also been identified as impediments to cross-cultural management research (Adler, 1984; Arndt, 1985; Brislin, Lonner, and Thorndike, 1973; Wind and Perlmutter, 1973).

Comparisons across cultures have traditionally followed either an emic or an etic approach. Research concerning the applicability of concepts across cultures is dominated by this debate which focuses on the two concepts of cultural uniqueness (the emic approach) and cultural comparability (the etic approach). The cultural uniqueness side of the debate advances the idea that concepts, theories, and practices cannot be applied universally because of cultural differences, while the cultural comparability view contends that there are universal traits that affect mankind (Berry, 1969; Hofstede, 1980; Lammers, 1977).

Cross-cultural studies in information systems (Abdul-Gader and Kozar, 1995; Straub 1994 and Rowe and Struck, 1996) have supported both the universal trait and the culture specific points of view. In one of these studies, a scale for computer alienation was tested in Saudi Arabia and the United States (Abdul-Gader and Kozar, 1995). This scale was found to predict computer adoption in both countries; thus, illustrating an etic approach. Straub (1994) found that the rates of adoption of email and FAX in the US and Japan were influenced by a local trait. This trait is the number of distinct characters composing the written language of the respective nationalities. Shore and Venkatachalam (1996) introduced another level of analysis by showing that the effect of national culture on technology adoption is contingent, in some cases, on other variables. Rowe and Struck (1996) took the debate to another level and found that cultural analysis and social theories are alternatives in understanding telecommunication choices.

The present study assumes an “etic” approach. “Etic” approaches depend on surfacing universal traits for validation. Some classification schemes for the differences among cultures have been established and validated. They represent traits that are relevant across multiple cultures. For example, Hofstede (1980, 1993) has defined the degree of difference along four dimensions for defining values associated with national cultures. These dimensions are: behavior toward people higher or lower in rank (power distance), behavior toward the group (individualism/collectivism), behavior of collecting things such as money or of concern with caring and quality of life (masculinity vs. femininity), and uncertainty avoidance. Two main differences between French and American values on this scale concern power distance and risk avoidance. The French are stronger in both of these characteristics than the Americans. Another model was developed by Adler (1984) which identified fundamental problems that permeate all aspects of cross-cultural management research. The present research is an extension of this type of investigation - to determine whether members of diverse cultural groups react similarly to the adoption of new technology. Our study takes the view that, though multi-cultural research is complex and demanding methodologically, it is a valuable contribution to science since it represents a unique opportunity to compare traits across cultures and gain insight into their universality.

Organizational Change

This research focuses on the relationships between information technology and organizational change. Recently researchers have striven to enlarge our understanding of the perspectives underlying these studies (Kling, 1980; Hirscheim, 1985; Crowston and Malone, 1988; Orlikowski...
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