Cultural Differences in Developers' Perceptions of Information Systems Success Factors: Japan vs. the United States

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The current study examined the perceptions of information systems (IS) developers from Japan and the United States with regards to the strategies that are considered most important for successful implementation of an IS. The results of a principal components analysis revealed that the IS strategies could be reduced to five components: (1) Characteristics of the Team Members, (2) Characteristics of the Project Leader, (3) Management/User Input, (4) Proper Technology, and (5) Communication. The results indicated that there was a significant difference in the perceptions of Japanese and U.S. developers with respect to the importance of the five components. Japanese developers perceived the Project Leader as the most crucial component for determining the success of an IS project. Team Member Characteristics was viewed as the least important by Japanese developers. On the other hand, the developers from the U.S. viewed Communications as the most critical component. Project Leader Characteristics was perceived to be the least important by U.S. developers. The results were discussed in terms of cultural differences.

Assessing the success or failure of information systems (IS) has been one of the most important issues not only for academicians, but also for practitioners. Numerous studies have been conducted to measure IS success and to investigate various implementation strategies that are associated with IS success (e.g., Ginzberg, 1981; McDoniel, Palko, & Cronan, 1993; Swanson, 1988). However, most of the studies have focused on the success strategies involving the development and management of IS in the United States and other countries with a similar culture (Elliot, 1996). With an increasing number of corporations developing and implementing IS applications which cross national boundaries and span diverse cultures, there is an urgent need to determine which IS implementation strategies will be effective in other countries (Ein-Dor, Segev, & Orgad, 1993; Dasgupta, Agarwal, Ioannidis, & Gopalakrishnan, 1999). In an era of corporate multi-nationalism and globalization of markets, the knowledge gained from cross-cultural research applicable to IS development can determine the difference between success and failure in the implementation of international IS.

Due to social and cultural differences, the successful IS implementation in a global environment may differ significantly from methods that have typically been proven to be successful in the United States (Shore, 1998). It has been demonstrated that national culture is an important variable in many global studies on IS development (Shore & Venkatachalam, 1994). Cultural differences at both national and organizational levels are two of the major factors affecting the transfer of computer technology (Kedia & Ghagat, 1988). It has been suggested that as corporations develop and implement global IS, there may be a need to modify their operating procedures to suit the needs of the host organization (Katz & Townsend, 2000). Thus, IS managers need to know if the procedures that are successful in the U.S. will also be effective in other cultures and if not, how their management style might need to be altered.

Cultural differences have particularly proven to be a major obstacle in global IS development when Asian offices are involved (Burnson, 1989). Asian cultures generally differ from the western culture on a number of aspects (Grover, Segars, & Durand, 1994). Thus, it may be even more important for IS managers from the U.S. to be flexible and capable of adopting new managerial approaches when implementing global IS involving Asian countries.
Moreover, IS implementation research in the U.S. has focused primarily on users’ views when evaluating IS success. Most of the studies have used varying definitions and measures of success, including user satisfaction, system usage, and the perceived benefits (Garrity & Sanders, 1998). The views of IS developers has generally been neglected in IS research (Kumar & Bjorn-Anderson, 1990). However, IS developers make a series of important decisions associated with the design and implementation of the system during the complex and unstructured process of IS development. The developers have to define, interpret, and operationalize IS development strategies, and in so doing, they have to rely on their own judgment (Kumar & Bjorn-Anderson, 1990). Thus the views of IS developers may influence many important decisions related to IS development, such as project management and resource allocation. It is therefore essential to understand the views of IS developers.

The purpose of this paper was to compare the perceptions of IS developers in the U.S. with the perceptions of IS developers from an Asian country, specifically Japan, in terms of the strategies that are believed to be critical in determining successful IS development. The decision to compare Japan and the U.S. was based on two considerations. First, both are economically strong with Japan traditionally possessing one of the strongest economies in Asia. Both nations are technologically highly advanced. For example, in terms of the countries with the most total number of computers and most number of personal computers, the U.S. ranks first among all nations and Japan ranks second (Information Please Almanac, 1999). In addition, Japan and the U.S. both have subsidiaries and actively market goods and services in the other country.

A second reason for comparing the two countries was based on the fact that there are vast cultural differences between the two nations. It has often been noted that the Japanese management style differs significantly from that of the U.S. (Guimaraes, Sato, & Kitanaka, 1999). While both countries are unique, the U.S. shares many cultural similarities with countries from Northern Europe and Japan shares many cultural similarities with other Asian nations (McIntosh, 1999). The comparison between the two nations may provide a good portrayal of some of the differences between eastern and western cultures. Moreover, any differences may provide further motivation to explore other Asian countries. Although several studies have compared Japan and the U.S. in terms of the impact of information technology (IT) on business practices (Bensaou, 1997; Guimaraes et al., 1999; Katz & Townsend, 2000), there are apparently no studies comparing Japan and the U.S. in terms of developers’ views on IS implementation strategies.

CULTURAL ISSUES

National culture strongly affects management practices, including system development strategies and policy-making (Earley, 1993). Hofstede’s (1980) research on cultural dimensions provides a theoretical foundation that has been frequently used for exploring the impact of cultural differences on the adoption and use of information technology. Hofstede identified four dimensions of societal culture, namely (1) power-distance, (2) the level of uncertainty culture, (3) individualism versus collectivism, and (4) masculinity versus femininity. Three of these four dimensions are relevant for the present investigation.

Power distance refers to how a society accepts the fact that power in institutions and organizations is unequally distributed. The U.S. is considered a low power distance culture (Hofstede, 1980). Members in the U.S. culture are reluctant to accept unequally distributed power. Power in the U.S. is generally widely dispersed. Participation and democracy are highly valued. In the U.S., employees want to have a voice in the decisions made by their organizations and expect their company to have an open and accessible communication system. On the other hand, the culture of Japan is predominantly a high power distance culture. Inequality in power is accepted as appropriate and legitimate. In most cases, there is little perceived need for subordinate participation in the organizational decision-making process (Redding & Richardson, 1986). Subordinates do not expect to be consulted or to become privy to the information held by management.

Uncertainty avoidance (UA) is the degree to which members of a society feel uncomfortable with uncertainty and ambiguity. Cultural members in a strong UA society are stressed by the continuous threat of uncertainty and attempt to reduce this stress by relying on strict adherence to plans, rules, and legal measures (Sekaran & Snodgrass, 1986). Members in a weak UA culture do not feel the same stress. They are generally willing to accept the uncertainty of the future and therefore do not perceive the need for strict regulations.

The U.S. is considered low in uncertainty avoidance and hence, there is generally not a perceived need for a rigid set of rules and laws. Individuals may determine their own rules with the leader acting as an arbiter (Katz & Townsend, 2000). Managers are expected to delegate specific tasks and hold subordinates accountable. Conversely, Japan has a very high UA culture. In a high UA society, there is an inclination for members to avoid uncertainty and ambiguity which influences the use and adoption of specific IS implementation strategies. In this culture, authorities are assumed to be competent and belief is placed in the experts and their knowledge.

The individual-collectivism dimension refers to the relationship between the individual and the group of which he or she is a member. According to Hofstede (1980), the U.S. ranks high on individualism. In a high individualism culture,
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