There is a story about someone from a poor developing country who was visiting a rich developed country. The visitor was amazed at the availability of technology and time saving devices. He was enthralled with the vast array of technology available to individuals in their daily work and personal lives. He was most impressed that almost everyone had a watch. After some contemplation he came to the realization that one of the major differences between his poor developing country and the rich developed country was that most everyone in his country may not have a watch but they had a lot of time. The moral of the story relates to determining if technology really provides what is truly required. It is necessary to decide on the appropriate use of technology.

Perhaps more importantly it is necessary to decide within a culture what the appropriate use of technology is. Indeed, when a cultural perspective is taken to investigating the use of technology two competing hypotheses emerge relating to convergence and divergence. (Ronen, 1986; Webber, 1969; and Yang, 1986).

The convergence hypothesis suggests cultures are becoming more similar because of the universality of technology. Further, education and the use of this common technology influences attitudes and values which underlie cultural characteristics. This convergence approach is reflected in a perspective which emphasizes technology and may be characterized by the idea behind the development of a global information systems profession with a standardized method for technology implementation.

The divergence hypothesis suggests cultures resist assimilation and strive to retain their distinctiveness. Thus, within a culture individuals will relate to one another through societal-based norms and there will be resistance to modify these norms through integration of other cultures. This approach is reflected in a perspective which emphasizes social interaction and may be characterized by the relationship established between information systems professionals and users; and their consequent culture-specific interpersonal interactions.

Beyond the convergence/divergence hypotheses dichotomy there exists a plethora of culture-related concepts which may be employed in a study of global information systems. These concepts may be viewed from various perspectives.

The management of global information systems necessitates a consideration for cultural aspects related to information system development, use, and maintenance. With respect to information systems development Leidner and Kayworth (2006) suggest that different cultures will perceive and approach the development of an information system in different ways. For instance some cultures may focus on the technical related issues while others might focus on personnel issues. Also, Leidner and Kayworth (2006) suggest use, depicted as adoption and diffusion will vary across cultures. As the use of information systems is inherently risky, risk-averse cultures will be more reticent at adopting and using new information systems.
General perspectives on technology vary across cultures. One view of an information system is that it consists of many related components which are organized to accomplish some task. These components include hardware, software, telecommunications, and people. Another view, commonly referred to as the socio technical perspective considers an information system to, in the first instance, be a social system, populated by personal interactions which are supported by technology. The discussion presented here is not meant to suggest which of the above two perspectives is more appropriate or correct. But, it is important that cross-cultural researchers realize that there are differing perspectives which should be taken into consideration when planning to conduct cross-cultural investigations.

The pervasive aspects of culture will impact how leadership and decision making is carried out within an organization. The Chief Information Officer (CIO) represents formal leadership and senior decision making of the information systems function within an organization. In his investigation of the CIO role Hunter (2007) determined that while the roles were similar, how they were operationalized varied across the cultures. He conducted in-depth interviews with CIOs in New Zealand, Taiwan, and the United States. The results of his investigation support earlier work (Hunter and Beck, 1996; Pearson and Chatterjee, 2003; and Pearson et al, 2003) which identified common roles that were carried out from different cultural perspectives. So, for instance, Hunter (2007) reported that, “…in Taiwan one of the CIOs indicated that the IT area provided leadership, expertise, and direction (expert) for the company. In New Zealand, however, the comment was more about how the IT area must attempt to work with (coach) the users.” (Hunter, 2007:257).

A further area of investigation relates to cross-cultural research. As organizations expand internationally there is more interaction between individuals within the same company but from different cultures. This situation presents challenges requiring insights from a global perspective (Javidan and House, 2002). Researchers should be cognizant of the development of constructs to be employed in their research. Cross cultural research may take an emic or an etic approach (Pike, 1954; Berry, 1990; and Headland et al, 1990). An emic approach means that the constructs are developed within one specific culture and then their application is used to compare with another culture. The development of universal constructs based upon a number of different cultures is what is referred to as an etic approach. While the latter approach may represent a more multi-cultural approach to developing constructs, it requires a significant effort. Triandis (1972) has suggested a “pseudo-etic” approach which employs a limited number of cultures to attempt to develop a set of universal constructs. Early and Mosakowski (1995) have subsequently supported this development of quasi-universal constructs within the confines of a practical research project.

A common perspective offered for the comparison of culture is that proffered by Hofstede (Hofstede, 1980, 1983, and 1993; Hofstede and Bond, 1988; and Hofstede et al, 1990). This perspective suggests that culture will vary based upon the following dimensions:

- **Individualism – Collectivism**
  - Individualistic cultures emphasize independence, while Collectivist cultures emphasize mutual dependence and obligations.

- **Power Distance**
  - High Power Distance cultures accept an unequal distribution of power, while Low Power Distance cultures strive for an equal distribution.
• Uncertainty Avoidance
  o Strong Uncertainty Avoidance cultures have formal codes of behaviour, while Weak Uncertainty Avoidance cultures are less controlled.
• Masculinity – Femininity
  o Masculine cultures emphasize achievement, while Feminine cultures emphasize caring.

These dimensions will have a significant impact on the successful development and use of information systems in cross-cultural situations.

Yet another consideration resulting from globalization as companies expand internationally is the cause and affect dichotomy. That is, the implementation and use of an information system will change the business processes of an organization. As a consequence, the culture of the organization will change. The way business is carried out will be affected by the information system. From a broader perspective, the general implementation and use of many information systems across a significant number of organizations will affect culture in general. Alternatively, culture (both corporate and national) will affect how an information system is implemented and used. So, culture-based perspectives will come into play through the use of an information system. Thus, this cause and effect dichotomy of information system affecting culture and culture affecting the information system represents a rich area for research.

Conducting research in another culture will invariably involve another language. If the researcher is not bi-lingual it will be necessary for someone to speak in other than their first language or to involve an interpreter. The research participant may find it difficult to express their explanations of the topic being considered. Further, the interpreter may not be familiar with the topic content and may have difficulty accurately translating comments.

Beyond the consideration for language, conducting cross-cultural research involves more complex logistics than focusing on one geographical area. This raises the consideration for involving co-researchers. In turn, issues will emerge regarding researcher commitment and overall project co-ordination. Thus, it is important that all researchers involved in a cross-cultural investigation are made aware of and realize the benefits of both sharing the data gathered and completing the project. As with any group, but more importantly in cross-cultural research the concepts which support cohesion and team building will contribute to identifying and resolving any issues that may arise.

When gathering data from a research participant from another culture, the researcher must be aware of two generic categories of responses. First, the research participant may strive to provide the researcher with a response that is thought to be “right”; or what is thought by the research participant that the researcher wants to hear. So, the researcher must strive to impress upon the research participant that there is neither a right nor wrong answer and that the interpretive comments offered possess the real value to the interviewer. Second, the research participant may only want to focus on the “good news” and may not want to discuss aspects which may put the research participant of the representative culture in a negative light. In both cases extra time must be taken to develop a level of trust between the research participant and the researchers so that the research participant feels comfortable providing an honest and accurate response.

The field of information systems research incorporates both a technical perspective as well as social interactions. It is possible for those involved in the information systems profession to work with anyone, anywhere, especially as organizations expand their operations internationally. Individuals from different cultures will interact on a daily basis. It is thus incumbent upon the information systems researcher to
remain cognizant of the aspects related to both the convergence and divergence hypotheses as well as the other aspects discussed above.

On a more positive note, new insights may be gained through conducting cross-cultural research. Rich data will be gathered reflecting cultural variability. Valuable perspectives will be gained on issues that transcend cultures. The similarities and differences from one culture to another will allow for researchers to compare and contrast research participant interpretations. These types of analyses will expand our understanding of information systems and their development and use in the global environment.

The research presented in the following chapters discusses many issues relating to information systems and takes many different perspectives on this intriguing topic.

GLOBAL THEMES

Chapter 1 by Hunter, Tan, and Tan discusses voluntary turnover factors of information systems professionals in New Zealand and Singapore. They identify universal factors that are culturally independent and those factors that are culturally sensitive. Understanding this variability will assist organizations to develop appropriate human resource policies. Trauth, Quesenberry, and Huang, in Chapter 2 conducted an analysis of career choices by women across multiple cultures including Australia, New Zealand, Ireland, and the United States. They identified themes relating to cultural influence on career choice attitudes. They propose that further research should take into consideration the variety of influences of career decisions by women and their varied responses. In Chapter 3, Lai identifies and evaluates the determinants of foreign affiliates’ strategies relating to global information systems. The countries included in Lai’s investigation include Canada, Japan, the United Kingdom, and the United States. They determined that global information systems strategy is more influenced by organizational and environmental factors than by industry or degree of globalization. These findings have implications for how assessing the complex relationship between head office and regional affiliates. Cong, Zhang, Chen, and Lai in Chapter 4 evaluate information technology offshore outsourcing. Their proposed model is based on a numerical analysis of a company in the United States that outsources software development to a firm in China. The model integrates risk assessment in the selection of an appropriate service provider. In Chapter 5, Schmidt, Johnston, Arnett, Chen, and Li assess awareness levels of computer security software between system users in China and the United States. They suggest the awareness level has not yet reached a critical mass sufficient for organizations to take proper precautions. Zhang, Gaskin, and Lowry in Chapter 6 examine the cultural impact on collaborative software systems. They rely upon many existing cross cultural publications. They provide a common taxonomy which they propose will support further necessary cross-cultural collaborative research. In Chapter 7, Nath, Sridhar, Adya, and Malik investigate requirements analysis for offshore projects. They compare results from investigations in India and the United States. They found that virtual teams develop their own control mechanisms and that the results are similar to face-to-face teams. Then, in Chapter 8, Greenberg, Wong-on-Wing, and Lui examine risks associated with products and services acquisition. They compared security and privacy aspects of consumer trust in online businesses in Hong Kong and the United States. They determined that there are cross-cultural differences in interpersonal trust which in turn will affect how e-commerce transactions are carried out.
REGIONAL THEMES

In this section the chapters focus on a specific location or small group of locations within a specific region. In Chapter 9, Huang, Davison, Liu, and Gu investigated the leadership style and interpersonal trust of knowledge workers in China. They determined that developing mutual trust will increase the knowledge sharing activity of knowledge workers. Cui and Zhang, in Chapter 10, examine the information technology adoption process in China and how government influences the process. They focus on firms in Shanghai. They conclude that government can support information technology adoption through the provision of information technology learning and practice information. Zhang, Sarker, and McCullough, in Chapter 11, focus on small to medium export firms in China to analyze their information technology capability. They determined that an innovative application of information technology will increase the small business’ capability to perform globally. In Chapter 12, Chen and McQueen investigate small Chinese firms in New Zealand and their attitudes towards the adoption of e-commerce. They found that firms which used more advanced e-commerce possessed an innovative enthusiasm for e-commerce and were more tolerant of ambiguity and were more willing to take risks. Hsu and Wang, in Chapter 13, discuss the Taiwanese perspective on knowledge sharing policies and practices. They concluded that knowledge sharing policies and practices positively affect knowledge sharing effectiveness. In Chapter 14, Shih, Chiu, Chang, and Yen also focus on Taiwan in their investigation of the adoption of Radio Frequency Identification (RFID). They determined that this technology was adopted for operations and supply chain efficiency. Gerow, Galy, Thatcher, and Srite, in Chapter 15, investigate the use of information technology. They focus on the United States to assess acceptance and use of information technology while considering within culture variability. The results suggest that cultural values should be taken into account in order to respond to the resistance to the implementation of information technology. In Chapter 16, Shen, Zhao, and Huang investigate group decision making based upon a case related to the aftermath of Hurricane Katrina and its affect on New Orleans. The proposed approach provides valuable input mission-critical decision making tasks and group interaction. Finally, in Chapter 17, Quan focuses on firms in the United States to evaluate the link between e-business and performance. It was determined that superior firm performance occurred when the focus of assessments was on revenues rather than costs. Further, the results suggest that a long time horizon is necessary to determine an adequate evaluation of the investment in e-business.

REFERENCES


