THE EFFECT OF ORGANIZATIONAL CULTURE ON E-COMMERCE ADOPTION

David W. Nickels

University of North Alabama, Box 5210 University of North Alabama Florence, AL 35632
Phone: (256) 765-4819 Fax: (256) 765-4811
dwnickels@una.edu

Obyung Kwun

Southern University at New Orleans, Building 36B 6801 Press Drive New Orleans, LA 70126
Phone: (504) 284-5462 Fax: (504) 286-5304
okwun@suno.edu

Adnan Omar

Southern University at New Orleans, Building 36B 6801 Press Drive New Orleans, LA 70126
Phone: (504) 284-5462 Fax: (504) 286-5304
aomar@suno.edu

ABSTRACT

This paper describes the background for a study in progress of the effect of organizational culture on levels of e-commerce adoption. While e-commerce has been studied in detail, the importance of organizational culture in the level of e-commerce adoption has not been explored in depth. Organizational culture can be a limiting factor on the acceptance of technological change and has been linked with organizational performance. Organizational cultures with an emphasis on external orientation and flexible structure, "adhocracies," are typified by leaders who are innovators and risk takers. An argument can be made that a culture promoting innovation and risk acceptance would provide needed support for higher levels of adoption of new technologies.

Keywords

Organizational culture, electronic commerce, e-commerce, e-commerce adoption

INTRODUCTION

E-commerce is beneficial to both businesses and consumers by removing time and space barriers. For consumers, e-commerce provides greater information richness in less time. B2B e-commerce also provides a number of benefits such as high accessibility, scalability, interoperability, interactivity, and greater information richness (Ratnasingam, 2005). The growing importance of e-commerce is reflected in strategic planning activities and is seen as necessary for the survival of many businesses (Maguire, Terziovski and Samson, 2001). In addition, many companies that adopt e-commerce hope to achieve competitive advantage (Berrill, Goode and Hart, 2004). However, the adoption of e-commerce is not straightforward: it does not guarantee benefits, and the extent to which companies use the Internet in their business activities varies.

The notion of the desirability of higher levels of e-commerce adoption has a precedent in the IT (information technology) integration research literature. Venkatraman (1994) proposed several advantages to the organization from increasing levels of IT integration in business processes: increased capabilities for first mover opportunities, greater organizational responsiveness and flexibility, and increased capacities for horizontal integration with business partners. In the e-commerce research literature, greater levels of e-commerce adoption have been linked with improved organizational performance (Kraemer, Gibbs and Dedrick, 2002). Companies that adopt internet technology in various activities are aware of this benefit and hope to improve competitive advantage, communication, and products and services when they adopt e-commerce (Berrill, Goode and Hart, 2004).

Organizational culture has been suggested as an important factor that influences successful adoption and implementation of IS (information systems) (Laudon and Laudon, 2006). It follows that IT adoption processes, especially those that require changes in business processes, may require changes in culture. Thus, adoption of e-commerce involves changes in IT and business processes, which, in turn, are impacted by organizational culture. However, the impact of organizational culture on e-commerce adoption has yet to be explored in-depth.

The purpose of this paper is to describe the background for a study to empirically test the relationship between organizational culture type and the level of e-commerce adoption.

BACKGROUND

E-COMMERCE ADOPTION

One of recurring themes in e-commerce literature is that in e-commerce adoption, the compatibility of organizational culture with e-commerce matters. Beatty, Shim, and Jones (2001) found that organizations perceiving Web site use as compatible with the existing organizational culture were earlier adopters than organizations perceiving some level of incompatibility between the two. Organizational cultures not supporting innovation and the use of new technologies have been identified as a barrier to B2B e-commerce adoption (Gibbs , Kraemer and Dedrick, 2003; Teo and Ranganathan, 2004). Teo and Ranganathan (2004) have also asserted that organizational culture presents a potentially critical barrier between firms

277

collaborating in B2B e-commerce activities. The compatibility between an organization's culture and e-commerce has been found to exert a strong positive influence on e-commerce adoption in small and medium size enterprises (Grandon and Pearson, 2004). In relation to organizational culture attributes, organizational cultures supporting innovativeness have been associated with higher capacities for successful adaptation and innovation (Hurley and Hult, 1998).

Diffusions of Innovation theory (Rogers, 1995) has been used as a basis for exploring e-commerce adoption in multiple studies (e.g. Beatty, Shim and Jones, 2001; Chircu and Kauffman, 2000; Kshetri and Dholakia, 2002). Diffusion is defined as the process by which an innovation is communicated through certain channels over time (Rogers, 1995). An innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption. The speed with which an innovation is adopted can be affected by characteristics of individuals or units of a social system. Here, there is an obvious connection to the concept of organizational culture, which is rooted in the ongoing interactions among individuals in the organizational social system. According to Diffusion of Innovations theory (Rogers, 1995), the characteristics of an innovation impacting its adoption are: (1) relative advantage (the degree to which an innovation is perceived as better than those currently in use), (2) compatibility (the degree to which an innovation is perceived as being consistent with existing values, past experiences, and needs of potential adopters), (3) complexity (the degree to which an innovation is perceived as difficult to understand and use), (4) trialability (the degree to which an innovation may be experimented with on a limited basis, and (5) observability (the degree to which the results of an innovation are visible to others). It is the compatibility characteristic that is of interest here because "existing values, past experiences, and needs of potential adopters" are embodied in the prevailing organizational culture.

ORGANIZATIONAL CULTURE

Identified as an important management issue since the 1980s, organizational culture has been the subject of numerous studies found in the management literature. Specifically, this construct has been studied as a facet of organizational behavior. Organizational culture can be defined culture as the deeper level of basic assumptions and beliefs that are shared by members of an organization, that operate unconsciously, and that define in a basic 'taken-for-granted' fashion an organization's view of itself and the environment (Schein, 1985).

Cameron and Quinn (1999) have identified both qualitative and quantitative strategies for measuring organizational culture. They argue that a quantitative approach is valid if it measures the underlying beliefs and assumptions that represent culture rather than surface attributes reflecting organizational climate. Based on this premise, they have developed an instrument, the Organizational Culture Assessment Instrument (OCAI), which they assert can be used to reliably measure the prevailing organizational culture. According to Cameron and Quinn (1999), organizational culture can be categorized into four prevailing cultures.

The clan culture is characterized as having friendly, supportive work environments. Supervisors are seen as mentors, and the concern for people, both employees and customers, is high. An emphasis is placed on teamwork.

278

The opposite of the clan culture is the market culture. A major characteristic is a hard-driving, competitive organizational environment. Managers are demanding, and a major organizational goal is winning in a competitive marketplace.

Organizations with hierarchy cultures are described as having formalized, structured work environments. A major emphasis is placed on coordination of efforts with the achievement of efficiency as a central focus. The management of employees is procedure driven, and predictability is valued.

The opposite of the hierarchy culture is the adhocracy culture, which is the organizational culture characteristic of interest in this research. In organizations predominated by an adhocracy culture, risk taking is acceptable. Cameron and Quinn (1999) characterize these organizations as dynamic, entrepreneurial, and creative places to work. Innovation and experimentation are valued, and employees are encouraged to act with individual initiative.

It is important to note that Cameron and Quinn (1999) assert that there is no inherent superiority of any one of these organizational profiles over the others. In other words, different predominant organizational cultures can be equally successful in promoting organizational effectiveness among different organizations and under different environmental circumstances. The environmental circumstance of interest here is the level of adoption of e-commerce technology.

MODEL

Venkatraman (1994) concludes that higher levels of IT-enabled business transformation involve higher degrees of change in organizational routines. This strongly implies the need for higher degrees of risk acceptance. In relation to e-commerce adoption, the adoption of and the success in e-commerce has been tied to organizations' risk acceptance and tolerance of uncertainty (Featherman and Pavlou, 2003; Gibbs, Kraemer and Dedrick, 2003), both of which are characteristics of adhocracy cultural orientations in organizations. However, no tests confirming this relationship have been located in the e-commerce literature. Eid, Trueman and Ahmed (2002) reported that multiple studies have supported an assertion that an organizational culture accepting of change is a B2B critical success factor. Similarly the compatibility between e-commerce and the firm's culture, values, and work practices is a significant determinant of e-commerce adoption (Grandon and Pearson, 2004).

Levels of e-commerce adoption can be defined as the extent of the use of e-commerce for a number of different activities such as sales, marketing, procurement, and sharing information (Kraemer, Gibbs and Dedrick, 2002). Although higher levels of e-commerce are associated with greater benefits, they may also require greater changes, which carry higher risk and uncertainty (Venkatraman, 1994). However, the potential benefits of higher levels of e-commerce adoption for most organizations far outweigh the risks.

Specifically, the proclivity of decision makers exhibiting higher levels of adhocracy organizational culture attributes to take risks and to innovate should lead to higher levels of e-commerce adoption. Therefore, we hypothesize that:

279

H1: Degrees of the adhocracy culture will influence levels of e-commerce adoption.
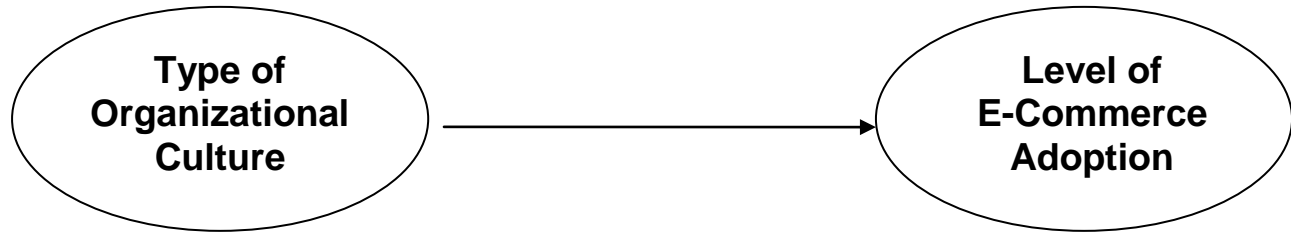
The research model is illustrated in Figure 1.

Figure 1: Research Model

METHODOLOGY

MEASURES

Organizational Culture: The Organizational Culture Assessment Instrument (OCAI) by Cameron and Quinn (1999) will be used to measure the prevailing organizational culture in each participating organization. OCAI (Cameron & Quinn, 1999) is one of the most widely cited instruments purporting to measure organizational culture. For identifying the levels of the four major culture types (Clan, Adhocracy, Market, and Hierarchy), the OCAI provides four scores that can be used to plot the perceptions of culture from organizational participants. Each of the four scores indicates the collective perception of organizational participants completing the instrument of the strength of one of the four culture types. The four scores are calculated from the collective results of the administration of the six questions of the OCAI to organizational respondents. In each question, respondents are asked to assign a total of 100 points among four alternatives describing characteristics of their organization.

Level of E-Commerce Adoption: Items will be developed to measure the extent to which web sites of the participating organization exhibit evidence of support activities for e-commerce in sales, marketing, procurement, and sharing information.

DATA COLLECTION
Data have been collected for the organizational culture dimension of the study. The participants for this component were individual senior managers whose job roles included either strategy formulation or strategy execution responsibilities, or both. For the second dimension of level of e-commerce adoption, the web sites of organizations represented among the organizational culture dimension will be reviewed to gather level of adoption data as described in the above section.

280

CONCLUSION

This paper examines the nature of the relationship between organizational culture and the level of e-commerce adoption in organizations. Research in IT adoption and e-commerce has shown strategic benefits from early adoption of e-commerce and a greater extent of e-commerce adoption. Today's fast changing business environment requires changes in assumptions, values, and the way of doing business. As e-commerce activities continue exponential growth in volume, there will be increasing demands on organizations to change the ways in which they interact with customers, suppliers, and business partners. In order for organizations to remain competitive in e-commerce capabilities, it would seem crucial that they assimilate an organizational culture environment that promotes innovation, risk-taking, and flexibility.

Although the importance of organizational culture has been implied across multiple studies of e-commerce adoption, no studies identifying the characteristics of organizational culture that would best support e-commerce adoption were found in the literature review for this study. Specifically, it is hypothesized that the results of the completed study will show empirical evidence that there is a positive correlation between the level of e-commerce adoption and the degree of adhocracy cultural characteristics among the perspectives of senior-level organizational management.

REFERENCES

Beatty, R., Shim, J. and Jones, M. (2001) Factors influencing corporate web site adoption: A time-based assessment, *Information & Management*, 38, 6, 337-354.

Berrill, A., Goode, S. and Hart, D. (2004) Managerial expectations of internet commerce adoption after the "tech wreck" of 2000-an Australian perspective, *Journal of Global Information Technology Management*, 7, 3, 45-63.

Cameron, K. and Quinn, R. (1999) Diagnosing and changing organizational culture: Based on the competing values framework, Addison-Wesley, Reading, MA.

Chircu, A. and Kauffman, R. (2000) Limits to value in electronic commerce-related IT investments, *Journal of Management Information Systems*, 17, 2, 59-80.

Eid, R., Trueman, M. and Ahmed, A. (2002) A cross-industry review of B2B critical success factors, *Internet Research*, 12, 2, 110-123.

Featherman, M. and Pavlou, P. (2003) Predicting e-services adoption: a perceived risks facets perspective, *International Journal of Human-Computer Studies*. 59, 451-474.

Gibbs, J., Kraemer, K. and Dedrick, J. (2003) Environment and policy factors shaping global e-commerce diffusion: A cross-country comparison, *The Information Society*, 19, 1, 5-18.

Grandon, E. and Pearson, J. (2004) Electronic commerce adoption: An empirical study of small and medium US businesses, *Information & Management*, 42, 1, 197-216.

Hurley, R. and Hult, G. (1998) Innovation, Market Orientation, and Organizational Learning: An Integration and Empirical Examination. *Journal of Marketing,* 62, 3, 42-54.

Kraemer, K., Gibbs, J. and Dedrick, J. (2002) Impacts of globalization on e-commerce adoption and firm performance: A cross-country investigation, Retrieved from http://www.crito.uci.edu/publications/pdf/gec/JIBS.pdf on 2/15/2006.

Kshertri, N. and Dholakia, N. (2002) Determinants of the global diffusion of e-commerce, *Electronic Markets*, 12, 2, 120-129.

Laudon, K. and Laudon, J. (2006) Management information systems: Managing the digital firm (9th Ed.), Prentice Hall, Upper Saddle River, NJ.

Maguire, C., Terziovski, M. and Samson, D. (2001). Reshaping the organisation based on e-commerce strategy, Retrieved from http://www.fsed.org/researchprojects/project2a.html on 2/14/2006.

Ratnasingam, P. (2005) E-commerce relationships: The impact of trust on relationship continuity, *International Journal of Commerce and Management,* 15, 1, 1-16.

Rogers, E. (1995) Diffusion of innovations (4th edition), The Free Press, New York.

Schein, E. (1985) Organizational culture and leadership: A dynamic view, Jossey-Bass Publishers, San Francisco.

Teo, T. and Ranganathan, C. (2004) Adopters and non-adopters of business-to-business electronic commerce in Singapore, *Information & Management*, 42, 1, 89-102.

Venkatraman, N. (1994) IT-enabled business transformation: From automation to business scope redefinition, *Sloan Management Review*, 35, 2, 73-87.