

NORMATIVE AND COGNITIVE INSTITUTIONS AFFECTING A FIRM'S E-COMMERCE ADOPTION

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Abstract

Notwithstanding the proliferation of studies linking e-commerce with the macro-environment, theoretical frameworks on the institution-e-commerce linkage are not well developed. Our primary purpose in this paper is to extend theory on the institution-e-commerce linkage by explicating the influences of normative and cognitive institutions on individuals' and firms' e-commerce adoption behaviors. Broadly speaking, the approach employed in this paper can be described as a positivistic epistemology. The paper takes a conceptual or a theory-building approach. We first develop a conceptual framework that represents how a technology's interaction with normative and cognitive institutions affects a firm's relationships with the profession, other businesses and customers. We then apply the framework to develop a set of propositions on normative and cognitive influences on a firm's e-commerce adoption behaviour. Our analysis indicates that normative and cognitive institutions, in spite of being less visible than regulatory institutions, are no less important in shaping the diffusion pattern of e-commerce.

Keywords: *Normative institutions, cognitive institutions, social network, e-commerce, cultural affinity*

Introduction

In a rich body of theory and empirical research, scholars have examined how factors external to a firm affect firms' technology adoption behaviors [Brown et al. 1976]. From the standpoint of e-commerce adoption, some of the factors most often cited in the literature include the lack of economies of scale in small nations, unavailability of credit cards and weak formal institutions and rule of laws hindering transactional and institutional trust [Hawk 2004, Pigato 2000, Wresch and Fraser 2006].

Notably lacking from this literature, however, is explicit attention to how informal institutions such as societal norms and culture affect the diffusion and adoption of e-commerce. Prior researchers have indicated that socio-culture environment as an important component of

“national information ecology” that affects e-commerce pattern [Zhu and Thatcher 2010, p., 53]. From a manager’s perspective, a better understanding of how value systems and culture influence consumer preferences and hence e-commerce pattern and potential could help devise better strategies across multiple markets [Gibbs et al. 2003, Hornby, Goulding and Poon 2002, Samiee 1998]. In particular, a careful consideration of how potentially culture-specific content is portrayed on a website is important to achieve the potential of e-commerce [BCG 2001, p. 1, Chau et al. 2002, Luna et al. 2002, Lynch and Beck 2001, McGrane 2000]. Especially for managers in developing countries, a more accurate knowledge of mechanisms associated with social and cultural contexts that drive the diffusion of e-commerce and other modern information technologies is likely to reduce the failure rate in assimilating these technologies [Munir 2002, Shareef, Kumar and Kumar 2008]. A deeper and richer understanding of social and cultural contexts is more important for business-to-consumer (B2C) e-commerce compared to business-to-business (B2B) e-commerce. This is because B2C e-commerce is more of a local phenomenon whereas B2B e-commerce is driven by global forces [Gibbs et al. 2003].

A deeper understanding of social and cultural contexts that drive consumer preference could also help policy makers devise strategies to accelerate e-commerce diffusion. Such an insight would also help national governments work with one another as well as with business communities engaged in online activities to define appropriate policies for e-business and drive down transaction costs [Cutter et al. 2000].

Preliminary evidence indicates that online shopping behaviors are shaped by norms and values that characterize social institutions [Lim et al. 2004, Pavlou and Chai 2002]. Little is known, however, about how social and cultural contexts [Luna et al. 2002, Sagi et al. 2004]

influence a firm's technology adoption behavior [Lynch and Beck 2001, Phillips et al. 1994] or e-commerce behavior in particular.

Notwithstanding the proliferation of studies linking e-commerce with the macro-environment [Kshetri 2001, 2007, Kshetri and Dholakia 2002, Xu et al. 2004], theoretical frameworks on the institution-e-commerce linkage are not well developed. Our primary purpose in this paper is to extend theory on the institution-e-commerce linkage by explicating the influences of normative and cognitive institutions on individuals' and firms' e-commerce adoption behaviors. Put differently, we examine how values, norms and cognitions held by individuals and organizations—or normative and cognitive institutions [Scott 1995, 2001]--influence a firm's e-commerce adoption.

The premise of this paper is that e-commerce scholars, managers and policy makers can gain further insights from institutional theories. By taking a closer interest in different elements of institutions, we can understand how marketers and consumers gain legitimacy from internal and external constituencies. For new fields like e-commerce, institutions guide behaviors of buyers and sellers by mediating the relationships between the players and the technologies which enable them to exchange resources [Russo 2001].

In terms of contribution to e-commerce research, the current work supplements previous macro level e-commerce studies and those focusing on the linkage between transaction costs and e-commerce linkage by providing new insights on institutional impacts on e-commerce. The article differs from existing e-commerce studies in at least two ways. First, in contrast to the existing literature on e-commerce, it emphasizes the 'institutional' nature of organizations to study their e-commerce behaviors. By doing this, it explores the interaction between normative and cognitive institutions and e-commerce technologies. Second, it brings together research from

electronic markets and institutional theory in order to generate new insights that will hopefully lead to new research in this field.

Before proceeding, we offer some clarifying definitions. Following WTO [1998], we define e-commerce as any transaction in which *at least one* of the following activities – production, distribution, marketing, sale *or* delivery—takes place by electronic means. E-commerce adoption is defined as the possession of requisite hardware and software to conduct e-commerce transaction. Following Gatignon and Robertson [1985], the width of e-commerce adoption can be defined as the number of different uses of e-commerce technology by a firm (e.g., in pre-transaction, transaction and post-transaction phases). Similarly, the depth of e-commerce adoption can be defined as the amount of usage of the e-commerce technology (e.g., e-commerce revenue). Subsequent researchers have elaborated and used the concepts related to width and depth of technology adoption (e.g., Dholakia, Dholakia and Kshetri 2004, Kshetri 2007]. According to these researchers, a higher width of Internet usage, for instance, is also associated with greater number of individuals within a household using the Internet. Dholakia, Dholakia and Kshetri [2004] have introduced the concepts of functional depth, which is related to the usage of the technology for performing a particular function, and overall depth, which is related to the total usage of the technology.

The remainder of the paper is structured as follows: The next section briefly discusses methodology employed. Then, we describe the approach to institutions used in this paper. It is followed by an examination of the effects of normative and cognitive institutions on a firm's technology adoption behaviour. Next, we develop some hypotheses on the linkage between institutions and a firm's e-commerce adoption behaviour. It is followed by a section, which

discusses the findings in relation to the literature.. Finally, we provide discussions and implications.

Methodology

Broadly speaking, the approach employed in this paper can be described as a positivistic epistemology. The paper takes a conceptual or a theory-building approach. It is not, however, the intention of this paper to come up with a full-blown integrative theory on the institution-e-commerce nexus. Being mainly based on qualitative information and early evidence related to e-commerce research, our research is exploratory in nature. The unit of analysis of this paper is the firm.

In a positivist framework, a theory would consist of a set of propositions representing the knowledge [Iles and Yolles 2002]. Following the tradition of a positivist approach [Lin 1998], this paper thus seeks to identify details associated with institutional impacts on a firm's e-commerce adoption with a set of propositions. Implicit in this approach is the assumption that the propositions can be tested in order to improve our understanding of institution-e-commerce nexus and the ability to make predictions [Iles and Yolles 2002].

It should be noted that propositions capture relationships between variables but do not themselves represent theory [Sutton and Staw 1995]. We have provided reasoning and justification for each proposition which is the crucial part of the theory-development process [Webster and Watson 2002]. Our reasoning and justification are based on how social norms, values and cognitions influence a firm's technology adoption behavior. The conceptual framework (Figure 1) is a major building block of the theory development process.

We have employed three main sources for the reasoning to develop propositions: theoretical explanations for "whys" and "hows" of e-commerce; past empirical findings; and

practice or experience [Webster and Watson 2002]. Among these, the logical reasoning is the most important component of our explanations related to the institution-e-commerce nexus. It represents “the theoretical glue that welds the model together” [Whetten 1989, p. 491].

We have also included past empirical research related to e-commerce and from related areas. Although evidence from related areas is relatively weak [Gay and Diehl 1992], such evidence provides an important perspective on social and cultural contexts that impact the development of communications network, of which the Internet is a subset. Next, the author's experiences in interacting with organizations and individuals; and evidence from literatures targeted to e-commerce practitioners have also been used in the theory development process [Webster and Watson 2002].

Insert Figure 1 here

Relevant Theories: Institutional Factors

The concept of institution has become increasingly popular in a wide range of social science disciplines. North [1996, p. 344] defines institutions as "formal constraints (rules, laws, constitutions), informal constraints (norms of behavior, conventions, and self-imposed codes of conduct), and their enforcement characteristics". Scott [1995, 2001] proposed three institutional pillars--regulative, normative and cognitive—which relate to “legally sanctioned”, “morally governed” and “recognizable, taken-for-granted” behaviors respectively [Scott et al. 2000, p. 238].

Regulative pillar

Regulative institutions consist of "explicit regulative processes: rule setting, monitoring, and sanctioning activities" [Scott 1995, p. 35]. Regulatory bodies (such as the UN Commission on International Trade Law and the U.S. Department of Justice) and existing laws and rules (e.g.,

the World Intellectual Property Organization (WIPO) Copyright Treaty and the USA Patriot Act) influencing a firm's e-commerce behavior fall under this pillar. These institutions focus on the pragmatic legitimacy concerns in managing the demands of regulators and governments [Kelman 1987].

Normative pillar

Normative components introduce "a prescriptive, evaluative, and obligatory dimension into social life" [Scott 1995, p. 37] and help us understand how "values and normative frameworks structure choice" (p. 38). To be successful, practices should be consistent with and take into account the different assumptions and value systems of the national cultures [Schneider 1999]. Normative institutions are concerned with procedural legitimacy and require e-commerce providers and online shoppers to embrace socially accepted norms and behaviors [Selznick 1984]. The basis of compliance in this case thus derives from social obligations, and non-adherence can result in societal and professional sanctions. Elements of normative institutions also include trade associations or professional associations that can use social obligation requirements to induce certain behavior within the e-commerce industry and market.

Cognitive pillar

Scott [1995, p.40] suggests that "cognitive elements constitute the nature of reality and the frames through which meaning is made". Although all components of institutions are intertwined with culture [Neale 1994, p. 404], cognitive institutions are arguably most closely associated with culture [Jepperson 1991]. Cognitive legitimacy concerns are based on subconsciously accepted rules and customs as well as some taken-for-granted cultural account of technology use [Berger and Luckmann 1967]. Although carried by individual members, cognitive programs are elements of the social environment and are thus social in nature [Berger and Luckman 1967].

Compliance in the case of cognitive legitimacy concerns is due to habits; Internet users and online sellers may not even be aware that they are complying [Grewal and Dharwadkar 2002].

Of these three pillars, normative and cognitive components are arguably more likely to explain interfirm differences as regulative influences are likely to apply uniformly within a given industry [Miller 1996, p. 287]. An institutional pillar both reflects as well as determines the nature of the other pillars [Hayek 1979]. It is thus worth noting that there are often difficulties to isolate them in the real world.

Sources of institutional pressures

Neoinstitutionalism is characterized by both macro- and micro-level approaches [Scott 1987].

One way to differentiate these two approaches is whether the sources of institutionalization are considered to be external or internal. Macroinstitutionalism considers the sources of institutionalization in the external environment and argues that organizations exhibit isomorphism with respect to external institutional pressures by adopting structures and processes. Microinstitutionalism, on the other hand, assumes that these sources are internal to the organization [Bresser and Millonig 2003]. Scott [1995, 40] observes the existence of external and internal dimensions in institutions by stating that values and norms "...are both internalized and imposed by others". Inter-firm differences in behavior can be explained in terms of an 'institutional filter', which determines the extent to which specific environmental demands are compatible with an organization's system of norms and values and therefore are adopted [Bresser and Millonig 2003]. Macro-level heterogeneity can thus arguably be attributed to "homophilic microlevel rules" [Macy and Wilier 2002, p. 13]. Dienhard [2000, p. xvi] illustrates how macro- and micro-level institutions are related:

..[M]arkets ..are embedded in social institutions that guide behavior, involve organizations, that have internal structures (institutions) that guide behavior, and involve individuals making decisions in the context of market and organizational institutions and relationships .

Institutions influencing firms' e-commerce behavior thus reside at different levels—global, national, local, social network, professional, industry, inter-organizational and intra-organizational [Atkinson 1991, Giddens 1984, Kalipeni and Feder 1999, Oppong and Kalipeni 2005, Strang and Sine 2002]. Thanks to globalization, governments are turning to supranational institutions to resolve transnational problems [Smith and Wiest 2005]. It should, however, be noted that although some commentators have argued that supranational institutions are playing a crucial role in solving transnational problems [Dingwerth 2005] and are reducing the power and autonomy of the state [Smith and Wiest 2005], others argue that these institutions have failed to acquire legitimacy because they lack a democratic mandate and don't represent broad interests [Castles 2005]. Nonetheless, a firm's e-commerce behaviors are governed by a number of international laws and treaties. For instance, the World Intellectual Property Organization (WIPO) Copyright Treaty (1996) and WIPO Performances and Phonograms Treaty (1996) established rules relating to issues of copyright raised by digital technology. Likewise, International Chamber of Commerce developed model contract for privacy and transborder data flows, model electronic sales contract, dispute resolution for e-commerce, etc.

Of greatest relevance here are national level institutions—also known as the 'country-level effects' or the 'societal effects' [Zaheer and Zaheer 1997]-- which include political, legal, cultural and other environmental factors specific to a country that influence cyber attacks. The state is arguably the most important external institutional actor and powerful drivers of institutional isomorphism since a violation of laws and regulations can result in harsh sanctions

[Bresser and Millonig 2003]. Moreover, many cultural-cognitive factors influencing e-commerce such as nationalism and preference to the native language also reside at the national level.

At professional and industry levels, ethical codes of conduct set by various institutions and governing bodies such as professional associations and other private sector organizations govern firms' e-commerce adoption behaviour. The codes of conduct generally require members to maintain higher standards of conduct than required by law [Backoff and Martin 1991].

In some societies, social networks are among the powerful forces that shape firms' e-commerce adoption. At the social network level, participants are encouraged to comply with the norms and values of the network [Chung 2004] and have obligation to be trustworthy [Granovetter 1985]. This is especially prominent in many Asian economies, where thanks to the influence of Confucian ethics and collectivism, people are highly integrated and emphasize on long-term relationships that may offer little immediate benefit [Dwyer et al. 2005, Hofstede 2001, Okazaki 2004, Triandis 1995]. Some institutionalists refer traditional institutions consisting of custom and limited social networks (intragroup networks) as true forms of institutions [Sjostrand 1992]. Indeed, Gehlen [1980/1957] argued that modern society is being increasingly deinstitutionalized. In some societies, informal networks are still more effective than formal laws and regulations in dealing with local problems [Mol and Van Den Burg 2004].

Different theoretical contributions and various empirical studies have led to the accepted view that that institutions within organizations or intraorganizational institutions have important consequences for organizations and influence the implementation of a technology [Elsbach 2002]. Intraorganizational institutions related to organizational idiosyncrasy, which may lead to varying responses to influences from the external environment [Zucker 1991]. Organizational norms and cognitions are reflected in the organization's structures, strategies, and routines [Scott

1995, Dienhard 2000]. To take one example, the Indian IT firm, Infosys encourages informal knowledge sharing or an "asking culture" and has formed social networks among the company's employees for this purpose [Garud and Kumaraswamy 2005]. On the other hand, modern information and communications technologies (ICTs) may not fit with internal norms and values of organizations with a 'low-tech-culture' [Bresser and Millonig 2003]. The unwillingness to acquire resources that do not fit with cultural norms is also called an institutional isolating mechanism [Oliver 1997]. Studies have also found that if a firm's internal structure favours risk aversion and inertia, it is less likely to adopt e-commerce [Molla and Licker 2005].

Normative and Cognitive Institutions and Technology Adoption: The Conceptual Framework

Figure 1 represents a conceptual framework that connects how normative and cognitive institutions influence a firm's technology adoption behavior. The parsimonious framework presented by Figure 1 is developed based on the review of literature. The arrows in Figure 1 connect various constructs represented by the propositions developed in this paper. In the next section, we build on this framework to develop a set of propositions related to a firm's e-commerce adoption as well as the width and the depth of adoption.

The diffusion pattern of a technology is tightly linked to the context provided by institutions [e.g., Dosi 1988, Ekholm 1988, Nelson and Rosenberg 1993, Ney 1999, Sabel and Zeitlin 1997, Storper and Walker 1989, Van der Meulen and Rip 1996]. An important mechanism in the institution-technology diffusion nexus is associated with technologies' transformation of firm's relationships with the profession and with business partners. Cultural affinity of the technology with a firm's employees and customers, which can be defined as the

degree to which culture embedded in the technology resembles their culture, also determines the firm's propensity to adopt the technology.

In particular, a firm's relationship with its customers is a function of the degree of 'fit' between the technologies used by them or what Ford et al. [1998] refer to as the 'technological distance'. The width and depth of technology adoption; relative preferences towards various technologies; experience and skills and sophistication of technology use of customers influence the "technological distance" and consequently the technology adoption behaviour of a firm.

Professional codes associated with the technology

A profession is self-regulated by a code of ethics [Claypool et al. 1990, Cohen and Pant 1991] and is characterized by its role as a moral community [Camenisch 1983]. The codes of conduct generally require members to maintain higher standards of conduct than may be required by law [Backoff and Martin 1991]. The codes also help make professional norms visible [Frankel 1989] and act as a vehicle to assure the public and clients that members are competent, have integrity, and maintain and enforce high standards [Ward et al. 1993]. Apart from convincing external parties of the integrity of the profession, codes play an important role in forcing members of a profession to question their values [Meyer 1987]. Codes also act as a support system against improper demands, and serve as a basis for resolving disputes [Frankel 1989]. A technology modifies these "guild-like aspects" of a profession that serve to protect the profession from outside encroachment and to protect the public [Harshman et al. 2005]. Thus, a new technology is likely to lead to the emergence of new codes in the profession. A technology is also likely to bring transformation in the ethical attitudes which represent individual factors and group norms [Winter et al. 2004].

Effects on establishment and maintenance of relationships

Business relationships entail exchanges of economic and social resources [Bagozzi 1975, 1979].

Social resources are in the forms of various relationships, ties, bonds and mutual trust.

Technologies can transform the fundamental means by which relationships are established and maintained within a business environment [Palmer 2005]. For instance, a technology provides tools with which people and institutions augment their abilities to communicate [Peterson and Anand 2004]. In some cases, rules established jointly by partnership members determine the degree to which a technology can replace relationships [Vlachopoulou and Vassiliki 2003].

Managers, especially in service organizations, are increasingly "trading off" social resources with technology-driven services [Bolton et al. 2003]. However, relationships in which social resources take precedence over business transactions are less likely to be replaced by technologies. Moreover, if a company's competitive advantage stems from its personal relationships with customers and business partners, the company may benefit little from automatic vertical networks [Carr 2004].

Customers' cultural affinity with the technology

Culture of a society influences the perceived need for a technological change as well as relative preference to a technology [e.g., Kshetri 2001, Rothwell and Wissema 1986]. Culture can thus inhibit as well as encourage technological innovations [Loch et al. 2003]. Culture determines the perception of basic needs and the degree to which translation of latent needs into basic ones through innovation diffusion [Rothwell and Wissema 1986].

Cultural affinity associated with a technology is a function of closeness between user and producer of the technology [Gertler 1995] and is likely to affect the ease of adoption of the

technology [Phillips et al. 1994]. Such closeness becomes even more important when the technology is expensive, complex, and rapidly changing [Gertler 1995].

Degree of functional affinity with the technology

Effective transfer of a technology requires a consideration of its compatibility with the functions to be performed. A number of components of a culture such as decision-making processes and styles, technological standards, manufacturing infrastructure, language, management practices [Schnepp et al. 1990] and perceived connection with productivity [Economides et al. 1999] determine a potential adopter's cultural affinity to the technology. To take one example, Auyeung et al. [2005] document how cultural inertia hindered the adoption of foreign accounting techniques in China. Adoption of Western accounting techniques required "Chinese writing instruments to be replaced with Western pen, ink, and paper; Chinese numerals to be superseded by Hindu-Indian figures; and the custom of writing vertically in Chinese calligraphy to be replaced with a horizontal writing format" [Auyeung et al. 2005]. Chinese firms thus rejected the Western accounting system notwithstanding its potential to enhance productivity. In another example, Gertler [1995] discusses negative experiences of a number of manufacturing plants in Ontario, Canada. These plants arguably attempted to implement northern European technology but lacked the cultural affinity [Gertler 1995]. Moreover, if potential users of an innovation are satisfied with their current routines, they may resist the innovation [Ram 1985]. Rothwell and Wissema [1986] point out that one of the important reasons for Ancient Greece not proceeding with industrialization, despite its expertise in technology and mathematics, was the easy availability of cheap slave labor.

Degree of emotional affinity with the technology

The above paragraph discussed how cultural factors influence a potential adopter's functional compatibility with the technology. A potential adopter's assessment of a technology goes beyond functions to be performed. A technology reflects values, norms, concerns and aspirations of the producer. For this reason, when the technology embeds in a society it reshapes the values [Bruce 2005]. The diffusion rate of an innovation is thus positively related to the 'inter-relatedness' among users and producers of the technology [Cassiolato and Baptista 1996] or the innovation's compatibility with social system values [e.g., Rogers 1983, 1995, Gatignon and Robertson 1985]. Klonglan and Coward [1970] hypothesize that cultural variables play more important role in the *symbolic adoption phase* (adoption of the idea component of the innovation) whereas economic variables play more important roles in the *use adoption phase* (adoption of the actual product). In some cases, social and institutional changes are necessary for acceptance and diffusion of innovations [Rothwell and Wissema 1986]. In the example discussed above on the rejection of Western accounting practices in China as, in addition to the functional incompatibility, Chinese firms were far from ready to discard Calligraphy that has deep roots in the Chinese culture [Auyeung et al. 2005]. Western accounting practices thus lacked emotional affinity with the Chinese culture. In some cases, governments also subsidize culture, in part to favour their national tradition over those of potential competitors [Caplan and Cowen 2004].

Normative and Cognitive Influences on a Firms' E-Commerce Adoption: Some Hypotheses

Like other technologies, an economy's e-commerce potential and pattern are tightly linked to the context provided by institutions. The Internet has stimulated new practices and modified existing practices related to social relations and communications as well as those related to business

transactions. Such stimulation and modification superimpose with existing social and business related obligations which has shaped the locus of e-commerce.

Table 1 lists and explains constructs used as independent variables in the hypotheses developed in this paper. Because of the relations between institutional pillars as noted above, each construct may have both normative as well as cognitive dimensions. Nonetheless, business related constructs are more related with normative institutions while consumer related constructs have a higher degree of association with cognitive institutions. A firm's e-commerce adoption as well as width and depth of adoption represent the dependent variables.

Insert Table 1 here

Ethical and professional codes of conduct

Tools of business related obligations play important roles in shaping the e-commerce landscape. For instance, several professional organizations offer codes of ethics for the practice of member companies involved in e-commerce activities. These codes attempt to protect citizens' privacy. In the U.S., in the early 2001, technology-industry lobbyists and consumer and civil-liberties activists including the American Civil Library Association, Electronic Privacy Information Centre and Consumer Federation of America circulated a letter to members of Congress and the president calling for a stronger set of privacy rules [Benson and Simpson 2001].

In December 2003, the U.K. Mobile Marketing Association issued the code of conduct which has specified the time of a day mobile marketers can target consumers [Precision Marketing 2003]. Given the highly personal nature of cell phones, perception of invasion of privacy is higher for mobile channels compared to fixed ones [Black 2001, Revolution 2003].

In China, the Internet Society has asked Internet companies to sign a voluntary pledge on "Self-discipline for China's Internet Industry". The signatories have obligations to investigate and block web-sites that contain politically and culturally objectionable contents.

Ethical and professional codes of conduct discussed above may not necessarily affect firms' e-commerce adoption. Nonetheless, they influence width and depth of e-commerce adoption. For instance, portals and search engines not following the guidelines of the Internet Society such as Google and Altavista were banned in China in 2002 [Singer 2002]. Chinese firms cannot thus use these search engines to advertise their products. The discussion in this section is summarized as:

H₁: The existence of ethical and professional codes of conduct that limit a firm's use of the Internet in marketing activities is negatively related to the firm's e-commerce adoption as well as width and depth of the adoption.

Social dimension in business relationships

Most business relationships are characterised by tight and complex interdependencies between buyers and sellers in the form of social networks [Bakos 1991, Moodley and Morris 2004, Wellman 2001]. Even in the U.S., in the hotel industry, for instance, purchasing agents prefer to negotiate with suppliers face-to-face and close deals with 'a handshake' [Rovenpor 2003].

The strength of social dimension and preference for face-to-face communications varies across cultures. For instance, while Americans place a higher emphasis on efficiency or "control of time", Japanese prefer to control "human relationships" [De Mooij 1998, Okazaki 2004]. For most Asian firms, business networks provide various competitive advantages in the form of social capital. Recall that in Confucianism, business relationships are not simply economic but also have social dimensions [Hofstede and Bond 1988, Romar 2004]. Personal relationships are important in doing business, and anonymous online relationships threaten to undermine these

established interpersonal networks [Gibbs et al. 2003]. The networks include “interlocking connections to local or regional business partners, more or less prominent tycoons, high ranking officials and other members of the local power elites” [Sikorski and Menkhoff 1999]. The precedence of established relationships such as those found in Indian conglomerates and Chinese guanxi [McKinsey 2001] over Internet-driven efficiency thus tend to work against the Internet and e-commerce.

Similarly, a study conducted among garment exporting firms in South Africa indicated that trading relationships in this sector are fostered over extended periods of time, depend on non-contract based activities and on complex information requirements and tend to be highly personalized [Moodley and Morris 2004]. Likewise, the importance placed on face-to-face commerce in localized economies has hindered the adoption of e-commerce among firms in the Arab region [Pons 2004]. Further evidence that social networks influence firms’ e-commerce comes from Driedonks et al.’s [2005] study of AuctionsPlus, an Australian online auction site created for trading cattle. They found that an important part of cattle producers’ social life entailed the traditional saleyard auctions with social network. They thus resisted an innovation that took away a big part of their social network. The finding of the study indicated that AuctionsPlus was more successful in northern Australia, where saleyards social group interactions are less accessible [Driedonks et al. 2005].

The studies reviewed above suggest that importance placed on face-to-face meetings hinders e-commerce adoption. Since most e-commerce transactions “attempt to substitute for social information” [Steinfeld 2002, p. 8], a high degree of social dimension and preference for face-to-face communications tend to hinder firms’ adoption of e-commerce technologies

[Moodley and Morris 2004]. This is mainly because the social aspect in traditional ways of business is not easily exchangeable with IT-enabled innovations that offer a higher efficiency [Driedonks et al. 2005]. Thus, the next proposition is:

H_{2a}: The strength of social dimension in business relationships is negatively related to a firm's e-commerce adoption as well as width and depth of the adoption.

H_{2b}: Conversely, a firm's preference to efficiency over social dimensions in business relationships is positively related to its e-commerce adoption as well as width and depth of the adoption.

Customers' cultural affinity with the Internet and e-commerce technologies

The Internet's asynchronous and relatively impersonal nature of communication makes it incompatible with values, norms and social obligations in some societies. People from collective cultures prefer traditional approaches that offer high degrees of social affinity [Hofstede 1980]. For instance, Japan's custom requires personal correspondence to be handwritten to show respect and courtesy [James 1998], which is incompatible with Internet use and hence e-commerce. Straub [1994] found that Japanese workers had lower propensity to use email than workers from the U.S. In other Asian countries such as China and India also there is a preference for personal face-to-face communications over impersonal e-mail communications [McKinsey 2001]. Similarly, in Middle Eastern countries, consumers consider face-to-face agreements important and prefer physical stores over the Internet [Sagi et al. 2004]. A study found that for countries lower in uncertainty avoidance, individualist cultures such as those of the U.S. show higher Internet shopping rates than do collectivist cultures [Lim et al. 2004]. In line with these arguments, the following proposition is presented:

H₃: Consumers in a society whose values and norms place emphasis on personal and face-to-face communications are less likely to adopt the Internet. A firm's dependence on such customers is negatively related with its e-commerce adoption as well as width and depth of e-commerce adoption.

More important perhaps are habits related to economic transactions. Especially the payment means used such as cash, checks, debit cards, and credit cards influence e-commerce potential and patterns. For instance, 35-40 per cent business transactions are conducted on a cash basis in Asian countries compared to 3 per cent in the U.S. [Biederman 2000]. In these countries, credit card use is too small to allow the growth of e-commerce [Roth 2004] and e-marketers are required to close most deals in the traditional way by using mail and fax [Chen 2004]. A large proportion of e-commerce in China and India also takes place on cash on delivery basis. Evidence from Latin America indicates that low rate of credit card usage can be attributed to the “lack of trust in than lack of access to” the credit card system [Hilbert 2001]. E-commerce is not thus much effective in reducing transaction costs in such cases. The above leads to the following:

H₄: Consumers’ degree of digitization of economic transactions is positively related to their e-commerce adoption. A firm’s dependence on customers with low degree of digitization of economic transaction is negatively related to its e-commerce adoption as well as width and depth of the adoption.

In some countries, cultural differences with the West represent a barrier to Internet and e-commerce adoption [Pons 2004]. A component of the Internet’s value system is related with the place of origin of the core technology as well as the bulk of the content. The Internet originated in the U.S. and most of the content available on the WWW originates in the Western countries. Many people in the East tend to doubt the integrity of information originating from the Western world and view the use of English as a vehicle for executing an electronic “Pax Americana” [Shabazz 1999]. In the Arab region, for instance, the perception of the Internet as a medium for immoral or ‘sacrilegious’ content has affected consumer adoption of the technology [Norton 2002]. The discussion in this section is summarized as:

H₅: Consumers in countries that have hostile attitude toward the West are less likely to adopt the Internet and hence e-commerce. A firm's dependence on such customers is negatively related to its e-commerce adoption as well as width and depth of e-commerce adoption.

An individual's likelihood of e-commerce adoption as well as width and depth of adoption are positively related to the degree of availability of e-commerce related technologies and products that are compatible with the individual's culture. Some elements of cultural compatibility include native language, local products [Gibbs et al. 2003], and domain names and local service providers.

A study by Forrester research found that visitors are twice more likely to stay at a website in their native languages and business users are three times more likely to buy on the Internet when addressed in their languages [Peek 2000, Silberstein 2000]. Similarly, a survey conducted among Chinese users indicated that, in 2000, 78 per cent viewed Chinese language information and 71 per cent viewed domestic information [CNNIC 2001]. Another survey found that in 2001, nine of the 10 most popular sites for Chinese surfers were China-based [Hormats 2001]. Chinese-language content on the Internet has been a major factor to contribute to a rapid growth of overseas Chinese visiting Chinese language websites [Hormats 2001]. Moreover, Chinese customers associate a firm with .CN address with a higher level of commitment and seriousness [Tindal 2003]. In China, preference to Chinese language can partly be attributed to the state's "intensive inculcation of nationalism via the Chinese press and education system" [Kurlantzick 2005]. Moreover, a software based translation program tends to have a higher error rate for Chinese compared to other languages [Tindal 2003]. Companies outside China are increasingly realizing the importance of having locally built services to succeed in China [Secured Lender 2004].

The discussion above indicates that a firm's deployment of technologies and availability of products compatible with its customers' cultures are positively related to the firm's width and depth of e-commerce adoption. Common language and culture enhance shared understanding and trust and reduces transaction costs [Steinfeld 2002, p. 8]. Thus:

H₆: An individual's likelihood of e-commerce adoption as well as width and depth of adoption are positively related to the degree of availability of e-commerce related technologies and products that are compatible with the individual's culture. A firm's deployment of technologies and availability of products compatible with its customers' cultures are thus positively related to the firm's width and depth of e-commerce adoption.

Findings

In this section, we discuss our findings in relation to the literature.

Exogenous and endogenous institutions at various levels associated with e-commerce

As noted earlier, various types of exogenous institutions such as ethical codes of conduct, habits, customs, rules, established relationship affect the diffusion pattern of e-commerce. An approach to analyze these institutions would be to focus on their exogenous and endogenous natures.

According to this approach, the exogenous institutional environment consists of formal and informal macro-level rules such as the judicial system, cultural norms, and kinship patterns [Davis and North 1971]. The Chinese government's authoritarian policies, emphasis on efficiency in the U.S., preference for human relationships in Japan and hostility towards Western culture in some societies are exogenous institutions. Through institutional rules, the issue of e-commerce is nested in these exogenous institutions. The exogenous institutional environment is slow to change and defines the world in which firms and people interact. Some refer these as fundamental institutions, which "are taken for granted and are difficult to change through purposive design" [Bresser and Millonig 2003].

The U.K. Mobile Marketing Association's codes of conduct and the Chinese Internet Society's voluntary pledge on "Self-discipline for China's Internet Industry" are endogenous institutional arrangements, which are informal micro-level rules, devised by specific parties to a specific exchange [Davis and North 1971, Carson et al. 1999]. These are also known as secondary institutions. They include contracts, organizations, and organizational rules and procedures and are more amenable to conscious design [Bresser and Millonig 2003].

In looking at issues of the development and change of institutions related to e-commerce, we are treating institutions as endogenous. Doing so, however, requires an understanding of other "higher" level existing institutions and other exogenous parameters [Snidal 1994, 1996]. Various exogenous parameters have both a direct and an indirect effect on firms' and consumers' e-commerce behaviors. While some exogenous parameters are more easily changeable, others are not.

Professional codes in the electronic market

The roles of professional associations deserve special attention in e-commerce. E-business parameters are still evolving. Prior research indicates that in nascent and formative sectors, there is no developed network of regulatory agencies comparable to established industrial sectors [Powell 1993]. As a consequence, there is no stipulated template for organizing, and thus pressures for conformity are less pronounced [Greenwood and Hinings 1996]. In such cases, professional associations are thus expected to play unique and important roles in shaping the industry. In some situations, the state will collaborate with such associations to rationalize an arena of activity [Scott 1992, p. 211]. Professional associations thus play an important role in strengthening the regulative institutions by providing the state with their expertise in developing new regulatory framework and strengthening the enforcement mechanisms.

Buyers in electronic markets are more susceptible to the “lemons problem”, as there is more incentive for sellers to market poor quality goods [Akerlof 1970, Kshetri 2010]. In general, opportunism is more likely to arise in electronic channels, which increases the possibility of deception through a deliberate creation of information advantage by a potential seller [Barkhi et al. 2008, Williamson 1975, 1985]. Instances of sellers’ and buyers’ engagement in opportunistic behaviors are more common in e-marketplaces [Chatterjee and Datta 2008]. If an e-commerce provider engages in an unethical business practice, it can have an adverse effect on the whole industry. In this regard, professional and trade associations’ measures are directed towards promoting responsible e-commerce behaviors.

Embedment of e-commerce measures within the “wider institutional field”

This paper's findings provide convergent evidence for the view that efforts to deal with institutional actors are likely to be successful if they are nested or embedded deeply within the “wider institutional field” [Lawrence et al. 2002] or “networks of other already legitimate institutions” [Suchman 1995]. Note that a field is “formed around the issues that become important to the interests and objectives of specific collectives of organizations” [Hoffman 1999, p. 352]. Some examples of e-commerce measures that are embedded within the “wider institutional field” [Lawrence et al. 2002] include providing e-commerce websites and domain names in consumers’ native languages and using locally built services.

A related point is that business relationships are nested and embedded in exogenous institutions, which display different degrees of inertia. As noted earlier, while consumers in Australia in general were against the online auction site created for trading cattle, there was a lower degree of resistance in northern Australia, where social network was relatively weaker or had lower inertia [Driedonks et al. 2005].

Wider diffusion of e-commerce and effects on normative and cognitive institutions

Different theoretical contributions and various empirical studies have led to the accepted view that when institutional rules and norms are broadly diffused and supported, organizations are more likely to acquiesce to these pressures because their social validity is less likely to be questioned [Knoke 1982, Oliver 1991, Tolbert and Zucker 1996]. For instance, Knoke [1982] found that one of the best predictors of a municipality's adoption of reforms was the proportion of other municipalities that had adopted such reforms. Likewise, Tolbert and Zucker's [1996] study indicated that the degree of diffusion of civil service policies and programs was positively related to the probability of adoption by a firm that hadn't yet adopted such policies and programs. This means that as the Internet diffuses more broadly, consumers in Arab countries are less likely to be concerned about the Internet's association with immorality. As noted above, low rate of credit card usage in Latin America is arguably because of the "lack of trust in than lack of access to" the credit card system [Hilbert 2001]. A wider diffusion of e-commerce thus may undermine the taken-for-grantedness of Latin American consumers' beliefs about problems associated with the credit card system. That is consumers are likely to be less concerned about the lack of trustworthiness of the system.

Institutions' amenability to purposive design

E-commerce transactions are exogenous with respect to established business relationships. These relationships, in turn, are exogenous with respect to fundamental institutions at the higher levels such as judicial system, cultural norms, and kinship patterns [Davis and North 1971]. Given a higher degree of inertia of exogenous institutions, economic actors tend to maximize their outcomes by modifying their behavior and developing efficient endogenous institutions [Snidal 1996]. Some institutions that are primarily designed for business purpose, which are more

amenable to change compared to fundamental institutions. For instance, while some businesses may prefer to negotiate face-to-face negotiation and close deals with ‘a handshake’, they may be willing to modify their behavior by adopting e-commerce to maximize their outcomes [Snidal 1996, Rovenpor 2003, Sagi et al. 2004]. As noted earlier, consumers in some countries prefer physical stores over the Internet [Sagi et al. 2004]. Businesses are exploring the possibilities of 3D e-retailing, where consumers can interact with experts and find items that are unavailable in the local store [Cleverley 2009]. As noted earlier, to maximize benefits, economic actors may modify their behavior by developing efficient endogenous institutions [Snidal 1996]. As noted earlier, institutions with various degrees of exogeneity exist. Some institutions related to e-commerce are thus more amenable to purposive design than others.

Informal institutions’ relationship with formal institutions

This paper mainly focused on informal institutions. Compared to some informal institutions such as customs and societal norms, formal institutions tend to be more amenable to purposive design. Unsurprisingly, measures at various levels are being taken to change formal institutions to facilitate the diffusion of e-commerce across the world. For instance, many countries have enacted laws on electronic signatures to facilitate e-commerce adoption. Informal institutions affect and are affected by formal institutions. North [1994] observes that informal rules provide legitimacy to formal rules [North 1994]. Likewise, Axelrod [1997, p. 61] comments on the relationship between regulative and normative institutions: “Social norms and laws are often mutually supporting. This is true because social norms can become formalized into laws and because laws provide external validation of norms”. Thus the e-commerce issues are nested in exogenous formal and informal institutions, which are likely to reinforce each other and create a virtuous circle by to facilitate e-commerce diffusion.

Discussion and Implications

The theoretical contribution of this paper is to propose hypotheses that explain the ‘Hows’ and ‘Whys’ [Whetten 1989] of a firm’s e-commerce adoption behaviour by examining the institution-e-commerce nexus. The hypotheses explore the mechanisms that connect infrastructures created by social and cultural contexts with a firm’s e-commerce adoption.

This study also moves beyond dichotomous "adoption versus non-adoption" and also focuses on width and depth of adoption. Although width and depth issues are not explicitly discussed in each proposition, for e-commerce adopter firms, normative and cognitive factors may increase or decrease width and depth of adoption. This article examined how normative and cognitive institutions influence diffusion speed of the Internet and hence e-commerce as well as e-marketers’ ability and innovativeness in targeting potential consumers. Our analysis indicates that normative and cognitive institutions, in spite of being less visible than regulatory institutions, are no less important in shaping the diffusion pattern of e-commerce. The success of firm’s e-commerce initiative is a function of its ability to understand ethical and professional codes of conduct related to e-commerce, nature of social dimension in business relationships, and consumers’ functional and emotional affinity with the Internet and e-commerce technologies.

The article thus digs deeper than obvious economic and infrastructure related factors to achieve this goal. We hope the proposed research propositions and associated reasoning should bring new impetus to theory development and improved recommendations to e-commerce practitioners.

Limitations and directions for future research

Several limitations of this research must be recognized in a balanced discussion of its findings. One limitation of our study concerns the lack of quantifiable measurements and empirical data. An additional limitation of this research is that we did not include the influence of formal institutions on individuals' and firms' e-commerce adoption behaviors. Another limitation of this research is that our dependent variables do not capture how and why organizations adopt e-commerce. As a further limitation of our framework, one might argue that the elements in the model fail to capture some important aspects of informal institutions. We readily acknowledge that there may be other theoretical explanations regarding institutional influences on organizations' and individuals' adoption of the Internet and e-commerce.

Both the contributions and limitations of this research merit attention and provide possible directions for future work. Further research is needed to validate, extend, refine, and assess the generalizability of the framework presented in this paper. A logical next step would be to empirically test the propositions offered in this paper. Measuring the dependent variables-- width and depth of e-commerce adoption-- is a straightforward exercise. For instance, the width of e-commerce adoption can be measured by the number of different e-commerce related activities a firm is engaged in (e.g., providing price information, advertising, responding to customer inquiries, providing shipping information, providing customer support online, providing after-sale services, conducting market research, etc.). Similarly, the depth of e-commerce adoption can be measured by as the amount of usage of the e-commerce technology (e.g., e-commerce revenue). For H_1 , the number and strictness of codes of conduct designed by professional organizations to define firms' socially responsible way of Internet use to market their products to consumers can be used as an independent variable. Similarly, the strength of social dimension in business relationships (H_{2a} and H_{2b}) can be measured by Hofstede's [1980]

individualism-collectivism dimension. It should be noted that collectivism emphasizes the goals of the group over those of the individual. Surveys can be conducted to measure consumers' degree of preference to face-to-face over Internet based communications (H₃). Likewise, an economy's credit card penetration rate can be used to measure the degree of digitization of economic transactions (H₄). One way to measure a country's degree of hostility toward the West (H₅) is to consider the country's agreement/disagreement with the U.S. in the United Nations. Dillon and Goldstein [1984, p. 76] measured this construct as "percentage of votes in agreement minus percentage in opposition". Finally, for H₆, per capita country level domain names or per capita native language websites can be used as explanatory variables.

Future research might also examine the effects of additional institutional factors on firms' and individuals' adoption of e-commerce. Survey instruments designed in other fields such as entrepreneurship [e.g., Busenitz et al. 2000], which capture a broad range of institutional elements, can be modified and used for primary data collection.

Another intriguing avenue for future research is to examine organizations' perceptions of various institutional factors in their decisions related to e-commerce adoption. In-depth qualitative interviews can be very helpful in understanding how and why organizations adopt various forms of e-commerce. It would also be interesting to examine how such perceptions vary across different types of organizations.

Finally, future research might also explore how institutional changes in an economy influence the e-commerce pattern. Prior research indicates that various components of institutions, despite their connotation of stability, are subject to change [Scott 2001, p.48]. An examination of how such changes affect e-commerce patterns in an economy might be worthwhile target of study.

Figure 1: Normative and cognitive institutions affecting a firm's e-commerce adoption behaviour

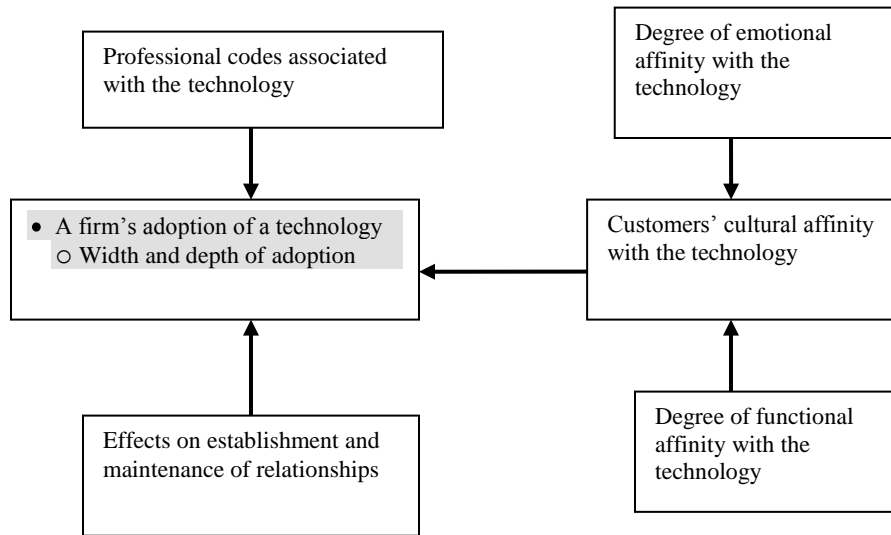


Table 1: Constructs used in the propositions

Type of construct	Construct	Explanation
Business related	Ethical and professional codes of conduct (H ₁)	The codes attempt to protect citizens' privacy constrain a firm's e-marketing initiatives.
	Emphasis on social dimension in business relationship (H _{2a}) vs. efficiency (H _{2b})	The degree of precedence of established relationships over Internet-driven efficiency may hinder a firm's e-commerce adoption.
Consumer related	Consumers' emphasis on personal and face-to-face communications (H ₃)	Incompatible with the Internet's asynchronous and relatively impersonal nature of communication.
	Consumers' degree of digitization of economic transactions (H ₄)	Digitization is associated with low transaction costs associated with e-commerce.
	Consumers' degree of hostility toward the Western culture (H ₅)	Represents a lack of cultural affinity and hence a barrier to Internet and e-commerce adoption.
	Degree of availability of e-commerce related technologies and products that are compatible with the consumer's culture (H ₆)	Increases cultural compatibility.

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