



Effect of Trust on the Success of IT Reform in Chile

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ABSTRACT

In an era of communication and information led by the Internet, the Chilean government understands that technological reform is imperative in order to be part of the global market. The government has recognized that many areas affecting electronic commerce are necessary to reform. However, the area related to trust, which in developed countries is seen as one of the most important barriers to the expected growth of electronic commerce, seems to be taken for granted. In this paper we examine how trust could affect the success of the technological reform project in Chile, which factors are most important in developing trust, and how to measure their effect. The model is based on the Technology Acceptance Model (TAM) extended to explain the acceptance of electronic commerce in Chile.

INTRODUCTION

Chile is a country in the process of development, and the government understands that the neo-liberal or free-market economic model, together with the fast development of communication, is one of the causes of the growing differences between rich and poor countries (Ocampo, 2000). Leaders believe that if the country does not join the global market, its destiny is poverty and misery, as clearly stated in the President's speech on the 21st of May 2002: "The world is living a particular moment of innovation and change and Chile has to participate in it, if we want to obtain the benefit to our citizens. Adequate tools exist but need to be implemented. This is not an option, those who do not do it are condemned to stagnation, which means to perpetuate poverty and underdevelopment" (Gobiernodechile, 2002). The country context in which this reform needs to be implemented is clear, but the idea is difficult to embrace at the level of the individual citizen. We hypothesize that a major obstacle to technological reform in Chile is lack of trust, not only in technology but as a deeply rooted facet of the culture. This paper focuses on the social capital (Fukuyama, 1999) needed for technology development in Chile and the capacity of the country to build trust.

Chilean society is characterized by a high degree of distrust (Valenzuela and Cousiño, 2000). People do not trust each other, a cultural characteristic shown by a lack of engagement with those outside of the extended family. Social life revolves around a close family circle. Industry in Chile is mainly comprised of small and family enterprises, leading to a low level of association at the industry level as well (Fukuyama, 1995, Sept/Oct 1995, 1999). There is low citizen participation in public activities, as shown by the low number of newly-registered people to vote. Some of these characteristics can be traced to the relative isolation of the country geographically, extended families living near to each other, and to a turbulent history. The efforts of the current government to overcome corruption during the last decades are seen as a positive factor to the Chilean capacity to build trust.

In Chile the necessary democracy to build institutions is threatened by distrust and will require a long time period to be consolidated. Justice and legal systems are antiquated and slow for citizen realities and needs. The historical background can explain the cultural mistrust in Chilean

society, compared with United States where the historical background was a relatively coherent development process between legal, economic and socio-cultural value models. This resulted in a solid, consistent and consolidated platform that permitted the U.S. to grow quickly while supporting the stress imposed by the increasing speed of change. In the Chilean case the political, economic and socio-cultural value models are not fully coherent, principally because they have been imported instead of being the result of a democratic consensus. The consequence is they are not deeply consolidated in society, and that makes it difficult to predict the impact of the application of the modern post-industrial and global model (Garretón, 2000).

In Chilean society mistrust is an attitude that, although natural in human interactions, is also considered a socio-cultural characteristic (Robles, 2002). Nevertheless, a growing level of association is detected in the commercial sector. One possible explanation is that Chileans are more open to trust each other to produce and compete in the market when there are clear rules to follow (Valenzuela and Cousiño, 2000). Societal problems that Chilean society is still facing are large salary differences and poverty (Ocampo, 2000) that could affect the acceptance of IT reform as a priority reform, threatening the confidence in government goals. In this context the impact of IT reform will be inequitable in Chilean society, and its implementation could be seen as a factor that will increase the existing socio-economical differences. This situation can cause lack of involvement and commitment with technology reform in Chilean society.

In this paper we propose a model to examine the effect of trust on the desired technology reform in Chile. We first develop a definition of trust, and then review literature that has examined factors needed to build trust in technology. We then propose a model based on the Technology Acceptance Model and state our hypotheses. Finally, we propose a methodology to validate our model as part of our continuing research into technology reform in Chile.

CONCEPT OF TRUST

"Trust is a fundamental basis for human interaction. Interaction on the Internet between heterogeneous user groups/types necessitates new forms of trust-building. While trust in IT can be considered at the levels of technical reliability and error-free technology, it becomes a cultural issue when humans interact through IT, especially in e-commerce" (Ruhmann, 2003). Since there is a little consensus about the meaning of trust, we will understand trust as: "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other party will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party" (Mayer et al., 1995). This definition will be used to develop the model.

SUCCESSFUL FACTORS IN BUILDING TRUST

We are identifying distrust as the primary reason that e-commerce has not reached its expected growth in Chile. Many studies have identified the factors responsible for human distrust toward the use of

technology and e-commerce, and some of them can be targeted to build or re-build trust. The task is difficult if we consider that in e-commerce technology substitutes for one important source of trust: the face to face interaction between business people. The more a business becomes "invisible," the more important trust becomes. At the same time, it is increasingly difficult to build trust. This being the case, how can trust even begin to grow in relationships of decreasing duration? Furthermore, how can trust develop in knowledge and service intensive products that characteristically cannot be tested before utilization? The client has nothing more to rely on than the trademark or brand name. We can thus assume that in the future a business' trademark will fulfill the function that value once fulfilled in pre-modern society (Norbert, 2002).

Since trust derives from the interplay of various factors in which social psychology, communication and technology are all involved; rationality does not necessarily play a role in the trust process. Thus it would be an error to approach the problem of trust through means based only on technology (Lutz, 2003). The eCommerce Trust Study (Robles, 2002; Usable Web, 2003) claims that trust springs from a well know brand, effective usable navigation and strong fulfillment, including privacy, effective order processing and good handling of returned goods. Among these factors fulfillment is seen as the most important trust-builder. Some of the barriers reported in the adoption of electronic commerce today are lack of awareness about the opportunities offered by electronic commerce and lack of trust in network security, although both are possible to overcome through adequate and updated commerce legislation (Owens, 1999; Shim et al., 2000).

According to Johnson (1999) there are actions that can be taken in order to reduce uncertainty in the user. First, educate the user about privacy and security issues. Second, develop a legislative framework that protects trading partners. Third, create the perception that technology can also be applied to protect the user, for example, through encryption mechanisms. The user of information technology systems, the Internet, information systems, software and technology in general, will trust the systems when they use it as Cheskin (Cheskin, 2003; Walker, 2003) concluded in his archetypical study: "Trustworthiness is about experience over time," where the most relevant and impacting experience is the first one.

Legal information is seen as an important way to generate trust and allow e-commerce to grow. "Providing legal information in electronic form at no charge is the best means of assuring a market for the information. It helps identify consumers and create the demand and interest of those who do not have experience with the technology and content of the Internet" (Hillis, 2003). This is the main strategy of developed countries to build trust, that is, providing a secure framework of legality. Advanced countries are developing the legal structures to make possible the unimaginable ways to conduct business via the Internet.

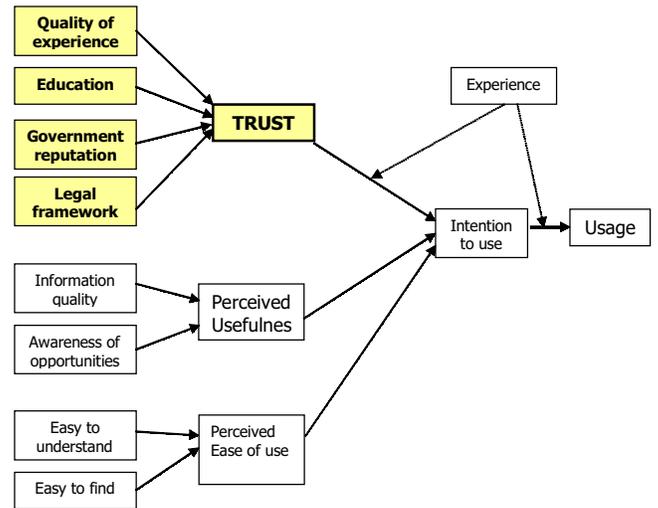
EXHANCED TECHNOLOGY ACCEPTANCE MODEL (TAM)

The model that we developed to explain the use (or lack thereof) of technological tools that the Chilean government wants to implement through IT reform is based on the Technology Acceptance Model (Davis, 1989), adapted to emphasize the trust requirement and considering the elements needed to build trust, that have the most impact in the Chilean case.

The elements we consider most relevant to building trust in our model are:

- Quality of experience: a positive result in the first try of any service already implanted by governmental IT reform;
- Education: training needed to inculcate the suitable set of social values to build trust in the new generation;
- Government reputation: equivalent to trademark and familiarity factors in building trust;
- Legal framework: existence of privacy and security policies that create security and protection perception in users.

Figure 1: Extended Technology Acceptance Model (Davis, 1989; Chiravuri and Nazareth, 2001) adapted to the Chilean case.



The proposed model for the Chilean case is similar to that of Chiravuri and Nazareth (2001) and is presented in Figure 1.

Based on the importance of trust in the context of technology acceptance and usage, the following hypotheses are posited:

H1: Cultural distrust will negatively affect the usage of the technology services that the Chilean government is implementing through IT reform.

H2: The existence and knowledge of an appropriate and coherent legal framework for e-commerce will positively impact trust in transaction and use of services through the Internet as a goal in government IT reform.

H3: The quality of experience, principally the first interaction, will directly affect the intention to use and trust the e-services implemented by IT reform.

PROPOSED RESEARCH METHODOLOGY

This research will employ questionnaires directed to the Chilean citizen designed to measure the degree of knowledge about IT reform and about the services already implemented in websites. Questions will address their experiences and the amount of knowledge of existing legal frameworks. We will be interested to find out their opinion of the importance of trust in the actual social context.

Surveys will be undertaken of websites implemented under IT reform which offer information and services. Statistics such as the number of visits for information only and the number visitors who have used the service will be collected. For each website we will develop comparisons of the number of visits to websites versus time (monthly) and number of people who have used the services versus time (monthly). These graphics will be used to measure the impact in usage of different government initiatives such as the approval of digital signature that is intended to increase trust and consequently the usage of e-services. The information obtained in surveys and questionnaires will be compared to ensure the quality of the data, especially information that pertains to our hypotheses.

IMPLICATION AND CONCLUSION

This research will give us a quantitative method to measure the impact of the different elements seen as trust builders in the actual state of the research, and through them validate our hypotheses. The extended Technology Acceptance Model that incorporates trust will contribute to a better understanding of how trust can impact the intention to use the technology. The model with the inclusion of trust

as a critical element will give us the possibility to evaluate not only the existing state, but the new initiatives implemented by the government to accomplish the main objective - the fundamental use of technology in Chilean culture.

REFERENCES

- Cheskin (2003). Accessed on April 14, 2003, from <http://www.cheskin.com/p/ar.asp?mlid=7&arid=40&art=0>.
- Chiravuri, A. and Nazareth, D. (2001). Consumer trust in electronic commerce: An alternative framework using technology acceptance. *Proceedings of the Seventh Americas Conference on Information Systems*, 781-783.
- Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13 (3), 319-340.
- Fukuyama, Francis (1995). *Trust: The Social Virtues and the Creation of Prosperity*. New York: Free Press.
- Fukuyama, Francis (Sept/Oct 1995). Social capital and the global economy. *Foreign Affairs*. Accessed on August 20, 2003 from <http://www.foreignaffairs.org/19950901faessay5067/francis-fukuyama/social-capital-and-the-global-economy-a-redrawn-map-of-the-world.html>.
- Fukuyama, Francis (1999). Social capital and civil society. Delivered at the International Monetary Fund Conference on Second Generation Reforms. The Institute of Public Policy, George Mason University, October 1. Accessed on June 10, 2003, from <http://www.imf.org/external/pubs/ft/seminar/1999/reforms/fukuyama.htm>.
- Garretón, Manuel Antonio (2000). La sociedad en que Vivi (re)mos (The society where we (will) live). In *Sociology Introduction to the Changing Century*, LOM Publishing House.
- Gobiernodechile (2003). Accessed on April 25, 2003, from <http://www.gobiernodechile.cl>.
- Johnston, D. (1999). Global electronic commerce-realizing the potential. *Masters of the Wired World*, A. Leer (ed.), Financial Times Pitman Publishing, London, 228 - 237.
- Hillis, B. (2003). Electronic commerce and law on the Internet. Accessed on May 10, 2003, from <http://www.llrx.com/features/econlaw.htm>.
- Lutz, Becker (2003). Principle Trust – Notes regarding a Problem of the Networked World. Accessed on April 16, 2003, from http://www.code.uni-wuppertal.de/uk/trust/bio_sum/summain.html.
- Mayer, R., Davis, J. and Schoorman, F. (1995). An integrative model of organizational trust. *Academy of Management Review*, 20 (3), 709-734.
- Norbert, Bolz (2002). **Oder: Eine Kampfschrift der neuen Reaktionäre**. Accessed on April 23, 2003, from http://www.single-generation.de/kritik/debatte_managerehe.htm.
- Ocampo, José Antonio (2000). Equity, development and citizenship. ECLAC (Economic Commission for Latin America Countries), Period of Sessions, 28, México, DF, 3-7 April, LC/G.2071(SES.28/3), United Nations.
- Owens, J. (1999). Electronic commerce: Taxing times. *Masters of the Wired World*, A. Leer (ed.), Financial Times Pitman Publishing, London, 286-295.
- Robles, J. Amado (2002). Estudio mundial de valores (Mundial study of values). *Ethic in Economy and Development*, National University, MORI 2002, Accessed on April 10, 2003, from <http://www.jp.or.cr/catedra/index.html>.
- Ruhmann, Ingo (2003). National Ministry for Education and Research. Accessed on April 16, 2003, from http://www.code.uni-wuppertal.de/uk/trust/bio_sum/biomain.html.
- Shim, J. P., Shimkin, M. G. and Bartlett, G. W. (2000). NetLaw in e-Commerce. *Communications of the Association for Information Systems*, September, 4(6).
- Usable Web (2003). Accessed on April 18, 2003, from <http://usableweb.org>.
- Valenzuela, Eduardo and Cousiño, Carlos (2000). Sociability and associativity: CEP (Centre of Public Studies), Essay of sociology coparative. *Public Studies n°77*, Accessed on April 29, 2003, from <http://www.cepchile.cl/>.
- Walker, D. (2003). Trust: it's about good experience over time. Accessed on August 8, 2003, from http://www.shorewalker.com/printpages/trust_sites-1.html.

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