

Association for Information Systems AIS Electronic Library (AISeL)

AMCIS 2000 Proceedings

Americas Conference on Information Systems
(AMCIS)

2000

Resource Transfer in the Adoption of Electronic Commerce in Mexico

Martha Garcia-Murillo
Syracuse University, mgarciam@syr.edu

Follow this and additional works at: <http://aisel.aisnet.org/amcis2000>

Recommended Citation

Garcia-Murillo, Martha, "Resource Transfer in the Adoption of Electronic Commerce in Mexico" (2000). *AMCIS 2000 Proceedings*. 275.
<http://aisel.aisnet.org/amcis2000/275>

This material is brought to you by the Americas Conference on Information Systems (AMCIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in AMCIS 2000 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

Resource Transfer in the Adoption of Electronic Commerce in Mexico

Martha García-Murillo, Syracuse University, School of Information Studies, mgarciam@syr.edu

Abstract

This paper identifies some of the obstacles that Mexican firms face in their efforts to start businesses using the Internet. In particular it addresses the issues of lack of financial resources, poor access to information infrastructure, and lack of consumer credit. The paper applies the resource-based theory of the firm, institutional economics, and Porter's national competitive advantage to argue that small firms and entrepreneurs that want to start a business in Mexico should do so by taking advantage of the resources available in other countries. In a sense they can transfer some of the resources and institutions they lack which, in the case of Mexico, come primarily from the United States.

Introduction

The purpose of this paper is to identify actions that Mexican companies have taken to overcome the obstacles they face in their attempt to implement electronic commerce. The paper applies the resource-based theory of the firm, institutional economics, and Porter's diamond to argue that small firms can overcome obstacles by taking advantage of the limited resources available at home as well as those available in other countries. The research is guided by the following question: given the multiple obstacles that have been widely identified, how are the early movers able to overcome the difficulties? Lack of capital resources, access, and household credit pose serious challenges for companies that want to start a new business using the Web or for established firms to expand their business to the Internet. The paper is organized in four parts. The first one outlines the theoretical background used for the analysis of data. The second presents the methodology. The third focuses on the specific circumstances of Mexico, identifying the obstacles and the way they affect the implementation of electronic commerce in the country. The last one draws conclusions.

Literature Review

Lack of resources is a major factor affecting the implementation of electronic commerce by Mexican firms. For this reason, this study relies on theories related to resources. The resource-based theory of the firm stresses the importance of resources in attaining sustainable competitive advantage. Resources, as defined by Shelby Hunt (1997), "are the tangible and intangible entities available to the firm that enable it to produce efficiently and/or effectively a market offering that has

value for some market segment(s)." As is prescribed by the theory, a firm should develop resources which create value and are rare, hard to imitate, and non-substitutable (Barney, 1991). The purpose is to create resources that are difficult to duplicate and lead a company to consistently outperform its rivals (Grant, 1991). The implication of the theory is that whenever a firm does not have all the resources to succeed it should try to obtain them. Resources can be obtained over time or can be acquired. (Dierickx, et al., 1989). One way of obtaining resources is through alliances. (Hamel 1991; Kogut 1988; Lei and Slocum, 1992). The objective is to acquire assets that are readily available in one's own country by making alliances with foreign firms. Unfortunately this option is only available to more established firms that can give something in exchange to the potential partner. It can be a way of overcoming the lack of resources available in a firm's home country (Porter, 1990). Nonetheless, lack of resources is only one aspect that firms have to overcome. Another aspect corresponds to country endowments. As stated by Porter, several factors available at home can make an industry competitive internationally:

- Factor conditions: the presence of specialized pools of skills, technology and infrastructure.
- Demand conditions: the presence of sophisticated and demanding local clients.
- Related and supporting industries: the presence of a critical mass of capable local suppliers of specialized inputs.
- Firm strategy, structure, and rivalry: the presence of capable, committed, fiercely competing local rivals.

Porter did not, however, account for a country's institutional environment, which can also have a significant impact on an industry's success. Institutions,¹ as defined by Jeffrey Nugent and Yifu Lin (1988), are "A set of humanly devised behavioral rules that govern and shape the interactions of human beings, in part by helping them to form expectations of what other people will do. Institutions can consist of both formal and informal entities." Evidence from unrelated studies about institutions reveal that conflicting, bureaucratic, and complex formal regulations can lead to poor industry performance (De Soto, 1989). It is therefore clear that to

¹ Institutions and rules will be used interchangeably in this paper.

have a successful economy there should be rules that facilitate commercial transactions and do not impede them. Rules and regulations should not be confused with protectionism and direct financial support to industries. Even though governments of less developed countries have implemented rules to protect their industries, the record of these policies is mixed at best (Krueger and Tuncer, 1982). Institutions should be facilitators that allow industries to flourish in the presence of competition. The problem for firms that operate under difficult circumstances is that on their own they cannot make the macroeconomic changes necessary for their success. For example, Porter's recommendations to improve a country's endowments are to: (a) focus on specialized factor creation through the use of specialized educational programs; (b) avoid intervening in factor and currency markets that aim to reduce costs; (c) enforce strict product, safety, and environmental standards, which will create pressure on companies to improve their quality; (d) sharply limit direct cooperation among industry rivals because, although it has been argued that it reduces redundancy, the ultimate result would be under-investment of R&D which could lead to the industry's demise; (e) promote goals that lead to sustained investment of human skills, innovation, and physical assets; (f) deregulate competition; (g) enforce strong domestic antitrust policies to foster innovation; and (h) reject manage trade. Although these recommendations are key to enhance the country's economic conditions, firms have little power to make these changes. Porter does provide some courses of actions for firms. Specifically he recommends firms to: (a) create pressure for innovation; (b) seek out the most capable competitors as motivators; (c) establish early warning systems to improve before it is too late; (d) improve the national diamond by forming clusters of domestic suppliers and related industries; (e) welcome domestic rivalry; (f) globalize to tap selective advantages in other nations; (g) use alliances only selectively; and (h) locate the home base to support competitive advantage. These recommendations, nonetheless, rely on the assumption that a company is already well established and has a minimum set of resources to take some action in the creation of strong industrial clusters. Recommendations for smaller, less endowed companies or even for entrepreneurs that want to start a business are not considered in Porter's analysis. The question is then what these firms can do to survive under difficult local conditions. Contrary to one of Porter's recommendations for firms, this paper advocates not only the use of domestic resources but also other countries' resources in the early stages of firm development. At this point the reader might ask: how can a small or start-up company take advantage of the resources of other countries if it is not a large multinational corporation? This would have been more difficult ten years ago but today international communications networks enable a small firm to be a

transnational within the confines of its own territory. The Internet allows institutional and resource transfer so that small firms in other countries can take advantage of them.

Methodology

The data collected for this paper consists of personal and telephone interviews with 22 individuals from companies in Mexico that are considered key to electronic commerce. Interviewee selection consisted of locating the names of individuals in trade publications. This process tended to identify the most important people in the field. Companies included banks like Banamex, the biggest bank in Mexico; PROSA, the leading financial institution in the country for the aggregation of financial services; IBM Mexico; Intel Mexico; Supersoftware, the first Mexican software company on the Internet; StarMedia the leading Spanish portal in Latin America; and Select IDC, the leading consulting company for electronic commerce indicators in Mexico. Additional data was collected from secondary sources and the analysis of 50 Mexican web sites that were selected at random from the Yahoo Mexico business directory. Interviews were transcribed and analyzed using content analysis software. The selection of questions for the interview involved inquiry about the factors that were affecting the implementation of electronic commerce in Mexico. The interviewees themselves identified obstacles and enablers. The following questions inquired about the factors that have helped overcome the identified obstacles.

Electronic Commerce in Mexico

Mexican entrepreneurs face important obstacles in their attempts to start new businesses. This paper identifies three factors that limit the growth of electronic commerce related business: the lack of capital, access, and consumer credit.

To start a new business an entrepreneur must have starting capital. The amount does not need to be large but it should be steady. The initial capital will allow her to acquire basic resources while future funds will allow growth of the business. In Mexico there are few feasible sources of funding. Banks, the most appropriate institutions to grant credit, are not a viable option due to the high interest rates that have prevailed in Mexico since the 1994 currency crisis. From 1994 to 1995 the rate increased from 18.9 to 57.2. This dramatic increase led to many loans being unpaid. Banamex, the largest bank in Mexico, reported in its 1997 annual report that more than half of its outstanding loans had passed their due dates. Additionally even if a firm wanted to apply for credit it would have been difficult to obtain it. Because of the large number of unpaid loans, Mexican banks are particularly reluctant to assist risky enterprises. The government does not provide either adequate sources of funding. Its role has been primarily to provide orientation.

Under such limitations it is difficult for an individual or group of individuals to survive in an enterprise that does not yield profits for more than a year. In the absence of viable sources of credit, Mexican firms have taken advantage of resources at home and abroad. At the most basic level firms can avail themselves of resources by complementing their income through offering goods or services that are easier to set up and provide a steadier flow of capital.

An example is Mexview, a firm started by a recent college graduate. His web business attempts to generate money from advertising and virtual tours of cities in Mexico. The company intends to develop virtual tours of hotels, which will pay to be featured on Mexview's site. Alternatively companies, such as car rental agencies, can sponsor virtual tours of a particular city. Mexview cannot yet make profits on these services so it offers web hosting and management for other companies. Another company, Supersoftware, is a retail software store that finances its virtual store from the sale of products in the physical store. Another alternative for start-ups is the willingness of some suppliers to provide favorable payment options. IBM Mexico, for example, designs electronic commerce solutions and provides financing for these projects. Companies that have successfully overcome the initial obstacles and have the potential of becoming successful are taking advantage of financial resources available in the United States from venture capitalists. Those who believe in the potential of the Latin American market have been eager supporters of a few start-ups. This source is, however, limited to relatively few firms.

The problem of lack of access is related to physical network connections and computer penetration. While in the United States 70% of homes have a computer in Latin America only 2.82% of homes have one (El Universal, Nov. 4, 1999). Such low penetration is explained by the low annual income of Mexican families, which has been calculated at an average of \$4,364.50 (Reforma, Nov. 4, 1999), and the cost of computers, which in Mexico range between \$1,400 and \$1,900 (The News, March 24, 1999). According to Select IDC only families that earn more than eight times the minimum wage can afford a computer. The price of connection to the Internet varies between \$15 and \$20 per month. Currently there are only 1.5 million people with access (Reforma, Feb. 21, 2000). In the private sector, computers are more common in large corporations, which also have dedicated access to the Internet. Smaller firms are less likely to have computers and if they have access to the Internet it is done through dial-up. For an entrepreneur with limited resources the

costs of setting up a site are too expensive. The purchase of a server, its maintenance, and connection to the Internet is a major expense. It is also difficult to obtain services that provide a fast and reliable connection to the site. In this respect, the infrastructure available in the United States has provided Mexican entrepreneurs with a viable alternative to the high cost options available at home. Mexican entrepreneurs have found that it is cheaper and more reliable to rent spaces from hosting services in the United States. These American companies provide not only faster and more reliable connections to the site but also cheaper monthly fees than similar Mexican alternatives. The Mexican firm simply has to work on the site offline and then makes a dial-up connection to the Internet to send its files to the server using ftp. Larger Mexican firms have taken some initiative to foster the penetration of computers as well as access to the Internet. The incumbent telephone company adopted one of these solutions. Telmex, in cooperation with Prodigy, provides consumers with a computer and a connection to the Internet. The initial payment covers part of the cost of the equipment, which varies from \$100 to \$500 depending on the equipment chosen by the customer and then 24 monthly payments of \$50. After the first two years the buyer owns the computer and the only payment to be made is that of the Internet connection. This last aspect may soon change due to the recent announcements by Terra, a subsidiary of the Spanish telephone company Telefonica; IFX, a Mexican company operating through Tutopia.com; and Gratis1, a joint venture of StarMedia, Chase, CMGI, and 1stUP to allow people connect to the Internet for free (El Financiero, March 3, 2000). As well, Bancomer, the second largest bank in Mexico, recently announced that it would reduce the opening hours of 1,360 of its branches. The objective is to foster Internet banking (El Universal, Feb. 22, 2000).

Another economic factor that has affected the more widely implementation of electronic commerce in Mexico is the low penetration of credit cards among Mexican consumers. The currency crisis of 1994 and, indirectly, the long recession and high inflation that the country experienced during the 1980s and early 1990s are the primary cause of the lack of credit cards. During the 1994 financial crisis interest rates rose in Mexico to levels that made it difficult for people to pay using credit. People unable to pay such high rates and fees pay most of their purchases using cash. Table 1 shows the changes in interest rates and prices in the 1990s. Credit card rates were considerably higher.

Table 1
Mexican Economic Indicators

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Consumer Prices	18.8	11.9	8.3	7.1	52	27.7	15.72	18.61	12.3
Nominal Interest rates (percentages)	24.9	22.6	21	18.9	57.2	36.8	24.8	26.9*	25*

Sources: United States-Mexico Chamber of Commerce, Latin Investor, Banco de Mexico. * = projected

While interest rates have decreased in recent years and there is wider use of credit cards, banks have been slow to embrace this new medium to allow verification of credit cards on-line due to the problems associated with unpaid balances and fraud. Last year the Mexican Hotel and Motel Association calculated the loss associated with credit fraud in the form of card clones to be \$700 million (El Universal, September 6, 1999). Similarly the Mexican Association of Travel Agencies stated that over 20 travel agencies had to close due to fraudulent credit cards (El Universal, October 13, 1999). As stated by Ramon Santoyo from Telelink (Interview, January 5, 2000), Mexican banks are afraid of opening yet another channel for fraudulent activities. Faced with this possibility, the major Mexican banks have delayed the provision of services to authorize credit card transactions on-line. They have started to provide this type of service only to the largest retail stores in Mexico, which is unfortunate because electronic commerce has been driven by entrepreneurial activity. Added to the lack of credit on the part of the population only 51% of those who have a credit card are willing to use it on the Internet (Reforma, Sept. 27, 1999).

The current solutions to this problem are primitive and rely on traditional payment schemes. Most commonly merchants allow multiple options for payment. Buyers can pay using cash at the time of delivery or deposit to the firm's bank accounts and send the receipt to the store for subsequent delivery of the product. At a more basic level the customer can also pick up the product and pay at the store. In order to serve the portion of the population that is able to pay by credit card, Mexican firms are taking advantage of the resources available in the United States. Some are opening accounts in American banks that will authorize credit card payments on-line. U.S. banking institutions have been better at accommodating the needs of small firms.

Mexican start-ups, facing an underdeveloped home market, are turning to the United States. A large number of Mexican-American buyers have much higher incomes than their Mexican counterparts. The segment of the U.S. population of Mexican background has been projected to grow from 8 million now to 12.48 million by 2015 (InterPress Service, July 14, 1999). As was

indicated by Marina Cardoso (Interview, Feb. 24, 2000) a founding member of Flowernet and currently of Regalanet, a substantial percentage of the deliveries in Mexico were made in poor neighborhoods but were ordered from the U.S. This is not surprising considering the large amount of money that Mexicans in the U.S. send annually to their families in Mexico, which has been calculated at \$5 billion (The Baltimore Sun, Aug. 11, 1999). The research from the sites also indicates that a large number of Mexican companies on the Internet are targeting the U.S. market. The successful use of this resource could help generate offerings of products to the Mexican population, which has not embraced this new means because of lack of access.

Conclusion

This paper presents some of the obstacles that Mexican firms face when trying to start a business on the Internet. It recognizes that lack of resources or the possibility of obtaining resources locally can limit their ability to succeed in this new medium. In contrast to the resource-based theory of the firm and Porter's recommendations on the competitive advantage of nations, this paper argues that small and start-up businesses should take advantage of both local and foreign resources to complement those available at home. By succeeding abroad they will be better able to prosper in the Mexican market once it becomes sufficiently developed.

References

- "Americas Business Forum Predicts Boom in E-Commerce," *El Universal*, November 4, 1999.
- "Bancomer Reduces Branch Opening Hours to Encourage Electronic Banking," *El Universal*, February 22, 2000.
- "Boom Expected in Internet Use After Introduction of Free Services," *El Financiero*, March 3, 2000.
- "Credit Card Scams Cost 700 Million Pesos a Year, Hotels Demand Action," *El Universal*, September 6, 1999.
- "E-Commerce Still Facing Major Problems in Mexico, Eight Percent of Population Uses the Net Daily," *Reforma*, September 27, 1999.
- "Free Internet Offers Unlikely to Affect Pay Services," *El Financiero*, March 7, 2000.
- "Income Per Capita Still Falling Despite Supposed Growth," *Reforma*, November 4, 1999.
- "Mexican Virtual Stores Failing to Capture Market, 75 Percent of Sales Go Abroad," *Reforma*, February 21, 2000.
- "Only 3 Million Mexican Families Can Afford Personal Computers," *The News*, March 24, 1999.
- "Travel Agencies and Airlines Argue over Credit Card Frauds," *El Universal*, October 13, 1999.
- Banamex, Annual Report 1997.
http://www.banamex.com/banamex/rep_fin/pdf_re/ia4.pdf.
- Banamex, *Annual Report*, 1997.
http://www.banamex.com/banamex/rep_fin/pdf_re/ia4.pdf.
- Banco de Mexico,
http://www.banxico.org.mx/public_html/inveco/infecon/cuadros/cra4.html.
- Barney, Jay B. "Firm Resources and Sustained Competitive Advantage," *Journal of Management* (17), March 1991, pp. 99-120.
- Cevallos, Diego. "Population-Mexico: No End In Sight To Illegal Immigration To U.S." *Inter Press Service* July 14, 1999.
- De Soto, Hernando. *The Other Path*, New York, Harper & Row, 1989.
- Dierickx, Ingemar, Cool Karel & Barney Jay B. "Asset Stock Accumulation and Sustainability of Competitive Advantage," *Management Science* (35), December, 1989, pp. 1504-1511.
- Grant, Robert M. "The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation," *California Management Review* (33), Spring 1991, pp.114-135.
- Hamel, Gary. "Competition for Competence and Inter-Party Learning within International Strategic Alliances," *Strategic Management Journal* (12), Summer Special Issue, 1991, pp. 83-103.
- Kogut, Bruce. "Joint ventures: Theoretical and Empirical Perspectives," *Strategic Management Journal* (9), July-Aug. 1988, pp. 319-332.
- Krueger, Anne and Tuncer, Baran. "An Empirical Test of the Infant Industry Argument," *American Economic Review* (72:5), Dec. 1982, pp. 1142-1152.
- Latin Investor,
<http://www.latininvestor.com/tables/inflacion.htm>.
- Lei, David and Slocum, John W. Jr. "Global Strategy, Competence-Building and Strategic Alliances," *California Management Review*, (35:1) Fall 1992, pp. 81-97.
- Nugent, Jeffrey and Justin Yifu Lin, "Institutions and Economic Development," in Jere Behrman and T.N. Srinivasan eds. *Handbook of Development Economics* (3A), New York: North-Holland, 1995
- Porter, Michael E. *The Competitive Advantage of Nations*, London, Macmillan, 1990.
- Quinones, Sam. "In Mexico, sharing their wealth," *The Baltimore Sun*, August 11, 1999.
- Shelby D. Hunt, "Resource-Advantage Theory: An Evolutionary Theory of Competitive Firm Behavior?" *Journal of Economic Issues* (31:1), Mar 1997, pp. 59-78.
- Telmex, "Prodigy Internet Plus,"
<http://www.telmex.com.mx/casa/entucasa.htm>.
- United States-Mexico Chamber of Commerce,
<http://www.usmccoc.org/eco1a.html#3>.