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DEVELOPING AN INSTRUMENT TO MEASURE THE INTENTION TO USE ELECTRONIC COMMERCE IN SMALL AND MEDIUM SIZED BUSINESSES IN CHILE

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Abstract

Due to the potential benefits that electronic commerce (e-commerce) may provide to small to medium sized enterprises (SMEs) and the fact that a small number of SMEs are currently using it, the major contribution of this paper is the development of an instrument to study the initial adoption of e-commerce in SMEs in Chile. This instrument could also help other developing countries to determine the e-commerce adoption intention. The instrument is developed by using Ajzen's Theory of Planned Behavior (TPB) that suggests the steps to elicit important constructs from a target population. A detailed explanation of the elicitation process is offered and the final instrument is presented.

Keywords: Theory of Planned Behavior, Theory of Reasoned Action, electronic commerce adoption

Introduction

Even though the Internet has existed for decades, e-commerce has become a reality only with the development of the World Wide Web (WWW) (Napier et al., 2001). E-commerce, is defined here as “*the process of buying and selling products or services using electronic data transmission via the Internet and the WWW*”. Examples that do not fit this definition include electronic publishing to promote marketing, advertising, and customer support. The mere use of electronic mail or the use of a web site for electronic publishing purposes does not constitute e-commerce according to the definition above.

E-commerce provides many benefits not only to sellers but also to buyers. For example, Napier et al. (2001) pointed out that by using e-commerce, sellers could access narrow markets segments that may be widely distributed geographically, thereby extending accessibility globally. Buyers could also benefit from accessing global markets and having a larger product availability from a wider variety of sellers. It is also said that e-commerce reduces costs. For instance, Schneider and Perry (2000) cited the example of Cisco Systems which sold 72 percent of its computer equipment sales via the Web in 1998. Since no customer service representatives were involved in these sales, Cisco estimates that it avoided handling 500,000 calls per month, for an annual savings of over \$500 million. Improvement in product quality and the creation of new ways of selling existing products are other benefits cited in the literature (Napier et al. 2001, Chaudhury and Kuilboer, 2002, Saloner and Spence, 2002). Not only have developed countries taken advantage of these potential benefits, but also developing ones (Huff et. al, 2000). Chile, for example, has started to provide its citizenry with access to the Internet and to promote electronic businesses.

The National Science Foundation (NSF) authorized the Chilean Internet connection in the early 1990s. Based on an NSF grant, the Catholic University at Santiago was the first organization to get connected to the Internet in 1992 (Arriagada, 2001). According to CyberAtlas, an Internet based company that maintains an updated list of the latest statistics on Internet users around the world, Chile registered 7 Internet Server Providers (ISPs) and 1.8 million Internet users by July 2001 which represents 11.7 percent of its population. Even though this percentage is high when compared with Internet users in other developing countries in South America, e-commerce in Chile has not been fully developed (Cubillos, 2001). For this reason and based on the potential benefits of e-commerce, it is important to study the intention to adopt e-commerce in SMEs in Chile. However, the lack of an adequate instrument that fits managers' perceptions and beliefs of e-commerce makes the study of future adoption difficult to accomplish.

Based on the TPB (Ajzen, 1991), this paper presents the development of an instrument designed to measure the intention to use e-commerce in SMEs in Chile. Due to the similarities in resources and idiosyncrasies that many developing countries in Latin America share, this instrument may be a useful tool for the initial study of the adoption of e-commerce not only in Chile but also in other developing countries in Latin America.

The Theory of Planned Behavior (TPB)

Many researchers have suggested intention models from social psychology that can explain the behavior and intention of individuals. The TPB (Ajzen, 1991) is an especially well established intention model that has been proven successful in predicting and explaining behavior across a wide variety of domains (see for example, Chang, 1998; Johnson et al., 1999; Taylor and Todd, 1995; Harrison et al., 1997; Riemenschneider and McKinney, 2001). The TPB is an extension of the theory of reasoned action (TRA) (Ajzen and Fishbein, 1980; Fishbein and Ajzen, 1975). TRA and TPB were formulated as generalized explanations of a broad range of individual behaviors, including the use of information technology (Agarwal, 2000). Both theories hypothesize that behavior is influenced by an individual’s intention to perform the behavior in question. According to Ajzen (1991), “intentions are assumed to capture the motivational factors that influence behavior”(p. 181). Thus, intention is determined by the individual’s attitude toward the behavior (A) and the subjective norm (SN). Attitudes toward the behavior refer to the degree to which a person has a favorable or unfavorable evaluation of the behavior in question. Similarly, subjective norm refers to the perceived social pressure to perform or not to perform the behavior.

Ajzen (1991) added a new construct to the TPB: perceived behavioral control (PBC). He stated that the original model was unable to deal with behaviors over which people have incomplete volitional control. PBC reflects an individual’s perceptions that there exist personal and situational impediments to the performance of the behavior. Ajzen (1991) pointed out that the more favorable the attitude and subjective norm with respect to a behavior, and the greater the perceived behavioral control, the stronger should be an individual’s intention to perform the behavior under consideration. The following figure summarizes the constructs involved in the TPB as well as the links among them.

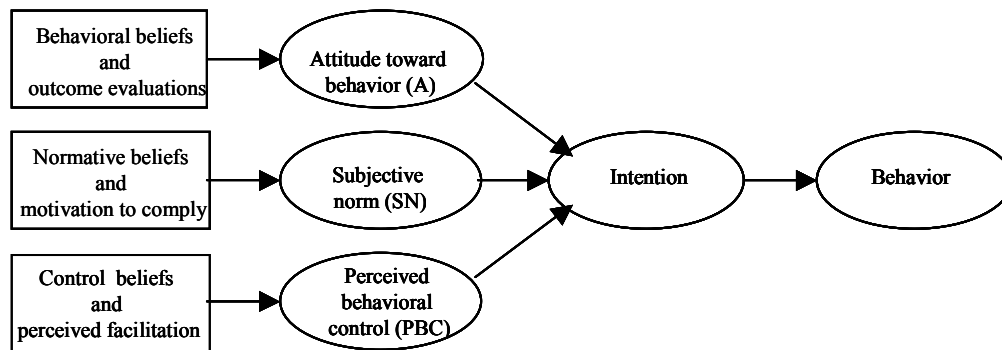


Figure 1. Model of the Theory of Planned Behavior

Table 1 summarizes the three determinants of intention (A, SN, and PBC) with their respective definition and measurement.

In order to determine the final behavior, Ajzen and Fishbein (1980) assign weights (w_i) to each determinant of intention (A, SN, and PBC). Weights vary according to individuals and situations and can be determined using linear regression at the time of data analysis. The following is the formula utilized to determine behavior (\propto means “is directly proportional to”)

$$\text{Behavior} \propto \text{Intention} \propto [w_1 (A) + w_2 (SN) + w_3 (PBC)]$$

Table 1. Determinants of Intention and their Measurement

| Construct | Definition | Measurement | Formula |
|------------------------------------|--|---|------------------------|
| Attitude (A) | <i>“A person’s general feeling of favorableness or unfavorableness for that behavior”</i> (Ajzen and Fishbein, 1980) | Product of one’s salient belief (B) that performing the behavior will lead to certain outcome, and an evaluation of the outcome (E) | $A = \sum B_i E_i$ |
| Subjective Norm (SN) | <i>“A person’s perception that most people who are important to him think he should or should not perform the behavior in question”</i> (Ajzen and Fishbein, 1980) | Product of one’s normative belief (NB) (<i>“person’s belief that the salient referent thinks he should perform the behavior”</i>) and his/her motivation to comply (MC) to that referent | $SN = \sum NB_j MC_j$ |
| Perceived Behavioral Control (PBC) | <i>“People’s perception of the ease or difficulty of performing the behavior of interest”</i> (Ajzen, 1991) | Product of one’s control belief (CB) (perception of the presence or absence of requisite resources needed to carry out the behavior) and his/her perceived facilitation (PF) (one’s assessment of the importance of those resources to the achievement of outcomes) | $PBC = \sum CB_k PF_k$ |

Methodology

Based on the TPB, this study develops a questionnaire to be used in the future to measure the intention to adopt e-commerce in SMEs in Chile. Ajzen (1991) gave guidelines to carry out the procedure of generating the instrument. In general terms, the procedure consists of the identification of the population of interest, the determination of the specific behavior of interest as well as the execution of an elicitation process to identify and determine the specific elements of the questionnaire. Mykytyn and Harrison (1993) as well as Harrison et al. (1997) have followed the requirements for instrument development suggested by Ajzen (1991) and defined a series of steps. Based on their work, table 2 shows the steps that have been identified and customized to this current study along with the people involved in each step:

Table 2. Steps to Generate the Instrument

| Step | Description | People involved |
|------|---|---|
| 1 | Determine the population of interest. In our case, top managers from SMEs in Chile. | Researchers |
| 2 | Determine the behavior of interest. In this study the intention to adopt e-commerce. | Researchers |
| 3 | Elicit perceived consequences of adopting e-commerce, as well as social referents associated with it, and the possible obstacles and barriers to it from an appropriate subsample (between 20-30 persons according to Ajzen, 1991) of the population. | Respondents (Top Managers) Researchers |
| 4 | Translation of the results from the elicitation process (step 3 above) | Independent Translators |
| 5 | Content analysis (Weber, 1990; Robert and Popping, 1993) to identify the most frequent responses. | Raters |
| 6 | Create measures of behavioral beliefs (B), evaluations (E), normative beliefs (NB), motivation to comply (MC), control beliefs (CB), and perceived facilitation (PF) on the most often-cited responses. | Researchers |
| 7 | Development of TPB questions for intention (I), attitude (A), subjective norm (SN), and perceived behavioral control (PBC). | Researchers |

Business Size

Different criteria have been utilized to determine the size of a SME. In our study we considered the number of employees as the principal criteria since other categorizations such as those involving revenue, total capital and so on are more difficult to obtain and can result in misleading classifications of organizations. The number of employees considered in a SME varies according to the agency providing the definition. For example, the U.S. Small Business Administration (<http://www.sba.gov>) uses a cutoff of fewer than 500 employees. Anckaert and Bravo (2000) have defined small and medium businesses as those with fewer than 100 employees. Harrison et al. (1997) as well as Iacovo et al. (1995) utilized a cutoff of 200 employees to make reasonable comparisons to prior studies involving IT and small businesses. For a further reference see Lockett and Brown's work (2001). They proposed a framework to classify SMEs based on number of employee criteria among others. For the purpose of this study and for the same reasons cited by Harrison et al. (1997) and Iacovo et al. (1995) we have used the cutoff of less than 200 employees.

Subjects

Chile is geographically divided into thirteen different regions. We targeted top managers of SMEs in the Bio-Bio region of Chile, which is located 328 miles south of Santiago, the capital. The Bio-Bio region is the second largest in terms of population and one of the three more important regions in the country (<http://www.economia.cl/regiones>). It is also the second region in terms of its contribution to the national economy (<http://www.octavaregion.com/v3/introduccion.htm>). Top managers are Chief Executive Officers (CEO) and owners of SMEs in this region. Here, we did not differentiate among CEOs and owners; instead we considered them all as 'top managers'.

Data Collection

The gathering process was carried out in two stages. In the first stage, a sample of 130 firms in the Bio-Bio region of Chile was selected from a guide of enterprises (GEEP 2002). A survey was sent to these companies in order to assess the utilization of e-commerce, as well as to identify some demographic information about the firm. Follow up telephone calls were made in order to ensure that the surveys arrived to the targeted mail addresses. During this first step we realized that not all the surveys arrived to the firms due to changes in mail addresses, so we resent 30 surveys to those organizations that did not receive the survey via the first mailing. This time, a contact person was identified and the top managers were contacted through the contact person. The nature of the investigation was explained to the contact person, and the willingness of the top managers to participate was ascertained. Through this mean, forty-five surveys were returned in a two-month period. Based on a preliminary analysis of the responses, we dropped those companies that indicated they were utilizing e-commerce in their businesses and those which had more than 200 employees. The results from this first stage gave us a total of 30 top managers that agreed to participate in the second stage of this study (step 3 on Table 2).

The second stage consisted of an Internet survey emailed to those 30 managers willing to participate in the elicitation process. In order to elicit perceived consequences of adopting e-commerce, as well as social referents associated with it, and the possible obstacles and barriers to it, five open-ended questions were included in the survey (see Table 3 below).

Table 3. Questions Included in the Survey

| N° | Question |
|----|--|
| 1 | What are some advantages to incorporating electronic commerce in your organization within the next year? |
| 2 | What are some disadvantages to incorporating electronic commerce in your organization within the next year? |
| 3 | Who are some individuals or groups who would approve of you incorporating electronic commerce in your organization within the next year? |
| 4 | Who are some individuals or group who would disapprove of you incorporating electronic commerce in your organization within the next year? |
| 5 | What are some obstacles related to incorporating electronic commerce into your organization within the next year? |

Development of the Instrument

The data collection process ended up with 28 responses from the top managers that agreed to participate in our study. The instrument was developed following the subsequent 3 stages: a) translation and content analysis of the results generated from the elicitation process (step 4 and 5 in Table 2), b) generation of component-based measures for attitude ($A = \sum B_i E_i$), subjective norm ($SN = \sum NB_j MC_j$), and perceived behavioral control ($PBC = \sum CB_k PF_k$) on the most often-cited responses (step 6 in Table 2), and c) development of direct TPB questions for intention (I), attitude (A), subjective norm (SN), and perceived behavioral control (PBC), the main constructs of the theory (step 7 in Table 2).

Translation and Content Analysis

Upon receipt of the 28 responses, one of the authors translated top managers' answers from Spanish to English. An independent translator closely supervised the translation process in order to make sure that the meaning of the responses was not lost during the translation process. As a result, small changes were made by the independent translator so as to make English sense of the respondent's answers.

The content analysis was carried out by two different raters who individually coded the responses. The first step in the content analysis consisted of the generation of five lists including all the answers from the respondents for each of the five questions contained in the survey (see Table 3 above). For example, list 1 comprised 76 items for question 1 in the survey (advantages of incorporating e-commerce), list 2 included 44 items for question 2 (disadvantages of incorporating e-commerce), and so on. The second step in the content analysis consisted of the classification of each item, according to its similarity, within a specific category. The objective in this second step was to determine the perceived consequences (advantages and disadvantages obtained from the items in lists 1 and 2), social referents (those who would agree or disagree to incorporate e-commerce obtained from lists 3 and 4), and obstacles to adopting e-commerce generated from list 5. For instance, each independent rater generated different categories and put related items together for each list generated in the first step of the content analysis. Since consensus is a must in this step, subsequent meetings were necessary in order to obtain agreement in the categories generated by the raters. As a result, 24 different categories were generated from the items in the first and second lists, 8 categories were generated from the items in the third and fourth lists, and 10 categories were generated from the items in the fifth list. Table 4 shows the final categories for perceived consequences, social referents, and obstacles to adopting e-commerce.

Generation of Component-Based Measures

Following the theoretical guidelines given by Ajzen and Fishbein (1980) and Ajzen (1991), we developed component-based measures to determine attitude, subjective norm, and perceived behavioral control. As shown in table 1, attitude is measured by behavioral beliefs and evaluations ($A = \sum B_i E_i$), subjective norm is measured by normative beliefs and motivation to comply ($SN = \sum NB_j MC_j$), and perceived behavioral control is measured by beliefs and perceived facilitation ($PBC = \sum CB_k PF_k$). Questions regarding evaluation, motivation to comply, and perceived facilitation were directly generated from behavioral, normative, and control beliefs respectively. It is important to note that while the measures for behavioral, normative, and control beliefs use a semantic differential scale (for example from extremely unlikely to extremely likely), the measures for evaluation, motivation to comply, and perceived facilitation use a unipolar scale (for instance not at all – a great deal). Appendix 1 shows the specific questions that were considered in this step.

Development of Direct TPB Questions

Finally, based on Mykytyn and Harrison (1993) and Harrison et al. (1997), we developed direct TPB questions to determine intention (I), attitude (A), subjective norm (SN), and perceived behavioral control (PBC) directly. Three questions were considered to measure the intention construct, 5 questions to determine the attitude construct, 3 questions to measure subjective norm, and 3 items to measure perceived behavioral control. According to the TPB, the direct measure of these constructs should correlate strongly with the component-based measures determined in the step b) above. For example, the sum of $NB_j MC_j$ cross products should correlate strongly with a direct measure of subjective norm. Appendix 1 shows the questions included to measure these constructs directly along with the complete proposed instrument.

Table 4. Salient Consequences, Referents, and Obstacles in Adopting E-commerce

| Consequences | Referents | Obstacles |
|--|--|--|
| Cost reductions | Customers/clients | Safe and secure system to safeguard client information |
| Increases in sales | Top management | Information system reliability |
| Productivity increases | Board of directors | Ability to determine client acceptance |
| Performing like a large company | Sales department | Knowledge and understanding of our executives |
| Ease in reaching clients | Administrative personnel | Training it would take to get your employees "up to speed" |
| Facilitating integration with customers and suppliers | Other functional area such as finance, distribution, exportation, training, etc. | Appropriate organizational culture |
| High implementation costs | MIS department | Ability to modify internal systems and procedures as necessary |
| Changing your information technology | People unfamiliar with this technology | Ability to plan and promote electronic commerce |
| Improving corporate image | | Financial assets |
| Publicizing your business to clients | | Hardware, software and MIS persons |
| Difficulty for your clients to reach us due to their lack of knowledge of the Internet | | |
| Speeding up your business processes | | |
| Speeding up the process of collecting money owed to your firm | | |
| Creating a new way to sell your products or services | | |
| High maintenance costs | | |
| Impersonal service for your clients | | |
| Difficulty in guaranteeing business success | | |
| Saving time for your customers to transact business | | |
| A less trustworthy way of doing business | | |
| Improving your business processes | | |
| Enhancing your distribution process | | |
| Making better use of information | | |
| Doing business in a way that is not applicable to our type of business | | |
| Making it easier for our customers to transact business | | |

It is important to note that although the TPB is associated with individual behaviors, the theory can also be applied to SMEs by considering that the respondents are top managers who are the primary decision makers. Similar to Harrison et al.'s (1997) work, in our study we carefully screened the respondents to make sure that they met that criterion. In addition, we included one question in the final instrument to assess the extent to which each respondent influences the decision making process in their firm: "How much does your firm's decision to incorporate electronic commerce depend on your personal opinion? ___%."

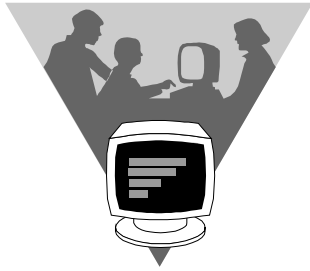
Conclusions

The nature of e-commerce today that includes so many business possibilities of a global nature suggests that research is needed to investigate how organizations in different countries may be proceeding along this path. Likewise, SMEs, especially those in less technologically developed countries, may provide significant information regarding the continued growth and expansion of this medium of doing business. This study hopes to investigate these matters thoroughly.

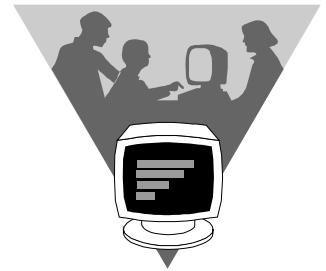
The instrument that has been developed will be translated into Spanish and then pilot tested to ensure that the wording used in the English version carries the same meaning in Spanish. Any suggestions, clarifications, and so on will be examined and incorporated into the final instrument. Lastly, a full study involving Chilean SMEs will be conducted.

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Appendix 1 Proposed Instrument Incorporating Electronic Commerce in Your Organization



INSTRUCTIONS

In this questionnaire, sometimes you will use rating scales with seven places. Please put an 'X' in the place on the scale that best describes your opinion. Place your marks in the middle of spaces, not on the boundaries. For example, if you were asked to rate how good or bad "the economy in Chile" is on such a scale, and you thought the economy was EXTREMELY GOOD, then you would mark an 'X' on the scale as follows:

| | | | | | | | |
|------|-----------|-------|----------|---------|----------|-------|-----------|
| GOOD | | | | | | | BAD |
| | extremely | quite | slightly | neither | slightly | quite | extremely |

You will also be making ratings about how **LIKELY** or **UNLIKELY** something is. You will use the rating scale in the same way. For example, you might make a rating about the following:

| | | | | | | | |
|----------|-----------|-------|----------|---------|----------|-------|-----------|
| UNLIKELY | | | | | | | LIKELY |
| | extremely | quite | slightly | neither | slightly | quite | extremely |

If our firm adds employees, it is _____ that it will help us improve our service to customers/clients.

| | | | | | | | |
|----------|-----------|-------|----------|---------|----------|-------|-----------|
| UNLIKELY | | | | | | | LIKELY |
| | extremely | quite | slightly | neither | slightly | quite | extremely |

In making your ratings, please remember the following points:

1. Please try to answer all the items -- do not omit any, even if they don't seem to apply to you.
2. Never put more than one check mark on a single scale.

⇒Reminder, all of your answers are completely **anonymous and confidential**. No one but the research team will ever see your answers.

INCORPORATION OF ELECTRONIC COMMERCE

How likely is it that your firm intends to incorporate electronic commerce in your organization within the next year?

| | | | | | | | |
|----------|-----------|-------|----------|---------|----------|-------|-----------|
| UNLIKELY | | | | | | | LIKELY |
| | extremely | quite | slightly | neither | slightly | quite | extremely |

How certain are your plans to incorporate electronic commerce in your organization within the next year?

| | | | | | | | |
|--------------------------------|-----------|-------|----------|---------|----------|-------|-----------------------------|
| CERTAIN WE DON'T HAVE PLANS | | | | | | | CERTAIN WE DO HAVE PLANS |
| | extremely | quite | slightly | neither | slightly | quite | extremely |

Our firm's commitment to incorporating electronic commerce in our organization within the next year is . .

| | | | | | | | |
|------|-----------|-------|----------|---------|----------|-------|-----------|
| WEAK | | | | | | | STRONG |
| | extremely | quite | slightly | neither | slightly | quite | extremely |

SOCIAL FACTORS

How much would each of the following people/groups STRONGLY APPROVE OR DISAPPROVE OF YOUR FIRM incorporating electronic commerce in your organization within the next year?

| | | | | | | | | |
|---|------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------|
| customers/clients would | DISAPPROVE | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | APPROVE |
| | | extremely | quite | slightly | neither | slightly | quite | extremely |
| top management would | DISAPPROVE | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | APPROVE |
| | | extremely | quite | slightly | neither | slightly | quite | extremely |
| board of directors would | DISAPPROVE | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | APPROVE |
| | | extremely | quite | slightly | neither | slightly | quite | extremely |
| sales department would | DISAPPROVE | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | APPROVE |
| administrative personnel would | | extremely | quite | slightly | neither | slightly | quite | extremely |
| other functional areas such as finance, distribution, exportation, training, etc. would | DISAPPROVE | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | APPROVE |
| | | extremely | quite | slightly | neither | slightly | quite | extremely |
| MIS department would | DISAPPROVE | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | APPROVE |
| | | extremely | quite | slightly | neither | slightly | quite | extremely |
| people unfamiliar with this technology would | DISAPPROVE | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | APPROVE |
| | | extremely | quite | slightly | neither | slightly | quite | extremely |

The questions below ask you to put a check mark in a space that indicates, IN GENERAL, how much your FIRM WANTS to do what the following groups or individuals think it should do. Make one check mark per question. For example, if your firm always wants to do what the government thinks it should, you'd check the "Very Much" part of the scale. If a question does Not Apply, write "NA" next to it.

IN GENERAL, how much does your firm usually want to do what ...

| | | | | | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| customers/clients think the firm should do? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | not at all | | somewhat | | | very much |
| top management thinks the firm should do? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | not at all | | somewhat | | | very much |
| the board of directors thinks the firm should do? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | not at all | | somewhat | | | very much |
| sales department thinks the firm should do? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | not at all | | somewhat | | | very much |

| | | | | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| administrative personnel think the firm should do? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | not at all | | | somewhat | | | | very much |
| ...other functional areas such as finance, distribution, exportation, training, etc. think the firm should do? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | not at all | | | somewhat | | | | very much |
| the MIS department thinks the firm should do? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | not at all | | | somewhat | | | | very much |
| people unfamiliar with this technology think the firm should do? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | not at all | | | somewhat | | | | very much |

POSSIBLE OBSTACLES AND BARRIERS

How likely is it that your firm has each of the following resources that could enable your firm to incorporate electronic commerce in your organization within the next year?

| | | | | | | | | | |
|--|----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------|
| safe and secure system to safeguard client information | UNLIKELY | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | LIKELY |
| | | extremely | quite | slightly | neither | slightly | quite | extremely | |
| information system reliability | UNLIKELY | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | LIKELY |
| | | extremely | quite | slightly | neither | slightly | quite | extremely | |
| ability to determine client acceptance | UNLIKELY | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | LIKELY |
| | | extremely | quite | slightly | neither | slightly | quite | extremely | |
| knowledge and understanding of our executives | UNLIKELY | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | LIKELY |
| | | extremely | quite | slightly | neither | slightly | quite | extremely | |
| training it would take to get your employees "up to speed" | UNLIKELY | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | LIKELY |
| | | extremely | quite | slightly | neither | slightly | quite | extremely | |
| appropriate organizational culture | UNLIKELY | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | LIKELY |
| | | extremely | quite | slightly | neither | slightly | quite | extremely | |
| ability to modify internal systems and procedures as necessary | UNLIKELY | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | LIKELY |
| | | extremely | quite | slightly | neither | slightly | quite | extremely | |
| ability to plan and promote electronic commerce | UNLIKELY | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | LIKELY |
| | | extremely | quite | slightly | neither | slightly | quite | extremely | |
| financial assets | UNLIKELY | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | LIKELY |
| | | extremely | quite | slightly | neither | slightly | quite | extremely | |

hardware, software and MIS persons UNLIKELY | | | | | | | LIKELY
 extremely quite slightly neither slightly quite extremely

How IMPORTANT are each of the following resources for your firm regarding incorporating electronic commerce in your organization within the next year?

safe and secure system to IMPORTANT | | | | | | | UNIMPORTANT
 extremely quite slightly neither slightly quite extremely

information system reliability IMPORTANT | | | | | | | UNIMPORTANT
 extremely quite slightly neither slightly quite extremely

ability to determine client acceptance IMPORTANT | | | | | | | UNIMPORTANT
 extremely quite slightly neither slightly quite extremely

knowledge and understanding of our executives IMPORTANT | | | | | | | UNIMPORTANT
 extremely quite slightly neither slightly quite extremely

training it would take to get your employees "up to speed" IMPORTANT | | | | | | | UNIMPORTANT
 extremely quite slightly neither slightly quite extremely

appropriate organizational culture IMPORTANT | | | | | | | UNIMPORTANT
 extremely quite slightly neither slightly quite extremely

ability to modify internal systems and procedures and necessary IMPORTANT | | | | | | | UNIMPORTANT
 extremely quite slightly neither slightly quite extremely

ability to plan and promote electronic commerce IMPORTANT | | | | | | | UNIMPORTANT
 extremely quite slightly neither slightly quite extremely

financial assets IMPORTANT | | | | | | | UNIMPORTANT
 extremely quite slightly neither slightly quite extremely

hardware, software and MIS persons IMPORTANT | | | | | | | UNIMPORTANT
 extremely quite slightly neither slightly quite extremely

OPINION

Incorporating electronic commerce in your firm within the next year would be ...

| | | | | | | | | |
|-----------|-----------|-------|----------|---------|----------|-------|-----------|-------------|
| GOOD | | | | | | | | BAD |
| | extremely | quite | slightly | neither | slightly | quite | extremely | |
| HARMFUL | | | | | | | | HELPFUL |
| | extremely | quite | slightly | neither | slightly | quite | extremely | |
| POSITIVE | | | | | | | | NEGATIVE |
| | extremely | quite | slightly | neither | slightly | quite | extremely | |
| EFFECTIVE | | | | | | | | INEFFECTIVE |
| | extremely | quite | slightly | neither | slightly | quite | extremely | |
| FOOLISH | | | | | | | | WISE |
| | extremely | quite | slightly | neither | slightly | quite | extremely | |

To your firm, incorporating electronic commerce within the next year would be ...

| | | | | | | | | |
|---------------------------|-----------|-------|----------|---------|----------|-------|-----------|----------------------------|
| EASY | | | | | | | | DIFFICULT |
| | extremely | quite | slightly | neither | slightly | quite | extremely | |
| UNDER YOUR FIRM'S CONTROL | | | | | | | | OUT OF YOUR FIRM'S CONTROL |
| | extremely | quite | slightly | neither | slightly | quite | extremely | |
| SIMPLE TO ARRANGE | | | | | | | | COMPLICATED TO ARRANGE |
| | extremely | quite | slightly | neither | slightly | quite | extremely | |

Most people who are important to your firm think your firm should incorporate electronic commerce within the next year.

| | | | | | | | | |
|-------|----------|----------|----------|---------|----------|----------|----------|----------|
| AGREE | | | | | | | | DISAGREE |
| | strongly | somewhat | slightly | neither | slightly | somewhat | strongly | |

Most people who influence the behavior of your firm think your firm should incorporate electronic commerce within the next year.

| | | | | | | | | |
|-------|----------|----------|----------|---------|----------|----------|----------|----------|
| AGREE | | | | | | | | DISAGREE |
| | strongly | somewhat | slightly | neither | slightly | somewhat | strongly | |

People whose opinions our firm value would prefer our firm to incorporate electronic commerce within the next year.

| | | | | | | | | |
|-------|----------|----------|----------|---------|----------|----------|----------|----------|
| AGREE | | | | | | | | DISAGREE |
| | strongly | somewhat | slightly | neither | slightly | somewhat | strongly | |

FUTURE CONSEQUENCES

The items in the list below all have to do with possible consequences or things you might associate with your incorporating electronic commerce in your organization within the next year. For each item, circle the abbreviation on the left that completes the statement in a way that best expresses YOUR OPINION. Again, your answers are completely ANONYMOUS.

If our firm incorporates electronic commerce within the next year, it is . . .

| extremely unlikely | quite unlikely | slightly unlikely | neither | slightly likely | quite likely | extremely likely | |
|-----------------------|-------------------|----------------------|---------|--------------------|-----------------|---------------------|---|
| EU | QU | SU | N | SL | QL | EL | ...that it will reduce costs |
| EU | QU | SU | N | SL | QL | EL | ...that it will increase sales |
| EU | QU | SU | N | SL | QL | EL | ...that it will increase productivity |
| EU | QU | SU | N | SL | QL | EL | ...that it will allow our firm to perform more like a large company |
| EU | QU | SU | N | SL | QL | EL | ...that it will make it easier to reach clients |
| EU | QU | SU | N | SL | QL | EL | ...that it will facilitate integration with customers and suppliers |
| EU | QU | SU | N | SL | QL | EL | ...that it will mean high implementation costs |
| EU | QU | SU | N | SL | QL | EL | ...that it will mean having to change our information technology |
| EU | QU | SU | N | SL | QL | EL | ...that it will improve our corporate image |
| EU | QU | SU | N | SL | QL | EL | ...that it will necessitate having to publicize our business to clients |
| EU | QU | SU | N | SL | QL | EL | ...that it will be hard for clients to reach use due to their lack of knowledge of the Internet |
| EU | QU | SU | N | SL | QL | EL | ...that it will speed up business transactions |
| EU | QU | SU | N | SL | QL | EL | ...that it will speed up the process of collecting money |
| EU | QU | SU | N | SL | QL | EL | ...that it will create a new way to sell our products or services |
| EU | QU | SU | N | SL | QL | EL | ...that it will lead to high maintenance costs |
| EU | QU | SU | N | SL | QL | EL | ...that it will lead to impersonal service to our clients |
| EU | QU | SU | N | SL | QL | EL | ...that it will be hard to guarantee business success |
| EU | QU | SU | N | SL | QL | EL | ...that it will save time for our customers to transact business |
| EU | QU | SU | N | SL | QL | EL | ...that it will mean a less trustworthy way of conducting our business |
| EU | QU | SU | N | SL | QL | EL | ...that it will improve our business processes |
| EU | QU | SU | N | SL | QL | EL | ...that it will enhance our distribution process |
| EU | QU | SU | N | SL | QL | EL | ...that it will provide us with a way to make better use of information |
| EU | QU | SU | N | SL | QL | EL | ...that it will be hard for us because it is not applicable for our type of business |
| EU | QU | SU | N | SL | QL | EL | ...that it will make it easier for our customers to transact business |

⇒How much does your firm’s decision to incorporate electronic commerce depend on your personal opinion? _____ %

ATTRIBUTES

Circle the abbreviation that best expresses how much you would like, or dislike each item below, or how negative (bad) or positive (good) you feel about it, IN GENERAL.

If our firm incorporates electronic commerce within the next year, it is

| extremely bad | quite bad | slightly bad | neither | slightly good | quite good | extremely good | |
|------------------|--------------|-----------------|---------|------------------|---------------|-------------------|---|
| EB | QB | SB | N | SG | QG | EG | Cost reductions |
| EB | QB | SB | N | SG | QG | EG | Increases in sales |
| EB | QB | SB | N | SG | QG | EG | Productivity increases |
| EB | QB | SB | N | SG | QG | EG | Performing like a large company |
| EB | QB | SB | N | SG | QG | EG | Ease in reaching clients |
| EB | QB | SB | N | SG | QG | EG | Facilitating integration with customers and suppliers |
| EB | QB | SB | N | SG | QG | EG | High implementation costs |
| EB | QB | SB | N | SG | QG | EG | Changing your information technology |
| EB | QB | SB | N | SG | QG | EG | Improving your corporate image |
| EB | QB | SB | N | SG | QG | EG | Publicizing your business to clients |
| EB | QB | SB | N | SG | QG | EG | Difficulty for your clients to reach you due to their lack of knowledge of the Internet |
| EB | QB | SB | N | SG | QG | EG | Speeding up your business processes |
| EB | QB | SB | N | SG | QG | EG | Speeding up the process of collecting money owed to your firm |
| EB | QB | SB | N | SG | QG | EG | Creating a new way to sell your products or services |
| EB | QB | SB | N | SG | QG | EG | High maintenance costs |
| EB | QB | SB | N | SG | QG | EG | Impersonal service for your clients |
| EB | QB | SB | N | SG | QG | EG | Difficulty in guaranteeing business success |
| EB | QB | SB | N | SG | QG | EG | Saving time for your customers to transact business |
| EB | QB | SB | N | SG | QG | EG | A less trustworthy way of doing business |
| EB | QB | SB | N | SG | QG | EG | Improving your business processes |
| EB | QB | SB | N | SG | QG | EG | Enhancing your distribution process |
| EB | QB | SB | N | SG | QG | EG | Making better use of information |
| EB | QB | SB | N | SG | QG | EG | Doing business in a way that is not applicable to your type of business |
| EB | QB | SB | N | SG | QG | EG | Making it easier for your customers to transact business |

BACKGROUND INFORMATION

1. About how many total people full and part time does your company employ? _____
2. What is your official title? _____
3. What is your type of business? _____
4. Do you make decisions about obtaining and using computers and information technology in your business? _____
5. Gender? _____ Male _____ Female
6. How long have you worked at your present firm? _____yrs.
7. How long have you worked in your present position? _____yrs.

THANK YOU VERY MUCH!! YOU'VE BEEN A GREAT HELP.