MOVING SERVICE RELATIONSHIPS ONLINE:
THE ROLE OF PROVIDER INVOLVEMENT

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ABSTRACT

For firms implementing self-serve, Internet-based service delivery systems, it is important to understand how existing service relationships may influence their customers' adoption of E-Commerce. Using interview and survey data from a single firm, we find that service relationships significantly and positively influence customers’ intentions to adopt E-Commerce primarily through customers’ desire for their provider’s continued involvement online. In that sense, we demonstrate that social capital plays an important role in service delivery and technology adoption.
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Social scientists have long suggested that social relations can facilitate economic action (Baker, 1990; Bourdieu, 1986; Coleman, 1988, 1990). Recent research has shown that relationships among people in organizations are positively associated with individual outcomes such as career development (Granovetter, 1995; Podolny & Baron, 1997) and organizational outcomes such as recruitment (Fernandez, Castilla, & Moore, 2000), product innovation (Hargadon & Sutton, 1997), and supplier relations (Uzzi, 1997). Relationships between customers and providers have also been associated with positive service outcomes such as increased customer satisfaction and service interaction frequency (Gutek, Bhappu, Liao-Troth, & Cherry, 1999).

While beneficial, relationships are costly to maintain (Adler & Kwon, 2002; Gutek & Welsh, 2000). In an effort to contain costs while increasing the demand for their products and services, many firms are adopting E-Commerce and self-serve, Internet-based service delivery systems because the Internet has the potential of being a low cost distribution channel. However, for firms that have developed service relationships with their customers over the years, incorporating the Internet - a lean medium (Daft & Lengel, 1986) - into their service strategy may prove to be a difficult task. Those that attempt to migrate their existing customers to self-serve, E-Commerce technology run the risk of losing their most loyal customers, namely those who value their service relationships with providers.

Service relationships have traditionally involved face-to-face interactions between a provider and customer (Gutek, 1995). Face-to-face interaction facilitates the development of social capital embedded in service relationships (Uzzi, 1997). Face-to-face interactions allow the
customer and provider to form precise mental images of each other, which enable them to
develop a strategy for interacting with each other (Nohria & Eccles, 1992). They come to know
each other as particular role occupants (Heimer, 1992). Role differentiation is both diminished
and unstable in computer-mediated interactions (Sproull & Kiesler, 1986). Therefore, computer-
mediated interactions offer both the customer and provider "only limited impressions with which
to construct the meaningful identities that enable people to orient themselves to, and develop
strategies for interacting with, one another" (Nohria & Eccles, 1992: 295). Furthermore, it is
more difficult in computer-mediated than face-to-face interactions for the customer and provider
to develop trust and regulate opportunism (Kiesler, 1986; Nohria & Eccles, 1992). Therefore, E-
Commerce and self-serve, Internet-based service delivery systems are likely to hinder the
development of service relationships and change their nature.

For firms attempting to move existing service relationships online, it is important to
understand how service relationships may influence customers' adoption of E-Commerce. This
is the issue we set out to explore in this paper. Specifically, we describe one firm's efforts to
develop a self-serve, Internet-based service delivery system to complement its service
relationships. We begin by providing a theoretical background for this case study. We discuss
the literature on relationships and social capital in organizations, extending this research to the
context of service delivery. We also discuss the benefits and costs associated with service
relationships, and how these can potentially impact E-Commerce adoption. We then describe the
firm and why it is a suitable case study for this research. Next, we describe our interviews with
the firm's providers and customers, discussing insights about the nature of their service
relationships and their thoughts about E-Commerce adoption. We then develop a model of
customers' intentions to adopt E-Commerce using both the theoretical background and insights
gained from our interviews. We follow with a description of the survey we conducted to test our model of customers' intentions to adopt E-Commerce and our results. Finally, we discuss the implications of our findings, the limitations of this study, and our conclusions.

THEORECTICAL BACKGROUND

Relationships & Social Capital

The importance of relationships in organizational contexts is widely and frequently expressed in the concept of social capital. Social capital is the resource embedded in all types of social relations. It is broadly defined as "the goodwill engendered by the fabric of social relations that can be mobilized to facilitate action" (Adler & Kwon, 2002: 17). Drawing on Granovetter's (1985) concept of structural and relational embeddedness, Nahapiet and Ghoshal (1998) distinguish between the structural and relational dimensions of social capital. They also suggest a third dimension of social capital based on Cicourel's (1973) system of shared meaning, which they call the cognitive dimension.

The structural dimension of social capital refers to the overall pattern of relationships among people either within or between organizational units, in other words, their social network. The presence or absence of relationships - commonly referred to as network ties - between individuals, as well as the network configuration of these relationships, are some of the most important aspects of the structural dimension of social capital (Nahapiet & Ghoshal, 1998). In contrast, the relational dimension of social capital refers to the specific nature of relationships that have developed over time among people with ties in a network. The relational dimension of social capital includes trust, expectations, obligations, respect, and friendship (Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998). Social norms and shared goals of people with ties in a network fall under the cognitive dimension of social capital (Tsai & Ghoshal, 1998).
In the context of service delivery, the structural dimension of social capital refers to the overall pattern of service interactions between customers and service providers. The taxonomy of service interactions proposed by Gutek and colleagues (Gutek, 1995; Gutek et al., 1999; Gutek & Welsh, 2000) categorizes service interactions into service relationships, pseudo-relationships, and encounters. In a service relationship, a customer and provider expect to have repeated service interactions with each other in the future.

The relational dimension of social capital refers to the features of service relationships, which include trust, loyalty, and knowledge (Gutek, Cherry, Bhappu, Schneider, & Woolf, 2000). Customer and provider come to know each other as role occupants, and sometimes as acquaintances or even friends. Control of their interactions resides with both the customer and provider. Over time, service relationships grow stronger as the customer and provider develop trust and loyalty (unless there are problems, in which case, either party can end the service relationship). In essence, the customer and provider are interdependent. For instance, the provider depends on the customer to enhance their reputation by referring them to others, and the customer depends on the provider to give them personalized, reliable service. To deliver such personalized service, the provider needs knowledge about the customer's individual needs and preferences, which is generally gained through successive interactions between them involving feedback that is both direct and informal.

The cognitive dimension of social capital, as defined by Nahapiet and Ghoshal (1998), refers to the shared goals and knowledge between customers and providers in service relationships. Service relationships have distinct features when compared to other types of service interactions because the goals of the customer and provider are aligned (Gutek et al., 2000; Gutek & Welsh, 2000). Both the customer and provider are motivated to ensure quality
service and to derive economic value from their service interactions, which are constrained by their interdependence. Over time, they develop a history of shared interaction that they can draw on whenever they interact to complete a service transaction.

Benefits & Costs of Service Relationships

Service relationships bear some resemblance to repeated play Prisoner’s Dilemma games in that customers and providers are interdependent. Both benefit if they cooperate with each other. For instance, both benefit if the provider gives good service and the customer pays promptly. Expecting an infinite number of future interactions (or at least not knowing when the last interaction will occur) is what induces both players to cooperate to their mutual gain. This is a phenomenon Axelrod (1984) called “the shadow of the future.” If the future casts a sufficiently long shadow, no oversight is required to maintain a relationship because both players cooperate out of mutual obligation. High quality service delivery can thus be maintained simply by the dynamics of the relationship; no formal controls and contracts are necessary, which leads to transactional efficiencies even in markets (Granovetter, 1985; Uzzi, 1997).

Providers who invest in service relationships with loyal customers gain power within their embedding firm and competitive environment because loyal customers, who purchase frequently and pay on time, can be very profitable for both the provider and their embedding firm (Gutek, 1995). The provider's reputation is enhanced because they have direct and personal knowledge of their loyal customers, which augments their service quality, customer satisfaction, and service frequency (Gutek & Welsh, 2000). However, providers who invest in service relationships with loyal customers can incur resource constraints because loyal customers expect personal attention, which can be both time-consuming and administratively costly for the provider and their
embedding firm (Gutek & Welsh, 2000; Hansen, 1999). In that sense, social capital investments in service relationships may not be cost effective (Adler & Kwon, 2002; Gutek & Welsh, 2000).

**E-Commerce Adoption & Service Relationships**

The cost effectiveness of service relationships is especially salient to providers and their embedding firms who are considering the adoption of E-Commerce. If they associate cost reductions with their customers' use of self-serve, Internet-based service delivery systems, providers and their embedding firms are likely to adopt E-Commerce. However, loyal customers who value the features of their service relationships are not likely to adopt E-Commerce if they associate a loss of these features when they use self-serve, Internet-based service delivery systems.

Service relationships today are sustained by a variety of communication media including face-to-face, phone, fax, and email, which enhance face-to-face interactions between the provider and customer by giving them additional channels for more frequent communication (Nohria & Eccles, 1992). E-Commerce and self-serve, Internet-based service delivery systems pose a threat to service relationships, however, because the provider is either partially or completely replaced by an automated process. When this occurs, the direct knowledge and feedback loop between the customer and the provider is broken. The provider is not directly involved in delivering service to the customer, and therefore, is also less directly accountable to the customer for the service delivered. With the automated process mediating between the customer and provider, both lose some degree of control over their interaction and they become less interdependent. For all these reasons, customers may associate self-serve, E-Commerce technology with a loss of these valued features of service relationships.
Based on these theoretical underpinnings, we set out to explore the influence of service relationships on customers’ intentions to adopt E-Commerce. In the next section, we describe the firm that we chose as our case study for this exploration.

THE FIRM

The firm, Custom Business Printing (CBP), manufactures custom printed office products, such as checks, forms, and stationery. It serves about 1 million customers in North America. These customers are primarily small businesses. CBP has traditionally served customers through service relationships, which are implemented through a network of 400 franchised providers (distributors) operating throughout the US and Canada. Its strategy of providing service relationships was developed in the 1970’s when CBP specialized in the manufacture and sale of its trademarked manual accounting system. The local provider would install CBP’s manual accounting system and train customers and their employees to use it.

Given the high margins of CBP’s manual accounting system and its training-intensive nature, service relationships appeared to be a very appropriate service strategy in the 1970’s. Increasingly, however, there are questions about the cost effectiveness of this service strategy given customers’ increasing reliance on computerized accounting systems and the consequent shift in CBP’s product portfolio from its manual accounting system towards low-margin, “commodity” items such as custom-printed checks and business stationery.

Thus, starting in 2000, CBP began to develop an E-Commerce strategy which consisted largely of a self-serve, Internet-based service delivery system that would allow customers to place orders online, check the status of their order, and access their account information. Presently, customers have to call or fax either CBP or their provider to accomplish these tasks. With this self-serve, E-Commerce technology, CBP believes that it can also defend itself against
competition from hardware and software -- especially accounting software -- vendors who have an online sales presence and who are bundling their products with office supplies and custom-printed stationery. In developing its E-Commerce strategy, CBP has made it clear, however, that it will not eliminate its network of providers because it considers the service relationships that these providers have with customers to be a competitive advantage.

We regarded CBP as an excellent case study for this research because it not only had an existing strategy of providing service relationships, but it had also decided to implement a self-serve, Internet-based service delivery system. Furthermore, CBP recognized that the social capital embedded in its service relationships was a competitive advantage.

**PROVIDER & CUSTOMER INTERVIEWS**

We conducted half-hour phone interviews with 10 providers and fifteen-minute phone interviews with 15 customers. CBP provided us with contact information for these 10 providers, who were stratified according to sales volume, tenure, and geography. We, in turn, requested each of these providers to give us contact information for 3 of their customers who varied in computer use: one that was eager to use the Internet, one that was somewhat interested, and one that was not interested in online ordering at all. In total, we received contact information for 21 customers. It was difficult to interview these customers during work hours, especially if they were responsible for answering phones or if their provider had not informed them that we would be calling to interview them. With their permission, we taped the phone interviews and had these transcribed. Three customers and one provider did not give us permission to tape their interviews. In these cases, we took notes.

During our interviews, we asked providers about their service relationships with customers: how they built and maintained these service relationships, how they developed
knowledge of and trust with their customers, what their customers valued about them, and how CBP’s self-serve, E-Commerce technology would impact these aspect of their service relationships. Similarly, we asked customers about their service relationship with their CBP provider: what they valued about their service relationship and how self-serve, E-Commerce technology might impact it.

Insights Gained from Provider Interviews

Providers confirmed that service relationships were a key component of their service strategy and their competitive advantage. They indicated that 50% to 70% of their customers knew them by name and related to them, as individual providers, rather than to CBP. Furthermore, providers indicated that they lost on average 15% of their customers annually, attributing this low turnover to their strategy of providing service relationships.

In explaining how they built and maintained service relationships with their customers, the providers invoked a number of factors. They stressed the importance of staying in touch with their customers on a regular basis, mostly by phone. However, most providers had met about 70% of their customers face-to-face at some point. Providers also felt that being geographically close to customers was desirable not only because it made face-to-face contact with customers possible, but also because it enhanced their service relationships in other ways. The providers’ knowledge of local market conditions enabled them to add value by giving customers advice and assessing the accuracy of their orders:

“Someone places an order, we ask the questions, and I think half the battle too is, when they call in and we ask ‘are there any changes?’ We know in Cincinnati that there’s area-code changes happening. There’s still some responsibility on my part to know some of that. And there’s also the issue with bank changes too. You know, banks change stuff that you would never know that they’re changing.”
They also indicated that customer knowledge, gained through their service relationships, was key
to them delivering exceptional customer care:

“We treat them on a professional but personal basis. I don’t know. It’s just kind of like family. You’re closer to some of them. You know things about their family. They know that if they call and they need to see me, then I’m going to be there. You know. We bend over backwards. If they run out of something and I happen to have it in the office, I will overnight it to them, you know.”

In the context of their service relationships, they took responsibility for customer orders by reviewing them for accuracy and reminding customers when to reorder:

“There’s a lot of different mistakes [people can make on orders]. People will put in essentially exact repeats or I will know that this is a new girl or new guy in the business there and I know that the owner wants it done in a certain way. Where the checks are shipped to, where certain security that he has, that I know the version of the software they are going to will not fit the form that they are trying to reorder.”

“I know in what month he [the customer] should be buying something. So we’ve endeared ourselves to these customers because we can phone up and say ‘Just do me a favor. Don’t want to bother you but just take a look, your checks look like they should be coming up for ordering this month based on how you use them.’ And in most cases, they say ‘Oh gosh, by golly, you’re right. I was going to call you. Thanks so much for calling.’”

When asked under what conditions they would encourage customers to use a self-serve, Internet-based service delivery system, providers indicated that they would want to review their customers’ online orders for accuracy so as to maintain the level of personal service that they currently gave customers:

“I think if a customer could reorder online and I could monitor it to make sure that it’s within the bounds of their normal reorder. Because see, a customer sometimes doesn’t know because of turnover whether they ordered 600 checks or 6000 checks, so if I see a customer that’s ordered 600 checks a year, and all of a sudden he’s ordering 6000, we call them up and say ‘Check that out!’ Or if they say the starting number [of a check order] is 12001 and I think the starting number should be 14000 because he has another 2000 checks there that he’s not aware of. And so if I were out of the middle of that mix, there would be more problems and hard feelings in some instances.”
Providers recognized that self-serve, E-Commerce technology would allow customers access to information about their products and services. However, they were concerned that such a system would make it more difficult for them to deliver the level of personal service that they currently gave customers if they did not have access to information about their customers' online activities:

“I guess the way I would see the Internet having an impact is that I would like to get my customers to go there first of all and get a good idea of some of the things that we have. I'm a little leery, however, you know, the opportunities to give service to a customer. Sometimes it starts with something as simple as somebody needs a copy of an invoice, or they want to check their balances. And I know we're going to automate that, and I like that idea of a customers being able to get a question answered on Saturday like that. I'd almost like to know, if I opened up a log that somebody came and accessed my site, who it was and what they wanted. So that I might be able to at least pick up the phone, since it's automated and say, ‘[name of interviewer], I saw that you came to our web site and you checked your invoice. Did you get the information you needed?’ and so forth, and use that to maintain or at least have an opportunity to maintain a relationship that would have been more personal.”

Overall, providers were eager to see CBP develop a self-serve, Internet-based service delivery system for customers because they felt they would be more efficient if their customers used such a system. However, they wanted oversight of customers' online activities so that they could continue to deliver the level of personal service that they currently gave customers, in essence, maintaining the social capital they had invested in service relationships.

Insights Gained from Customer Interviews

Customers indicated that they had service relationships with their CBP providers. They knew their providers by name and had worked with them for a number of years. They valued that their providers ensured their orders were accurate and delivered on time, that their providers reminded them when to reorder, and that their providers advised them what to order:

“They call and they check up on us whenever they think we may be getting low of checks, which I find is a good aspect too because a lot of times you don't think about the fact that you're running low until all of a sudden you're out of checks. So, they are pretty
good about -- either [the provider] or somebody else from her staff will call and say ‘we show that you haven't ordered checks in so long,’ or ‘how’s your check load going?’ And so they've been real good about that. I think that's why I like to work with them is because they are kind of good to check up on you. And whenever you do give them an order, they get right on it. And it's not a long waiting period.”

“I order it and she knows what to order.”

When asked under what conditions they would use a self-serve, Internet-based service delivery system, customers expressed more concern about the survival of their provider than about their provider reviewing their online orders for accuracy:

“INTERVIEWER: Or you don't think that [your provider’s review of your online orders] would be necessary once you’re able [to place order via the Internet]? INTERVIEWEE: I don't know. Would they get paid if I'm going straight through and not through them?”

“INTERVIEWER: Now in the context of sort of this Internet ordering, would you still want him [your provider] to be kind of reviewing your orders as he does now or is that not necessary in your mind? INTERVIEWEE: Well. That's hard to say if he's going to lose his job.”

In summary, customers valued the personal service that they received from their CBP provider. They also valued their CBP provider, expressing concern about their provider's future when considering their use of self-serve, E-Commerce technology. In that sense, they expressed concern about the social capital embedded in their service relationships and the well being of their social network.

MODELING CUSTOMERS' INTENTIONS TO ADOPT E-COMMERCE

Using the insights we gained from our interviews with providers and customers, as well as the theoretical background we discussed earlier, we developed a model of the influence of service relationships on customers' intentions to adopt E-Commerce (see Figure 1). The overall structure of our model is based on Fishbein and Ajzen’s (1975) theory of reasoned action, which suggests that beliefs and attitudes lead to behavioral intentions, which are predictive of actual
behavior. In our model, however, we omit actual behaviors because CBP’s self-serve, Internet-based service delivery system was still under development when we tested this model.

Firm Reputation

In our model, strength of service relationship is an antecedent of customers’ intentions to adopt E-Commerce. As a customer and provider invest more social capital in their service relationship, it grows stronger. As service relationships grow in strength, customers experience more of the valued features of their service relationships with providers, developing loyalty for their provider and brand loyalty for the products of their provider’s embedding firm. If the provider and their embedding firm are tightly coupled because the former is an agent of the latter (as is the case in CBP), then customers in strong service relationships will perceive the embedding firm to be more reputable. These customers will be more likely to use self-serve, E-Commerce technology because they have brand loyalty for the firm’s products and expect to do business with the firm for a long time, even if they have to adapt to changes in the firm’s service delivery system. Customers who perceive the firm to be more reputable anticipate that it will consistently deliver high quality products and services in perpetuity, therefore, they are more supportive of innovations that the firm implements in response to the dynamic business environment, such as self-serve, E-Commerce technology. Therefore, we predict that:

Hypothesis 1: The stronger customers’ service relationships with their provider, the more customers will perceive the embedding firm to be reputable.

Hypothesis 2: The more customers perceive the embedding firm to be reputable, the more customers will intend to adopt E-Commerce.
Loss of Service Relationship

As service relationships grow in strength, customers are more likely to associate self-serve, Internet-based service delivery systems with a loss of service relationship. Customers in strong service relationships have experienced more of the valued features of service relationships, many of which may be eliminated when their provider is partially or completely replaced by an automated process. Consequently, these customers will be less likely to use self-serve, E-Commerce technology. In that sense, loss of service relationship is an assessment of both the direct and the indirect negative consequences for the customer of using E-Commerce. Whereas a direct consequence of using E-Commerce might be the loss of personal service, an indirect consequence of using E-Commerce might be the loss of their provider and their provider's livelihood, which ultimately affects the customer’s social network. Therefore, we predict that:

Hypothesis 3: The stronger customers' service relationship with their provider, the more customers will associate E-Commerce with a loss of their service relationship.

Hypothesis 4: The more customers associate E-Commerce with a loss of their service relationship, the less customers will intend to adopt E-Commerce.

Provider Involvement Pre-Condition

Whereas loss of service relationship is based on customers' assumptions that E-Commerce will disintermediate their service provider and render their service relationship less personal, it is possible to implement E-Commerce in a way that keeps providers involved in their customers' online activities. If customers are assured that their provider will remain involved in their online activities, they will be more likely to use self-serve, E-Commerce technology. This condition of E-Commerce will be particularly attractive to customers who have strong service
relationships because they are more accustomed to receiving personal service and attention that results from their provider's involvement in their service relationship. Therefore, we predict that:

Hypothesis 5: The stronger customers' service relationship with their provider, the more customers will desire their provider's involvement as a pre-condition of their adoption of E-Commerce.

Hypothesis 6: The more customers desire their provider's involvement as a pre-condition of their adoption of E-Commerce, the more customers will intend to adopt E-Commerce.

Perceived Usefulness

In our model, perceived usefulness is the other antecedent of customers' intentions to adopt E-Commerce. Perceived usefulness, taken from Davis' (1989) technology acceptance model (TAM), is a highly generalized construct that captures “the degree to which a person believes that using a particular system would enhance his or her job performance” (Davis 1989, p. 320). According to research on technology adoption, perceived usefulness is a key predictor of technology adoption (Adams, Nelson, & Todd, 1992; Hendrickson, Massey, & Cronan, 1993; Igbaria, Zinatelli, Cragg, & Cavaye, 1997; Mathieson, 1991; Szajna, 1994; Venkatesh & Davis, 2000). While none of this research on technology adoption was done in either an E-Commerce or a service delivery context, the evidence that perceived usefulness is an antecedent of technology adoption is overwhelming. Therefore, we predict that:

Hypothesis 7: The more customers perceive E-Commerce to be usefulness, the more customers will intend to adopt E-Commerce.

Also, given that provider involvement is a pre-condition of customers' adoption of E-Commerce, we consider it to be a specific conceptualization of technology adoption by
customers that accounts for their embedding service relationship with providers. Therefore, we predict that:

Hypothesis 8: The more customers perceive E-Commerce to be usefulness, the more customers will desire their provider's involvement as a pre-condition of their adoption of E-Commerce.

CUSTOMER SURVEY

We conducted a survey to test our model of customers' intentions to adopt E-Commerce. CBP randomly selected and mailed our survey to 2500 of its customers. The customers that we had previously interviewed were not part of the survey sample. Customers who returned their completed survey were entered into a drawing for twenty-five (25) $50 prizes and 3 Palm Pilots, which CBP provided. The odds of winning these prizes were stated clearly in CBP's cover letter that accompanied our survey. A reminder card was mailed to the survey sample ten days after the initial survey packet had been posted. Also, customer service agents in two CBP call centers telephoned 500 customers randomly selected from the 2500 customers in the survey sample, reminding them to complete and return their surveys. All these efforts were aimed at ensuring a satisfactory response rate to the survey.

We received 383 completed surveys in postage-paid envelopes addressed directly to us, which were included with the survey sent to customers. Therefore, the response rate to the survey was 15%. Interestingly, the reminder phone calls to customers revealed that some Canadian customers, who were French-speaking, were unable to complete our English survey. Furthermore, 7% of the phone calls made were to incorrect or disconnected phone numbers, raising questions about the accuracy of mailing addresses. Unfortunately, we had no way of assessing how many mailed surveys were returned because of incorrect mailing addresses or
customer business closures. We can, therefore, only assume that the ‘real’ response rate was somewhat higher than 15%.

Statistical Method

We used Partial Least Squares (PLS), specifically PLSGraph, Version 3.0, build 176, to test our model. PLS is a regression-based structural equation modeling technique that uses a component-based approach to estimation. PLS analysis involves an assessment of the measurement model and an assessment of the structural model (Compeau & Higgins, 1995; Igbaria et al., 1997). The measurement model is evaluated by examining the factor loadings of individual items and internal consistency reliability (ICR) of each factor to assess discriminant validity and reliability. Factor loadings and ICRs greater than 0.700 are considered adequate (Fornell & Larcker, 1981; Gefen, Straub, & Boudreau, 2000). For discriminant validity, individual items should load higher on the factor they are measuring than on other factors in the measurement model. Also, the average variance extracted (AVE) for the factor and its measures should be greater than the correlation between it and other factors in the measurement model. The structural model is assessed by examining the path coefficients (B). Furthermore, the total variance explained (R²) in the dependent variables is taken as an indicator of model fit.

We regard PLS as appropriate for this analysis because:

1) This research is exploratory in nature. Although our model builds on past research, we developed several new measures in order to test it in this specific case study. By combining the measurement and the structural model, PLS is particularly well suited to exploratory research (Chin, 1998). Furthermore, in the absence of a well established theoretical model where estimates of path and factor loadings can be used to assess the model’s overall fit compared to
the theorized model, a component-based structural equation modeling technique such as PLS is regarded as more appropriate than covariance-based methods (Chin, 1998).

2) PLS makes no distributional assumptions about the data, i.e., it does not require that data be normally distributed (Gefen et al., 2000). This makes it particularly useful in both small sample size and exploratory research.

3) PLS supports models that use both formative and reflective indicators. Reflective indicators are affected by the same underlying latent variable, while formative indicators are causes of latent variables (Chin, 1998). This means that reflective indicators are highly interdependent, implying that a change in the magnitude of the latent variable, for instance an attitude, should be reflected by a same-direction change in the magnitude all its indicators. Formative indicators, in contrast, are viewed as independent causes of a latent variable in that they measure the conditions under which a latent variable is formed. There is no assumption that formative indicators are correlated. In our model, customers’ intentions to adopt E-Commerce are measured using formative indicators. We measured customers’ intended usage of the capabilities that CBP’s E-Commerce technology would offer them. These capabilities included the ability to learn about products and prices, to check the status of an order or account, and to purchase products. Customers’ intentions to use these capabilities are formative indicators because the use of one capability is not necessarily correlated with the use of another – for instance, customers who intend to reorder CBP products online may not intend to check their order or account status online.

Survey Measures
In this section, we discuss how the items that were included in our survey measured the constructs in our model of customers' intentions to adopt E-Commerce. The specific survey items are listed in Table 1.

Strength of service relationship. To measure the strength of customers' service relationships with CBP providers, we adapted survey questions developed by Gutek et al. (2000). We wanted to distinguish between customers who had and did not have a service relationship with a CBP provider. Therefore, we adapted the following question used by Gutek et al. (1999) for this same purpose: "Is there a particular person you usually contact to purchase CBP products, that is, someone you consider your CBP representative?" We deemed customers who responded negatively to this question as not having a service relationship with a CBP provider. They were instructed not to respond to the questions measuring strength of service relationship. Their missing responses to these questions were coded as zeros. Of the 383 customers who responded to the survey, 107 did not have a service relationship with a CBP provider.

Firm reputation. To measure customers' perception of CBP's reputation, we adapted survey questions developed by Gutek et al. (2000).

Loss of service relationship. To measure whether customers associated a loss of their service relationship with E-Commerce adoption, we developed survey questions based on insights from interviews with CBP providers and customers.

Provider involvement pre-condition. To measure whether provider involvement was a condition for customers' adoption of E-Commerce, we developed survey questions based on insights from interviews with CBP providers and customers.
Perceived usefulness of E-Commerce. To measure whether customers perceived self-serve, E-Commerce technology to be useful, we adapted survey questions developed by Davis (1989).

Intention to adopt E-Commerce. To measure customers' intentions to adopt E-Commerce, we developed survey questions based on the features that CBP planned to make available to customers through its self-serve, E-Commerce technology.

Results

Sample. Of the 383 customers who responded to our survey, 11 did not indicate their gender, 269 were women, and 103 were men. Ninety percent (90%) of customers described their ethnicity as “white, European” and 66% of them described their office as having an urban location. Customers, on average, were 46.4 years old (S.D.=11.9), worked 39.5 (S.D.=14.1) hours per week, had worked in their current position for 11.6 years (S.D.=9.31), had 17.7 years (S.D.=10.0) of related work experience, and worked in a business that employed 9.70 (S.D.=17.6) full-time equivalents.

When comparing the responses of early (first week) and late (second week) respondents to test for non-response bias (Armstrong & Overton, 1977), we found no difference in their demographic profile. Our chief concern with regard to non-response bias was that only customers who were in service relationships responded to our survey. However, about a third of the respondents (107 of 383 customers) did not have a service relationship with a CBP provider.

Measurement model. Prior to assessing our structural model, we need to examine our measurement model. Our measurement model satisfied the criteria for reliability and discriminant validity. The individual item factor loadings and cross loadings are presented in the factor structure matrix in Table 2. Individual items loaded higher on the factor they were
measuring than on other factors in the measurement model. The internal consistency reliability (ICR) of each factor is presented in Table 3. All factor loadings and ICRs were greater than 0.700 except for one factor loading, namely LOSS2, which was 0.691. For each factor in Table 3, the average variance extracted (AVE) is listed in bold on the diagonal. Also for each factor in Table 3, the correlation between it and other factors is listed off the diagonal. The AVE for each factor was greater than the correlation between it and other factors in the measurement model.

Structural model. We now proceed with the assessment of our structural model because our measurement model is acceptable. The PLS test results of our structural model are presented in Figure 2. Upon examining the path coefficients, we note that one of our hypotheses was not supported. The path between strength of service relationship and loss of service relationship (H3) is not statistically significant. However, in addition to assessing the statistical significance of the paths, we need to consider their substantive significance or effect sizes. To do this, we can apply Pedhazur’s (1982) suggested lower limit of 0.05 for regression coefficients as an evaluation criterion because the path coefficients produced by PLS are standardized betas (B). Upon examining the path coefficients for substantive significance, we note that the path between loss of service relationship and intention to adopt E-Commerce (H4) is not substantively significant. Therefore, our hypotheses H3 and H4 were not supported.

Given that the goal of this study was to explore the influence of service relationships on customers' intentions to adopt E-Commerce, we want to determine the effect of strength of
relationship on intention to adopt E-Commerce. By multiplying the path coefficients along the three indirect paths between strength of relationship and intention to adopt E-Commerce and summing them, we get a total effect size of 0.117 for strength of service relationship on intention to adopt E-Commerce. In contrast, the effect (direct and indirect) of perceived usefulness on customers’ intentions to adopt E-Commerce is 0.662.

The final step in the evaluation of our structural model involves an assessment of the total variance explained (R²) by the dependent variables. Whereas the variance explained by firm reputation and loss of service relationship is modest, 5.3% and 1.6% respectively, the variance explained by provider involvement pre-condition is 30%. Furthermore, the variance explained by intention to adopt E-Commerce is 61%. Given that intention to adopt E-Commerce was the outcome variable in our structural model, our model has acceptable explanatory power and fit.

**DISCUSSION**

These results provide support for our model of the influence of service relationships on customers' intentions to adopt E-Commerce. They suggest that social capital theory and the concept of service relationships enhance our understanding of technology adoption. Strength of service relationship, through its effect on mediating variables such as firm reputation and provider involvement pre-condition, plays an important role in customers’ intentions to adopt E-Commerce. Customers who had strong service relationships with providers perceived the embedding firm to be more reputable, had a stronger desire for their provider’s involvement as a pre-condition of their adoption of E-Commerce, and had stronger intentions to adopt E-Commerce. Perceived usefulness had a more substantial impact on customers’ intentions to adopt a self-serve, Internet-based service delivery system. Nevertheless, the mediating variables
in our structural model that relate to strength of service relationship do play a substantial role in explaining customers’ intentions to adopt E-Commerce.

The lack of support for the two hypotheses (H3 and H4) related to loss of service relationship was somewhat surprising. From a theoretical perspective, customers with a strong service relationship should be more concerned about losing social capital, in general, and the valued features of service relationships, in particular, through a move to an E-Commerce mediated environment. Furthermore, customers who more strongly associate a loss of service relationship with E-Commerce adoption should be less inclined to adopt a self-serve, Internet-based service delivery system.

There are several possible explanations for the lack of significance in the paths related to loss of service relationship. In retrospect, it was the providers that we interviewed rather than the customers who voiced more concern that their service relationships would be damaged and that their business would be hurt by the introduction of E-Commerce. Even though customers expressed concern over their provider’s well being in the context of an E-Commerce mediated environment, our results suggest that customers perceived self-serve, E-Commerce technology to be useful, which was a strong predictor of their intentions to adopt E-Commerce. In other words, the job enhancements afforded by self-serve, E-Commerce technology were more salient to customers than the possible loss of their provider and their provider's livelihood as a consequence of their adoption of such technology. This relative salience might be explained as customers’ acceptance of increasing technology-mediation, as well as a loss of social capital, as an inevitable part of innovation and progress.

From a measurement standpoint, our data analysis suggests that the two measures we developed for this research, namely loss of service relationship and provider involvement pre-
condition, had both high discriminant validity and internal consistency reliability. However, only provider involvement pre-condition demonstrated nomological validity in that it related to the other constructs in the model as predicted. The development and validation of a measure of provider involvement as a pre-condition for technology adoption is a first, yet important, step in applying social capital theory and the concept of service relationships to research about technology adoption. Although we cannot establish the validity of this measure on the basis of a single case study, we do regard the development of this measure as one of the contributions of this research.

Limitations

Our findings need to be considered in light of the limitations of this research, in particular, the use of a single case study for both model development and testing. We need to take into consideration the context-specific details of this research when interpreting the results and identifying implications for research and practice. For instance, it is important to note that most CBP customers are small businesses. In other words, CBP providers sell commodity products through business-to-business service relationships with owners of small business or their staff members responsible for ordering office supplies. Furthermore, CBP providers are franchisees, namely small business owners themselves. Therefore, they are likely to be active in their local small business community through participation in business associations and networking groups, building social capital and service relationships in ways that may be distinct from providers who are employees in large firms or who serve consumers rather than business customers.

Given the case-specific attributes of this research, one might conclude that our findings are not applicable to business-to-consumer service relationships. However, it is important to
note that the taxonomy of service interactions (Gutek, 1995; Gutek et al., 1999; Gutek & Welsh, 2000), on which this research is built, is not specific to business-to-business service environments. On the contrary, this taxonomy and the features of service relationships have thus far been tested only in business-to-consumer environments. Thus, despite the firm-specific nature of our data, we would argue that the theoretical underpinnings of our model render the findings of this research applicable to both business-to-business and business-to-consumer environments. Furthermore, the processes that CBP sought to automate through implementing a self-serve, Internet-based service delivery system can be found in most organizations, irrespective of whether they sell commodity or custom products and whether they serve businesses or consumers. Ultimately, however, the generalizability of our model and research findings can only be assessed through replications in other settings.

With respect to data analysis, we need to highlight that despite the causal paths proposed in our model and the strong support provided for these paths by PLS testing, we cannot make conclusive statements about causality because we cannot rule out alternative paths and explanations for our findings. For instance, interaction effects cannot be modeled in PLS and other structural equation techniques, which limits our ability to assess alternative models.

Implications for Research and Practice

Despite the limitations discussed above, the results of this research demonstrate the role of social capital and service relationships in E-Commerce adoption. Research on social capital and service relationships has not yet considered questions of technology adoption and technology adoption research has not yet considered the role of social capital and service relationships. Thus, both bodies of research paint an incomplete picture.
This research is a first and exploratory attempt at completing this picture. Future research should use data from multiple organizations to test our model and validate the measures that we developed for this study, in particular, the provider involvement pre-condition. In order to understand the interactive effects of E-Commerce and service relationships, longitudinal research that explores the impact of E-Commerce adoption on the strength of service relationships and firm reputation should be conducted. Also, given that this study was limited to service relationships, future research could explore the adoption of E-Commerce in service environments where pseudo-relationships and encounters are prevalent. Finally, future research could explore E-Commerce adoption in service environments where providers and customers are not aligned in their desire to build service relationships. For instance, in car sales, providers’ interests in getting to know customers are generally at odds with customers’ wishes to avoid contact with sales associates. Accounting for this apparent mismatch between customer and provider preferences would require an extension of the E-Commerce adoption model that we have proposed in this study.

From a managerial standpoint, the findings of this research highlight the importance of keeping the provider involved when moving service relationships online. Provider involvement should take the form of encouraging customers to use a self-serve, Internet-based service delivery system, checking the accuracy of customers' online transactions, and being accountable for customers’ online satisfaction. Provider involvement is not a one-time activity but an ongoing effort to keep customers satisfied and loyal to the firm. In fact, we would caution firms that have traditionally engaged in service relationships not to replace their providers with self-serve, E-Commerce technology. They run the risk of losing their most loyal customers, namely those that have strong service relationships with their providers. Furthermore, given that the
scalability of an E-Commerce strategy is constrained by provider involvement, firms that have traditionally engaged in service relationships may need to temper their expectations of self-serve, E-Commerce technology and recognize the merits of an E-Commerce strategy that takes social capital into account.

CONCLUSIONS

In this paper, we explored how service relationships influenced customers' adoption of E-Commerce in the context of one firm's efforts to develop a self-serve, Internet-based service delivery system. We have shown that the strength of service relationships significantly influenced customers’ intentions to adopt E-Commerce through customers’ perceived reputation of the firm and their desire for their provider’s continued involvement in online transactions. In that sense, we were able to demonstrate that social capital plays an important role in service delivery and technology adoption.
1 Service encounters typically consist of a single interaction between a particular customer and provider. Over time, the customer's successive contacts involve different providers, so the customer does not get to know any individual service provider. Many of the firms that have created service encounter delivery systems are well known to customers. Thus, rather than the individual service provider it is the embedding service firm that customers identify when they are seeking service, and many chose to go back to the same firm each time they need service. These kinds of interactions are called pseudo-relationship, which consist of repeated contact between a customer and a firm. In this case, the customer does not get to know any individual service provider but does become acquainted with the services, products, and procedures of the firm. Customers anticipate future interaction not with a particular provider but rather with the firm.

2 A pseudonym
REFERENCES


## TABLE 1

### Survey Items

<table>
<thead>
<tr>
<th>Strength of Service Relationship [5-strongly agree, 1-strongly disagree]</th>
</tr>
</thead>
<tbody>
<tr>
<td>REL1: I am a loyal customer of my CBP representative.</td>
</tr>
<tr>
<td>REL2: I know my CBP representative well.</td>
</tr>
<tr>
<td>REL3: My CBP representative knows me well.</td>
</tr>
<tr>
<td>REL4: I value the advice that my CBP representative provides me.</td>
</tr>
<tr>
<td>REL5: I trust my CBP representative.</td>
</tr>
<tr>
<td>REL6: The service I receive from my CBP representative is personalized just for me.</td>
</tr>
<tr>
<td>REL7: If I were dissatisfied with the service I received, I would speak directly to my CBP representative about the problem.</td>
</tr>
<tr>
<td>REL8: I would refer someone else to my CBP representative.</td>
</tr>
</tbody>
</table>

### Firm Reputation [5-strongly agree, 1-strongly disagree]

I purchase products from CBP because …

| FIRM1: They have a good reputation.                            |
| FIRM2: They have been in business for a long time.            |
| FIRM3: I expect them to be in business for a long time to come.|
| FIRM4: They assume personal responsibility for my satisfaction.|
| FIRM5: I have an established business relationship with them.  |

### Loss of Service Relationship [5-strongly agree, 1-strongly disagree]

Using the CBP web site would …

| LOSS1: Hurt my CBP representative's business.                  |
| LOSS2: Undermine my local small business community.           |
| LOSS3: Eliminate the personal service that I currently receive from my CBP representative. |
| LOSS4: Destroy the relationship that I currently have with my CBP representative. |

### Provider Involvement Pre-Condition [5-totally confident, 1-not at all confident]

I would use the CBP web site if …

| INV1: My CBP representative encouraged me to use it.           |
| INV2: My CBP representative personally reviewed my online orders.|
| INV3: My CBP representative was personally responsible for my online satisfaction. |

### Perceived Usefulness of E-Commerce [5-strongly agree, 1-strongly disagree]

Using the CBP web site would …

| USE1: Improve my performance at work.                          |
| USE2: Increase my productivity at work.                       |
| USE3: Enhance my effectiveness at work.                       |
| USE4: Be useful to me at work.                                |
| USE5: Be a more convenient way for me to purchase products.   |

### Intention to Adopt E-Commerce [5-strongly agree, 1-strongly disagree]

I would use the CBP web site …

<p>| ADPT1: To learn about the products that CBP sells.            |
| ADPT2: To learn about volume discounts on products that CBP sells. |
| ADPT3: To learn about the prices of CBP products.             |
| ADPT4: To purchase products, including re-orders.             |
| ADPT5: To check my order status.                             |
| ADPT6: To check my account status.                           |</p>
<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Factor 1: Strength of Service Relationship</th>
<th>Factor 2: Firm Reputation</th>
<th>Factor 3: Loss of Service Relationship</th>
<th>Factor 4: Perceived Usefulness of E-Commerce</th>
<th>Factor 5: Provider Involvement Pre-Condition</th>
<th>Factor 6: Intention to Adopt E-Commerce</th>
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### TABLE 3

Descriptive statistics and Correlation Matrix

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<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>ICR</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
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<tr>
<td>1. Strength of Service Relationship</td>
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<td>.985</td>
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<td>3. Loss of Service Relationship</td>
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<td>.888</td>
<td>.126</td>
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<td>4. Perceived Usefulness of E-Commerce</td>
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</tbody>
</table>

1 Correlation coefficients greater than .100 are significant at $p<0.05$. Correlation coefficients greater than .131 are significant at $p<0.01$. 
FIGURE 1

The Influence of Service Relationships on Customers' Intentions to Adopt E-Commerce

Hypotheses

- **H1:** +
- **H2:** +
- **H3:** +
- **H4:** -
- **H5:** +
- **H6:** +
- **H7:** +
- **H8:** +
FIGURE 2

The Influence of Service Relationships on Customers' Intentions to Adopt E-Commerce

Results

![Diagram showing the influence of service relationships on customers' intentions to adopt E-Commerce.](image)

\[ R^2 = 0.053 \]

- **Firm Reputation**: B = 0.230**
- **Loss of Service Relationship**: B = 0.126
- **Intention to Adopt E-Commerce**: B = 0.106**

\[ R^2 = 0.016 \]

- **Strength of Service Relationship**: B = 0.234*
- **Provider Involvement Pre-condition**: B = 0.015*

\[ R^2 = 0.301 \]

- **Perceived Usefulness of E-Commerce**: B = 0.387**

\[ R^2 = 0.609 \]

\[ 2 \ p<0.05*, \ p<0.01** \]