

## The relationship between buyer and a B2B e-marketplace: Cooperation determinants in an electronic market context<sup>☆</sup>

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### Abstract

“Stop thinking like a supplier and start thinking as a customer.”

The authors argue that cooperation may be achieved by augmenting the core product with technology-based services. Given the growing importance of real time information exchange and interactivity, a better understanding of the use of technology to the establishment and development of the buyer–supplier cooperative relationships is essential for knowledge advancement. This paper argues that firms should aim to put themselves into their customers’ shoes and use the “voice of the customer” to take their major relationship management decisions. To do so, the authors use a sample of nearly 400 SMEs’ purchasing managers, to better understand cooperation determinants from the buyers’ perspective. The study reveals that in an electronic marketplace, cooperation is positively affected by termination costs, supplier relationship policies and practices, communication and information exchange, and negatively affected by product prices and opportunistic behavior. Moreover, both relationship commitment and trust play a major role in mediating the relationships between these five determinants and cooperation. Surprisingly, resources relationship benefits do not show a significant impact on either commitment or cooperation. Theoretical and managerial implications of these findings are discussed.

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“To be an effective competitor in the global economy requires one to be a trusted cooperator in some network (...). Relationship marketing, in all its contexts, requires cooperative behaviors” (Morgan & Hunt 1994).

“Electronic commerce has added a whole new dimension to discussions of business relationships” (Morgan & Hunt, 2003).

In a highly competitive context, firms’ increasing costs in customer acquisition enhance the suppliers’ need to create and develop cooperative relationships with their customers (Doney & Cannon, 1997; Reichheld & Sasser, 1990). Cooperation refers to situations in which parties work together to achieve mutual goals, leading to outcomes that exceed what any of the firms involved would achieve if they acted solely in their own best interests (Anderson & Narus, 1990), and cooperative relationships are characterized by high levels of trust (Dwyer, Schurr, & Schmid, 1987; Morgan & Hunt, 1994). As far as marketers place an

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increasing emphasis on building long-term relationships, trust assumes a central role in the development of marketing theory and marketing practice (Dertouzos Lester, & Solow, 1989; Dwyer, et al., 1987), representing one of the most essential ingredients in the creation and development of cooperation between buyers and suppliers (Anderson & Narus, 1990; Ganesan, 1994). However, when comparing future intentions of customers with weak and strong relationships, Garbarino and Johnson (1999) found that the last are driven by both trust and relationship commitment, meaning that these two dimensions are essential mediators between component attitudes and cooperation. As relationships characterized by trust are so highly valued, partners will desire to commit themselves to such relationships (Morgan & Hunt, 1994).

Despite the development and progress in the understanding of Relationship Marketing (RM), much research has not attempted to address its implementation in organizations (Too, Souchon, & Thirkell, 2001). RM definitions are mainly aimed at the desired outputs, forgetting the required inputs or features, which would enable an observer to determine if a marketing relationship policy were followed by the organization. Additionally, the clients' voice has been frequently ignored (Lages, Lancaster, & Lages, 2005). The issue of why customers may want a marketing relationship with a firm, or what benefit they may perceive from a cooperative relationship, remains under-explored (Garbarino & Johnson, 1999).

Electronic markets are defined as networked information systems that serve as an enabling infrastructure for buyers and sellers to exchange information, transact, and perform other activities related to the transaction before, during, and after transaction (Varadarajan & Yadav, 2002). From a cooperation perspective, electronic marketing (e-marketing) covers all orientations that allow relational exchanges in network, interactive, digital contexts; where security, privacy, and customer problem solving represent new marketing roles (Kalyanam & McIntyre, 2002). In this context, where business is conducted at a distance and risks and uncertainties are magnified, trust becomes even more important in gaining the commitment of the customers and their cooperation than in the traditional context. In fact, when customers trust the on-line supplier, they are much more likely to be committed, and cooperate by opening their communication with the supplier and sharing personal information. This allows the supplier to customize the offer, which in turn increases trust and strengthens the relationship (Reichheld & Scheffer, 2000).

Despite the interest of practitioners and academicians in electronic markets, concerted efforts to understand them have been lacking (Grewal, Comer, & Mehta, 2001). Furthermore, it has been observed that most firms do not acknowledge the impact of new information and communication technologies, and the potential of e-marketing on customer attitudes and behavior (Coviello, Milley & Marcolin, 2001). As observed by Morgan and Hunt

(2003), a number of questions emerge from this new context, namely: 1) Are relationships established in the bricks-and-mortar world transferable to the firm's Web presence? 2) How do firms develop a reputation for trust among customers whom they never see in person? This is particularly important in the case of SMEs (small- and medium-sized enterprises), where the development and implementation of customer retention strategies, and the use of electronic means for relationship development and cooperation purposes are seldom a characteristic.

Our research will focus on the extent to which the information and communication technologies (ICT) may contribute to the buyer–seller cooperative relationship, in an electronic market context. It is our objective to extend, from a buyer's perspective, our understanding of the following issues:

1. key determinants of buyer–seller cooperation;
2. the mediating effects of trust and commitment on the buyer–seller cooperative relationship;
3. the effects of trust on relationship commitment.

To do so, in the subsequent sections, we present the theoretical background, namely the nature of cooperation. We then present research hypotheses, research methodology, and report the results. Finally, we discuss the limitations of our research and the implications of our findings.

## 1. Theoretical background and conceptual framework

One central idea underlying relationship marketing is that the goal of marketers is to nurture long-term relationships by means of a structure of mutual benefits for the parties involved (Hewett & Bearden, 2001). These benefits can be achieved through cooperative actions undertaken by the parties. Morgan and Hunt (1994, p.26) suggest that cooperation requires the two parties in a relationship to participate actively to achieve mutual benefits and that cooperation promotes success in the relationship. Cooperation can then be defined as similar or complementary coordinated actions taken by firms in interdependent relationships to achieve mutual outcomes or singular outcomes with expected reciprocation over time (Anderson & Narus, 1990). In an e-market environment we view buyer-cooperation in terms of the regularity of the interactions and communication activities with the supplier (O'Keefe, O'Connor, & Jung, 1998) which promotes the dialogue and increases customer satisfaction.

In view of the objectives mentioned above, we propose a conceptual model and hypotheses based on the “commitment–trust” approach (Morgan, 2000; Morgan & Hunt, 1994). Morgan and Hunt's (1994) theory holds that both commitment and trust are key variables, essential to the process of building cooperative marketing relationships. More recently, Morgan (2000) suggests that the develop-

ment of the mediators and effective cooperation in marketing relationships depend on three sets of dimensions—economic, resources, and social contents. First, relationships that provide partners with superior economic benefits will foster effective cooperation, and thus relationship preservation and success. These economic relationship benefits constitute the economic content (Morgan, 2000). Literature suggests that economic relationship dimensions, namely for buyers in the virtual marketplaces, may include market-driven product pricing policies (Klein & Quelch, 1997), as well as relationship termination costs (Morgan & Hunt, 1994).

Second, the resource content may include relationship benefits to the relationship such as security, privacy, and service quality and consistency, offered by the supplier in an ICT context (Zeithaml, Parasuraman, & Malhotra, 2002). Finally, the social content, through which partners perceive their current and future compatibility, results from the sharing of similar cultures, information, open communication, and partners' behavior (Morgan & Hunt, 1994; Sivadas & Dwyer, 2000). In an ICT context, these technologies act as a dialogue stimulator, facilitating interactivity and real time relevant information exchange between buyers and sellers (McKenna, 1997; Weiber & Kollmann, 1998). While building on different domains of relationship marketing literature and exploratory analysis findings, we developed a conceptual framework (see Fig. 1), which systematizes key determinants of cooperation.

More specifically, the distinct characteristics of the e-market, such as its interactivity (Kalyanam & McIntyre, 2002) and real time functionality (McKenna, 1997), make the direct translation of constructs from other relationship market contexts difficult and sometimes inappropriate. To overcome this obstacle we have also built on the consumer–firm exchanges literature (Garbarino & Johnson, 1999; Sirdeshmukh Singh, & Sabol, 2002) and service exchanges in a web context (Grewal et al. 2001; Zeithaml et al., 2002).

In this section we begin by developing the hypotheses associated with the precursors of buyer–supplier cooperation. We propose that cooperation is affected by a set of determinants in an e-market context, through the mediating effect of trust and relationship commitment. More specifically, we suggest that product prices, termination costs, and resources relationship benefits affect cooperation through their impact on relationship commitment. Additionally, opportunistic behavior, communication, and information exchange affect cooperation through the mediating effect of trust. Moreover, we suggest that supplier relationship policies and practices affect cooperation through both the mediating variables, while trust itself has a direct effect on relationship commitment.

### 1.1. Precursors of cooperation

#### 1.1.1. The effects of relationship commitment on cooperation

Relationship commitment and trust are sentiments that have been identified as being critically important in the development of long-term firm relationships (Anderson & Narus, 1990; Dwyer et al., 1987; Kumar, Sheer, & Steenkamp, 1995; Morgan & Hunt, 1994). Commitment and trust are “key” because they encourage marketers to: 1) work at preserving relationship investments by cooperating with exchange partners, 2) resist attractive short-term alternatives in favor of the expected long-term benefits of staying with existing partners, and 3) view potentially high-risk actions as being prudent because of the belief that partners will not act opportunistically. In short, commitment and trust lead directly to cooperative behaviors that are conducive to relationship marketing success (Morgan & Hunt, 1994).

Commitment to the relationship is defined as an enduring desire to maintain a valued relationship (Moorman, Deshpande, & Zaltman, 1992). Commitment has three compo-

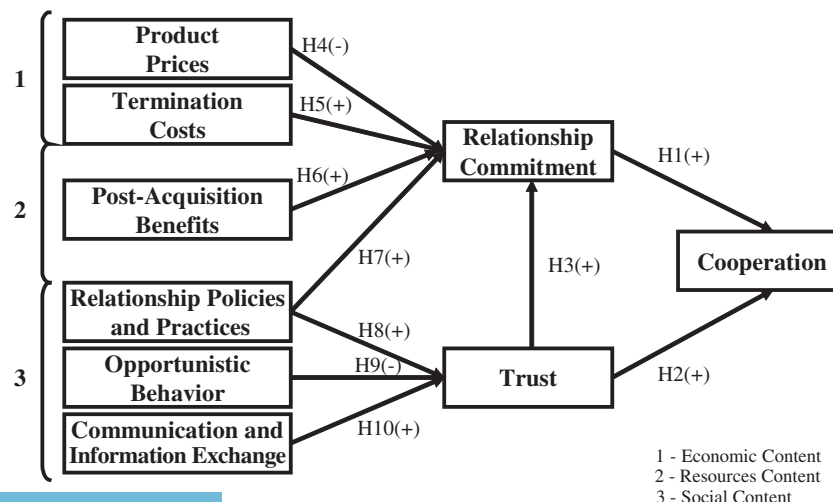


Fig. 1. Conceptual model of the determinants of cooperation in an electronic market context.

nents: an instrumental component of some form of investment, an attitudinal component that may be described as effective commitment or psychological attachment (e.g. customer pride in being associated with the supplier), and a temporal dimension indicating that the relationship exists over time (Garbarino & Johnson, 1999). In inter-organizational relationships, such as this research setting, commitment is the desire to develop a stable relationship, a willingness to make short-term sacrifices to maintain the relationship, and a confidence in the stability of the relationship (Anderson & Weitz, 1992). It implies the adoption of a long-term orientation toward the relationship—short-term sacrifices to realize long-term benefits—an implicit or explicit pledge of relational continuity between exchange partners (Dwyer et al., 1987).

Suppliers in a committed relationship gain greater access to market information for developing products (Anderson & Weitz, 1992). Buyers in the e-market will receive more relevant on-time market and product information (Weiber & Kollman, 1998; Smith, Bailey, & Brynjolfsson, 1999) and a more efficient service delivery. Because both parties receive valued contributions from each other, each partner has a strong motivation to build, maintain, strengthen and deepen the relationship, making it more likely that they perceive their relationship as a win–win opportunity (Kumar et al., 1995), and cooperation as a means to develop it. Specifically, we hypothesize:

**Hypothesis 1.** There is a positive relationship between relationship commitment and cooperation.

### 1.1.2. *The effects of trust on cooperation*

The evolution of competition forces firms to cope with an increasing difficulty in the management of technological options and market relations. Technologies are in continuous development, and new or more aggressive competitors frequently threaten market relations. Most firms have reacted to this dynamic by trying to develop long-term cooperative relationships with their clients, based on mutual trust (Raimondo, 2000). Relational exchanges differentiate from discrete transactions along several key dimensions. The most important difference is the fact that relational exchange transpires over time; each transaction must be viewed in terms of its history and its anticipated future, suggesting that the basis for future collaboration may be supported by implicit and explicit assumptions, trust, and planning (Dwyer et al., 1987).

Trust exists when one party has confidence in an exchange partner's reliability and integrity, which is associated with qualities such as consistency, competency, honesty, fairness, responsibility, helpfulness and benevolence (Morgan & Hunt, 1994). Once trust is established, firms learn that coordinated joint efforts will lead to outcomes that exceed what the firm would achieve if it acted solely in its own best interests, sometimes willing to temporarily postpone the receipt of its own benefits until

some later time (Anderson & Narus, 1990). So trust is a working relationship, and this fact has repercussions on the firm's actions. These repercussions can be defined as the firm's belief that another company will perform actions that will result in positive outcomes for the firm, as well as not take unexpected actions that would result in negative outcomes or risks for the firm.

Trust is central to all relational exchanges and is the cornerstone of the strategic partnership (Moorman et al., 1993; Morgan & Hunt, 1994). In the e-commerce environment, perceived risk is more pronounced than in traditional commerce. This is founded on three sources: 1) the electronic system—the Internet—which is a relatively new and complex technology, whose security problems are frequently reported in the media; 2) the potential market partners—the online suppliers—who have the possibility to act opportunistically, and easily register and track customer data; and 3) the customers themselves, who often have not yet gained much experience with this form of shopping, and therefore have not accumulated enough relevant knowledge about potential market partners as well as the process of how to shop online (Einwiller, Ingenhoff, & Schmid, 2003). Trust may take on a heightened importance in e-markets because of the spatial and temporal separation between buyers and sellers imposed by the medium. An Internet transaction does not typically involve the simultaneous exchange of money and goods, but instead they are transmitted from different locations and different times. When selecting a supplier, a customer must beware that the other party may be an expert in attracting traffic and in making credit-deposits card, but not in actually delivering goods (Smith et al., 1999). So, given the augmented perceived risks in the electronic environment, trust is even more important to long-term relationships between firms and their customers than in the traditional marketplace, and is a main determinant in the development of partners' cooperative efforts and actions. Considering these facts, we posit the following:

**Hypothesis 2.** There is a positive relationship between trust and cooperation.

### 1.2. *Antecedents of relationship commitment*

#### 1.2.1. *The effects of trust on relationship commitment*

The relationship management literature suggests that the future of buyer–seller relationships depends on the commitment made by the partners to the relationship, and that short-term sacrifices are normally necessary to realize long-term benefits (Dwyer et al., 1987). Because relationships characterized by trust are so highly valued, partners will desire to commit themselves to such relationships (Morgan & Hunt, 1994).

In the e-market context, customers are considerably uncertain about matters of privacy and security for financial transactions (Einwiller et al., 2003), and service quality and

consistency. Because commitment involves potential vulnerability and sacrifice, parties will seek only trustworthy partners, and firms are unlikely to be committed unless trust is already established (Garbarino & Johnson, 1999). In accordance with the theory of trust and commitment, we consider trust as a precursor of commitment (Morgan & Hunt, 1994), so we posit the following hypothesis:

**Hypothesis 3.** There is a positive relationship between trust and relationship commitment.

#### *1.2.2. The effect of product price on relationship commitment*

Academic literature and business practice are directing increased attention to the importance of creating value in buyer–seller relationships. One way of creating value is to reduce costs in commercial exchanges. The electronic market may provide significant cost savings, if compared with the traditional marketplace (Kalyanam & McIntyre, 2002; Sawhney & Zabin, 2002)—namely on customers' direct product costs. Direct product costs are the actual price charged by the supplier for the main products sold to a customer. Because this cost is the easiest to measure, it traditionally has received the most attention from buyers and sellers.

The e-marketing environment enables large-scale use of certain pricing mechanisms, such as forward auctions, reverse auctions, dynamic pricing, and “name your own price”, that are not widely feasible (Kalyanam & McIntyre, 2002). Furthermore, as Peppers and Rogers (1999) point out, relationship marketing has only recently become practical and cost-efficient on a large scale because of database technology and the Internet, which allow the individual user to set their own preferences, and the firm to recognize a visitor in real time and configure its offerings digitally. As customer firms increasingly rely on tools such as value analysis in selecting and evaluating suppliers, suppliers that lower customer direct product costs (prices) will be preferred. A supplier that enhances customer value by lowering customer product prices will increase its “share of customer” at the expense of suppliers that do not provide such a benefit (Cannon & Homburg, 2001), suggesting that when this situation occurs, the customer will enhance his commitment to the supplier. Therefore, we posit the following hypothesis:

**Hypothesis 4.** There is a negative relationship between product prices and relationship commitment.

#### *1.2.3. The effect of termination costs on relationship commitment*

Relationship literature assumes that a terminated party will seek an alternative relationship and have “switching” costs, something that promotes dependence (Morgan & Hunt, 1994). Buyer switching costs may arise as a result of prior commitments to a technology and to a particular

supplier, such as communication systems requiring ongoing service or technical extension (Jackson, 1985), or through developing routines and procedures for dealing with a specific supplier that will need to be modified if a new relationship is established (Heide & John, 1990). In some situations, an entire set of working relationships will need to be established with different parts of the supplier's organization, such as technical support personnel and application specialists. All else being equal, buyers will be motivated to stay in existing relationships to minimize or avoid switching costs (Heide & Weiss 1995).

These switching costs are inflated by investments that make it difficult to switch to another relationship, such as lack of service and up-to-date information (Ganesan, 1994), difficult or impossible to re-deploy to another activity or channel. As mentioned by Ganesan (1994), the lack of alternatives is the primary cause of dependency, and dissolving the relationship is therefore not a viable solution in many situations.

When interdependence between supplier and buyer are balanced, partners exhibit a working consensus to collaborate (Spekman, Salmund, & Lambe, 1996). On the buyer side, dependency can be managed making investments in the relationship with the supplier, by engaging in bonding behaviors, enhancing the commitment to the vendor, and developing a stronger cooperative long-term relationship (Ganesan, 1994). In the e-market environment customers make significant investments in learning about technology, firm's products and business practices, in volume purchasing commitments, and in buying products and supporting infrastructure that is only available from specific firms (Sawhney & Zabin, 2002). Therefore, we posit the following hypothesis:

**Hypothesis 5.** There is a positive relationship between relationship termination costs and relationship commitment.

#### *1.2.4. The effects of resources relationship benefits on relationship commitment*

Competition—particularly in the global marketplace—requires that firms continually seek out products, processes, and technologies that add value to their offerings. Dimensions such as product profitability, customer satisfaction, and product performance (Morgan & Hunt, 1994), may represent relationship benefits; or security, or service quality and consistency in the electronic context. Researchers agree that these benefits show a major impact on customers' buying decisions.

Database technology and the Internet allow an enterprise to track its customers individually across all touch points. Digital interaction on Web sites, at call centers, and through sales force automation tools now provides an automated connection to the firm. Mass customization technology permits a firm to configure its offerings digitally. This interaction is then likely to become part of an ongoing series of linked interactions, building a rich and individualized

context for the relationship over time (Kalyanam & McIntyre, 2002). With each interaction, the offering can more closely meet the customer's needs. The relationship tends to get smarter and smarter, in what Peppers and Rogers (1999), calls a "learning relationship". In such an environment, marketing functions defined from a relational exchange perspective (e.g. security and service quality and consistency) may be regarded as resources relationship benefits. We suggest that suppliers that deliver superior benefits will be highly valued by their partners; in turn, these partners will commit themselves in their relationship with the supplier, which leads us to the following hypothesis:

**Hypothesis 6.** There is a positive relationship between resources relationship benefits and relationship commitment.

### *1.3. The effect of relationship policies and practices on both relationship commitment and trust*

Despite the well-recognized significance of trust building in customer–firm relationships, few studies have examined company behaviors and practices that build or deplete customer trust, or the mechanisms by which these behaviors/practices contribute to trust enhancement and/or depletion (Sirdeshmukh et al., 2002). Therefore, although sufficient evidence exists to suggest that trust matters for critical relational outcomes, this paper pinpoints behaviors and management practices that are likely to be key drivers of both customer relationship commitment and trust.

An important aspect of the definition of trust is the notion of a belief, a sentiment, or an expectation about an exchange partner that results from the partner's expertise, reliability, and intentionality, reflecting two distinct components: 1) credibility, which is based on the extent to which the buyer believes that the supplier has the required expertise to perform the job effectively and reliably, and 2) benevolence, which is based on the extent to which the customer believes that the supplier has intentions and motives beneficial to the customer (Ganesan, 1994). Moreover, regarding the component of credibility, Smith and Barclay (1997) find that perceptions of role competence have a significant effect on the partners to invest in the relationship, suggesting that the buyer perception of the supplier role competence has an impact on the customer relationship commitment.

Strategic considerations motivate organizations to build capabilities and preempt competition, and thereby serve customers better. Considering the prominent role of technology in modern society, it comes as no surprise that organizations view technology as a means of building sustainable competitive advantage (Day & Glazer, 1994). Regarding the organizational decision to participate in electronic markets, strategic considerations such as providing better customer service (e.g. problem solving) gain particular significance (Grewal et al., 2001).

Dwyer et al. (1987) theorize that shared values contribute to the development of both commitment and trust. Similarly,

Morgan and Hunt (1994) suggest that shared values, defined as the extent to which partners have beliefs in common about what behaviors, goals, and policies are important or unimportant, appropriate or inappropriate, and right or wrong, are direct precursors of both relationship commitment and trust. These authors also suggest that the shared ethical values construct included in their research should be extended to other types, for example, relating to product quality, promotion tactics, or customer service, "as this could further the development of commitment and trust in relational exchange" (Morgan & Hunt, 1994, p. 32). Following this recommendation and the results of both the literature review and the qualitative exploratory stage, we decided to add to ethical values another component—problem solving orientation—defined as the customer's perception of the supplier's motivations to anticipate and satisfactorily resolve problems that may arise during and after a service exchange (Sirdeshmukh et al., 2002). In an electronic market environment, where problem-solving orientation has an important significance, we suggest that supplier relationship policies and practices may impact on both relationship commitment and trust, as follows:

**Hypothesis 7.** There is a positive relationship between relationship policies and practices and relationship commitment.

**Hypothesis 8.** There is a positive relationship between relationship policies and practices and trust.

### *1.4. Antecedents of trust*

#### *1.4.1. The effects of opportunistic behavior on trust*

The issue of transaction costs is central to the study of organizations, and includes the costs of reaching an agreement that is satisfactory to both sides, adapting the agreement to unanticipated contingencies, and enforcing its terms (Ganesan, 1994). Because of bounded rationality and the costs of writing, negotiating, and implementing a contract, a comprehensive contract involving a long-term relationship is not possible. At best, only incomplete contracting can be achieved, increasing the possibility of one of the partners taking advantage of the other through opportunistic behavior, defined in the transaction cost analysis (TCA) literature as "self-interest seeking with guile" (Williamson, 1975, p.6). Incomplete contracting in a trusting relationship means that the two parties agree to adapt to unanticipated contingencies in a mutually profitable manner, responding to inequities through solutions over the long run instead of short-term opportunistic behavior, the hazards of which can be mitigated or removed if there is trust between the two parties in long-term relationships (Ganesan, 1994).

Although the concept of trust is now used in many disciplines, its study originated in the fields of psychology and sociology. Within these disciplines, trust appears to be defined by two constituent constructs: the first one is predictability of the behavior of the subject—or organization—in whom trust is placed, which comes from the

learning process based on experience; the second one is the certainty that the person (or firm) concerned could not behave opportunistically and that his actions would be aimed to achieve joint benefits (Raimondo, 2000). In the virtual marketplace, where business is conducted at a distance and the actual delivering of goods represents a higher risk for the buyer, supplier opportunistic behavior becomes more obvious and easy to follow than in the traditional marketplace.

Incorporating trust in models of firms' relationships provides a unique vantage point of treating opportunistic behavior as an explanatory variable. In fact, for trust developing purposes, partners in a relationship must overcome this natural opportunistic behavior, resist the desire for an advantage, and instead work toward a mutually beneficial situation (Morgan & Hunt, 1994), which suggests the following hypothesis:

**Hypothesis 9.** There is a negative relationship between opportunistic behavior and trust.

#### 1.4.2. *The effects of communication and information exchange on trust*

Communication can be broadly defined as the formal as well as informal sharing of meaningful and timely information between firms (Anderson & Narus, 1990). This definition has as its focus the efficacy of information exchange rather than the quantity or amount, and the construct inherently taps past communications.

Communication and trust are two of the facets that comprise cooperative competency, related to the ability of firms to assimilate and make use of new information or technologies, as well as to forge, develop, and govern partnerships (Sivadas & Dwyer, 2000). Cooperative competency manifests itself through the effective exchange of information—a source of a firm's market orientation and sustainable competitive advantage (Day, 1991; Lages, Lages, & Lages, 2005; Porter & Millar, 1985)—and successful partnerships are characterized by greater levels of trust, exhibiting better communication quality and information sharing (Mohr & Spekman, 1994).

The World Wide Web is a new medium characterized by ease of entry, globality, time independence and interactivity. As such, it represents a remarkable new opportunity for marketers to communicate with new and existing markets in a very integrated way (Berthon, Lane, Pitt, & Watson, 1998). Internet-based business-to-business e-markets represent an inter-organizational information system that facilitates electronic interactions among multiple buyers and sellers (Grewal et al., 2001). In fact, in an electronic market environment, buyers and sellers come together in a *marketspace* and exchange information related to price, product specifications, and terms of trade, and a dynamic price-making mechanism facilitates transactions between the firms (Kaplan & Sawhney, 2000).

The inter-firm acquisition of information leads to richer and proprietary knowledge bases, and its distribution, interpretation, and utilization result in sustainable competitive advantages, by enhancing the value of the firm's resources and organizational capabilities and by reducing uncertainty. The availability and depth of information are frequently mentioned as an important reason for shopping online, and in terms of information content, the ability to search price and quality information increases satisfaction with both the experience and product purchased and improves intentions to revisit and repurchase from a Web site (Zeithaml et al., 2002).

One factor that distinguishes firms that merely possess information from those that use information is the level of trust users have in producers of information (Moorman et al., 1993). Because we test our model at a specific point in time, our definition of the construct corresponds to inherently past communication, as in previous studies (Anderson & Narus, 1990; Morgan & Hunt, 1994). Therefore, we posit that if a buyer's perception that past communication and information exchange from the supplier has been of high quality—that is, relevant, timely, and reliable—this will result in greater buyer trust, suggesting the following hypothesis:

**Hypothesis 10.** There is a positive relationship between communication and information exchange and trust.

## 2. Research methodology

### 2.1. *The B2B e-marketplace: pmelink.pt*

Usually an e-market is sponsored or maintained by a market maker, whose primary function is to gather buyers and sellers in a marketplace (Grewal et al. 2001; Klein & Quelch 1997). Taking into account the objectives of this project, we selected *pmelink.pt* and its small and medium enterprise (SMEs) customers to test the proposed hypotheses. *pmelink.pt* is an online business center that sells goods and services to SMEs in areas that support their core businesses. *pmelink.pt* was formed when three major Portuguese groups recognized an opportunity to market a variety of goods and services to their joint client base. Portugal Telecom is by far the leader in its sector, and two banks, Banco Espírito Santo and Caixa Geral de Depósitos, are both leaders in the area of SMEs. Portugal Telecom's penetration is almost 100% and the two banks between them count as clients around 65% of all SMEs operating within Portugal.

In the banks' day-to-day relationships with their clients, it was realized that they were often strong in their core businesses but very poor in support areas—clerical, office supplies and purchasing, IT, marketing, logistics and so on. An opportunity existed to take advantage of technology to give them the supporting tools they needed in these areas.

pmelink.pt not only promises fast and efficient delivery of goods but also leverages direct cost reductions to its clients through bulk ordering and strategic sourcing of materials from key suppliers. In addition to products, pmelink.pt offers a range of business services, business expertise, advice and information through the same online connection. Essentially, pmelink.pt operates between diverse businesses and suppliers: a customer places an order with pmelink.pt, which is forwarded to one of their 30 suppliers; an express cargo carrier takes care of delivery logistics, and pmelink.pt bills the customer. Despite the apparent complexity of operations, pmelink.pt promises a 99% success rate for goods being delivered within a 24-h timeframe.

pmelink.pt selected an Internet and a CRM electronic platforms, to formulate an integrated e-business infrastructure and guarantee a reliable, scaleable and future-proof e-commerce solution. The integration between applications is also apparent in the provision of information and services and in personalization. For example, pmelink.pt recognized that SMEs often had difficulty dealing with various legal requirements. In response, it developed a package of core services that includes a search engine for all types of legal documents, a simulator for various fees and taxes, a fiscal calendar with reminders of major dates, and a library of printable official forms. Monitoring user activities on the site allows individual visitors to be segmented, so that campaigns can be targeted more effectively. Based on its unique relationship with its investors and customers, pmelink.pt aimed to contact and start business with around 10% of the 200,000 SMEs operating in Portugal by the end of its third year of existence (May, 2004). Using a reliable sample of their customers, our aim was to understand their perception of pmelink's economic, resources, and social relationship contents, and its impact on the creation and development of a marketing relationship process.

## 2.2. Survey instrument development

A questionnaire was developed that incorporates a variety of multi-item measures and indicators of the conceptual framework. Also included were additional indicators derived from exploratory in-depth interviews with the supplier's managers, specific to the research context. The buyer–seller cooperation construct was adapted from Hewett and Bearden (2001), taking into account that a major form of buyer–seller cooperation, in an electronic environment, may be observed when regular interactive and communication activities take place (O'Keefe et al., 1998). With regard to the mediating variables, relationship commitment was adapted from Anderson and Weitz (1992) and Kumar et al. (1995). In this respect, the interviews with the supplier's managers revealed that the SMEs' customers may not understand the items “willingness to invest” and “willingness to make short-term sacrifices to realize long-term benefits”, possibly introducing bias through their answers. In view of this potential

problem, we decided to add to the measures used by Anderson and Narus (1990) another scale adapted from Kumar et al. (1995), to reinforce the affective commitment, the expectancy of continuity perceptions, and the willingness to increase identification with the supplier.

Trust was adapted from Morgan and Hunt (1994) and Anderson and Narus (1990). Product prices were adapted from Cannon and Homburg (2001), and termination costs and opportunistic behaviors were adapted from Morgan and Hunt (1994). With regard to resources relationship benefits, we followed the electronic market literature suggestions, and the conclusions from the interviews with the supplier's managers. Relationship policies and practices were adapted from Sirdeshmukh et al. (2002). And finally, communication and information exchange were adapted from Sivadas and Dwyer (2000).

The content and face validity of the items were assessed by seven judges (two marketing professors and the five pmelink.pt managers). The survey was revised according to their comments and then given to a pretest sample of ten SME customers' purchasing managers. The pretest results were used to refine the questionnaire further. A full list of the final 28 items and their scale reliabilities can be found in Appendix A. The average internal reliability (Cronbach Alpha) was .84.

## 2.3. Data collection

In order to understand the buyer–seller cooperative relationship process, primary data were collected following a three-stage process. First, in-depth interviews were conducted with the five managers of pmelink.pt, in order to identify the main ICT relationship benefits searched for and perceived by SME customers. Additionally, we conducted meetings with selected SME customers to understand their perceptions of ICT relationship benefits.

Second, after a pre-test, data collection was done through a “html attachment” questionnaire that was included in the pmelink.pt online newsletter (September 2003). This newsletter is addressed to all the individuals responsible for office products or services “buying centers” of the SME customers—ranging from general manager to purchasing and financial managers. SMEs' structures and resources are very limited; meaning that in most cases the “buying center” is run by one person, who is responsible for the entire buying process of office products. This is the case of pmelink.pt and its customers, adding the fact that the office products considered in the transactions are not complex products, normally not requiring intervention from other persons in the firm.

We obtained 395 valid questionnaires, above the minimum number (381) required for a 95% confidence level and 5% sampling error. Stratified sampling, based on the customers' loyalty degree strata grouping, was established and achieved. Finally, follow-up interviews were conducted to discuss the main findings.



#### 2.4. Sample profile and non-response bias

Respondents covered the main industry and economic activities, from the primary sector (5%), to the industrial sector (21%), and the services sector (74%). They also selected and purchased from main product categories, as classified by the supplier: paper (74%); consumable goods (73%); other office products (57%); systems equipment (29%); office furniture (5%); and services (6%).

The survey was directed to individuals that are primarily responsible for the SMEs' "buying center", based on the supplier database. The job titles of the respondents ranged from general managers to financial managers, purchasing managers, and administrative managers (82%); other job titles (18%) correspond to staff that are normally responsible for contacting and dealing with the supplier on a day-to-day basis. Despite the fact that the respondents use different titles, they were selected from the supplier's data file as being responsible for the buying process and the main link to the supplier, in order not to introduce external validity problems to the results.

As previously discussed, in May 2004 *pmelink.pt* completed its third year of existence. The respondents' firm profiles varied from less than 6 months (20%) of business experience with the supplier, to more than 12 months (50%), a high percentage of which was more than 2 years (70%). Collectively, this indicates that although the title of the respondents' positions may be wide-ranging, the individuals appear to have significant knowledge in the specific purchasing activities of the firm.

Non-response bias was tested by assessing the differences between the early and late respondents with regard to the means of all the variables (Armstrong & Overton, 1977). No significant differences were found, suggesting that response bias was not a significant problem in the study. Data were analyzed through exploratory factor analysis (EFA), followed by confirmatory factor analysis (CFA) and structural equation modelling (SEM).

### 3. Data analysis

#### 3.1. Measurement model

In order to assess the validity of the measures, the items were subjected to a confirmatory factor analysis (CFA), using full-information maximum likelihood (FIML) estimation procedures in LISREL 8.3 (Jöreskog & Sörbom, 1993). In this model, each item was restricted to load on its pre-specified factor. The chi-square for this model is significant ( $\chi^2=696.72$ ; 315df,  $p=.00$ ). However, since the chi-square statistic is sensitive to sample size, we also assessed additional fit indices. The Comparative Fit Index (CFI), the Incremental Fit Index (IFI), and the Non-Normative Fit Index (NNFI) of this model are .93, .94, and .94, respectively. We also assessed the Root Mean Square Error of

Approximation (RMSEA), which assesses fit and incorporates a penalty for lack of parsimony. The RMSEA of this model is .055, indicating a good fit to the population.

Convergent validity is evidenced by the large and significant standardized loadings of each item on its intended construct (average loading size was .79). As shown in Appendix A, all constructs present the desirable levels of composite reliability (Bagozzi, 1980). Discriminant validity among the constructs was also stringently assessed using the Fornell and Larcker (1981) test; all possible pairs of constructs passed this test. Discriminant validity was also evidenced by the correlation estimates between any two constructs (Jöreskog & Sörbom, 1993). No correlation includes the value of 1 (Anderson & Gerbing, 1988). Appendix B provides an overview of the construct means, standard deviations, and the correlation matrix among the constructs.

#### 3.2. Path model parameter estimates

The final structural model revealed a good fit—CFI=(.93), IFI=(.94), and NNFI=(.94). All values observed reveal that the final model is good in reproducing the population covariance structure, and there is an acceptable discrepancy between the observed and predicted covariance matrices (Steiger, 1990). As observed in Table 1, the majority of the predicted direct relationships are statistically significant.

As can be seen, Table 1 reveals that relationship commitment has a significant positive effect on their cooperation with the supplier (.49,  $p<.01$ ), thus providing support to H1.

When testing H2, the results indicate that trust has a significant positive direct impact on buyer–supplier cooperation (.30,  $p<.01$ ), thus providing support for hypothesis H2. Moreover, as observed in Table 1, the total positive effect (.61,  $p<.01$ ) is strengthened by a significant indirect effect of trust on cooperation (.32,  $p<.01$ ), through relationship commitment.

Regarding the impact of trust on relationship commitment, Table 1 shows a significant positive effect (.65,  $p<.01$ ), thus providing support to H3.

There is a significant negative direct effect of product prices on relationship commitment ( $-.09$ ,  $p<.05$ ), thus providing support to hypothesis H4. Additionally, there is a negative indirect effect on cooperation ( $-.05$ ,  $p<.05$ ).

The positive impact of termination costs on relationship commitment (.25,  $p<.01$ ) is confirmed, thus providing support to hypothesis H5. Additionally there is a significant positive indirect impact on cooperation (.11,  $p<.01$ ), through relationship commitment.

Surprisingly we did not find a relationship between resources relationship benefits and relationship commitment; hence we did not find support for H6.

Regarding the impact of supplier relationship policies and practices on relationship commitment, we did not find a

Table 1  
Effects of exogenous and prior endogenous constructs (Maximum Likelihood Estimation,  $N=395$ )

Effect of/on	Relationship commitment			Trust			Cooperation		
	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total
Relationship commitment							<b>0.49</b>		<b>0.49</b>
							<b>6.36</b>		<b>6.36</b>
							<b>H1</b>		<b>H1</b>
Trust	<b>0.65</b>		<b>0.65</b>				<b>0.30</b>	<b>0.32</b>	<b>0.61</b>
	<b>10.13</b>		<b>10.13</b>				<b>4.43</b>	<b>6.12</b>	<b>10.78</b>
	<b>H3</b>						<b>H2</b>		
Product prices	–0.09		–0.09					–0.05	–0.05
	–2.49		–2.49					–2.37	–2.37
	<b>H4</b>								
Termination costs	<b>0.25</b>		<b>0.25</b>					<b>0.11</b>	<b>0.11</b>
	<b>4.64</b>		<b>4.64</b>					<b>4.01</b>	<b>4.01</b>
	<b>H5</b>								
Resources relationship benefits	–0.08		–0.08					–0.07	–0.07
	–1.36		–1.36					–0.87	–0.87
	<b>H6</b>								
Relationship policies and practices	0.03	<b>0.23</b>	<b>0.26</b>	<b>0.36</b>		<b>0.36</b>		<b>0.23</b>	<b>0.23</b>
	0.48	<b>5.08</b>	<b>3.79</b>	<b>5.77</b>		<b>5.77</b>		<b>4.78</b>	<b>4.78</b>
	<b>H7</b>			<b>H8</b>					
Opportunistic behavior		–0.13	–0.13	–0.20		–0.20		–0.12	–0.12
		–3.50	–3.50	–3.68		–3.68		–3.52	–3.52
				<b>H9</b>					
Communication and information exchange		<b>0.07</b>	<b>0.07</b>	<b>0.11</b>		<b>0.11</b>		<b>0.07</b>	<b>0.07</b>
		<b>1.98</b>	<b>1.98</b>	<b>2.02</b>		<b>2.02</b>		<b>1.99</b>	<b>1.99</b>
				<b>H10</b>					

Values above are completely standardized estimates; values below are  $t$ -values. Values in bold are significant effects. Because of rounding, sometimes the “total effect” is not the same as “the direct effect plus the indirect effect”.

significant positive direct effect. However it indirectly affects relationship commitment through trust (.23,  $p < .01$ ) leading to a total significant positive effect (.26,  $p < .01$ ). Hence, there is a partial support to hypothesis H7. Supplier relationship policies and practices show a significant positive direct effect on trust (.36,  $p < .01$ ), thus supporting hypothesis H8. Additionally there is a significant positive indirect impact on cooperation (.23,  $p < .01$ ).

There is a significant negative direct impact of opportunistic behavior on trust (–.20,  $p < .01$ ), thus providing support to H9. Additionally, there is a significant negative impact on relationship commitment (–.13,  $p < .01$ ), through trust, and a significant negative indirect effect on cooperation (–.12,  $p < .01$ ) through trust.

And finally, there is a significant direct effect of communication and information exchange on trust (.11,  $p < .05$ ), thus providing support to H10. Additionally, there is a significant positive indirect impact on relationship commitment (.07,  $p < .05$ ) through trust, and a significant positive indirect effect on cooperation (.07,  $p < .05$ ) through trust.

### 3.3. Relative importance of predictor variables

The above discussion has focused upon the rows of Table 1. The following discussion will now consider the relative explanatory power of the predictor variables with respect to each of the three endogenous constructs in the model, thus examining the columns of Table 1.

When analyzing the determinants of relationship commitment, Table 1 shows that the most powerful direct significant impact comes from trust (.65,  $p < .01$ ), which is more than twice the effect of termination costs (.25,  $p < .01$ ), and more than six times the impact of product prices (–.09,  $p < .05$ ). The strong direct impact of trust on relationship commitment also explains the significant indirect effect of three of the key determinants of cooperation on relationship commitment. Indeed, there is an impact of supplier relationship policies and practices (.23,  $p < .01$ ), followed by opportunistic behavior (–.13,  $p < .01$ ), and communication and information exchange (.07,  $p < .05$ ) on relationship commitment through trust.

Regarding the determinants of trust, we note that the main direct effect comes from the supplier relationship policies and practices (.36,  $p < .01$ ), which represents one and a half times that of opportunistic behavior (–.20,  $p < .01$ ), and more than three times the importance of communication and information exchange (.11,  $p < .05$ ).

In terms of the determinants of cooperation, the most important direct effect is relationship commitment (.49,  $p < .01$ ), followed by trust (.30,  $p < .01$ ). However, when analyzing the total effects, trust comes in first place (.61,  $p < .01$ ), followed by relationship commitment (.49,  $p < .01$ ), supplier relationship policies and practices (.23,  $p < .01$ ), opportunistic behavior (–.12,  $p < .01$ ), termination costs (.11,  $p < .01$ ), communication and information exchange (.07,  $p < .05$ ), and finally product prices (–.05,  $p < .05$ ).

#### 4. Research limitations

There are some limitations to consider regarding the results. First, we offer the buyers' view as a starting point to understand the determinants of cooperation in this environment. The research relies on the responses of the buyers only, providing an incomplete view of the relationship. Since the buyer–supplier relationship research in the electronic market context is still in an early stage (Morgan & Hunt, 2003), we offer the buyer's view as a starting point to understand how they can foster trust and commitment from the suppliers (Jap & Ganesan, 2000). Nevertheless, we strongly encourage future research into the supplier side as well as both sides of the dyad.

A second limitation regards the fact that the sample consists of participants of the marketplace. Future research should include non-participants and customers that have left the firm.

A third limitation is that our research instrument, the questionnaire, may have created common method variance. This could be particularly threatening if the respondents were aware of the conceptual framework of interest. However, they were not told the specific purpose of the study, and all of the construct items were separated and mixed (Jap, 2001; Lages & Jap, 2003). Furthermore, we guaranteed confidentiality to all survey participants, which also helps to reduce the possibility of bias in trust, commitment, and cooperation for self-presentation reasons (Singh, 2000; Lages & Lages, 2004).

Fourth, the data are not longitudinal. For future research purposes the model developed and tested could benefit from being tested in a longitudinal design, as such studies provide for stronger inferences (Anderson & Narus, 1990; Morgan & Hunt, 1994).

Fifth, a limitation may reside in the specificity of the target of this study—Portuguese SMEs serviced by *pme-link.pt*. While enhancing the focus of this research, it may also limit the generalization of the results to some degree, at the same time creating the need for further studies in this field. Future research might explore, for example, how a B2B e-marketplace learns about the features and services necessary to ensure success. Also, measures of traffic through the B2B e-marketplace (e.g. frequency of use, development of trade, new entrance and exit of members) would be interesting to explore. It is hoped that by shedding light on the use of new information and communication technologies, this study will trigger further works to the improvement of relationship marketing theory and practices in a B2B e-marketplace.

#### 5. Discussion

We have attempted to contribute to the knowledge and development of relationship marketing and e-markets. We have empirically provided an expansion of the key

mediating variables (KMV) theory presented by Morgan's theoretical work (2000), to better understand the strategic nature of relationship marketing. As suggested by Morgan (2000, p.484), we expect in this way to “shed light on the processes and motivations of relationship building”. Regarding the electronic environment, the key to success is in offering benefits of comparable relevance to both buyers and sellers that are superior to their traditional transaction methods (Klein & Quelch, 1997). The research approach allows a better understanding of the extent to which the information and communication technologies (ICT) may impact on, and contribute to, the development of the buyer–seller cooperative relationship.

By empirically expanding the KMV theory, in an e-market context, we had some interesting findings. In the next section, we first discuss the implications of our research findings for relationship marketing and e-markets research, then speculate on some implications for marketing practice, and finally draw the conclusions of our research.

#### 6. Implications for research in relationship marketing and e-markets

As a first result of our research, we found that the adapted Morgan and Hunt (1994) framework confirmed its robustness in a very different environment—the electronic market context. In fact, as observed in Table 1, both of the mediating constructs, relationship commitment and trust, show a very significant positive direct effect on cooperation, reinforcing the theory that suggests that “if cooperative relationships are required for relationship marketing success, our results suggest that commitment and trust are, indeed, key” (Morgan & Hunt, 1994, p.23). The results also show that the direct impact of commitment on cooperation is greater than trust, which also strengthens the theory that “relationships are built on the foundation of mutual commitment” (Berry & Parasuraman, 1991, p.139). Additionally, there is a significant positive direct impact of trust on commitment, thus confirming the theory suggesting “firms are unlikely to be committed unless trust is already established” (Garbarino & Johnson, 1999, p.73). This relationship explains why the total effects of trust on cooperation are greater than commitment on cooperation.

Second, by extending the economic content of the KMV model—that is, by adding product prices to relationship termination costs (the only economic construct included in the KMV model)—we found a direct negative impact of product prices on cooperation, through the mediating effect of relationship commitment. Despite the reality showing that the majority of online shoppers are not out to score the absolute lowest price in the market (Reichheld & Scheffer, 2000), B2B buyers are price rational. Regarding termination costs, results confirm the theory that buyers will be motivated and committed to stay in existing relationships to economize on those costs (Heide & Weiss, 1995).

Third, we extended the resources contents by adding key online benefits. As in the KMV model, the hypothesized effect of relationship benefits on relationship commitment was unsupported (Morgan & Hunt, 1994, pp. 32). We found no significant impact of these benefits on cooperation through the mediating effect of relationship commitment. One of the possible explanations for this surprising finding may be that these benefits were measured in comparison with those of alternative suppliers. Hence, future studies should try to measure satisfaction with absolute levels of benefits. Another possibility might be that, before engaging in the relationship, customers already had a good perception of the supplier's founders' credibility and reliability—two of the most important national banks and the national telecom company—and extended the “security” image to the supplier. Another reason may result from the “halo effect” suggested by Morgan and Hunt (1994, p. 32), through which the apparent relationship between benefits and commitment disappear when exogenous variables (e.g. communication and information exchange and customer problem solving) are included in the analysis of other constructs.

Fourth, regarding the social content (cf. Morgan & Hunt, 1994, p.484), we extended the sharing values construct (the KMV model included only ethical values) by adding “problem solving” practices. The empirical testing revealed that, although we did not find a direct impact of supplier relationship policies and practices on relationship commitment, we found a significant direct positive effect on trust, and an indirect impact on commitment through trust. These findings may be explained on the basis that the buyer–supplier relationship process is still in an early stage of development, when the parts involved are discovering and testing the goal compatibility, integrity, and performance, as well as potential obligations, benefits, and burdens involved with working together on a long-term basis (Dwyer et al., 1987). It might be that the relationship will become significantly positive in the medium–long term.

Additionally, as in the KMV model, both communication and information exchange, and opportunistic behavior show a significant direct effect on trust, positive and negative respectively, as well as an indirect effect on relationship commitment, through trust. This confirms that meaningful communication between firms in a working partnership is a necessary antecedent of trust, at any one point in time (Anderson & Narus, 1990). Moreover, trust depends on the customer perception that there is no opportunism from the counter-party (Raimondo, 2000).

## 7. Implications for marketing practice

First of all, our findings show that relationship and customers' cooperative actions are possible to develop in an electronic environment, where perceived risk and uncer-

tainty are highlighted if compared with traditional commerce, and that technology plays an important role for relationship management purposes (Sawhney & Zabin, 2002). Our study suggests that it is possible to connect a mass of customers and suppliers through a B2B e-marketplace and develop business relationship processes. In a context where most firms (such as SMEs) do not reckon the potential of e-marketing on influencing customer attitudes and behavior and the use of customer retention strategies, our findings may contribute toward clarifying these important key relationship phenomena.

Second, the findings also suggest that when it comes to customer relationship development purposes, even in an electronic environment, the old rules retain their vitality. In fact, despite the innovative and quite different characteristics of the “marketspace”, compared with the traditional marketplace, the extended KMV maintains its robustness. When it comes to developing customer cooperative behavior, customer cooperation requires the supplier to be previously trustworthy, which then leads to customer commitment, in that order (Dwyer et al., 1987; Jap & Ganesan, 2000). In fact, trust should be the main objective to attain through relationship marketing activities, namely in the early stages of the relationship process. This research suggests that one viable function and relationship marketing activity in the electronic context may indeed be to “produce” trust, in order to enable the participants to reach added benefits.<sup>2</sup>

Managers willing to implement retention strategies and develop customer relationship processes should be aware, from the outset, of the negative impact of opportunistic behavior; and positive effects of customer-oriented relationship policies and practices—namely customer problems solving—as well as reliable and meaningful information contents on trust. Not only are these considerations vital in terms of the supplier value chain organization, they may also be regarded as an important contribution to the customer value chain (Porter, 2001; Weiber & Kollman, 1998).

Third, despite the majority of online shoppers not using the Internet to search for the absolute lowest price in the market (Reichheld & Scheffer, 2000), B2B buyers are market price-driven. For this reason suppliers must regard their pricing policy as an important determinant of cooperation, through the mediating effect of commitment.

## 8. Conclusion

The technology impact on relationship marketing represents one of the most serious challenges to firms.

<sup>2</sup> We acknowledge an anonymous reviewer for this insight.

Our research allows us to suggest and reinforce the idea that the customer relationship process needs to be regarded by academics and practitioners as a long-term rewarding process, even in an electronic and real time environment. The main determinants of customer cooperation rely mainly on trust and commitment. Commitment development requires the previous achievement of trust. As a starting point, this fact enhances the importance of establishing the adequate marketing activities that lead to customer trust, such as relationship policies and practices, communication and meaningful information exchange facilities, and the fulfillment of all forwarded promises, not forgetting that suppliers need to pay special attention to their pricing policy. In the electronic market context, marketing is required to perform new roles, such as customer support service (Kalyanam & McIntyre, 2002) that is associated with trust, commitment, and cooperation. To do so, suppliers are encouraged to put themselves into their customers' shoes and use the "voice of the customer" to take their major relationship management decisions. Suppliers should also be aware that as the relationship process develops, customers make significant investments in learning about a firm's products and business practices and supporting infrastructure that are only available from specific firms (Sawhney & Zabin, 2002). These investments represent very good reasons for buyers' commitment development (resulting in higher product purchases and meaningful information exchange) and a stronger cooperative long-term relationship with the supplier.

#### Appendix A. Final scale items and reliabilities

Cooperation ( $\alpha = .86$ ;  $\rho = .86$ ;  $\rho_{vc(n)} = .68$ )

Please rate your agreement with each of the following statements, regarding your relationship activities with *pmelink.pt* (the supplier).

Scale: 1=Strongly Disagree; 7=Strongly Agree

- My firm and the supplier regularly interact.
- There is an open communication between our firms.
- Overall, we are satisfied with the interaction with the supplier.

Relationship Commitment ( $\alpha = .86$ ;  $\rho = .87$ ;  $\rho_{vc(n)} = .57$ )

Please rate your agreement with each of the following statements, regarding your relationship with *pmelink.pt* (the supplier).

Scale: 1=Strongly Disagree; 7=Strongly Agree

- We have a strong sense of loyalty to the supplier.
- We expect to be using the supplier for some time.
- Our relationship with the supplier is a long-term partnership.

- We would not drop the supplier because we like being associated with it.
- We want to remain as a customer of the supplier because we have pride in being associated with a firm that carries a technological image.

Trust ( $\alpha = .92$ ;  $\rho = .92$ ;  $\rho_{vc(n)} = .75$ )

Please rate each of the following statements:

1) In our relationship, *pmelink.pt* (the supplier)

Scale: 1=Strongly Disagree; 7=Strongly Agree

- Is someone to whom I give my confidence.
- Has high integrity.
- Gives us reliable information and advice.

2) Overall, how would you characterize the level of trust your company has in its working relationship with *pmelink.pt* (the supplier)?

Scale: 1=Do Not Trust At All; 7=Totally Trust

#### A.1. Economic content

Product Prices

How do you compare the (catalog) prices of *pmelink.pt* (the supplier) with the prices of alternative suppliers?

Scale: 1=Prices are much lower; 7=Prices are much higher

- Product prices

Termination Costs ( $\alpha = .80$ ;  $\rho = .81$ ;  $\rho_{vc(n)} = .59$ )

Please rate your agreement with each of the following statements:

If we decided to leave *pmelink.pt* (the supplier)...

Scale: 1=Strongly Disagree; 7=Strongly Agree

- We are afraid of what might happen without having another supplier lined up.
- Our business would be greatly disturbed.
- It would represent an important loss to us.

#### A.2. Resources content

Resources Relationship Benefits ( $\alpha = .71$ ;  $\rho = .87$ ;  $\rho_{vc(n)} = .69$ )

How do you compare *pmelink.pt* (the supplier) with an alternative supplier, with whom you work, or have worked before, in terms of...

Scale: 1=Much Worse; 4=The Same; 7=Much Better

- Payment security.
- Product delivery.
- Service delivery quality consistency.

A.3. Social Content

Relationship Policies and Practices ( $\alpha = .81$ ;  $\rho = .82$ ;  $\rho_{vc(n)} = .61$ )

Please rate your agreement with each of the following statements, regarding pmelink.pt (the supplier).

Scale: 1=Strongly Disagree; 7=Strongly Agree

- a) The supplier has policies that show respect for the customer.
- b) The supplier has practices that make solving problems easy.
- c) The supplier solves my firm’s problems quickly.

Opportunistic Behavior ( $\alpha = .89$ ;  $\rho = .90$ ;  $\rho_{vc(n)} = .75$ )

To accomplish its own objectives, sometimes pmelink.pt (the supplier) . . .

Scale: 1=Strongly Disagree; 7=Strongly Agree

- a) Alters the facts slightly.
- b) Promises to do things without doing them later.
- c) Fails to provide us with the support that they are obliged to.

Communication and Information Exchange ( $\alpha = .84$ ;  $\rho = .85$ ;  $\rho_{vc(n)} = .65$ )

How do you compare pmelink.pt (the supplier) with an alternative supplier, with whom you work with, or have worked before, in terms of communication and information?

Scale: 1=Much Worse; 4=The Same; 7=Much Better

- a) Provides relevant information to our firm.
- b) Provides on-time information.
- c) Guarantees privacy on the sharing of information.

Appendix B. Means, standard deviations, and correlations among constructs

Constructs	Means	S.D.	1	2	3	4	5	6	7	8	9
1. Cooperation	4.5	1.20	1								
2. Commitment	4.3	1.21	.69**	1							
3. Trust	5.2	1.09	.64**	.72**	1						
4. Product prices	3.6	1.16	-.20**	-.29**	-.20**	1					
5. Termination costs	3.0	1.42	.23**	.37**	.17**	-.28**	1				
6. Resources relationship benefits	4.9	1.08	.22**	.29**	.29**	-.37**	.37**	1			
7. Polices and practices	5.1	1.06	.35**	.43**	.48**	-.35**	.34**	.52**	1		
8. Opportunistic behavior	2.4	1.36	-.24**	-.28**	-.36**	.22**	-.09	-.20**	-.39**	1	
9. Communication and information exchange	4.7	1.05	.23**	.28**	.31**	-.27**	.29**	.54**	.44**	-.20**	1

\*\*Correlation is significant at the .01 level (2-tailed).

References

Anderson, J., & Gerbing, D. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411–423.

Anderson, J., & Narus, J. (1990, Jan). A model of distributor firm and manufacturer firm working partnerships. *Journal of Marketing*, 54, 42–58.

Anderson, E., & Weitz, B. (1992, Feb). The use of pledges to build and sustain commitment in distribution channels. *Journal of Marketing Research*, 29, 18–34.

Armstrong, J., & Overton, T. (1977, Aug). Estimating non-response bias in mail surveys. *Journal of Marketing Research*, 16, 396–400.

Bagozzi, R. (1980). *Causal models in marketing*. New York: John Wiley.

Berry, L., & Parasuraman, A. (1991). *Marketing services: Competing through quality*. New York: The Free Press.

Berthon, P., Lane, N., Pitt, L., & Watson, R. (1998). The world wide web as an industrial marketing communication tool: Models for the identification and assessment of opportunities. *Journal of Marketing Management*, 14, 691–704.

Cannon, J., & Homburg, C. (2001, Jan). Buyer–seller relationships and customer firm costs. *Journal of Marketing*, 65, 29–43.

Coviello, N., Milley, R., & Marcolin, B. (2001). Understanding IT-enabled interactivity in contemporary marketing. *Journal of Interactive Marketing*, 15(4), 18–33.

Day, G. (1991). Learning about markets. *Marketing Science Institute Report* (pp. 91–117). Cambridge, MA: Marketing Science Institute.

Day, G., & Glazer, R. (1994). Harnessing the marketing information revolution: Towards the market driven learning organization. In R. Blatteberg, R. Glazer, & J. Little (Eds.), *The marketing information revolution* (pp. 270–288). Boston: Harvard Business Press.

Dertouzos, M., Lester, R., & Solow, R. (1989). *Made in America: Regaining the productive edge*. Cambridge, MA: The MIT Press.

Doney, P., & Cannon, J. (1997). An examination of the nature of trust in buyer–seller relationships. *Journal of Marketing*, 61(2), 35–51.

Dwyer, F. R., Schurr, P., & Oh, S. (1987, Apr). Developing buyer–seller relationships. *Journal of Marketing*, 51, 11–27.

Einwiller, S., Ingenhoff, D., & Schmid, B. (2003). A model of trust and reputation in electronic commerce. *Proceedings from the EMAC 32nd Conference*. Glasgow: University of Strathclyde.

Fornell, C., & Larcker, D. (1981, Feb). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18, 39–50.

Ganesan, S. (1994). Determinants of long-term orientation in buyer–seller relationships. *Journal of Marketing*, 58(2), 1–21.

- Garbarino, E., & Johnson, M. (1999, Apr). The different roles of satisfaction, trust and commitment in customer relationship. *Journal of Marketing*, 63, 70–89.
- Grewal, R., Comer, J., & Mehta, R. (2001, Jul). An investigation into the antecedents of organizational participation in business-to-business electronic markets. *Journal of Marketing*, 65, 17–33.
- Heide, J., & John, G. (1990, Feb). Alliances in industrial purchasing: The determinants of joint action in buyer–seller relationships. *Journal of Marketing Research*, 27, 24–36.
- Heide, J., & Weiss, A. (1995, Jul). Vendor consideration and switching behavior for buyers in high-technology markets. *Journal of Marketing*, 59, 30–43.
- Hewett, K., & Bearden, W. (2001, Oct). Dependence, trust, and relational behavior on the part of foreign subsidiary marketing operations: Implications for managing global marketing operations. *Journal of Marketing*, 65, 51–66.
- Jackson, B. (1985, Nov–December). Build customer relationships that last. *Harvard Business Review*, 120–128.
- Jap, S. D. (2001, Feb). Pie-sharing in complex collaboration contexts. *Journal of Marketing Research*, 38, 86–99.
- Jap, S. D., & Ganesan, S. (2000, May). Control mechanisms and the relationship life cycle: Implications for safeguarding specific investments and developing commitment. *Journal of Marketing Research*, 37, 227–245.
- Jöreskog, K., & Sörbom, D. (1993). *LISREL 8: Structural equation modeling with the SIMPLIS command language*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Kalyanam, K. S., & McIntyre, S. (2002). The e-marketing mix: A contribution of the e-tailing wars. *Journal of the Academy of Marketing Science*, 30(4), 487–499.
- Kaplan, S., & Sawhney, M. (2000, May–Jun). E-hubs: The new B2B marketplaces. *Harvard Business Review*, 97–103.
- Klein, L., & Quelch, J. (1997). Business-to-business market making on the Internet. *International Marketing Review*, 14(5), 345–361.
- Kumar, N. L., Scherr, L., & Steenkamp, J. (1995). The effects of perceived interdependence on dealer attitudes. *Journal of Marketing Research*, 32, 348–356.
- Lages, C., Lages, C. R., & Lages, L. F. (2005). The RELQUAL scale: A measure of relationship quality in export market ventures. *Journal of Business Research*, 58, 1040–1048.
- Lages, L. F., & Jap, S. (2003). The relationship among past performance, marketing mix adaptation, and current export performance improvement in global marketing relationships. Joep W.C. Arts, Sumitro Banerjee and Jeroen L. G. Binken, *Global Marketing, Marketing Science Institute Report 3*, 116, 97–98.
- Lages, L. F., & Lages, C. (2004). The STEP scale: A measure of short-term export performance improvement. *Journal of International Marketing*, 12(1), 36–56.
- Lages, L. F., Lancaster, A., & Lages, C. (2005). Bringing relationship marketing theory into B2B practice: The B2B-RP scale and the B2B-RELPERF scorecard. *Proceedings of the 13th international colloquium in relationship marketing*. Newfoundland, Canada: Faculty of Business Administration at Memorial University of Newfoundland.
- McKenna, R. (1997). *Real time—Preparing for the age of the never satisfied customer*. Boston, Massachusetts: Harvard Business School Press.
- Mohr, J., & Spekman, R. (1994). Characteristics of partnership success: Partnership attributes, communication behavior and conflict resolution techniques. *Strategic Management Journal*, 57, 135–149.
- Mooman, C., Deshpandé, R., & Zaltman, G. (1993, Jan). Factors affecting trust in market research relationships. *Journal of Marketing*, 57, 81–101.
- Morgan, R. (2000). In J. Sheth, & A. Parvatiyar (Eds.), *Handbook of relationship marketing*. Sage Publications.
- Morgan, R., & Hunt, S. (1994, Jul). The commitment–trust theory of relationship marketing. *Journal of Marketing*, 58, 20–38.
- Morgan, R., & Hunt, S. (2003). *An interview with Dr. Rob Morgan and Dr. Shelby Hunt*. [http://www.in-cites.com/papers/Morgan\\_n\\_Hunt.html](http://www.in-cites.com/papers/Morgan_n_Hunt.html) (accessed 5-01-2004).
- O’Keefe, R., O’Connor, G., & Jung, H. (1998). Early adopters of the web as a retail medium: Small company winners and losers. *European Journal of Marketing*, 32(7/8), 629–643.
- Peppers, D., & Rogers, D. (1999, Jan–Feb). Is your company ready for one-to-one marketing? *Harvard Business Review*, 151–160.
- Porter, M. (2001, Mar). Strategy and the Internet. *Harvard Business Review*, 63–78.
- Porter, M., & Millar, M. (1985, July–Aug). How information gives you competitive advantage. *Harvard Business Review*, 85, 149–160.
- Raimondo, M. A. (2000). The measurement of trust in marketing strategies: A review of models and methodologies. *Proceedings of the IMP Conference 2000*.
- Reichheld, F., & Sasser, W. (1990). Zero defections: Quality comes to services. *Harvard Business Review*, 68, 105–111.
- Reichheld, F., & Schefter, P. (2000, Jul–Aug). E-loyalty: Your secret weapon on the web. *Harvard Business Review*, 105–113.
- Sawhney, M., & Zabin, J. (2002). Managing and measuring relational equity in the network economy. *Journal of the Academy of Marketing Science*, 30(4), 313–332.
- Singh, J. (2000, Apr). Performance productivity and quality of front-line employees in service organizations. *Journal of Marketing*, 64, 15–34.
- Sirdeshmukh, J., Singh, J., & Sabol, B. (2002, Jan). Consumer trust, value, and loyalty in relational exchanges. *Journal of Marketing*, 66, 15–37.
- Sivadas, E., & Dwyer, F. (2000, Jan). An examination of organizational factors influencing new product success in internal and alliance-based processes. *Journal of Marketing*, 64, 31–49.
- Smith, A., & Barclay, D. (1997, Jan). The effects of organizational differences and trust on the effectiveness of selling partner relationships. *Journal of Marketing*, 61, 3–21.
- Smith, M. Bailey, J. Brynjolfsson, E. 1999. *Understanding digital markets: Review and assessment*. eBusiness Center, Sloan School of Management, MIT, March paper 140, <http://ebusiness.mit.edu>.
- Speckam, R., Salmond, D., & Lambe, C. (1996). Consensus and collaboration: Norm-regulated behavior in industrial marketing relationships. *European Journal of Marketing*, 31(11/12), 832–856.
- Steiger, J. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate Behavioral Research*, 25, 173–180.
- Too, A., Souchon, A., & Thirkell, P. (2001). Relationship marketing and customer loyalty in a retail setting: A dyadic exploration. *Journal of Marketing Management*, 17, 287–319.
- Varadarajan, P., & Yadav, M. (2002). Marketing strategy and the Internet: An organizing framework. *Journal of the Academy of Marketing Science*, 30(4), 296–312.
- Weiber, R., & Kollman, T. (1998). Competitive advantages in virtual markets—Perspectives of information-based marketing in cyberspace. *European Journal of Marketing*, 32(7/8), 603–615.
- Williamson, O. (1975). *Markets and hierarchies: Analysis and antitrust implications*. New York: The Free Press.
- Zeithaml, V., Parasuraman, A., & Malhotra, A. (2002). Service quality delivery through web sites: A critical review of extant knowledge. *Journal of the Academy of Marketing Science*, 30(4), 362–375.

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