

The Role of Trust in
B2B Electronic Commerce
- Evidence from Two e-Marketplaces

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Doctoral Thesis

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Summary

The primary purpose of the current research has been to examine the roles of interpersonal, interorganizational, and institutional trust in establishing buyer-seller trust in public B2B e-marketplaces (EMP). Interpersonal trust refers to trust within the buyer-seller dyad. Interorganizational trust is trust between organizations, in this case mainly the buying and the selling company versus the e-marketplace. Institutional trust refers to structures that the e-marketplace itself can put in place; for example, the monitoring of transactions.

The issue of interest is the role that trust plays in the buyer-seller dyad within the e-marketplace, and how trust in this dyad can be developed; for example through institutional trust-measures. This is an important issue because trust generally is viewed as a necessary ingredient for any successful transaction. Both published research and experience support the perspective that trust is necessary for individuals and companies to adopt the practice and principles of electronic commerce, both in business-to-consumer (B2C) and business-to-business (B2B) trade. In the current study, the adoption of e-commerce concerns the use of B2B e-marketplaces which are public; that is, they are open to every company to join. Compared to other risk reducing mechanisms like control, for example through written contracts, trust is regarded as a more effective means of enabling transactions between previously unfamiliar buyers and sellers at an e-marketplace. A sufficient number of transactions in turn are desirable and part of liquidity; there must be at least a certain number of members and/or transactions for an e-marketplace to remain viable.

To address the study's research questions, an empirical investigation was conducted which involved a case study at each of two public e-marketplaces. Methodologically, both qualitative and quantitative techniques were used. A research model was developed based upon previous research in both B2C and B2B e-commerce. The research model depicts how the trust antecedents e-marketplace reputation and institutional trust-building measures positively affect trust in both the e-marketplace and the buyer/seller. This trust, in turn, is positively correlated with satisfaction, commitment and intention to do future business. Trust also was hypothesized to lower the buyer's and seller's perceived risk of transacting on the e-marketplace.

The proposed research model was tested through a survey with buying and selling companies in the two e-marketplaces. Overall, the data support the research model. The study contributes to existing published research by empirically validating that trust in the e-marketplace is correlated with perceived risk reduction, satisfaction, and commitment to the e-marketplace. The results also indicate that trust in the EMP consists of the three dimensions of competence, integrity and benevolence, suggesting that buyers and sellers assess the EMP in terms of specific attributes, as opposed to assessing it globally. Likewise, the dimensions of credibility and benevolence are essential components of the trust between a buyer and a seller. Furthermore, trust in the buyer-seller dyad appears to have a positive impact upon the intention to buy or sell.

The data also show that trust can be nurtured primarily through the processes of attribution and prediction. As for managerial implications, management at the two e-marketplaces should devote attention to increasing transparency within their member companies. Measures should be taken to facilitate member companies collecting information about potential buyers or sellers in the e-marketplace.

Sammanfattning

Denna avhandling undersöker den påverkan som individrelaterat, organisationsrelaterat och institutionsrelaterat förtroende har när det gäller att etablera förtroende mellan köpare och säljare på publika e-handelsplatser. Individrelaterat förtroende syftar på förtroende mellan en köpare och säljare. Organisationsrelaterat förtroende är förtroende mellan organisationer, i detta fall främst det köpande eller säljande företaget och e-handelsplatsen. Institutionsrelaterat förtroende, slutligen, syftar på de strukturer som e-handelsplatsen kan implementera, till exempel övervakning av transaktioner.

Studien fokuserar på förtroendets roll i en konstellation bestående av en köpare och en säljare. Detta inkluderar hur förtroende kan utvecklas, till exempel genom institutionella förtroendeskapande åtgärder. Detta är en viktig fråga eftersom förtroende generellt ses som en nödvändig ingrediens för en lyckad transaktion. Både publicerade forskningsresultat och praktisk erfarenhet stöder antagandet att förtroende är viktigt för att privatpersoner och företag ska anamma elektronisk handel. I denna studie avser e-handel användandet av publika e-handelsplatser, det vill säga e-handelsplatser öppna för företag att ansluta sig till. Jämfört med andra riskreducerande mekanismer som kontroll, till exempel via skriftliga avtal, anses förtroende vara ett mer effektivt sätt att få till stånd transaktioner mellan obekanta köpare och säljare på en e-handelsplats. Ur e-handelsplatsens perspektiv är ett tillräckligt stort antal transaktioner i sin tur önskvärda eftersom de leder till likviditet: en kritisk massa av medlemmar och/eller transaktioner som gör e-handelsplatsen ekonomiskt livsduglig.

För att svara på undersökningens forskningsfrågor gjordes en studie av två publika e-handelsplatser. Såväl kvantitativa som kvalitativa metoder användes. En forskningsmodell togs fram, baserad på tidigare forskning om förtroende inom konsument- och företagsmarknaden. Forskningsmodellen speglar hur en e-handelsplats rykte och institutionella förtroende positivt påverkar förtroendet för e-handelsplatsen och förtroende inom köpar-säljar-konstellationen. Detta förtroende är i sin tur positivt korrelerat med nöjdhet, engagemang och intentionen att göra framtida affärer. Förtroende antas också vara negativt korrelerat med upplevd risk vad gäller transaktionen.

Den föreslagna forskningsmodellen testades med data från en enkätundersökning med köpande och säljande företag anslutna till de två e-handelsplatserna. Generellt sett stöds modellen av insamlade data. Därför bidrar denna studie till tidigare forskning inom området genom att empiriskt bekräfta att förtroende för e-handelsplatsen är korrelerat med upplevd riskreduktion, nöjdhet med och engagemang för e-handelsplatsen. När det gäller förtroende i köpar-säljar-konstellationen är det positivt korrelerat med intentionen att köpa eller sälja i framtiden. Vidare så antyder resultatet att förtroende för e-handelsplatsen kännetecknas av kompetens, integritet och välvillighet. Detta innebär att köpare och säljare utvärderar förtroende gentemot e-handelsplatsen i termerna av dessa tre dimensioner, till skillnad från ett enda, övergripande förtroendebegrepp. Resultatet av studien indikerar också att trovärdighet och välvillighet är två nödvändiga ingredienser i förtroende mellan en köpare och säljare

Studien visar också att förtroende mellan köpare och säljare kan stärkas främst genom de två processerna attribution och prediktion. När det gäller praktiska implikationer rekommenderas publika e-handelsplatser att fokusera på ökad transparens mellan köpare och säljare, det vill säga underlätta för företagen att samla information om potentiella köpare och säljare på e-handelsplatsen.

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"Business is built upon trust but could be ruined in a second"

Phonetrade Golden Rules – Phonetrade.com

Chapter 1: Introduction

1.1 Trust as a foundation for business relationships

What is trust? Broadly speaking, trust is the assured reliance on the character, ability, strength or truth of someone or something (Merriam-Webster, www.m-w.com). Trust plays a vital role in a wide spectrum of human interactions, among them cooperation, network relations and crisis management (Rousseau, Sitkin, Burt, Camerer 1998). It has been studied in the context of relationships between organizations (Ring and van de Ven 1992, Zaheer, McEvily, Perrone 1998), international joint ventures (Madhoo 1995), interpersonal relationships within an organization (McAllister 1995), sales manager-salesperson relationships (Brashear, Boles, Bellenger, Brooks 2003), organizational performance (Prietula and Carley 1999), close personal relationships (Rempel, Holmes and Zanna 1985), and artificial intelligence (Castelfranchi and Tan 2002) to name a few examples.

Trust also is considered important in commercial relationships (e.g. Blomqvist 1997, Grandison and Sloman 2000), among them buyer-seller relationships (Dwyer, Schurr and Oh, 1987, Morgan and Hunt 1994, Doney and Cannon 1997). Trust has been described as “the glue” in dyadic buyer-seller relationships (Dion, Easterling and Miller 1995). Some authors even claim that “trust is the very foundation of commerce” (Farhoomand and Lovelock 2001, p.336). For instance, buyers have to trust sellers to provide the advertised goods or services and not to reveal private customer information for other parties. Sellers, on the other hand, must trust the buyer’s ability to pay and authorization to purchase (if it is a corporate buyer), and the buyer’s personal characteristics (Grandison and Sloman 2000).

1.2 Trust as an enabler of e-commerce

In electronic commerce, the buying and selling of goods or services online (eMarketServices 2004a), trust has received significant attention recently, seen as being essential to growth in this area of business. The Commission of the European Communities noted that, in order to win consumers as well as

businesses over to e-commerce, it is necessary to build trust and confidence. In concrete terms, consumers and businesses must feel confident that their transactions will not be intercepted or modified, that both sellers and buyers own the identity they claim, and that the transaction mechanisms are available, secure and legal (eMarketServices 2005)

There is a growing body of research literature dealing with online trust, in which e-commerce is one prominent application. Several studies contend that e-commerce cannot fulfill its potential without trust (e.g. Jones, Wilikens, Morris, Masera 2000, Gefen 2000, Farhoomand and Lovelock 2001, Raisch 2001). Lee and Turban (2001) highlight lack of trust as the most commonly cited reason in market surveys why consumers do not shop online. The authors argue that “the importance of trust in e-commerce cannot be overestimated” (p.77). This claim is motivated by the fact that shopping on the Internet is more uncertain and riskier than traditional shopping. The reason for this is that online shops are not well known to the consumers, the consumer has no opportunity to physically examine the product before buying, and the consumer cannot protect any sensitive private or financial information that the seller receives (ibid).

In research on business-to-consumer (B2C) e-commerce, trust is regarded as a mental short-cut to a buying decision, where the buyer is faced with the uncertainties of product quality and vendor reputation (Grabner-Kräuter 2002). Some suggest that trust can turn a potential online consumer from a curious “window shopper” to an actual buyer (McKnight, Choudhury, Kacmar 2002a). Empirical evidence indicates that knowing and trusting the web site are the overriding concerns for Internet consumers when doing business with an online vendor (Reichheld and Schefter 2000). The literature on online trust essentially makes the assumption that risk and dependence, such as giving out personal and payment information to an e-vendor, is higher in e-commerce than in traditional, physically conducted commerce. Therefore the need for trust also is higher.

Trust is not the only means to obtain a transaction between an online buyer and seller; control is an alternative (Tan and Thoen 2001). Control over a transaction can be executed, for example, through a third-party, such as a bank, which assures that funds are available to the seller. Trust is dependent

upon risk, meaning that the higher the risk, the lower the trust level, or put differently, the higher the risk, the more trust is needed (e.g. Friedman, Kahn, Howe 2000). If risk can be reduced in other ways, for example by providing increased control to the buyer or seller or both, then trust may not be necessary. For example, a buyer and a seller who do not trust each other can use an escrow service like Escrow.com to go through with the deal (www.escrow.com). An escrow service deposits the buyer's money until the buyer declares that the received goods fulfill the expected standard. In a similar manner, a comprehensive written contract can largely mitigate the need for trust.

Lowering risk through an escrow service or a contract takes time and money, which adds to the cost of the transaction. In addition, such control mechanisms do not completely eradicate deceit and the need for trust. For example, a seller can ship and get paid for a product that only later turns out to be defective. On the other hand, a buyer can ship back a forged item while demanding a refund, causing problems for the seller (Conte and Paolucci 2002). If an escrow service is being utilized, the user needs to trust the service itself, because there are several fraudulent escrow web sites. For reasons like these, trust has drawn attention from the research community as an essential prerequisite for conducting commerce in general and e-commerce in particular.

1.3 Trust as a success factor for B2B e-marketplaces

E-commerce also takes place in a business-to-business (B2B) setting. B2B e-commerce is by far the largest e-commerce sector in terms of turnover (Laudon and Traver 2002). Research literature and evidence from the field indicate that trust is a critical success factor in B2B e-commerce in general and especially for public e-marketplaces (EU Commission 2002, p.19, Pavlou, Tan and Gefen 2002). Trust has been characterized as the 'Achilles heel' of EMP adoption (Hsiao 2003).

A public e-marketplace (EMP) is a central market space open for many buyers and sellers (Grieger 2003, eMarketServices 2004a). At such an EMP, there is a match-making of both unknown and known buyers and sellers, possibly resulting in transactions. According to a recent EU Commission

study, B2B e-commerce, such as that which occurs in EMPs, requires building trust with previously unknown suppliers if participants are to take full advantage of it (EU Commission 2002, p.19, Mont and Yearworth 2002). To give one example, a small Italian seller of agricultural products uses the EMP Agrelma.com to find potential buyers. With respect to payment the seller needs to trust the potential buyer's ability to pay for the products. Therefore the seller uses the information on Agrelma.com to find out more about the buyer. If the level of trust in the buyer is too low, the seller demands payment in advance (eMarketServices 2004b).

There are barriers to establishing trust. The main trust barriers for adopting e-commerce, especially among small and medium-sized companies (SMEs), have to do with buyers' uncertainty about the protection of sensitive corporate data, the security of information and communication systems, and the lack of clear information on the terms and conditions of the contract (EU Commission 2002, p.19). If such barriers can be overcome, there are advantages to creating buyer-seller trust at an EMP. Among those identified is continuity, as in recurrent transactions, which is important in order to achieve high trade volumes (Pavlou 2002). Trust can, in the best case scenario, create a virtuous cycle of strengthened trust and enhanced buyer-seller relationships. An international Delphi study of the expected future of EMPs found that increasing information exchange will lead to more joint problem solving. Successful problem solving in turn will enhance trust among the business partners, resulting in more information exchange (Daniel, White, Harrison, Ward 2003).

From a slightly different perspective, trust is important for the neutral governance of a public EMP (Brunn, Jensen, and Skovgaard 2002). Governance in turn is one setup component for the two pillars of a successful EMP: liquidity and value capturing. In other words, if the EMP manages to become trusted by both buyers and sellers as a neutral EMP, then this governance helps the EMP to achieve liquidity, a critical mass of members or transactions, as well as capture value for the member companies. Trust also enters the picture in relation to the technological platform: an EMP should provide a secure trading platform in order to secure the trust of its buyers and sellers (ibid.).

1.4 The research problem and research questions

Trust can be viewed as a “good old concept” that has renewed relevance in the new Internet electronic markets. The online trading environment is characterized as being void of face-to-face contact between a buyer and a seller. Therefore the parties lack many of the cues in traditional business signaling trust, such as a solid handshake. Furthermore, the online markets vastly expand the circle of potential customers, putting both buyers and sellers in contact with numerous previously unknown business partners. The differences between traditional and electronic markets make it crucial to investigate how trust is created and maintained in the e-commerce setting.

In highly competitive B2B markets, knowledge of how to develop trust is considered highly beneficial to both purchasing and sales managers (Dion et al. 1995). This also is the assumption behind recent work in B2B e-commerce (e.g. Schoder and Yin 2000), including B2B e-marketplaces (Pavlou et al. 2002, Hsiao 2003). Public EMPs create one forum for e-commerce where trust building appears fundamental, judging from previous research. This need has to do with the desire to build liquidity, that critical mass of members and/or transactions (Brunn et al. 2002).

From the viewpoint of EMP adoption, trust certainly is not the only barrier. Previous studies concentrate on the barriers of technology, organization and collaboration. Even so, trust is conceptualized as one powerful impediment to EMP adoption (Hsiao 2003).

From an academic perspective, trust is looked upon as a complex research subject. There is a bewildering variety of definitions, trustworthiness attributes, and trust-building processes as they relate to e-commerce (e.g. Grandison and Sloman 2000, Dimitrakos 2001, Grabner-Kräuter 2002, McKnight and Chervany 2002). Studies like those just mentioned have attempted to define and operationalize trust in e-commerce by drawing on existing literature from disciplines like social psychology, philosophy, economics and game theory. According to McKnight and Chervany (2002) current research efforts have produced only meager results in clarifying the concept. Therefore, the notion of trust in e-commerce needs to be further

clarified by disentangling more from less important dimensions of trust, and establishing how these dimensions interrelate.

Little of the online trust literature pertains to B2B interactions, especially in EMPs. Thus, there is a need to disentangle the concept of trust as it relates to B2B EMPs. Of special interest in this research are public B2B e-marketplaces, where match-making of buyers and sellers occurs. As mentioned above, at such EMPs buyers meet sellers with whom they previously had been unfamiliar, and vice versa, and with whom they may or may not transact. Hence, in match-making there is a need for exploring the role of initial trust building. In this respect, institutional trust is regarded as a special form of trust which possibly can create initial trust between a buyer and a seller at an institution like an EMP. However, there is a lack of empirical knowledge about how trust in the EMP impacts on buyer-seller trust (Pavlou 2002, Pavlou et al. 2002) As an example, the role and importance of institutional arrangements that B2B e-marketplaces offer in order to build buyer-seller trust and increase liquidity is not known (Pavlou et al. 2002).

This research study examines the development and promotion of buyer-seller trust in e-commerce conducted via public EMPs. In doing so the study ties to recent research, striving to take advantage of the true benefits of this new mode of commerce (e.g. Kini and Choobineh 1998, Tan and Thoen 2001, Pavlou et al 2002). By buyers and sellers we refer primarily to individual purchase and sales managers. The individual buyer-seller dyad is a unit of analysis which is relatively unexplored in marketing research, as opposed to trust between firms as collective units (Nicholson, Compeau, and Sethi 2001). The preceding discussion is the motivation behind this author's interest in the following research problem:

The role of trust in establishing buyer-seller relationships in public B2B e-marketplaces

Based on an initial literature review the following research questions have been formulated:

- 1) To what extent do different dimensions of trust exist in the specific setting of a public e-marketplace?
- 2) What trust-building processes establish buyer-seller trust in a public e-marketplace?
- 3) To what extent does seller trust in buyers differ from buyer trust in sellers?
- 4) Does institutional trust in an e-marketplace influence interpersonal buyer-seller trust?
- 5) Does institutional trust in an e-marketplace or interpersonal trust in a buyer-seller dyad influence a buyer's intention to purchase or a seller's intention to sell?

1.5 Research objective

The research goal was to identify a set of independent dimensions of trust in B2B e-commerce, which in aggregation impact upon the decision-making processes of both buyers and sellers. Equally important are how these dimensions interrelate and what processes either weaken or strengthen buyer-seller trust. These goals are in line with a growing body of literature beginning to address such issues. From a practitioner point of view, it is important to identify the most promising approaches to developing trust in the specific setting of e-marketplaces.

The theoretical framework to be employed was drawn from relationship marketing, particularly the Commitment-Trust Theory (Dwyer et al. 1987, Morgan and Hunt 1994, Håkansson and Snehota 1995). Relationship marketing postulates that buyer-seller relationships are best understood as an ongoing relational exchange process, not a short, discrete transaction with a distinct beginning and ending (Morgan and Hunt 1994). In light of this perspective, trust fulfils an important role. A long-term relationship, as opposed to a discrete one, is characterized by cooperation and mutual adjustments by the two parties, sharing both the burdens and the benefits, as well as planning for future exchanges (Garbarino and Johnson 1999). Although it can be argued that a transaction at an EMP is best understood as a discrete transaction, this study takes the view that discrete transactions in the

purest form are uncommon in real-life (Dwyer et al. 1987); therefore trust should play a role here also.

The Commitment-Trust theory by Morgan and Hunt holds that trust and relationship commitment are the cornerstones of a successful business relationship. The reason that commitment and trust are key variables is that they result in cooperative behavior, which in turn induces relationship marketing success. Therefore, commitment and trust influence cooperation to a greater extent than power does, power being another determinant of cooperation (ibid).

1.6 Method

Since we sought for the current research to be both exploratory and explanatory, we adopted the combined approach of both qualitative and quantitative methods. In keeping with this, case studies were used for an in-depth examination of the phenomenon in question (Yin, 1994; Lee, 1989). The cases were two public B2B e-marketplaces; one for printed matter, one for mobile phones.

The main data collection was preceded by a pilot study. This involved in-depth, exploratory interviews (Ganesan 1994) with individual purchasers and sellers of member companies of the two EMPs. The objective was to explore the issue of trust in buyer-seller relationships in a chosen setting, to more concretely refine the study's theoretical framework. Drawing from the interviews and additional literature review, a testable quantitative research model was developed and a questionnaire distributed to the member companies. The proposed model was to a large extent in accordance with the work of McKnight and Chervany (2002) and McKnight et al. (2002a). The model was tested using a series of bivariate regression analyses and a simplified structural equation model.

Overall, approximately 20 interviews were conducted and 126 questionnaires collected between January 2004 and January 2005.

1.7 Contributions to current understanding

The results of the current study will help to fill a void in the academic literature. The research extends previous theoretical work and empirical results on trust in B2B e-marketplaces. To some extent, the study also extends the study of relationship marketing. In concrete terms, this thesis sheds some light on the important dimensions of trust in a B2B EMP context. These results may assist in designing public e-marketplace strategies, in terms of building necessary buyer-seller trust. By knowing how to “jump-start” the development of buyer-seller trust, e-marketplace managers should more easily achieve desired liquidity and trading volumes.

1.8 Delimitations of the current study

Investigating the research problem and answering the research questions in a reasonable amount of time created limitations in the scope and size of the current study. First, time constraints limited the study to only two cases. The use of additional cases naturally would increase confidence in the accuracy of the results.

Second, the study postulated and tested only one research model. Ideally at least two competing models should have been evaluated (Byrne 2001).

Third, the research model is rather limited in terms of the number of variables examined. This is due to a compromise between the depth of the study and the desired survey response rate.

Fourth, this study examines the notion of trust, as opposed to distrust. Distrust is not only the absence of trust but a different construct. Distrust towards e-marketplaces has been studied as an adoption barrier in its own right (Hsiao 2003).

Fifth, the study investigates trust from interpersonal and interorganizational perspectives, not, for example, from an individual perspective involving psychological theory, or from a relational perspective involving social network theory. Neither does this research take cultural differences into account; for example, trust towards domestic versus foreign suppliers.

Chapter 2: Literature Review

2.1 Overview

This literature review is based primarily on two pools of literature: one recent stream investigating trust in an online e-commerce context, the other from the well-established B2B marketing literature. These two sets of literature have been used in the following manner: the e-commerce literature formed a background for the initial research framework. It was a natural starting point for delving into the subject. It provided an overview of the research about trust in e-commerce. This literature is written mainly from a general e-commerce perspective, where the terms buyers and sellers usually are used without further specification. To the extent that buyers and sellers are defined, they refer to consumers and web vendors. In the current research with a B2B focus, the above perspective still is relevant. This is because we assumed that a corporate buyer or seller at an EMP to some extent makes the decision to trust or not on the same basis as an online consumer.

In the B2B marketing literature, the issue of trust in buyer-seller relationships has been examined for a long time. This literature was used mainly in crafting the current research model, including the hypotheses generated for the quantitative part of the study. The reason for this decision was that the marketing literature contains more empirically-based analyses in comparison to the reviewed e-commerce literature, which for the most part is conceptual and lacks thorough empirical support. With respect to the above, our literature review is roughly divided in two parts: the first (Chapter 2) providing necessary definitions of trust and introducing trust in e-commerce settings, the second (Chapter 4) referring to hypotheses development.

In this study, the terms “buyer” and “seller” refer to the individual B2B sales and purchase manager, following the definitions posed by Dion et al. (1995). Thus the focus of trust in this study has been on the interpersonal level. However, in a B2B context inevitably the organization behind the individual becomes involved as a trustee, making the concept of interorganizational trust relevant. For this reason “buyer” and “seller” does not exclude the company.

Interorganizational trust is examined also in terms of the buyer and seller trusting the e-marketplace as an organization.

From a theoretical point of view, this dissertation mainly draws from relationship marketing theory, as described in section 1.5 (Research objective).

2.2 Definitions of trust

Trust is a complex notion. Current literature on trust tends to be theoretically fragmented and the definitions show a great degree of disparity (e.g. Blois 1999, McKnight et al 2002a). This warrants a review of trust definitions. In the field of B2B marketing many studies do not even define trust and those that do refer back to earlier studies (Blois 1999). Morgan and Hunt (1994, p. 23) in their Commitment-Trust Theory define trust as the perception one party has “in an exchange partner’s reliability and integrity”. In a later study of individual buyer-seller relationships in an industrial market, trust again was defined as confidence in the other party’s reliability and integrity (Nicholson et al. 2001).

The trust definition of Moorman, Zaltman and Deshpande (1992, p.315) covers two distinct approaches in the literature; firstly, trust as a belief, sentiment or expectation about the trustworthiness of an exchange partner, secondly as an intention or behavior reflecting vulnerability and uncertainty on behalf of the party who trusts, hereto referred to as the ‘trustor’. Their definition of trust reads: “a willingness to rely on an exchange partner in whom one has confidence”. According to Moorman et al., both the belief and the intention/behavior components must be present if we are to speak of trust. In other words, it is not trust if we believe the trustee is trustworthy but are not willing to rely on the trustee. In the same manner it is not a matter of trust if we indeed are willing to rely but lack confidence in the trustworthiness of the trustee. In this case, reliance might be induced by power or control (ibid.).

In a study of long-term buyer-seller relationships in a retailing setting, trust was defined as consisting mainly of credibility and benevolence (Ganesan 1994). Credibility refers to the vendor’s expertise to do the job effectively and reliably. Benevolence is the vendor’s intentions and motives to be beneficial

to the buyer in a new situation for which there is no previous commitment (ibid).

An element which is not explicitly covered in the above cited definitions is the anticipation of positive outcomes of trust (Chopra and Wallace 2003). In a B2C e-commerce setting, such a positive outcome is the act of paying online (Koufaris and Hampton-Sosa 2004, Dimitrakos 2001, Tan and Thoen 2001), or the sharing of personal information and acting on the advice of web vendors (McKnight et al. 2002a). In the EMP context, there is empirical evidence of outcomes such as increased satisfaction with the exchange relationship, reduced uncertainty about products and transaction partners, and an expectation of future transactions (Pavlou 2002).

When defining trust for e-commerce, one also should consider the nature of the trustee. With respect to this, researchers disagree as to whether trustors and trustees always must be human or if they may be artificial as well, such as computer software or some kind of information system. This debate is due to the fact that e-commerce involves IT systems. According to one view, only humans can place trust. This trust is directed towards other people. Therefore, it is misleading to speak of people placing trust in computers, machines or systems (Friedman et al. 2002).

Another view is that both the trustor and the trustee can be non-human. Examples of an artificial trustee are an automated control system (Kini and Choobineh 1998), the electronic shopping channel (Lee and Turban 2001, Kim and Prabhakar 2000), the communication infrastructure (Jones et al. 2000), on-line artificial agents (Castelfranchi and Tan 2002), and information (Chopra and Wallace 2003). For example, consider the case of a cashier trusting the credit card transaction system. If a customer's card is rejected the cashier trusts the system and distrusts the customer (Abdul-Rahman and Hailes 2000). For an electronic vendor the web site is the main channel of customer interaction. The characteristics of the e-vendor's web site, in particular its usefulness and ease-of-use, affect how much a customer trusts it, which in turn determines whether or not a transaction will take place or not (Gefen, Karahanna, Straub 2003).

A trustor can be non-human, typically a software program, as long as it is able to form a belief (Dimitrakos 2001), belief as defined by Moorman et al. In the e-commerce setting, belief concerns the trustee fulfilling the agreed-upon contract (Chopra and Wallace 2003), delivering fine products and not intentionally harming the customer (McKnight et al. 2002a).

Our study follows the definition by Moorman et al. (1992), as described above. We define trust as a trustor's willingness to rely on an exchange partner in whom the trustor has confidence. Confidence refers to the credibility and benevolence of the exchange partner (the trustee). Given the online context of B2B EMPs we include the web site, or any other IT system, in our definition of the trustee.

2.3 The nature of trust

Having dealt with trust definitions in the previous section, we now elaborate on the nature of trust, including the different perspectives on trust and their underlying theories. The literature is not clear on the nature of trust in e-commerce. Trust in e-commerce is claimed to be mainly *interpersonal* (Chopra and Wallace 2003, Abdul-Rahman and Hailes 2000, Lee and Turban 2001). From this perspective, trust is viewed as a social tie between two specific parties, in e-commerce the transaction partners (Chopra and Wallace 2003). For example, in business-to-consumer (B2C) e-commerce the transaction partners are an individual and an organization.

In B2B, both the trustor and the trustee may be organizations. For example, organizational buyers and sellers at an e-marketplace represent their respective companies, governed by rules and policies, making it an instance of interorganizational trust (Pavlou 2002). Most research in B2B marketing focuses on trust as a firm-level construct (Nicholson et al. 2001). However, trust in a B2B context cannot be reduced to only interorganizational trust. As Blois (1999) points out, trust is necessarily individual because its definition includes an affective component – only individuals can feel emotions and be hurt by distrust. Therefore “institutional trust” is really a shorthand description of two sets of individuals directing trust towards each other.

A study of trust in buyer-seller relationships in United States (US) manufacturing firms demonstrated that trust develops at two levels: the industry and the individual buyer. At the industry level trust is reflected in legal contracts between a buying and a supplying company. At the individual level, trust is a buyer's "true" cognitive assessment of a supplier's capabilities and motives. Trust can vary on these two levels, explaining different scenarios. One example is when a supplier's performance deteriorates, thus decreasing trust on the industry level, while on the individual level trust is still high due to a longstanding relationship (Handfeld and Bechtel 2002). Hence, trust in B2B e-commerce also can be classified as interpersonal.

Trust also is considered *societal*, referring to system trust between institutions, such as organizations, or between individuals and institutions. An example is an individual trusting the economy, the government, the judicial system or any larger social system (Kini and Choobineh 1998). The interpersonal and societal perspectives overlap significantly and in some cases are combined (McKnight and Chervany 2002, Lee and Turban 2001). The overlap is evident, for example, when a company as a trustee is included both in the interpersonal (Chopra and Wallace 2003) and in the societal perspective (Kini and Choobineh 1998).

The *individual* nature of trust stems from an approach where personality traits are in focus. An individual's personality influences how much he or she generally will trust, or in other words, his or her propensity or disposition to trust. Propensity to trust has been translated to an individual's or organization's tolerance for financial risk (Chopra and Wallace 2003). The individual perspective is applied in several e-commerce trust models. It is typically operationalized as a construct that moderates the effect on consumer trust in web vendors (Kini and Choobineh 1998, Lee and Turban 2001, McKnight and Chervany 2002, Koufaris and Hampton-Sosa 2004).

Finally, the *relational* nature of trust originates from a sociological approach (Kini and Choobineh 1998, Chopra and Wallace 2003); that is, trust is a property that emerges in a mutual relationship. Lewis and Weigert (1985) label this type of trust a "social reality." By this they mean that trust is a collective attribute. Trust exists in the relationships among people rather than as a property of isolated individuals. This approach is viewed by some as not

relevant to e-commerce (Chopra and Wallace 2003) while others regard the relationship between an individual and the Internet as an instance of relational trust (Kini and Choobineh 1998).

Following previous research (e.g. Chopra and Wallace), this research pursues the interpersonal and interorganizational perspectives, as described above. The justification is that trust in a B2B EMP context first and foremost is a matter of individual buyers and sellers trusting or distrusting each other. At the same time these individual buyers represent their companies, making it a matter of interorganizational trust.

2.4 Trust-building processes

Trust-building processes are related to our second research question: “what trust-building processes establish buyer-seller trust?” In the previous sections we outlined central definitions and tried to pinpoint the nature of trust. Trust-building processes refer to the ways in which trust is developed. For example, trust usually is conceptualized as a cumulative process that builds on several, successful interactions (Nicholson et al. 2001). Each type of process increases the perceived trustworthiness of the trustee, raising the trustor’s level of trust in the trustee (Chopra and Wallace 2003). As with the nature of trust, the literature gives an ambiguous picture of the processes that are active in e-commerce, and in B2B e-marketplaces in particular. In this section, we describe the most common approaches and relate them to our study.

In the literature, classifications of processes overlap to a large degree. A rudimentary way of classifying is in 1) cognitive and 2) personal/emotional trust processes. The former notion refers to trust as a result of impersonal, detached and dispassionate antecedents. Examples are a common value system and frequency of interaction. The latter notion stands for trust as an outcome perhaps as a result of amiability between a buyer and a sales representative (Nicholson et al. 2001).

According to another marketing study, there are three distinctly different trust processes in buyer-seller relationships: calculative processes, predictive processes, and identification processes (Brashear et al. 2003). The calculative process has its roots in economics and sociology, focusing on a rational

comparison of the costs and benefits of a given behavior. An interorganizational example is when a buying firm pays premium prices to a supplier to ensure a high level of quality. Hence, it would be too costly for the seller to behave in an untrustworthy manner and likely lose premium revenue from future purchases (Doney and Cannon 1997).

The predictive process, as the word suggests, builds trust when the trustor is able to interact and observe the trustee, thus predicting future behavior. One example is a buying firm which develops trust in the supplying firm's salesperson, who repeatedly makes promises and delivers them (Doney and Cannon 1997).

Finally, identification processes build trust when the trustor and the trustee identify with the counterpart's desires and intentions. This can manifest itself, for example, in shared values between a salesperson and a sales manager (Brashear et al. 2003).

It is not known exactly what trust-building processes are relevant in an e-commerce context. It is suggested that, in this setting, trust-building is based on the processes of prediction, attribution, bonding, reputation and identification (Chopra and Wallace 2003). Prediction-based trust was described above. It has to do with consistent behavior of the trustee. It assumes interaction between the trustor and the trustee. Prediction cannot contribute to purely initial trust in e-commerce, only in transactions that follow the first one.

Attribution builds on an assessment of visible evidence of the trustee's qualities or motivation. Stated differently, a trustor ascribes a positive motivation to the trustee. The evidence can come from the trustee itself or from others (Chopra and Wallace 2003). Transparency is one measure to build attribution trust. One example is the Singapore Case Trust effort, where businesses' trade practices were made transparent. This could mean clearly stating on the web site all dispute-solving and refund policies, and the commitment to information security and confidentiality (Farhoomand and Lovelock 2001). Therefore, by displaying transparent trade policies, prospective consumers can attribute positive qualities to a vendor, resulting in trust.

Bonding, or affective trust, is an affective process; in other words, it is based on emotions. In e-commerce, bonding can emerge from a trading relationship (Chopra and Wallace 2003).

Reputation is considered a trust-building process which is highly relevant in e-commerce markets (e.g. Atif 2002). With reputation is understood the process of transmitting an image of an actor in a network of other actors (Conte and Paolucci 2002, p. 71). In an e-commerce context such as eBay auctions, the image concerns sellers' propensity to cheat in transactions (Resnick, Zeckhauser, Friedman, Kuwabara 2000). A more favorable reputation increases trust; for example, sellers with good reputation at the auction web site eBay get paid more than not-so-reputable sellers (Ba and Pavlou 2002).

Finally, according to the Chopra and Wallace classification, identification-based trust refers to one party identifying with the other, for example in terms of shared ethical values (Morgan and Hunt 1994). Identification builds trust when the parties share common goals, values or identities. In e-commerce, these attributes perhaps may relate to corporate image (Chopra and Wallace 2003).

Institution-based (or institutional) trust is yet another relevant trust-building process in a B2B EMP context. This is because the EMP itself is an institution. The EMP can put in place its own processes, standards and norms for managing transactions, thus institutionalizing them. Example of institutional trust builders are monitoring of transactions, assistance for resolving conflicts, and the enforcement of proper conduct (Pavlou 2002, McKnight and Chervany 2002, Pavlou et al. 2003, Gefen et al. 2003). Institution-based trust is felt to be relevant in the exploration phase of an online B2B relationship, when the parties have no previous experience with each other (Pavlou et al. 2002).

The concept of institutional trust largely is resting upon the work of Zucker (1986, in Pavlou 2002, and Pavlou et al. 2002). Zucker argues that in an economic environment where the actors do not share similarity or familiarity with each other, institutional trust is the most important creator of trust. This argument has its basis in an investigation of US businesses at the beginning of

the 20th century. The concept of institutional trust has gained attention by e-commerce researchers, because of its applicability to the e-commerce environment: a huge amount of buyers and sellers aggregate, and they have no familiarity or cultural similarities (Pavlou et al. 2002).

Institutional trust also is related to the Internet as a whole. The two associated constructs, structural assurance and situational normality, refer to the web environment in general, with its technological infrastructure and legal framework (McKnight and Chervany 2002). McKnight and Chervany (2002) and Castelfranchi and Tan (2002) note that, in a novel situation such as considering a purchase from an unknown web vendor, a high level of institutional trust can reinforce interpersonal trust. The result is an increase in the buyer's combined trust in the web vendor.

The concept of institutional trust is closely related to the notion of third-party trust. Trusted third-parties are independent controlling or certification authorities (Grabner-Kräuter 2002), certifying legal procedures and technical standards in order to avoid contract disputes among business partners (Schoder and Yin 2000). Trusted third-parties signal trustworthiness of sellers of products whose quality can not be evaluated by buyers through normal use. Empirical evidence indicates that third-party seals increase an e-vendors perceived trustworthiness in the eyes of potential buyers. The seals represent organizations that assure privacy, e.g. BBB, processes, e.g. WebTrustee, or technology, e.g. VeriSign. Third-party seals build on the process of transference, which means that a trustor concludes that an unfamiliar person or organization is trustworthy because it is associated with a known and trusted third-party (Kimery and McCord 2002).

2.5 Trust from a B2B marketing perspective

Trust has been studied extensively in the field of B2B marketing. For example, Ganesan (1994) found empirical support for the hypothesis that trust and dependence were the two key ingredients for obtaining a long-term orientation of a buyer-seller relationship in a sales channel. The sales channel in question consisted of retail buyers and their vendors in department store chains. A long-term orientation is desirable due to its advantages for the channel members, such as receiving merchandise in short supply. From this

viewpoint, trust is necessary because it shifts focus to future conditions. When parties trust each other, they expect the “pie of rewards” to be divided fairly even if something unanticipated happens (ibid.).

Relationship marketing (RM) is claimed to be built upon the foundation of trust (Berry 1995, in Blois 1999). In RM, trust is viewed as belonging to one end of a scale that extends from purely transactional to relational orientation (Garbarino and Johnson 1999, Dwyer et al.1987). An example of a short, or discrete, transaction would be a “one-time purchase of unbranded gasoline out-of-town at an independent station paid for with cash” (Dwyer et al. 1987, p. 12). In its pure form a discrete transaction is void of any relational element between the buyer and the seller, a condition which rarely exists in real-life. In the majority of transactions there is at least some degree of relational content (ibid.). Therefore, from the relationship marketing viewpoint of obtaining long-term buyer-seller relationships, the concept of having trust and enhancing it is important.

Why trust is regarded as important in RM is that a trusting relationship is characterized by cooperation and mutual adjustments by the two parties, sharing both the burdens and the benefits, as well as planning for future exchanges (Garbarino and Johnson 1999). The underpinning idea in RM that a transaction is relation oriented can perhaps not readily be applied to e-commerce. It can be argued (Jøsang 1999) that e-commerce, by its nature, is about trusting sufficiently a counterpart with whom the trustor has had no prior and anticipates no future interactions. Further it can be argued that the very nature of an EMP is to enable a discrete transaction between a buyer and seller. If one assumes such a viewpoint, then trust should not be an essential component of EMP exchanges, except perhaps for a minimum level of trust to overcome the threshold of exchange. On the other hand, as mentioned above, purely discrete transactions are rare. There usually is some element of relationship building in any buyer-seller contract. Therefore, it is reasonable to believe that the ideas of RM are applicable in buyer-seller transactions in an EMP, at least to some extent.

In developing their Commitment-Trust Theory and their concept of RM, Morgan and Hunt (1994) suggest that trust and commitment, not power, are the keys to relationship marketing. Their research model was tested

empirically in the setting of US automobile tire retailers. They found empirical evidence that commitment and trust produce outcomes that in turn promote efficiency, productivity and effectiveness. Apart from trust and commitment, which are desirable outcomes in their own right, Morgan and Hunt postulate five additional outcomes. Their results show that trust and commitment significantly explain acquiescence (the degree to which a party accepts or adheres to the specific requests or policies of their counterpart), propensity to leave, cooperation, functional conflict (disputes solved amicably) and decision-making uncertainty. The authors conclude that, paradoxically, an effective competitor in today's marketplace needs to be an effective co-operator in an organizational network. This cooperation is facilitated by a high degree of commitment and trust.

2.6 Research framework

In this section we discuss the theoretical framework that we have developed in order to better understand trust development in a public B2B EMP. The framework represents an initial pre-understanding of the complex trust issues that B2B buyers and sellers alike face as they decide whether to enter into an online transaction through an EMP. This framework draws from the theoretical areas reviewed in this chapter, including online trust and B2B marketing research. The section is structured along the seven main constructs of the research framework.

2.6.1 The differences between B2C and B2B e-commerce

Before presenting the variables in our research framework we highlight the major differences between B2C and B2B – the market of interest in this study. Generally speaking, B2B e-commerce is much more complex than B2C. First of all, B2B e-commerce involves multiple companies and employees. The trade is part of a company's supply chain; that is, all the activities that concern the flow of raw materials and information from extraction to the end-user (Handfeld and Bechtel 2002). The purchasing process requires several people in a company, hundreds in a large one, to coordinate their activities. Another key feature of B2B is that business rules govern decisions; for example, approval is needed for orders larger than a certain limit. The average order size at online exchanges can vary between

\$50,000 and \$250,000. This is compared to a typical B2C order worth around \$75 (Phillips and Meeker 2000, p.23).

For companies, several driving factors other than a low price are important, such as product quality and reliability, consistent timely delivery and established relationships (Raisch 2001). For example, two main concerns for a particular Swedish company using a print job exchange (www.printoffer.com) are appropriate paper quality and the supplier's compliance with environmental standards (eMarketServices 2004a). In B2B markets, selection is centered around a desire to have value, equity or a partnership, as opposed to in B2C where selection is driven by brand, word-of-mouth, price or advertisement (Phillips and Meeker 2000, p. 23).

The complexity of B2B buying is illustrated in a process that may include as many as 20 distinct steps (Schneider 2002, p. 181). These steps can be grouped into three basic categories: 1) Finding potential business partners; 2) Evaluation, price finding and sourcing; and 3) Purchasing, settlement and payment (EU Commission 2002, p.13). This shows that online order matching is only one of several interactions between the buyer and seller in a typical B2B purchase.

2.6.2 Preconditions of trust

Preconditions for trust decide if trust is relevant or not in a certain setting and situation. This dimension was touched upon in the sections 1.3 and 2.2. Two conditions jointly determine trust preconditions: *risk* and *dependence* (Figure 1). Risk is composed of the trustor's uncertainty about the outcomes and vulnerability to a potential loss when faced with undesirable outcomes (Chopra and Wallace 2003). Dependence exists when one party does not have total control over the conditions that are necessary for achieving an action or a desired outcome that the other party performs (Handfeld and Bechtel 2002). In short, a need for trust arises when one party is depending upon another, and simultaneously risks something through the other party's actions (Chopra and Wallace 2003).

There is an inverse relationship between risk and trust, meaning that the higher the risk, the lower the level of trust. Or vice versa, when the risk is small, it is easy to trust (Friedman et al. 2000, Deelman and Loos 2002, Grandison and Sloman 2000, Kini and Choobineh 1998). Trust functions as a

way to reduce the perception of risk and also to increase risk taking (Chopra and Wallace 2003, Kimery and McCord 2002, Ba 2001). Stated differently, a certain risk level is offset by trust.

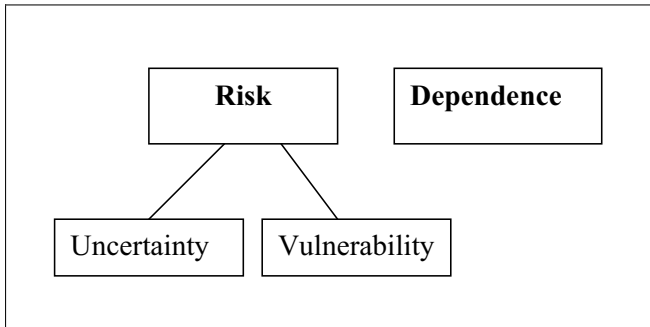


Figure 1: Risk and dependence as preconditions for trust (adapted from Chopra and Wallace 2003)

The reviewed literature shares the assumption that risk and dependence both are greater in e-commerce than in traditional commerce. The reason is the separation in time and space between the buyer and the seller (Grabner-Kräuter 2002). When transacting online, “potential customers, especially buyers, feel uneasy, uncertain, and insecure” (Conte and Paolucci 2002, p. 174). A typical situation is a consumer who buys an item and receives the good days or even weeks later, delivered by a seller perhaps thousands of miles away.

Buyer risk in e-commerce is manifested in *uncertainties* and *vulnerabilities*. *Uncertainties* include: 1) product or service quality; 2) seller reputation; and 3) transaction systems. *Vulnerabilities* include: 1) not receiving shipment or shipment of goods other than that expected; 2) financial loss; and 3) harm to privacy after releasing personal information (e.g. Dimitrakos 2001, Jones et al. 2000, McKnight and Chervany 2002, Lee and Turban 2001, Grabner-Kräuter 2001, Ba et al. 1999, Conte and Paolucci 2002).

One example of product uncertainty is when a customer buys software online without knowing for sure that the software contains all advertised features or if it will install successfully (Manchala 2000). Sellers can reduce buyer uncertainty about products and increase trust by letting prospective buyers

test a product. One way is allowing downloading of restricted versions of software products (Deelman and Loos 2002).

Product-related uncertainty is relevant also for the B2B buyer. Online catalogs, for example, exhibit deficiencies such as displaying obsolete products, inconsistent abbreviations, poor product descriptions and non-updated prices (Phillips and Meeker 2000, p. 29). A corporate buyer's uncertainty about product quality can be counterbalanced by inspections done by an intermediary, as shown in the case of online used-car auctions (Clark and Lee 1999).

In the same manner as an online consumer, an online B2B buyer faces uncertainty about a previously unknown seller. This can be termed *client risk* (Schoder and Yin 2000). When decision makers do not have information that allows predictions of proposed partners' future behaviors, it leads to them to choose partners whom they already know and trust, thereby preventing potentially better partners from being considered (Eisentraut, Koch, Möslein 2001). To reduce this kind of uncertainty, the buyer or seller can use a B2B online service like the Swedish based Emfas (www.emfas.se), which features financial and credit ratings, annual reports, market analysis and other information mainly about domestic companies. On a global level, Dun & Bradstreet is a credit rating service with information about 83 million companies world-wide (www.dnb.com).

Uncertainty also concerns the involved transaction systems, a consumers' inability to control the system of the transaction actors, such as the web server of the online vendor and possibly banks and other operators (Grabner-Kräuter 2002).

Vulnerability is the second risk component in our classification system. In B2C e-commerce, a consumer is vulnerable primarily to not receiving ordered goods.

“There seems little assurance that the customer will get what she or he sees on the computer screen, at a certain time and in the quantity ordered.”

(Grabner-Kräuter 2002, p. 2)

One type of vulnerability is financial loss. According to the US-based Internet Crime Complaint Center (IC3), in 2004 approximately 16 % of over 100,000 consumer fraud complaints, mostly in the US, had to do with non-delivery of merchandise and/or payment. The median loss was \$ 219 per complaint. Internet auctions were the most common setting for fraudulent activities (Internet Crime Complaint Center 2005). Given such vulnerability, in order to trust a financial transaction with an unknown company, a potential consumer needs “something more” (Friedman et al. 2000, p.39). Insurance can play this role as a mechanism for limiting the financial risk. Examples are credit card companies protecting their customers from online fraud (Klang 2001). The well-known Internet auction site eBay automatically insures the first \$200 in every transaction. It also is possible to keep payment in electronic escrow until the buyer has received and accepted the merchandise, thus protecting buyers from fraudulent sellers (Reichheld and Schefter 2000).

Risk of financial loss is much greater in B2B trading, simply due to the larger financial value of most transactions. This makes the need for trust greater in B2B than in B2C e-commerce (EU Commission 2002). Financial risk primarily is coupled with buying direct products, which constitutes about 80 percent of a company’s total purchase value (Lee and Turban 2001 p. 232). Direct products typically are not off-the-shelf products. They are purchased in large volumes after negotiations and contracting (Schneider 2002, p. 182). Sourcing of direct products makes the company vulnerable in yet another way: it requires coordination of supplier activities and it is tied to the consumption of the external market (Phillips and Meeker 2000, p. 88). Direct products are typically used in a scheduled, just-in-time manner. Therefore a company is more vulnerable to them arriving late or not at all. If something happens with an order and the goods suddenly are missing, a production line or an entire factory may have to shut down.

If direct products are so important for companies, what do companies do to develop trust buying them? Purchasing personnel spend much of their time qualifying suppliers, negotiating prices and terms, building confidence with strategic suppliers and also evaluating and certifying them (Lee and Turban 2001, p. 232). These activities can be regarded as a way of reducing uncertainty, thus lessening the need for trust.

Finally, in terms of risk, an online consumer is vulnerable to losing privacy, privacy being defined as freedom from unauthorized intrusion (Merriam-Webster, www.m-w.com). The loss of privacy happens when organizations share customer data with each other without the customer's informed consent. The customer is risking misuse of personal information such as name, address, credit card details, and previously made purchases (Grandison and Sloman 2000). In a B2B context, privacy usually involves protecting sensitive company information. A survey from the EU Commission (2002) shows that the main trust barriers for adopting e-commerce, especially among SMEs (small and medium-sized companies), have to do with uncertainties about information. Among the top-five reasons for buyers to distrust B2B e-commerce are uncertainty about protection of confidentiality of sensitive data, and uncertainty about the security of information and communication systems.

Not only the buyer but also the seller assumes a risk in certain e-commerce transactions. Therefore the seller to some extent must trust the buyer, or use some other mechanism to follow through with a transaction. Essentially, the seller risks that the buyer might not be able to pay for the purchased goods or services, is not authorized to make the purchase (if it is a corporate buyer) and is concealing his or her personal characteristics, such as age (Grandison and Sloman 2000). Furthermore, a buyer can cheat on a seller by falsely claiming that goods either were not received or were different than that ordered, or by shipping back a forged item while demanding a refund (Conte and Paolucci 2002, p. 175, Manchala 2000).

Dependence is a second precondition for trust, as shown in Figure 1. Dependence exists when one party in some respect is "in the hands of" the counterpart regarding control. Dependence from a consumer point of view is manifested in several ways, including the e-vendor's control over the consumer's personal and payment information, like credit card numbers, and the shipment and delivery of the order. Furthermore, the consumer depends upon the seller for product support and reclamation or replacement of faulty products. This dependence makes the consumer vulnerable.

As discussed above in the paragraph about vulnerability, there are many types of dependence in B2B e-commerce. It is mainly the complexity of the B2B

supply chain or networks that makes a company depend upon many other companies and their decision-makers.

In sum, the two trust preconditions of risk and dependence vary across different e-commerce settings. The greater risk and dependence are, the larger the need for trust or an equivalent mechanism to reduce the preconditions. It is likely that the role played by trust differs greatly with the context. As Selnes (1998) notes, trust is not always relevant; for example, when the size of the investment is limited, when there is abundant information to reduce uncertainty or when contracts govern a transaction. Trust is dependent upon perceived risk, which in turn varies with the nature of the buyer-seller relationship and the complexity of the product and the market (ibid.).

2.6.3 System security and web site quality

A dominant theme in the e-commerce trust literature is the impact of the online buying situation on the buyer's trust towards the seller, in terms of perceived security and web site quality. Security of information or systems often is assumed to be part of a trusting transaction (e.g. Jones et al. 2000, EU Commission 2002). That is, if we speak of trust in e-commerce, we typically have the security of money and information in mind. It is assumed that a secure system, such as a web site, makes it dependable, and ultimately creates trust.

While some authors equal security with trust (e.g. Su and Manchala 1997, Jøsang 1999), others claim that secure transaction conditions are not enough for establishing an atmosphere of trust (Dimitrakos 2001, Nikander and Karvonen 2000, Abdul-Rahman and Hailes 2000, Singh, Yu, Venkatraman 2001, Klang 2001, Castelfranchi and Tan 2002). Security measures such as passwords and digital certificates can ensure authentication and authorization. Even so, techniques like these do not guarantee that the authorized counterpart acts so that it serves the interests of the trustor (Singh et al. 2001). Every technological measure intended to improve security and trust in a virtual community will prove itself ineffective unless it incorporates human interpersonal, social and legal relationships (Castelfranchi and Tan 2002).

The two views on the role of security in e-commerce can be summarized into saying that security is a necessary, but not a sufficient part of trust. The reason for this is that even though a secure transacting system might ensure payment and the right identity of the counterpart, there is always uncertainty about products and actors as well as other risks. Such risks need to be dealt with in other ways than establishing authenticity and authorization.

Furthermore, the characteristics of the web vendor's site are widely regarded as having an impact on initial consumer trust towards the vendor. Unlike when shopping in a physical store, which is perhaps large, well-stocked, nicely decorated and well-staffed, thereby lending face validity to the company, when shopping online the customer is met only by a two dimensional screen with text and graphics (Koufaris and Hamton-Sosa 2004). The assumption behind this reasoning is that when lacking direct interaction and experience of the counterpart, trust might stem from the appearance of a web site and the credibility of featured information.

In an experimental study of a web site offering legal advice, the investigators discovered that perceived web site quality positively influenced trust in a web vendor. In other words, among consumers interacting with a web site, the first impression of the web site strongly affects trust in the vendor behind the site (McKnight et al 2002a). Web site ease-of-use and usefulness - the much investigated constructs of the Technology Acceptance Model (TAM) - also appear to predict trust in a B2C e-commerce setting (Koufaris and Hampton-Sosa 2004).

2.6.4 Trustworthiness

In order for a trustor to place trust in a trustee, it is essential for the trustee to be perceived as trustworthy. According to Blois (1999) who reviewed marketing papers on trust, it is important to distinguish between trust and trustworthiness – many studies do not. According to one definition, “trustworthiness is the antecedent accumulated perceptual experiences that lead one to trust another person, institution, or organization” (Caldwell and Clapham 2003, p. 351). A trustee, for example a salesperson, can not create buyer trust. The only thing the salesperson can do is enhance his/her own trustworthiness, which is the salesperson's desire to be trusted, in order to possibly have the trust of a buyer (Blois 1999). Consequently a trustee,

whether it is the EMP as an institution or an individual member of that e-marketplace, can promote its own trustworthiness. Thereby the possibility of obtaining trust increases.

In our definition of trust (section 2.2), we concluded that in e-commerce it is reasonable to include an organization or an information system in the notion of a trustee. In other words, a trustor may trust a company, a web site or some other institution. Logically, an organization, such as an EMP, or an information system should be able to increase its trustworthiness. The study of Caldwell and Clapham (1999) takes the standpoint (following Hosmer 1995) that organizations as a collective unit can indeed exhibit trustworthiness, that trustworthiness is an organizational construct, though closely related to interpersonal trustworthiness. An organization's trustworthiness may be intimately anchored in the three interpersonal trustworthiness attributes suggested by Mayer, Davis, and James (1995): ability, benevolence and integrity.

Assessing trustworthiness is viewed as the first step in an iterative process; in the beginning of a relationship a trustor checks the trustworthiness of the trustee, as well as his or her own experience of the trustee (Blois 1999, Deelman and Loos 2002). Certain aspects of a trustee create trustworthiness in the mind of the trustor, though those aspects vary strongly between trustors and contexts (Blois 1999). Our chosen definition of trust stresses two dimensions, namely credibility and benevolence (Moorman et al. 1992), but there exists several classifications of trustworthiness – many of them overlapping – for an online environment. One classification delineates four classes of attributes: *competence*, *positive intentions*, *ethics*, and *predictability* (Chopra and Wallace 2003). Another study identifies three trustworthiness attributes, corresponding to the first three in the previous classification: *ability*, *benevolence* and *integrity* (Bhattacharjee 2002). A third study suggests that trustworthiness attributes can be merged into the two categories of *predictability* and *goodwill* (Handfeld and Bechtel 2002).

For the sake of discussion, we follow the classification by Chopra and Wallace and integrate the other trustworthiness attributes into the above mentioned classification. Firstly, in e-commerce competence or *ability* (Mayer et al. 1995, Lee and Turban 2001, Bhattacharjee 2002, Gefen et al.

2003) is reflected in the ability of a transaction partner to deliver or pay for the goods (Chopra and Wallace 2003, McKnight and Chervany 2002, Grandison and Sloman 2000, Tan and Thoen 2001). An example of how competence manifests itself in B2B is the ability of the seller to live up to the terms in a bid at an EMP auction (Mullane et al. 2001).

Secondly, positive intentions are visible in a business partner's respect for privacy and in intent not to commit fraud. Closely related constructs are *benevolence* and *goodwill* (McKnight and Chervany 2002, Gefen et al. 2003, Christensen and Gressgård 2002, Friedman et al. 2000), meaning that the trustee refrains from being opportunistic by not taking advantage of the trustor, or according to other authors (Lee and Turban 2001, Mayer et al. 1995) to do good things and not only maximize personal profit.

Thirdly, ethics are embodied in protecting the integrity of the transaction. This attribute also is referred to as *integrity*. Integrity is the trustor's perception that the trustee sticks to a set of principles that the trustor deems acceptable (Mayer et al. 1995). Translated into e-commerce, integrity means that a party is honest, fulfills ethical obligations and promises to deliver goods or services and secure private information (McKnight and Chervany 2002, Lee and Turban 2001, Gefen et al. 2003).

Fourthly, predictability stands for how uniformly the trustee behaves. An example is an online customer forecasting that Amazon.com will consistently deliver a book within seven days (McKnight and Chervany 2002).

2.6.5 Information quality

Closely related to the dimension of trustworthiness is the notion of information quality. In the information science literature, information quality is a variable determining if a user will attend to a message or not. The assumption is that people judge information quality as different from information content (Wathen and Burkell 2002). Information quality deals with attributes such as accuracy, timeliness and relevance. The concept is relevant for e-commerce trust because buyers and sellers to some extent act on the information that is provided to them via information systems, such as a web site. For example, a web page must be grammatically correct, spell-checked and contain timely information (Deelman and Loos 2002). If the

information is of uncertain quality, a person is vulnerable to errors in his or her decision making (Chopra and Wallace 2003). Thus, information quality determines if a user will be influenced by and act upon the provided information (e.g. Deelman and Loos 2002, Chopra and Wallace 2003, Tan and Thoen 2001).

Information quality in an anonymous online environment can be regarded as a visual manifestation of trustworthiness attributes, essentially competence and goodwill, outlined in the previous section (2.6.4). For instance, a consumer assesses the efficiency and reliability of an e-vendor resting upon information on such issues as delivery charges, order progress, and policies on privacy, returns and redresses (Grabner-Kräuter 2002).

A number of information quality attributes are suggested in the literature, among them accuracy, currency (timeliness), coverage, credibility (or believability) and depth (Alexander and Tate 1999, Tseng and Fogg 1999, Naumann and Rolker 2000, Rieh 2002, Wathen and Burkell 2002, Chopra and Wallace 2003). There is a considerable amount of overlap in these attributes. It appears, though, that most attributes can be grouped under the heading *credibility*. It strongly influences the impact of a message (Tseng and Fogg 1999, Wathen and Burkell 2002). It is suggested that users determine credibility by jointly assessing the credibility of the *message* and the credibility of *the surface* (here a web site). The evaluation of message credibility in turn is divided into (1) source expertise, trustworthiness, etc., and (2) message content, relevance, currency, etc. Surface credibility is affected by such factors as the design of the visual interface, speed of loading, interface usability and organization of information. At this stage “even a single spelling mistake can give the impression of ‘amateurism’ and lead the user to reject the site as not credible” (ibid, p.140). If, however, a user approves of the web site’s surface credibility, he or she will proceed to evaluate the message credibility.

2.6.6 Reputation as a trust-builder

Reputation was briefly described in section 2.4 as one of the trust-building processes. In effect, reputation is a vehicle for transferring trust, in particular at the initial phase of a business relationship. Reputation is touted as a promising, cost-effective way to build trust in an electronic market, such as in e-commerce (e.g. Padovan, Sackmann, Pippow 2002). The e-commerce trust literature gives little empirical evidence about the role of reputation. What makes reputation distinctly different from other trust-building processes is that it can develop an agent's trust in a trustee without the agent having any experience of its own with the trustee. In other words, a buyer may trust a vendor solely because other buyers trust the vendor (e.g. Conte and Paolucci 2002, Mui, Mohtashemi, Halberstadt 2002).

Reputation is defined as an estimation by others of an "entity's willingness and ability to repeatedly perform an activity in a similar fashion" (Herbig, Milewicz, and Golden 1994, p. 23). An example of such an activity is a vendor's delivery of goods. Hence, reputation is a historical notion and different reputations can co-exist, such as reputation for quality, one for marketing, one for product innovation and so on (ibid.). According to another definition, reputation is one agent's perception of another agent's intentions and norms. This definition also may be termed image. Reputation can develop either from an agent's own or from others' experience with a trustee (e.g. Conte and Paolucci 2002).

Reputation also refers to the process of transmitting this target image (Conte and Paolucci 2002, p. 71). Reputation then contributes to trustworthiness by giving the trustor some historical information about an individual or an organization before the trustor has been in contact with them. This reputation, negative or positive, shapes the trustor's expectations about how the trustee will behave (Blois 1999). Put differently, reputation sorts out the "bad" transaction partners so that the "good" ones can trust and cooperate with each other. This effect is shown in computer simulations (Conte and Paolucci 2002, Padovan et al. 2002). Thus, reputation-based trust is social, and hence transmitted from user to user (Patrick 2002).

In e-commerce specifically, reputation concerns both buyers and sellers. It is obtained from offline sources and online ratings (Chopra and Wallace 2003).

Online ratings can take the form of buyer ratings of sellers in predetermined categories or free comments (Resnick et al. 2000). These ratings sometimes are published in so-called reputation systems. For example, at eBay auctions vendor profiles are created consisting of buyer comments on sellers and rating of sellers in three categories: positive, negative, and neutral (Resnick et al. 2000, Ba and Pavlou 2002, Strader and Ramaswami 2002).

In the current investigation, we refer to reputation mainly as the *propagation* of actor image. Although the first step is to acquire this image, or what can also be called internal reputation, what is interesting from a trust point of view is the dissemination of this image/internal reputation among several actors, for example buyers.

2.6.7 *Trusting beliefs*

The construct *trusting belief* refers to the nature of trust and how trust can be measured. That is, in this study trust was defined as a trustor's belief in a trustee regarding certain aspects; for example, credibility and benevolence. Can this trust be measured, and if so, how? Generally speaking, trust is claimed to be measurable, though it is "extremely difficult" to measure the trust level needed for successful e-commerce (Turban et al. 2002, p. 131). The reason for this is that transactions involve multiple parties, who are separated by time and geography. In addition it is difficult to measure the mental processes of the parties (ibid.).

The reviewed literature reveals that trust is measured differently depending upon the context and the construct. Trust measurement focuses on measuring either trusting beliefs or trusting behavior. For measuring beliefs, the approaches can be categorized as quantitative or qualitative (e.g via a semantic scale or a partial order). As an example of a quantitative measure of a trusting belief, Jøsang (1999) and Mui et al. (2002) mathematically represent trust with probability values between 0 and 1. This measure incorporates an agent's belief, disbelief and uncertainty about an unknown agent. In another study the levels of a trust relationship are arbitrarily set to integer values from 1 to 100 for trust and from -1 to -100 for distrust. The context is a trust management system for e-commerce (Grandison and Sloman 2002). In another study dealing with virtual communities, a trust belief is

measured qualitatively. Four discrete, semantic steps range from very untrustworthy to very trustworthy (Abdul-Rahman and Hailes 2000).

Other studies have operationalized and measured trust indirectly, through constructs like customer beliefs in the integrity, benevolence and ability of a company (Bhattacharjee 2002, McKnight et al. 2002b, Koufaris and Hampton-Sosa 2004).

Trust also can be measured through visible behavior, for example, within the context of Trust Games. People make choices in a dilemma setting, such as a Prisoner's Dilemma, and their choices are interpreted as trust or distrust (Snijders 1996, p. 21). Applying this approach to e-commerce, one can say that behavior such as giving out personal information to a vendor or conducting a transaction are trust-based acts, both objective and measurable.

2.6.8 Trusting behavior

The final construct in our research framework is trusting behavior. It refers to the positive outcomes of trust. As we indicated in the introductory chapter, the online trust literature treats trust as a mental short-cut to a buying decision, or a notion potent enough to convert an online "window shopper" to an actual buyer (Grabner-Kräuter 2002, McKnight et al. 2002a). A concrete example would be a consumer sharing his or her credit card information with a vendor (Gefen et al. 2003). In a B2B setting, trust had been conceptualized as an order qualifier; that is, a condition that must exist before any transaction can take place (Doney and Cannon 1997). In the particular context of a public EMP, a positive outcome of trust is continuity, a buyer's expectation of future transactions with a seller (Pavlou 2002). Overall, a transaction between a buyer and a seller can be viewed as a trusting behavior.

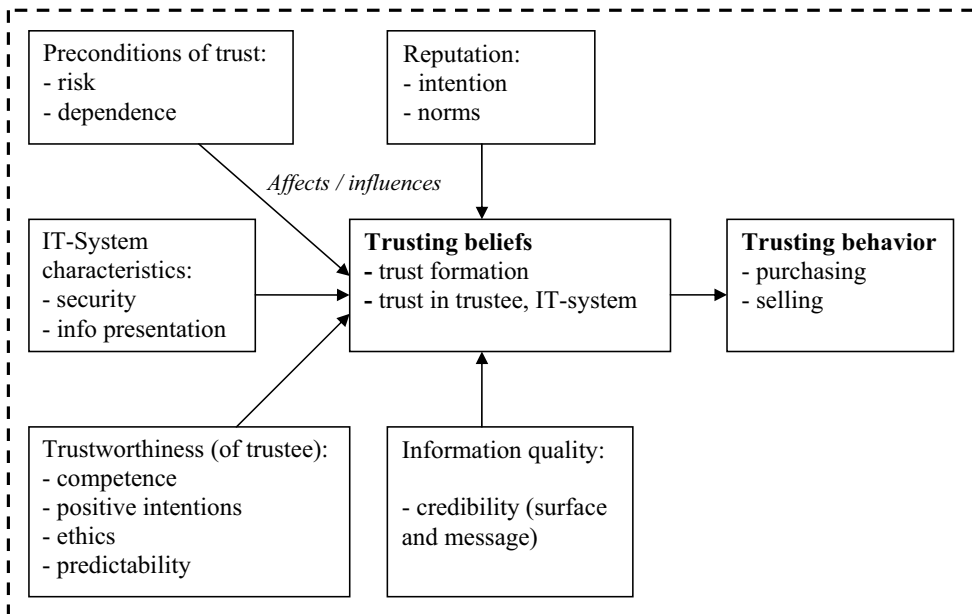


Figure 2: Research framework depicting how an online trustor (buyer or seller) develops trust in a trustee (human or system) at an e-marketplace

As previously mentioned, this research framework (Figure 2) contains seven broad constructs. Definitions of the individual variables, their measures and interview questions used in the pilot study are included in Appendix 1. Each variable draws upon the reviewed literature for its definition. The variables and sub-variables can be regarded as the most important dimensions of trust in the chosen context which our research questions address.

The research framework can be viewed as a conceptual roadmap of how trust is created and can be influenced at a B2B EMP. The framework does not imply any hypothesis testing. It is meant to be explored by qualitative data.

2.6.9 Buyer-seller trust and e-marketplaces

Having briefly pointed out the characteristics of B2B e-commerce, as opposed to B2C e-commerce (section 2.6.1), it now is appropriate to more closely discuss the concept of e-marketplaces. This is necessary in order to identify the trust issues involved, in particular concerning trust preconditions. An

EMP can be defined differently. According to eMarketServices (2004a) an EMP has to have the following characteristics:

- It must be open to many buyers and sellers
- the EMP does not set the prices for the goods or services it provides
- the EMP should not itself trade its own goods or services
- the EMP provides at least one trading functionality, such as requests and bids, electronic auctions, or catalogs with an ordering function
- trade focus is on business-to-business or business-to-authorities

The main function of an EMP is to assemble a critical mass of buyers and sellers, and to provide an infrastructure for transactions. An exchange may or may not take part in the transactions (Lucking-Riley and Spulber 2001). An EMP operates one or several business tools for order matching, such as auctioning, catalog order, dynamic pricing, requests for proposals (RFP) and requests for bids (RFB) (Phillips and Meeker 2000, p.28, e-Marketservices 2005). Two examples of EMPs are e-Steel.com and PaperExchange.com. These EMPs facilitate quick spot sourcing of manufacturing inputs, eliminating the need for contracts or other documents that spell out the relationship.

In an EMP, business partners may be completely anonymous to each other (Kaplan and Sawhney 2000). For example, anonymity is the case at the Swedish-based Excesstrade.com, where anonymous buyers and sellers transact with electronic components (www.excesstrade.com).

Common business roles of EMPs are *matchmaking* and *procurement* (Raisch 2001), also called *spot sourcing* and *systematic sourcing* (Kaplan and Sawhney 2000). Matchmaking or spot sourcing is a relatively simple activity, by which a more or less passive exchange system brings buyers and sellers together. Here, well-branded and well-defined commodity products and services are exchanged. An example would be a computer manufacturer needing to buy 5,000 units of power supplies and have them delivered within two days (ibid).

Procurement or systematic sourcing on the other hand involves creating a network of suppliers. The partners know and trust each other and relationships are meant to last through the use of long-term contracts (Kaplan

and Sawhney 2000). Procurement often is performed by integrating the systems of several buying and selling companies into a supply chain or supply chain network. Referring to Figure 3, matchmaking takes place in phase 2 and 3, while procurement or systematic sourcing occurs in phase 4. Matchmaking can be said to constitute the core of e-commerce. Matchmaking increasingly is being executed in e-marketplaces.

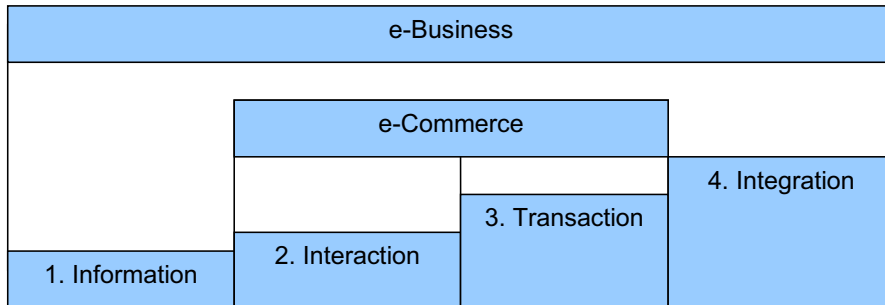


Figure 3: Different phases of e-business (adapted from E-MarketServices2005)

In terms of ownership, practitioners generally classify EMPs into three categories: private, consortia and independent EMPs (Hsiao 2003). Private EMPs usually are hosted by key buyers with the objective to exchange such items as purchase orders. Consortia-based EMPs can be both buyer and seller centric, with the trademark of being run by a consortium, such as Covisint which is led by an automobile consortium. Finally, an independent EMP is hosted by a neutral intermediary. An example is the Hong Kong-based Alibaba.com, facilitating trade in 27 different industries from textiles to electronics (www.alibaba.com). The independent EMP type most closely corresponds to the public EMP that is the focus in this study. This is because the independent EMP strives towards acquiring as many new buyers and sellers as possible

The issue of trust is singled out as pivotal to trade at EMPs, to the point of saying that if there is no trust, there is no deal (eMarketServices 2005). The reason why trust is regarded as fundamental is that it is necessary for the parties to develop sufficient confidence in the electronic transaction that they are willing to ship the product, transfer funds, and in real time enter a binding commitment through a contract (ibid.) Trust is hypothesized to be particularly important for independent exchanges, because they require the development

of trust relationships between buyers and sellers in order to achieve liquidity (Hsiao 2003). From a trust perspective, the main challenges for an EMP have been summarized in the following three requirements: (i) transparent information about members and products, (ii) secure electronic communication systems and protection of confidential company data, (iii) dispute resolution systems (EU Commission 2002).

In section 2.6.2, Preconditions for trust, we argued that on the broadest level the importance of trust increases when (i) the products are used directly in production, (ii) the transactions are made with unknown business partners, which often is the case in matchmaking. First, when sourcing of direct products the financial risk is large because of the large order sums. Product uncertainty also may be high for direct products. In addition, direct products are used in the supply chains. Second, in matchmaking/spot sourcing, actor uncertainty is higher than in procurement/systematic sourcing. Following this logic, the need for trust would be greatest in matchmaking of direct products. Given that matchmaking/spot sourcing most likely takes place at a public EMP, we focus our research interest upon such EMPs.

As we have previously pointed out, we assume that during each transaction it generally is the buyer who has the greatest need for trust. Naturally, because of the buyers' need for trust in the sellers, in the long-run it is critical for sellers to promote buyer trust, so as to uphold the market.

Chapter 3: Pilot study

3.1 Overview

In order to refine the research framework and further develop hypotheses for quantitative testing, a pilot study was undertaken. The pilot study consisted of in-depth interviews at two cases. The cases are public, B2B e-marketplaces: Printoffer.com and Phonetrade.com. They are presented in the following sections.

Regarding the methodology employed, semi-structured interviews were made with the assistance of an interview guide, following the variables outlined in the research framework (see Appendix 1). At Printoffer, face-to-face interviews were conducted with 10 individual buyers of print and 3 sellers (print shops), as well as the two owners/founders of Printoffer; in total 14 interviews. At Phonetrade, 5 members were interviewed by telephone, and there were two face-to-face interviews with the founder of Phonetrade, in total 7 interviews. In addition there has been extensive e-mail correspondence with the founder throughout this research. A more thorough review of and justification for the case study methodology is presented in Chapter 5 - Methodology.

Table 1: Comparison of two EMPs: Printoffer and Phonetrade

Characteristics	Printoffer	Phonetrade
Products	Printed matter	Mobile phones and accessories
Horizontal/vertical	Vertical	Vertical
No. of members	3,900 print buyers, 394 sellers (print shops), mostly in Nordic countries	Approximately 300 buyers and sellers globally, primarily in Europe, the US and the Middle East
Trade principle	Matching	Matching
Trade tool	Exchange of RFQs (Request For Quotation) & bids	Exchange of RFQs & bids, Phonetrade wholesale (web shop)
Trading steps online	Matchmaking	Matchmaking, negotiation, payment (Phonetrade Escrow)

3.2 Printoffer – the print e-marketplace with a Scandinavian focus

Printoffer (PO) is an independent EMP that trades printed matter, like brochures, folders, catalogues and publications. The company has its head office in Sweden. Its two founders, Mr Per-Olof Alm and Mr Björn Kronqvist, started the company in 1999. Their reason was to improve the printing market, primarily for buyers, in terms of expanding the circle of print shops from a local to a European or even global scale. The objective of this matchmaking is, in short, to redistribute the print jobs on the market. PO vastly expands the market for print buyers, resulting in lower prices and often higher quality prints. For sellers, the proposed value is to obtain access to a broader customer base, thereby getting new and more print jobs, although the competition places a downward pressure on prices.

The company is financed only through membership revenues. PO is open for all print buyers, free of charge, and for every print shop which pays a yearly fee of 4,500 SEK (approx. 500 Euro). PO has no employees. Mr Alm and Mr Kronqvist together run the daily business. According to them, PO is a very long-term project.

3.2.1 The competitive environment

PO is, in effect, the only EMP for printed matter for buyers in the Nordic countries. According to the trade directory of E-marketservices.com (www.emarketservices.com), which is regularly being updated, there are six EMPs in the printing industry apart from PO. These, however, focus upon regional markets other than Sweden, such as Hungary, North America and French-speaking European countries. In addition, there are a couple of horizontal EMPs on which printed matter can be traded, but it is unknown to what extent printed matter actually is traded in these markets. Therefore it appears safe to state that for Swedish print buyers, which constitute the majority of PO buying members, PO is in practice the only available EMP for online matchmaking of print jobs. Evidence for this assumption was strengthened by pilot study data that revealed that Swedish companies generally prefer to do business with domestic print shops. Therefore, PO has no real competition in this industry as far as Swedish print buyers are concerned.

3.2.2 Trading functionality

PO can be described as “semi-online”, meaning that it offers only the matchmaking online. There is no functionality for price negotiation, payment or other steps in the B2B buying process. The matchmaking functionality is implemented in the following way:

1. A potential print buyer fills in a request form on the PO web site. The request is automatically distributed through e-mail to all print shops that belong to the category that the buyer has specified. Sellers also can enter the PO web site and inspect presently active requests.
2. If the seller – the print shop - is interested in making an offer to the buyer, the seller makes a contact with the buyer. From that point on, all communication and transactions are made directly between the buying and selling company through traditional channels, including telephone, fax, e-mail and face-to-face meetings.

The PO management has no insight into or control of what transactions actually take place, other than sporadic testimonies from members or occasional customer surveys. The PO staff conducts random surveys with the objective of finding out if the matchmaking resulted in a deal and, if so, how much money the buyer saved in comparison with buying from the regular sellers. PO claims that, on average, print buyers receive 20 to 75% lower prices, plus a higher product quality.

PO does not want to get involved in the negotiation process. PO states on the web site that it takes no legal, economic or any other responsibility for the matchmaking of contacts or ensuing deals. The rationale for providing only the matchmaking function is that PO wants to rule out any suspicion among buyers and sellers that the requests or bids are manipulated in some way. For example, if PO engaged in the negotiation, PO would have access to offered prices. Given this information, PO then could act as a print broker and award allied print shops certain jobs. By not engaging in these steps, PO hopes to uphold its members’ trust both in the process itself and in PO as an EMP.

3.2.3 *Printoffer from a trust perspective*

With respect to trust the analysis of the in-depth interviews resulted in the themes outlined below. The themes are derived mainly from the variables in the research framework, but new themes emerged as well during the coding process. For details see Appendix 2a. Each theme is illustrated with one or two quotations from respondents.

Supplier control. The main objective for print buyers to use PO is to get a picture of the print market beyond regular suppliers. This “supplier control”, or “temperature reading” as one respondent fittingly puts it, includes finding print shops for odd jobs and most importantly, finding the current price level for the requested job. Typically a print buyer receives between 10 and 15 offers per request. Respondents witness that the offered price for a job often varies by 50% or more. Knowing the price level on the print market for a certain type of job gives the buyer leverage to put pressure on the regular supplier. Armed with pricing information from PO, the buyer then may negotiate with the regular supplier. In many cases PO has “shaken the market” for the buyers, resulting in supplier switching, from the regular to a new supplier.

Since the supplier control is simply the writing of requests and comparing offers, it can be concluded that, for the buyer, trust is not an issue at this stage. The reason is that trust preconditions are not present: the buyer does not risk anything; neither is the buyer depending on the print shop. The picture is somewhat different for the sellers writing the offers. There is risk present, although small, in binding themselves to work they may have to do at a later stage. The offer is a type of a contract, usually legally binding for 30 days. Other than that, the seller only risks wasting time writing offers that will not be responded to.

However, the above conclusion is valid only in the match-making phase. As soon as a buying or selling company wants to make business, trust enters the picture to some extent. This will be elaborated on in the following subsections.

“Using Printoffer is an easy way to scan the market for pricing of different kinds of printed matter” (Peter Lindhe).

“Usually I use Printoffer for control; to see if I get new contacts for a new kind of printed matter” (Göran Tröjer)

Risk and Dependence. We defined risk as consisting of uncertainty and vulnerability. Dependence refers to the circumstance in which one party has less than total control over conditions necessary for achieving a desired outcome, through actions that the counterpart performs. These two preconditions of trust exist in various combinations among PO buyers, and to a certain extent among sellers, when proceeding past online matchmaking and entering into a transaction. Uncertainty is manifested primarily in the condition that buyers don't know the print quality, vulnerability in potentially not getting the print on time. This risk is due to the buyer's dependence on the print shop to deliver the ordered product on time.

Uncertainty about product quality generally is low. These days there are no large differences between the ability of print shops to produce a good job in terms print color quality, for example. Conversely, dependence and vulnerability can be high. One example comes from a print buyer whose company had to cancel education courses when ordered course material did not arrive in time. Another example is a buyer who could not raise the company's product prices because the ordered catalogues with the new prices had not arrived in due time.

“You have to be absolutely certain of timeliness of delivery. Usually we work towards dead-lines where ordered print is going to be distributed with other material, e.g. our member magazine” (Göran Tröjer)

“Delivery time is very important. Our customers want their stuff very quickly. Often they give us their requests with very short notice” (Frida Andersson)

In order to reduce the risks associated with dealing with a new supplier, buying companies often order print samples or a test print of a real product for any larger production. Another method, which can be complementary, is

to supervise the print intake; for example, the adjustments made on the printing press before actual printing commences. For some respondents, the need to visit the print shop in effect excluded suppliers outside of Sweden or at least outside of Scandinavia. For such close collaboration, it clearly is an advantage if the mother tongue can be spoken.

Regarding seller trust in buyers, the interviews of the three seller representatives confirmed the literature view that sellers generally do not risk as much as buyers. Therefore, the need for seller trust in the buyer is smaller. The risk and dependence on behalf of the seller essentially concerns non-payment. The seller also takes a financial risk, although small, regarding the annual PO membership fee. It is not certain that this fee and the seller's presence on PO will result in actual business.

“For us there are no risks associated with using Printoffer. This is because the print buyer is not anonymous. Of course there's always the risk that the buyer won't pay, but that is not specific for Printoffer in any way. It's up to me to make credit checks” (Pär Sundin)

In sum, trust preconditions are present and trust needed for the most part when a buyer and a seller proceed past the PO matchmaking and enter into a business agreement. This is to say that it takes little or no trust to use PO as such, as the matchmaking itself is practically risk-free for the buyer and only entails a small risk for the seller. In the following stages of the buying process the buyer does assume risks, and so does the seller to a lesser degree

Trust. All respondents had an opinion about trust when discussed indirectly, as in discussing competence as an attribute of trustworthiness. However, when asked explicitly if trust is important or not for doing business via PO the answers varied. Some buyers did not have much of an opinion on trust. Others did not quite relate to the question and appeared somewhat confused. Still others claimed that trust is important or even the prime consideration when choosing a new supplier. Overall, it appears that, for the print buyers, trust is not a primary concern, with one exception: possible lack of trust for foreign sellers.

“There is a difference between printing works; between those we trust and those we don’t trust. We stay with those we trust” (Magnus Berg)

Trustworthiness. Trustworthiness was defined as the trustor’s accumulated perception of the trustee that might result in trust, the trustee being another person, institution or organization. Several attributes were suggested as trustworthiness enhancers, among them competence, positive intentions, ethics and predictability.

The pilot study revealed that seller trustworthiness in the eyes of the buyer increases if the seller is perceived as competent, pro-active and ethical. As an example, seller competence can entail having a firm grip on the print production process. Competence also manifests itself in a seller’s technical know-how, such as the ability to handle both text and graphics.

From the seller point of view, buying competence is desirable. That is, the buyer should be knowledgeable about the printing process in general and the specific request in particular. If not, unnecessary problems can arise, taking time to solve and eventually lowering the seller’s profit. Examples are that the buyer specification is poor or the buyer changes the specification in the middle of the printing process.

The pro-activeness attribute can mean such things as suggesting new ways of printing that the buyer does not understand or foresee. It even can be that a seller declines performing a certain job and instead recommends another print shop. This can occur when a given print shop has the technical capability to deliver, but not the experience and degree of specialization to perform really well for a certain product. In our classification, pro-activeness can be translated into positive intentions. Sellers also desire pro-activeness in buyers, although they recognize that some buyers demonstrate inadequate knowledge of the process leading to naïve or unrealistic requests.

Ethics appeared in the form of keeping a promise about price, fulfilling promised delivery times and not using a lower quality paper than agreed upon. According to the seller respondents, buyers can behave unethically. This may occur, for example, when the buyer is an advertising agency with an

end-customer, who blames the print shops for problems that the agency itself has created.

“The seller should take responsibility and guarantee the quality. They should add something to the printing process and put forward good suggestions concerning paper, printing technique and so forth” (Anders Jonasson)

Reputation. Reputation is the development and transfer of one actor’s image to other actors. The image might concern trustworthiness or reliability. Reputation propagation therefore can increase or decrease trust, for example buyer trust towards sellers.

There is some evidence of reputation at PO, but this reputation seems to happen only within a company or a company group, as in among two or more individual print buyers. The picture that surfaces is that reputation, according to our definition (buyers at different companies sharing their views of selling companies), plays a very small, if any, role in these buying decisions. Each print buyer is left to his or her own judgement as to whether or not to try a new print shop, on behalf of his or her company. The selection of print suppliers does not appear to be dictated by company policy, even in quite large companies (by Swedish standards). Then, gradually over the years, a print purchasing manager gains understanding and experience relating to what print shops are in the market, what they can perform and which can and cannot be trusted. One possible explanation for the absence of reputation is the reluctance among buyers at different companies to share their customer base. As one print buyer stated:

“Good supplier contacts take time to acquire. You don’t give them away for free” (Anna Gustavsson)

3.2.4 Conclusions Printoffer pilot study

Summarizing, the PO pilot study data suggest that further investigation on trust in direct, non-vetted buyer-seller relationships is necessary. This means that trust is mainly of the interpersonal type – directly between an individual trustor and in most cases an individual trustee. Referring to the division of

B2B trust in two levels – company and individual – we see that trusting in the PO context first and foremost takes place on the individual level. The individual makes a 'true', first-hand assessment of the motives and capability of the trustee. For example, "slick" sales talk or intrusive contact efforts on behalf of the seller can decrease buyer's trust. On the contrary, a seller who gives an impression of knowing what he or she is talking about increases buyer trust. The importance of good personal chemistry between the buying and selling representatives was highlighted by several respondents. In many cases, the sales representative is the buyer's first and only contact with the print shop. It is evident that the nature of this relationship affects the buyer's willingness to conduct further business.

Writing contracts can be viewed as a manifestation of firm level trust. Such practice does not appear to be very common (unless we consider the PO offers as contracts). Therefore one can conclude that firm level, or interorganizational trust, is not as prominent as interpersonal trust at PO. Having said this, we acknowledge that an important trustworthiness attribute such as keeping promised delivery times makes trust interorganizational as well. By this we mean that delivery of printed matter is an outcome of the print shop as a company, not of the individual sales agent. Therefore, it is fair to say that the buyer does or does not trust the selling company; that trust exists on a firm level as well.

There is no observed trust directed towards PO as an EMP. Stated differently, it takes relatively little or even no trust to use PO. Neither is there any evidence of institutional trust. That is to say that PO does not apply any measures to promote trust-building among its member companies. There is no such thing as the monitoring of transactions among the member companies.

Regarding trust-building processes, the buying situation is practically void of reputation, the propagation of seller trustworthiness in a network of print buyers from different companies. This means in the PO setting that the individual buyer, whether he or she works for a small or a large company, builds his or her own experience of the market and its sellers.

When considering the division of trust-building processes in cognitive versus personal/emotional contexts, it can be concluded that initial buyer-seller trust

at PO is of the first type. When the buyer and seller hardly know each other, they apparently make a rational decision of if the counterpart is trustworthy. When a buyer-seller relationship has matured, it is possible that the personal/emotional component is stronger. Some respondents admit that they feel a certain amount of guilt towards established suppliers when they use PO to come in contact with new suppliers. This feeling of guilt can reasonably be explained by a personal/emotional trusting bond. The continued use of a supplier, which becomes increasingly established and sometimes even the sole supplier, is an example of cumulative trust-building.

Of the classifications of trust-building processes, the label *attribution* appears to fit best. Attribution builds on an assessment of visible evidence of the trustee's qualities or motivation. Put differently, a trustor ascribes a positive motivation to the trustee. The practice of obtaining print samples gives the prospective buyer some visible evidence of what the trustee is capable of, competence-wise. Transparency is another appropriate label for this process. As a first step in the buying process, the selling company's web site typically is inspected. The intent is to find information about the seller, including the seller's trustworthiness. When the buyer-seller has conducted at least one deal, prediction-based trust can start evolving. Founded on the results of the first transaction, the buyer can predict the outcome of the next transaction with the same print shop.

As a comment on the revised research framework in Figure 4, note that compared to the original research framework (Figure 2 – Chapter 2) the constructs IT-System characteristics and Information quality are omitted. These variables did not appear as significant in the pilot study interviews. Also, compared to the original research framework, the construct Trusting behavior does not include selling (Figure 4), indicating that at PO trust primarily is an issue for the buyer.

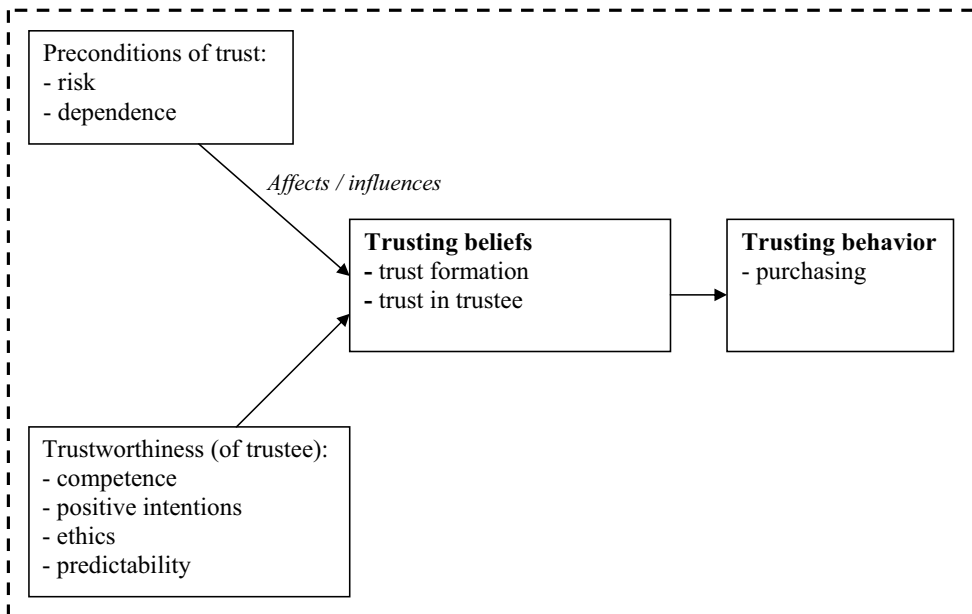


Figure 4: Revised research framework (Printoffer.com)

3.3. Phonetrade – the truly global e-marketplace

Phonetrade (PT) is a Swedish-based B2B EMP for mobile phones and accessories (www.phonetrade.com). The company has its head office in Sweden. It is owned by three persons, including Mr Martin Ericsson who is the company’s founder and front figure. It has no employees apart from Mr Eriksson and the CEO, Mr Allan Jansson. Presently, Phonetrade has approximately 300 member companies in about 50 countries. The list of members includes everything from one-man businesses selling a few thousand cell phones annually, to a number of large distributors selling millions of cell phones per year. The membership fee varies between 50 Euro and 500 Euro, depending upon the service level. For example, the regular 500 Euro fee includes access to the member list, which the lower fee does not.

The business concept of PT is (i) to provide a market where members can trade with mobile phones and accessories, (ii) to sell to members directly from major manufacturers. The existence of a proprietary sales channel for its own products should disqualify Phonetrade from being classified as a true

EMP, according to the definition proposed by eMarketServices (2004a). However, we have chosen to include PT despite this fact. The PT Wholesale function is rather new and presently not the dominant pillar of the business model.

The aim of PT is to dis-intermediate, that is, to abolish unnecessary middlemen in the distribution chain from manufacturer to consumer. According to the founder, both retailers and e-marketplaces like PT gain from reducing the number of intermediaries. In addition, manufacturers do not find much advantage in a system in which large distributors keep numerous cell phones in stock but, other than that, add little or no value.

3.3.1 The competitive environment

At least ten B2B EMPs dedicated to mobile phones and/or accessories exist worldwide. Some of the most prominent competitors are Clicktango (Italy), Handyking (Germany), Rampal (Israel), GsmExchange (Ireland), and International Phone Traders (UK). There also are horizontal EMPs that provides a market for mobile phones. Examples are Alibaba (China) and Indiamart (India).

In this rather fierce global competition, PT tries to position itself as “the stock exchange for mobile phone trading”. This means, in essence, that there should be no product uncertainty and that stock ultimately can be bought and sold unseen. Presently, there are some uncertainties particularly related to used cell phones. These phones are classified differently in various parts of the world depending upon how reconditioned they are. In various ways, PT is attempting to reduce this product uncertainty, including weeding out stolen goods from the trade – a common phenomenon in this industry.

Another important differentiating aspect of PT is trust. By joining, new traders should get access to a network of trustworthy traders all over the world. This vision is implemented mainly by pre-screening potential members. The criteria for membership include verification through different sources, such as VAT registration. Although these verifications are relatively simple to carry out, not many e-marketplaces perform such controls, due to their ambition to connect as many participants as possible to their e-marketplaces.

3.3.2. Trading functionality

PT can be viewed as a “fully-online” EMP. This means that it offers online matchmaking, negotiation and payment functions. They are implemented in the following way:

1. A trader posts a Request to buy on the PT web site. Alternatively a trader posts an Offer to sell.
2. A seller can bid on a Request and a buyer can bid on an Offer, thus entering an online negotiation. Anonymous bids can be placed. The buyer and seller are notified through e-mail about each other’s bids.
3. When a deal is accepted, the buyer settles payment with the seller in any way they choose. Payment also can be done using PT Escrow.

Alternatively, PT members can sell product by posting an offer at Phonetrade Wholesale, PT’s web shop which is open to everyone, including non-members.

The PT Escrow system is worth mentioning separately as a cornerstone of trust. With Escrow, the buyer deposits his or her money at a bank account handled by PT. The seller delivers the goods to the buyer, who inspects it, either him or herself or via a representative. If the buyer accepts the shipment, PT is notified and payment is released to the seller. The idea behind PT Escrow is to rule out risks, both for the buyer and seller. The buyer does not risk company money before the goods have arrived and been inspected. The seller, on the other hand, can safely ship the goods, knowing that the buyer already has deposited payment for it.

An examination of active requests and offers at PT reveals that the majority of those have not received any online bids. This means that most transactions are concluded external to the PT system, in effect making it “semi-online”. The PT trading system allows monitoring of which members receive bids and who proceeds further to negotiation. However, PT is not particularly interested in examining the details of the online transactions that take place. One reason for this is that transaction fees are not employed as a revenue stream. As a consequence, PT management cannot give accurate figures for how many transactions take place. The PT management estimates that approximately

1,000 deals are made annually, with an average cost of 200,000 Euro. This would amount to an annual turnover of about 200 million Euro.

In addition to providing an e-marketplace for members, PT sells its own products. The company recently has set up a so-called global account for SonyEricsson products. This means in practice that PT acts as an online, world-wide distributor for SonyEricsson. The ability to buy directly from major manufacturers via PT came about in 2004. It means a shift in the business role of PT from providing only a neutral platform for transactions to actively take part in the trade. This shift could have consequences for trust of Phonetrade, among other things. However, according to the founder, this is a very popular service among the small and medium-sized members of PT. The reason is that they usually cannot source products directly from manufacturers. Through PT, the small members increase their leverage. PT is attempting to establish customer accounts like SonyEricsson with other major manufacturers like Nokia, Motorola, Samsung and LG Electronics.

3.3.3 Phonetrade from a trust perspective

With respect to trust, the analysis of the interviews resulted in the themes presented below. Each theme is illustrated with one or two quotations. For details see Appendix 2b.

Meeting place. PT primarily is a meeting place for traders, only secondarily a platform for transactions. Members log in to see offers and requests. If these are of interest, contact is made through telephone or email, and negotiation may commence. It appears that one category of PT members uses PT only as an information channel. Members occasionally post offers or requests with the only purpose of awakening buyer or seller curiosity to the point of wanting to become contacted. It is not important if this contact results in a deal or not. Another category uses the PT trading network to conduct business. For one of the respondents it was a series of successful first deals – 10,000 phones sold in a week – that lured him permanently to PT. For another company, PT is its sole business channel.

If we assume that PT is a meeting place in the first place, then one conclusion is that trust is not the overriding issue for doing online transactions. In other words, if the PT members are not actually transacting online, trust in the

counterpart and/or Phonetrade is not of great importance at this stage. One exception could be that it takes a certain amount of trust to start using PT in the first place. Regardless, trust comes into the picture later on in the process when potential business partners negotiate outside of the PT system. The semi-online characteristic can possibly explain why none of the respondents mentioned system characteristics and information quality as relevant for trust in the PT context.

"You can say that PT is a meeting place, not a platform for a long-term relation between a buyer and a seller. Once I establish a contact with a seller who got the goods that I am interested in we maintain a direct contact, not through PT" (Trader 1)

"I became a trial member and posted an offer for a small quantity to see if we could sell something. In two hours we had sold it. That was fast. At Phonetrade they deal with each other, at other web sites they just talk" (Trader 3)

Risk. In the mobile phone market, uncertainty about products can be large, in particular when it comes to so called 'refurbished' phones and accessories. These usually have a high defect rate, with as much as 10-20 % of the products not being fully functional. Sophisticatedly refurbished phones can be sold as new by an unscrupulous seller. This risk exists also for new phones, but it is much smaller.

Furthermore, in terms of dependence phones might not be in stock. This means that a trader sells a batch of phones that he or she does not have in his or her possession, only hoping to obtain stock if a second deal goes through. For the buyer, this condition means among other things that money can be locked into a deal that will never materialize. If a transaction eventually takes place, the buyer also might receive the wrong quantity or type of phones, compared to what has been ordered.

There is also client uncertainty. The potential buyer or seller can be dishonest or criminal. The sale of cell phones from the manufacturer to end consumer is

lined with fraud such as VAT¹ fraud, defective goods, non-deliveries and non-payments. Regarding VAT, in a chain of buyers and sellers telephones are being bought and sold with VAT being withheld from the tax authorities in the home countries of the traders.

In sum, the pilot interviews indicated that trade with mobile phones is a high risk business, in turn necessitating a large need for trust. With respect to trust in PT, the member company takes a certain financial risk in paying the membership fee. Therefore, trust in the EMP is relevant to some degree.

“As a buyer you need a lot of trust in the seller. They might say that they have 5,000 phones, but they don’t. It’s just an offer that has been sent to them via somebody that they don’t know” (Trader 4)

“Mobile phone trading is quite a high risk thing really. You might not get the goods you ordered at the end of the day. Or you don’t get as many as you ordered, or some of the phones don’t work. Or maybe you don’t get the phones at all” (Trader 2)

Risk reduction. Hand in hand with risk goes risk reduction. In particular, with a new trading partner the traders employ several risk reducing mechanisms aimed at reducing client uncertainty. To begin with, a trader can check up on a potential business partner, either directly or via other sources. This involves inquiring about legal status of the company, past and present activities and so on. If a transaction then commences, a trader can take measures such as asking for proof of stock; for example, requesting pictures of the goods. A common risk reducing activity is inspection. An inspection can be made by several parties and at different levels. Typically the freight forwarder makes an inspection. Such an inspection can, at its simplest, consist of reading on the boxes that they contain mobile phones of a certain brand in a certain quantity. At the other end of the scale, an inspection can entail dismantling a sample of the product to see the actual content.

¹ Value-added tax

"The biggest reason for us to use Phonetrade is that Martin Eriksson has controlled these companies rather effectively. Then half of our job is already done. We then know that they are legitimate companies, VAT registered etc."
(Trader 4)

Trust. Four of the five pilot respondents stated that trust either is important or very important in this industry. Among other things, it makes trading much quicker and more efficient. In the experience of one of the respondents, trust shortens the length of each transaction by 2-3 days. Trust is on a zero level before the first transaction, according to one respondent. Each successful transaction with the same buyer or seller causes trust to increase and the need for risk reduction to decrease. Occasionally the trust level is so high in a buyer-seller relationship that goods and money flow back and forth without any checks and balances. This is, however, rare. Because trust is perceived as crucial in this industry, one strategy is to stick only to a trusted circle of business partners. This trusted network can consist of the PT member body or of another group of partners in the same business. Respondents associated trust both with individual buyers or sellers and the buyer's or seller's company.

"When you send someone half a million for goods which is expected to be delivered next week, then trust plays a large role" (Trader 1)

"I say to people that you could have a couple of million pounds in your bank account, but if you are not a trustworthy person and your reputation is not good, there are not going to be many people who want to deal with you"
(Trader 4)

Reputation. At PT, reputation according to our definition is used as a basis for trust decisions only to some extent. There is generally no "talk in the business". Therefore, a trader relies upon his or her own experiences with a potential or existing business partner, building up what could be labelled an internal reputation database. When the situation involves dealing with a business partner with whom the trader has had no previous experience, it is common to start with such tactics as visiting the business partner's web site,

in order to form a picture of that company. Telephone calls can be made directly to the company and its key people approached. Also, names of reference people or companies can be obtained from the company in question. If a business relationship is thereafter initiated, the trader acquires experience of his or her own of regarding the counterpart, which adds to the internal reputation data base.

“You don’t share your sources with other people. They are valuable company assets” (Trader 1)

Institutional trust. Judging from the pilot interviews, the members to a very large extent trust PT with its body of buyers and sellers. This can be labelled institutional trust. As we described in section 2.4 – Trust-building processes – institutional trust relies upon a framework of arrangements such as monitoring or problem-resolving measures, often by a third party. In our research context, the EMP itself is the institution. One pillar in terms of institutional trust is the terms and conditions – or The Phonetrade Golden Rules – for membership. These are prominently displayed on the web site. The motto is “Business is built upon trust but could be ruined in a second”. In short, the Golden Rules are meant to mould the PT trading community into a trusted and secure network of buyers and sellers.

PT actively is creating institutional trust, although this effort might not always be an explicit objective for the management team. Mr Eriksson frequently uses the term family, which is strongly related to the concept of trust. PT promotes a “family-like” trading community. Mr Eriksson maintains regular contact with several members, and takes pride in getting to know as many of them as possible on a personal level.

One consequence of Mr Eriksson’s close ties with his members is that the reputation information that he gradually acquires is being used as a basis for trust decisions. Thus, Mr Ericsson is in effect “Mr Phonetrade” (as he also labels himself on the web site staff information page). One example can illustrate this. A member in Portugal contacted Mr Eriksson via e-mail to ask if she could directly approach a trader in Hong Kong, who had listed some interesting offers at Phonetrade.com, though not exactly the models she was

looking for. Mr Eriksson picked up this lead and contacted the Hong Kong member, in an attempt to connect these two members for a transaction. In his e-mail, Mr Eriksson recommended the Portugal seller to the Hong Kong buyer, in effect conveying trust between the two member companies.

One aspect of the above described arrangement is, of course, that is it very much related to one person, and therefore very vulnerable. The question can be raised: what happens to the institutional trust if Mr Eriksson is not present as the spider in the web of international phone traders?

“You have a feeling that Martin Eriksson is somehow watching over it. You can e-mail him and ask for everything and in 10 minutes you have an answer.” (Trader 3)

“Phonetrade and other commercial sites are a tool that I use, but they are not responsible for the trustworthiness of members. There’s no way that they could be, but it’s a useful tool” (Trader 2)

Trustworthiness. A trader’s trustworthiness as a buyer or seller can have several antecedents. Know-how of the industry and its products is one example; quick responses to inquiries is another. These attributes can be sorted under the label ‘competence’. One respondent put forward that a new business partner can display positive intentions through assuming a small risk; for example, by delivering goods to the buyer’s freight forwarder for inspection. Such behavior increases a seller’s trustworthiness. A practice that on the other hand decreases a buyer’s trustworthiness in the eyes of a seller, is when a buyer wants goods shipped to a country other than that from which payment originates.

Taking into consideration that PT is a trustee, Mr Eriksson’s habit of mostly prompt e-mail replies was given as an example of trustworthiness-raising. Furthermore, the screening and approval of new members is another major source of trustworthiness. On the contrary, the trustworthiness of PT is diminished by offerings that are gradually getting older and unattractive. One respondent held forward that PT must constantly have attractive offerings that

are being replaced, which is not the case in the mind of this respondent. Also the product know-how of PT generally is low, according to this trader.

“Before we make business we want to talk with them, to know everything: their number of employees, previous activities etc. They must have been registered and active in this business for at least 18 months” (Trader 5)

3.3.4 Conclusions Phonetrade pilot study

The pilot study suggests that, in the PT case, trust generally is perceived to be very important as a risk-reducing mechanism. This is because there is high risk and dependence when dealing with bulk selling and purchasing of mobile phones and accessories. These trust preconditions manifest themselves as risk of losing money, as a buyer, and not getting paid, as a seller. Furthermore, product uncertainty as part of risk also is high, especially for refurbished goods. Dependence can take the form of a buyer not getting the ordered merchandise in time, if at all. For such reasons, trust quickens the pace of a transaction, and in some cases enables a transaction to occur in the first place. Referring to an example from one of the respondents, when trust is not present, the trader is sitting on a stock of 5,000 phones with a potential buyer, but nothing happens for 3-4 weeks, if at all. However, in the presence of trust, goods and money are exchanged quickly, and profit made.

Regarding trust as either an interpersonal or an interorganizational concept, the PT case does not offer clear evidence for the importance of one over the other. It appears that trust exists both on the individual and the firm level. If the trustee is a one-person firm then obviously the target and type of trust essentially is the same. Also in the case of a larger company, trust can be directed towards the individual buyer or seller as well as the company.

We also find that, at PT, trust clearly is of the institutional type. Formal arrangements such as the Terms and Conditions and the Escrow payment system contribute to this. Also the “softer” efforts by Mr Eriksson to create a family-like, “nice” and secure trading community can be seen as institutional trust-builders.

Regarding trust-building processes at PT, the trader generally uses his or her own data base. This can be a formalized data base or just the experience of the individual. Trust apparently is of the cognitive type, by which rational judgement is made about the competence and positive intentions of the potential business partner. Furthermore, when for example the seller is asked to assume some risk by letting a third party inspect the goods, this is an example of attribution. That is, the seller as the trustee provides visible evidence of his or her quality or motivation. With a completely new business partner, trust is non-existent. Trust gradually builds up in a series of successful transactions, which provides a base for prediction.

Reputation as a trust-builder does not play a prominent role, in general. Several buying or purchasing managers at the same company can exchange reputation with each other, or in some cases with external sources. There is one notable exception to the above picture, namely reputation collected and propagated by Mr Eriksson, who is a central actor in the PT buyer-seller network.

The pilot study points to perceived value as a primary concern besides trust - value in terms of attractive offers which are constantly updated. If buyers and sellers do not perceive enough value in being PT members, they may not continue as members regardless of trust. PT management is using trust as a differentiating factor in its competition with other similar EMPs. While this might be a success factor, it is possibly not enough to create the desired liquidity. The pilot study suggests that a critical mass of transactions, with a constant flow of requests and bids, can quickly attract a potential member. Such a critical mass appears to be intertwined with trust, as in it can help to establish trust, and trust in turn can enable transactions and thus contribute to liquidity.

Note in Figure 5 that compared to the research framework (Figure 2 – Chapter 2), the constructs IT-System security and Information quality are omitted, because they did not emerge as relevant. The new construct, Institutional trust, is added.

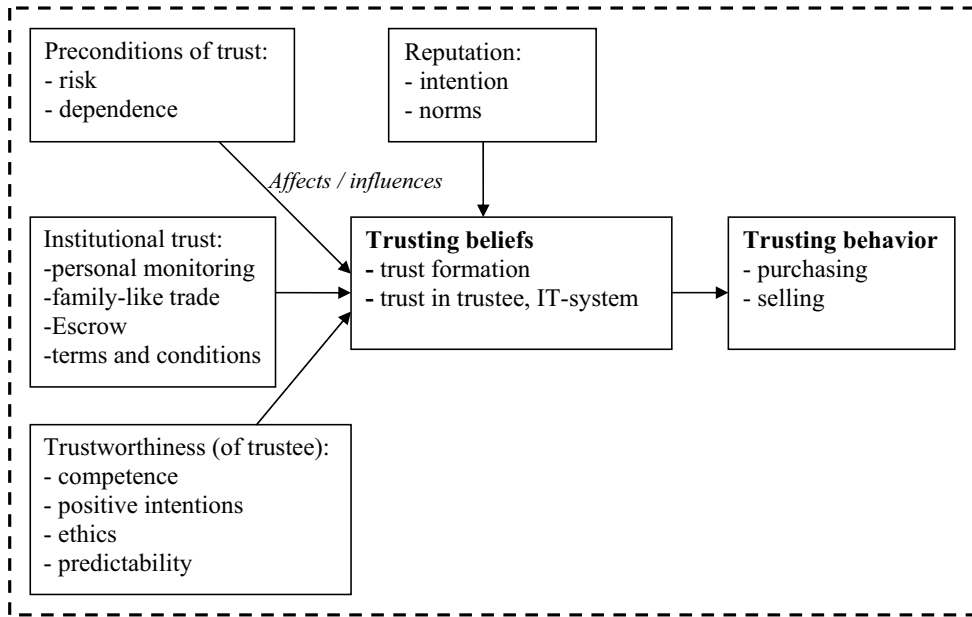


Figure 5: Revised research framework (Phonetrade.com)

Chapter 4: Research Model

4.1 Overview

Building on the research framework and the pilot study, a research model was constructed. The objective has been to enable a quantitative analysis of selected variables in the research framework. When explaining the research model, the exploratory first part of the case study is referred to as the pilot interviews or the pilot study. In order to develop the research model, additional literature was referenced. The focus of this literature search was B2B marketing, including relationship marketing and the Commitment-Trust Theory.

4.2 Models of initial trust in e-commerce

The present research model is inspired primarily by trust models developed by McKnight, Cummings and Chervany (1998), McKnight and Chervany (2002), McKnight, Choudhury and Kacmar (2002a) and McKnight, Choudhury and Kacmar (2002b). These models have their origin in a high-level conceptual model by McKnight et al. (1998) depicting initial trust, which is trust grounded in an individual's disposition to trust and institutional cues, thus not related to first-hand experience of the trustee. This model, in turn, is derived from trust notions from five different research streams, among them psychology and sociology. In a refined version (McKnight and Chervany 2002), the trust model is adapted to e-commerce.

Summarizing the McKnight et al. model, its constructs build upon the perspective of a time line, a series of events happening over time all of which are required to forge a trusting relationship (Figure 6). First, there are antecedent factors such as an individual's disposition to trust. Second, disposition to trust plus institution-based trust breed trusting beliefs. Institution-based trust is trust in a certain situation or structure. Trusting beliefs refer to the trust that an individual has in the competence, benevolence and integrity of a web vendor. Finally, trusting beliefs lead to trusting intentions, a willingness to be dependent under conditions of risk. These intentions translate into behaviors such as purchasing, cooperation and

information-sharing. This “chain” of constructs is resting upon the Theory of Reasoned Action (Fishbein and Ajzen 1975, in McKnight et al. 2002b).

The same kind of rationale is found in the model by Doney and Cannon (1997). In this marketing study, characteristics of the supplier firm and salesperson result in trust in the supplier firm and salesperson. This trust eventually leads to purchase choice and anticipated future interaction.

In short, the reviewed trust models have an underlying perspective that can be categorized as trust antecedents, beliefs, intentions and outcomes. Our research model ties to this sequential relationship, but excludes certain antecedents and also behavioral outcomes of trust. Regarding trust outcomes we follow the common view that intentions can be used as a proxy for behavior (McKnight et al. 2002b).

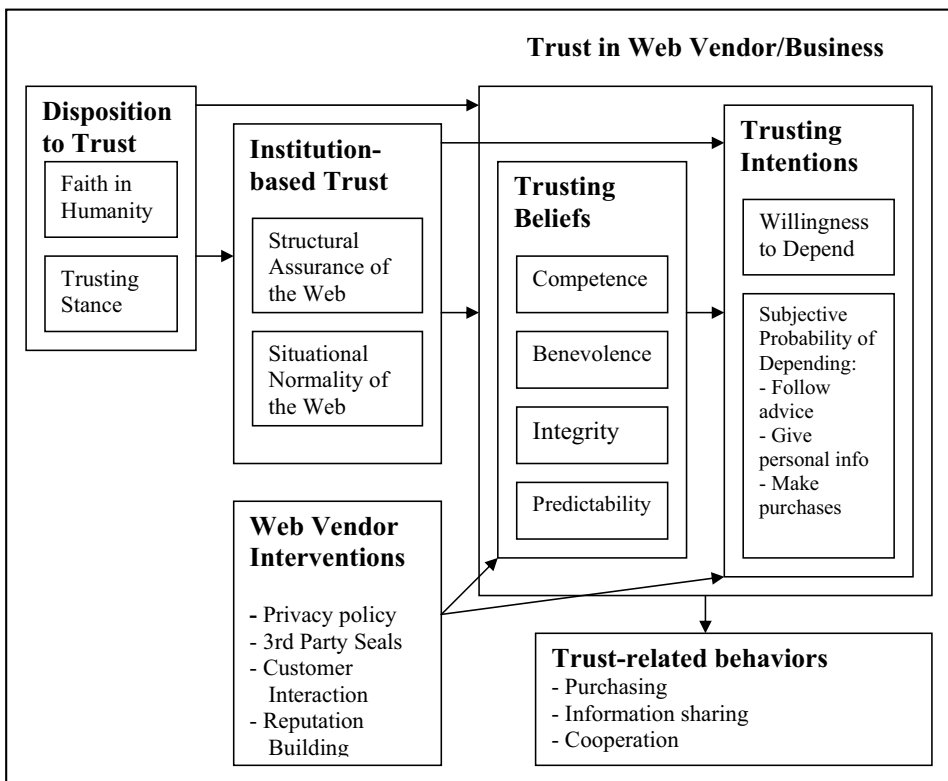


Figure 6: Initial trust formation in an e-commerce setting (adapted from McKnight et al. (1998) and McKnight and Chervany (2002))

4.3 The present research model

Our research model (Figure 7, p.64) primarily draws on the model by McKnight et al. with its initial trust timeframe in an e-commerce setting. In our research, we assume that the primary trust issue at a B2B EMP is to make new buyers and sellers trust each other enough to conduct transactions. This objective requires initial trust on behalf of both parties. Initial trust is the same as trust in the exploratory or build-up phase of a buyer-seller relationship. Our model depicts buyer trust in sellers as well as seller trust in buyers, as opposed to studies that investigate trust only from the buyer point of view (e.g. Doney and Cannon 1997). Not included in the present model are disposition-to-trust constructs. Such constructs refer to psychological notions. We excluded them from our investigation because they are not amenable to influence by EMP managers.

The choice of constructs and related variables in our model has been made after theoretical considerations, and considering the results of the pilot interviews. For example, institution-based trust is included because at PT this appeared to be a relevant trust-building process. The trust outcomes of commitment and satisfaction have been included on theoretical grounds: commitment is a frequently examined trust outcome and a cornerstone in the Commitment-Trust Theory (Morgan and Hunt 1994). Satisfaction is another key concept in relationship marketing, worth examining in the B2B EMP context. On the other hand, the issue of trusting the web interface did not seem to be very relevant at either EMP, as the pilot study revealed. Therefore, a theoretically justifiable construct like Web site quality has been excluded.

Furthermore, trust in the buyer's or seller's company is omitted from our model. We focus on interpersonal and interorganizational trust in the EMP, not trust in the buyer's or seller's organization (as in Doney and Cannon, 1997). The reason is that buyers and sellers at a public EMP encounter new business partners. In this exploratory phase, neither a buyer nor a seller is likely to have developed trust in the companies that these sales or purchase managers represent. Rather, trust may or may not grow first among the individuals, and secondly towards the EMP itself as a market, in much the same way that an online consumer might develop trust in an unknown web vendor.

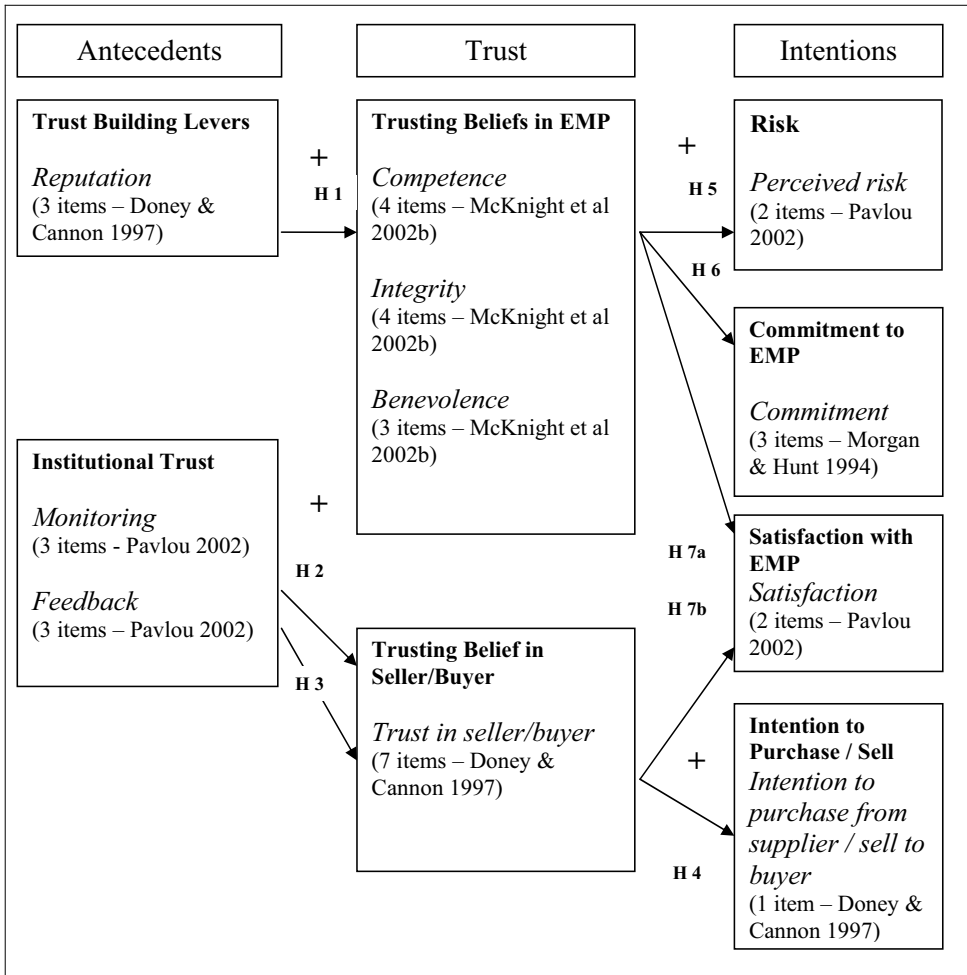


Figure 7: Research model of the present study

4.4 Hypotheses development

Reputation. In the literature, reputation is a variable highly related to initial trust. Doney and Cannon (1997) define reputation as the degree to which a supplier is believed to be honest and concerned about its customers, as judged by companies and people in the industry. Ganesan (1994) provides empirical evidence that a favourable vendor reputation, as perceived by the industrial buyer, leads to credibility, which is one dimension of trust.

The e-commerce trust literature has examined reputation of a web vendor as a variable. An experimental study of trust towards a legal advice web site found that perceived vendor reputation strongly influenced trust in the vendor (McKnight et al. 2002a). Koufaris and Hampton-Sosa (2004) found that reputation is a significant antecedent of consumer trust towards an online company. In the present research, the EMP is the equivalent of a B2C web vendor. In other words, to the extent that reputation is relevant for trust-building, we assume that it is the reputation of the EMP, and not the reputation of the purchasing manager's or the salesperson's company that is most important.

The pilot interviews indicated that, in both the print and the mobile phone case, buyers and sellers generally have no access to information about each other's reputation. The exception might be Phonetrade. The EMP, on the other hand, seemingly enjoys a reputation among its members. Thus, we hypothesize that a given EMP's perceived positive reputation increases trust in that EMP.

H 1: Perceived e-marketplace reputation is positively correlated to trust in the e-marketplace

Reputation is measured with three items adapted from "Supplier Firm Reputation" (Doney and Cannon 1997). These reflect the EMP reputation in terms of being honest and concerned about the member companies, as well as an overall measure (see Appendix 3 for all measurement items)

Institutional trust. Institutional trust originates from conditions that already are in place prior to any buyer-seller interaction (Pavlou et al. 2002); expressed differently, it refers to trust in the situation or the structure (McKnight and Chervany 2002).

Institutional trust can be created by *monitoring*. This means that the EMP supervises all transactions to assure that they are made in compliance with widely accepted agreements and rules. Monitoring includes punishing wrongdoers (Pavlou 2002). The above-mentioned study found a significant relationship between perceived monitoring and buyers' trust in sellers.

Our pilot interviews indicate that, in the Phonetrade case, monitoring is indeed a relevant trust-building mechanism. The respondents commented upon how they perceive the staff of Phonetrade supervises transactions on the web site. The respondents find this supervision positive from a trust point of view. Conversely, in the Printoffer case, monitoring is not a relevant concept.

H 2: Perceived monitoring is positively correlated to trust in buyer/seller

Monitoring is measured with items adapted from “Perceived monitoring” (Pavlou (2002), tapping third-party mechanisms for monitoring, product assurances and the enforcement of proper transactions.

Feedback is another trust-building mechanism with some empirical support for its effect on buyer-seller trust. Feedback refers to a mechanism for providing reliable information to buyers about sellers’ past trading activities (Pavlou 2002). Feedback is related to both reputation and monitoring. The reputation of a buyer or seller or the result of transaction monitoring can be distributed – fed back - to the market. In a B2C e-commerce setting, empirical findings indicate that good feedback profiles - meaning more positive, less negative ratings - induce trust. Higher trust levels in turn make the subjects more likely to pay premium prices (Resnick et al. 2000, Ba and Pavlou 2002).

Feedback as an institutional trust-builder is, to a certain extent, manifested in our pilot study. In the Phonetrade case, the staff largely provides feedback about its members’ trading activities to other members. In the Printoffer case, the process of reputation appears non-existent and there also is no feedback mechanism to distribute information regarding reputation. Based upon the above we hypothesize the following:

H 3: Perceived feedback is positively related to trust in buyer/seller

Feedback is measured with items adapted from “Perceived feedback” (Pavlou 2002). These items measure mechanisms for feeding back to the community information about member transaction history and misconduct, and also a mechanism for individual members to publicize their purchasing experience in the EMP.

Trusting beliefs in the EMP. This construct refers to trust in the e-marketplace. Since both the buyer and seller represent organizations and the EMP also is an organization, this is an example of interorganizational trust. As for reputation, we postulate that the trustee, the EMP, resembles the web vendor in many B2C e-commerce trust studies. Furthermore, in accordance with the work of Morgan and Hunt (1994), Ganesan (1994), Doney and Cannon (1997) and McKnight et al. 2002b we contend that trust is a multi-dimensional construct. According to McKnight et al. (2002b) e-commerce consumers assess web vendors in terms of specific attributes, and not in broad terms. In other studies, trust has been hypothesized to be a unidimensional construct, which is best measured using a single-item scale. This latter rationale is that multi-item scales, like that of Morgan and Hunt, use sources of trust as measures of trust, thus falsely representing the trust construct (Selnes 1998). Nevertheless, in accordance with Mayer et al. (1995) and McKnight et al. (2002b) we argue that trust in the EMP is composed of the three attributes: competence, integrity, and benevolence.

In the Printoffer case, the pilot interviews showed general buyer-seller trust in the EMP, but no particular dimensions of trust. The Phonetrade respondents, on the other hand, expressed EMP trust in terms that can be characterized as competence and benevolence.

Trust in the EMP is measured using items adapted from “Trusting Beliefs” - McKnight et al. (2002b). These items assess competence in the form of providing an effective and well functioning trading service, integrity by being truthful, honest and living up to commitments, and benevolence by providing help and acting in the interest of the member company.

Trusting belief in the seller/buyer. This is the second central construct of our research model. Interpersonal trust in a buyer-seller dyad is directed towards the individual buyer or the seller. Buyer and seller are defined as the primary contact for buying and selling at a company. In a study of company dyads in a mature industrial market, the authors concluded that trust is built at an individual level, between two representatives from the buying and the selling company (Narayandas and Rangan 2004). In a similar industrial buying context, it was found that buyers develop trust in both the supplier firm and

its salesperson. Trust in the salesperson consists of the salesperson's perceived credibility and benevolence (Doney and Cannon 1997). Likewise, buyer trust in sellers at an EMP was related to sellers' credibility and benevolence (Pavlou 2002). These two trust dimensions draw from the findings of Ganesan (1994).

The pilot interviews indicated that trust is directed both towards the individual buyer/seller and the company to which they belong. In the PT case, trust appears to be very much related to the individual. The reason is likely that the majority of the trading companies are one person companies or have few employees. Credibility and benevolence are manifested in several ways, such as the buyer's willingness to use the form of payment the seller prefers, and the seller's competency in delivering the ordered product.

At PO, credibility is manifested in such ways as the seller's know-how of print products and openness about existing or potential problems. Benevolence can appear in the form of a salesperson promoting a less profitable but more suitable product for the buyer. Thus, we assume first that trust develops between individuals at two companies, second that trust in a buyer/seller is multidimensional like trust in an EMP.

Trust in a buyer or seller is measured using items from "Trust of Salesperson" (Doney and Cannon 1997), tapping credibility and benevolence as well as some global trust measures, plus one item from Ganesan (1994) measuring the product know-how dimension of credibility.

The respondents were instructed to have the *last* buyer or seller in mind. Although this assumes previous interaction, thus not truly initial trust, it was believed that excluding those with experience of trading would give a distorted picture of trust at the EMP. In order to control for the amount of experience, the respondents could state the number of previous transactions they had had with the counterpart.

Intention to purchase/sell. In the literature trust has been identified with a number of positive outcomes, such as intention to purchase. In a B2C e-commerce setting, trust is regarded as a mental short-cut to a buying decision

(Grabner-Kräuter 2002). There is empirical evidence that trust in a web vendor has a positive effect on a consumer's intention to buy from that vendor (McKnight et al. 2002a).

In a B2B buying context, trust was found not to determine purchase choice; this was determined by factors such as relative price/cost. Nevertheless, trust appears to be a necessary "order qualifier"; in other words, to be considered for an order, a supplier must have the buyer's trust. Trust also plays an important role in expected future interactions with the supplier (Doney and Cannon 1997).

The pilot interviews provided evidence that trust is important, though not always crucial for buying and selling in an EMP. At Printoffer, trust appears to be primarily an issue for the print buyers. For them, trust in a print shop apparently can function as an order qualifier. The sellers, on the other hand, generally need not trust the buyers, other than with respect to payment. At Phonetrade, the traders generally both buy and sell. To them, trust can be decisive in both situations. Given the above research findings we hypothesize the following:

H 4: Trust in the seller/buyer is positively correlated to intention to purchase or sell

Intention to purchase or sell is measured using one item adapted from "Anticipated Future Interaction" (Doney and Cannon 1997). It reflects the likelihood of making a purchase from a supplier, or selling goods to a buyer during the next three months. The two original items' timeframe of "next year" and "during the next three years" was considered too long in the EMP context, and therefore was combined into one item measuring three months.

Perceived risk. Risk is a major precondition of trust, as has been previously explained. Perceived risk varies in different buying-situations depending upon the nature of the buyer-seller relationship, the complexity of products, and the complexity of the overall market (Selnes 1998). Following Pavlou (2002), stemming from work by Mayer et al. 1995, a buyer's perceived risk originates from the behavior of the sellers and not the EMP. This is a case of

information asymmetry; in other words, the seller knows more than the buyer about the product, thus putting the buyer at risk.

It is unknown to what extent trust can reduce perceived risk in the EMP setting. In accordance with Pavlou, we assume that trust is important in the EMP context as a means to reduce perceived risk, in turn making it more likely to achieve transactions.

H 5: Buyer's and seller's trust in the e-marketplace is negatively correlated to perceived risk.

Perceived risk is measured using two items adapted from "Perceived Risk" (Pavlou 2002), assessing the amount of risk and the potential of loss.

Commitment. Commitment is the most frequently examined outcome of buyer-seller trust (Morgan and Hunt 1994, Ganesan and Hess 1997, Narayandas and Rangan 2004). Commitment has been defined as "an enduring desire to maintain a valued relationship" (Moorman et al.1992, p. 316). Trust and commitment are suggested key variables explaining cooperation and other positive outcomes in interorganizational alliances. Commitment is defined as when exchange partners make an implicit or explicit pledge to continue their relationship (Dwyer et al. 1987). It is perceived to be the last and most advanced phase of a relationship (Morgan and Hunt 1994). Customers with strong relationships have high levels of trust and commitment, as well as beliefs and intentions that focus upon trust and commitment (ibid.).

It is believed that trust and commitment operate at two different levels. Trust is developed and maintained between individuals at two companies. The trusting bond at the individual level then is transformed into inter-firm commitment (Narayandas and Rangan 2004). In a study of channel relationships, a vendor's perception of a retail buyer's credibility, or trustworthiness, was found to significantly affect the vendor's long-term orientation with the retailer (Ganesan 1994, Ganesan and Hess 1997), long-term orientation here equalling commitment.

Considering the above research, we hypothesize that trust precedes commitment. However, the above cited studies, for example by Morgan and Hunt (1994), investigate trust and commitment in mature business relationships. Our focus is trust in the exploratory relationship phase, when the buyer or seller have had no to only a few prior transactions with a given counterpart. Therefore, we assume that it is not likely that a buyer or seller with initial trust in the counterpart has developed a commitment to that counterpart. Instead, commitment might be directed towards the EMP. The pilot interviews indicated that commitment to the EMP can develop within a short time, even days. Therefore, we hypothesize that trust in the EMP leads to commitment towards the EMP.

H 6: Trust in the e-marketplace is positively correlated to commitment to the e-marketplace.

Commitment is measured with items adapted from “Relationship commitment” (Doney and Cannon 1997). These items tap the company’s intention and efforts to maintain the relationship for an indefinite period of time, as well as an overall measure of commitment.

Satisfaction. Trust and satisfaction are two key concepts in relationship marketing. Overall satisfaction is a cumulative construct which sums up and embodies a consumer’s total experience with a firm (Garbarino and Johnson 1999). A study of trust and satisfaction in long-term buyer-supplier relationships in a Norwegian institutional setting found that satisfaction drives trust (Selnes 1998). Similarly, Ganesan (1994) suggests that satisfaction with previous outcomes leads to trust in a supplier. In the present study, however, we suggest that trust drives satisfaction and not the other way around. The reason for this is that satisfaction is related to an experience with the counterpart, which is less likely in the early phase of relationship building. According to Geyskens et al. (1998 in Pavlou 2002) trust reduces conflict and thus increases satisfaction. Pavlou (2002) found empirical evidence that sellers’ trust in buyers is significantly related to satisfaction with these sellers, during the exploratory phase.

Following the above reasoning, we hypothesize first that trust in the buyer/seller positively affects satisfaction with the collective of sellers and buyers at an EMP; Second, we hypothesize that trust in the EMP likewise can cause satisfaction with the buyer-seller collective.

H 7a: Trust in the e-marketplace is positively correlated with satisfaction with sellers/buyers in the e-marketplace

H 7b: Trust in the seller/buyer is positively correlated with satisfaction with sellers/buyers in the e-marketplace

Satisfaction is measured using two items, adapted from “Satisfaction” (Pavlou 2002), which assess 1) how pleased a buyer and seller are with conducting business with a counterpart through EMPs, and 2) if the buyer and seller regret this activity.

Chapter 5: Methodology

5.1 Overview

This chapter presents the methodology involved in the current investigation. In short, case studies were the method of choice. Within the case studies both qualitative and quantitative data were gathered and analyzed. The presentation of the chosen methodology includes discussion regarding the research approach, the design of the two case studies, as well as the collection and analysis of the data.

5.2 Qualitative research methods

5.2.1 Research overview

Overall, our process followed a traditional case study approach (Eisenhardt 1989, Yin 1994). That is, data related to specific research questions were collected from buying and selling member companies of two e-marketplaces (EMP), as well as from the EMP management. Investigating two EMPs makes this a multiple case study. A case study is an appropriate investigative tool when, for example, the phenomenon in question needs to be considered in its real-life context, over which the researcher has little or no control and has to rely on multiple sources of evidence (Yin 1994). These conditions applied for the current research study.

Within the case study approach, an integrative approach was taken, using both main research paradigms: quantitative and qualitative. First, in the pilot study qualitative data from semi-structured interviews were collected. This data helped to craft the research framework and to partly answer the research questions. Only a qualitative approach was expected to give a comprehensive and holistic understanding of the research problem within a limited time. The researcher could probe respondents, ask follow-up questions, and thus get a relatively comprehensive picture of the phenomenon in question.

The pilot study was exploratory and descriptive in nature. It explores and describes “what” trust dimensions are important in B2B e-commerce, and “what” trust-building processes are relevant for decision-makers (purchasing and sales managers) – thereby addressing research questions 1 and 2. The outcomes permitted us to narrow down the trust dimensions in our research framework to a manageable set, and suggested a testable research model for the following quantitative study. Therefore, the pilot study can be categorized as inductive or a bottom-up approach (Figure 8).

Second, a quantitative approach was utilized to empirically test the research model. This was the main study. With respect to this factor analysis and bivariate (simple) regression techniques were employed for hypothesis testing. Thus, the main study mainly is explanatory in its aim to explain “how” the variables in the research model are causally related (research questions 4 and 5). The main study can be categorized as deductive, or a top-down approach (Figure 8).

The model testing was confirmatory; that is, the aim of the factor analysis was to either confirm or fail to confirm the proposed structure, not to “discover” new factors, as in an exploratory factor analysis (Hair, Andersson, Tatham, Black 1998). No alternative models were set up.

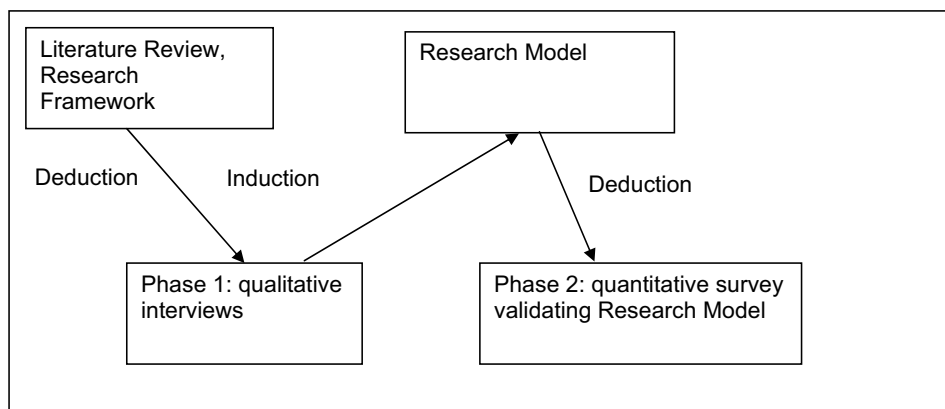


Figure 8: Overall methodological approach

5.2.2 B2B e-marketplaces

Public B2B EMPs, involving interactions between many prospective buyers and sellers in the sale and purchase of products was the chosen case study setting. The characteristics of EMPs have been outlined in section 2.5.9. There were two primary reasons for this choice of study venue. First, at such an EMP, buyers and sellers encounter new, previously unknown business partners. It is assumed in this thesis that this condition makes trust more relevant as opposed to at a private EMP. At a private EMP, member access is granted only after top-level negotiation and pre-screening. This means that for the individual purchaser or seller in a private EMP, the decision to trust or not has been made in advance by other decision makers. Trust, therefore, is more a strategic (long-term) than a tactical (short-term) company issue.

With respect to individual B2B buyers or sellers independently making decisions to trust or not trust new business partners, the case study setting has some bearing on business in consumer (B2C) e-commerce as well.

Second, buying or selling direct products gives rise to larger financial and other risks, thereby creating an increased need for trust compared to indirect products.

5.3 Case study design

The purchase and selling functions of member companies of a B2B EMP for printed matter (Printoffer.com) and mobile phones (Phonetrade.com) provide a means to partially validate the theoretical underpinning of the research framework and the research model.

5.3.1 Selection of cases

At the outset of this research, eighteen EMPs were identified as potential cases, inclusion criteria being: 1) a many-to-many market for direct products, 2) an EMP head office and main body of member companies located in Sweden, and 3) a willingness of EMP managers to provide information (Appendix 5). All but one of these EMPs were found through the web site, e-Marketservices.com, a non-profit organization that classifies and promotes the use of B2B EMPs worldwide. A closer screening of the EMPs revealed

that eight of the eighteen were more interesting than the others to study. This had to do with the extent that the EMPs lived up to the inclusion criteria. For example, some of the eighteen trade with direct products, but since the buyers are public sector authorities, the buying process is much different than with the private sector companies; thus, the trust issue also is different.

The managers of the eight EMPs were contacted by telephone. Two EMPs eventually agreed to participate in the study. Thus, the main criterion for final selection was availability. In addition, both Printoffer and Phonetrade have existed for approximately five years, making them veterans in an EMP environment characterized by a high incidence of close-downs. The question can be asked if trust has anything to do with the survival of these two EMPs. Printoffer and Phonetrade were presented in Chapter 3, Pilot Study, in which a preliminary analysis was performed based upon qualitative data.

5.3.2 Unit of analysis

The individual buyer-seller dyad was the primary unit of analysis in this study. This is because we defined trust as being mainly of the interpersonal type, on the individual level. Having said this, we acknowledge that trust is of the interorganizational type as well, meaning on the company level and between a company and the EMP. This, then, was the secondary unit of analysis. Because several units of analysis were used, our case should be classified as an embedded case study (Yin 1994, p. 41).

5.3.3 Anonymity

In the PO case, anonymity was not requested by the participating companies. The reason is likely that trading with print generally is a low risk business, at least as far as match-making is concerned. Furthermore, the pilot study revealed that no company-sensitive information is exchanged when buying print. Even so, the identity of the respondents have been somewhat protected by excluding the names of their companies in the accompanying quotations.

In the PT case, confidentiality was an issue. The pilot study interviews indicated that the trader's main company asset is his or her database of buyers and seller. This database may be regarded as a company secret, likewise, in some cases, the exact steps in dealing with stock of mobile phones. This business generally involves high risk, as several respondent testimonies of

fraud show. For this reason, it was decided to disguise the names of the PT respondents in both the pilot and the main study.

5.3.4 Data sources

The data were gathered during the period November 2003 to January 2005. The following data sources were used:

Interviews: Pilot study interviews were mostly in the form of face-to-face, semi-structured interviews with a total of 18 member company representatives (13 at PO, 5 at PT). In addition, the founders/managers of the two EMPs were utilized as informants. An interview guide was developed, relating to the research framework. At PT, a considerable amount of interview information (approximately 16 pages of transcript) was gathered during telephone invitations to the web survey.

Web based survey: Data collection for the main study was performed using a web-based survey. This questionnaire featured about 30 items related to the research model plus a handful of demographic questions, the latter mainly probing for membership status. In addition, a Comment Box yielded additional qualitative data. A screen shot of one of the pages of the web survey is enclosed in Appendix 6.

Archival data: Industry journals, newspaper articles, promotional materials, web site examination and similar archival data provided only minor input to our research. In the Printoffer case, a recent customer satisfaction survey was used to corroborate study data.

5.4 Data collection and analysis

5.4.1 Qualitative data – the research framework

In the pilot study, representatives of the PO and PT member companies were interviewed. The selection of companies was purposeful, roughly in accordance with the three pre-determined inclusion criteria for EMPs: (i) being or having been an active buyer or seller, (ii) located in Sweden for reasons of access, (iii) willing to provide data in the form of personal

interviews. This selection can be labeled theoretical sampling; that is, that gaps and holes in our theories are filled with data from recurrent field work (Charmaz, p. 519, in Denzin and Lincoln 2000). The interviewing and selection of more companies to investigate in the pilot study continued until the emerged theoretical categories were believed to be saturated.

Regarding the amount of raw data, the PO interviews lasted approximately 12 hours in total and produced 65 pages of transcripts. The interview transcripts were analyzed by the researcher alone by means of coding and writing marginal notes (Miles and Huberman 1994). The codes mainly derived from the constructs in the research framework, such as “risk” and “trustworthiness”. New codes such as “supplier control” were created in the process. Marginal notes were written in order to suggest new interpretations, leads and relationships with other part of the data.

At PT, only a handful interviews were conducted, via telephone and e-mail, due to time and cost restraints. The PT member company representatives were considerably more difficult to reach and obtain data from. They are international businessmen and women, often traveling. With the active help of PT management, five short interviews ultimately were conducted. Therefore, the selection of PT companies for the pilot study was made with accessibility as the main criterion.

In terms of length, these interviews lasted about five hours and resulted in 35 transcript pages. The researcher used a tape recorder to tape all interviews. For the purpose of data analysis, it was essential that exact responses to interview questions were recorded so that key terms could be coded and indexed.

5.4.2 Quantitative data – the research model

The research model presented in Chapter 4 (Figure 7, p.64) depicts casual relationships between several variables. In addition, a dependent variable such as EMP Trust is in turn an independent variable in another causal relationship. For this reason an appropriate statistical technique to perform hypotheses testing of the research model is Structural Equation Modeling (SEM). Since our model features six dependent variables (endogenous constructs in SEM

language), two of which are also independent variables, SEM can simultaneously calculate this set of regressions.

As mentioned above, the main study data collection was performed via a self-administered web based survey. This choice was made partly after recommendations by both the PO and PT staff (expected higher response rate compared to a postal survey), and partly due to its lower cost. In the PO case, the sample population consisted of all of the approximately 300 Swedish sellers (print shops) and approximately 2,000 Swedish buying companies. At PT, the sample population was approximately 500 former, present and prospective member companies.

At PT, the web survey was e-mailed to almost 500 respondents. The e-mail invitation yielded only two responses. After a wave of reminder e-mails to nearly 200 respondents, resulting in only one additional response, e-mailing was terminated. This was followed by an effort via telephone to secure at least 30 valid survey responses. The intent was to being able to partly test the postulated model. Over two months, about 180 international phone calls were made. Of those, approximately 60 calls reached a desired PT respondent or someone else at the company who would be eligible to answer the survey. In addition, about 70 personalized e-mail survey invitations were sent out.

The incentives offered on behalf of PT management was first, a better ranking in the soon to be introduced member ranking system, plus increased attention from the PT staff. After having received a low response despite these incentives, a free 3-month membership extension was added, worth Euro 125, provided the member had paid the regular annual membership of Euro 500. This effort eventually resulted in 35 apparently valid responses, and data collection was terminated. For practical reasons, it was not possible to obtain any further responses.

At PO, the web survey e-mail invitations resulted in 91 responses out of approximately 700 member companies targeted. The incentive offered on part of the researcher was a manager-friendly summary of the study's findings with respect to Printoffer. The e-mail was sent only to the Swedish companies, since a test e-mail to a sample of foreign companies resulted in only one response. The overall response rate was approximately thirteen

percent. Printoffer's membership roster was used as a sampling frame. Emails initially were sent to the most recent members, both print buyers and print shops. E-mails sent to members who had joined PO as early as 2001 were associated with a significantly reduced response rate, and the number of erroneous e-mail addresses also increased. For this reason, no further e-mail invitations were sent. No e-mail reminders were sent due to our wish not to annoy respondents.

5.4.3 Missing data

Missing data was not an issue since the questionnaire was administered through a web survey. A built-in script at the web survey pages ensured that each mandatory question was answered before the next page appeared. Thus, there were no missing data in any completed survey. On the other hand, we have no measure of the number of respondents who started but failed to complete the survey.

5.4.4 Data analysis procedure

The original approach for data analysis in the main study was to specify a full structural model (SEM) and then test the propositions with SEM, using AMOS 5.0 software (Arbuckle 2003). Due to the limited sample available, a complete structural equation modelling approach was not possible. With a rule of thumb of a minimum 5 observations per estimated parameter (variable) (Hair et al. 1998), our model would have required almost 200 responses for an adequate SEM test, with simultaneous regressions of all relationships including complete error and residual variables (see Appendix 4 for an illustration of a SEM model of the PT data)

Therefore an alternative approach to SEM was taken, using a simplified structural equation model. First, the central latent constructs were examined in terms of their item loadings. Stated in SEM terms, the measurement models were evaluated. Although we did not formulate any hypotheses, by suggesting a second-order construct such as EMP Trust, we essentially hypothesized that it is composed of their items and sub-constructs. Therefore a confirmatory factor analysis (CFA) was performed with respect to the central constructs. A CFA essentially is a test of the hypothesis that the construct in question is composed of the suggested underlying variables (Byrne 2001, p.57).

Then, data reduction in the form of summated scales was performed. A summated scale combines those items in a multi-item scale that load highly on a certain factor into one composite measure. This technique has two distinct advantages: first a summated scale to some extent overcomes the measurement error included in each individual item (by including only those items that load above a certain limit); second the summated scale represents multiple aspects of a concept in a single measure. A properly constructed summated scale represents the many “facets” of a concept while at the same time it maintains parsimony regarding the number of variables in a multivariate model (Hair et al. 1998, p. 116-117).

Lastly we specified the structural model for directly observable variables rather than latent constructs. This simplifies the identification/estimation of the path coefficients (regression weights) (Samouel, Money, Pitt, and Berthon, *forthcoming*). As a result we produced 6 new variables, each representing the previous manifest variables in the research model (see Figure 9). In sum, although we could not run a complete SEM model with its elaborate representation of error, we could test a simpler but also a more parsimonious model.

The above procedure was first performed on the PO data. Thereafter the two data sets (PO and PT – $n = 91$ plus $n = 35$) were merged into one ($n=126$). This can be termed pooling the data. The structural model based upon the pooled data is referred to as the final model. The same hypotheses were tested on the pooled data. The objective of creating the final model was to increase the sample size and find out if the same hypotheses were supported or not on with combined data from the two cases.

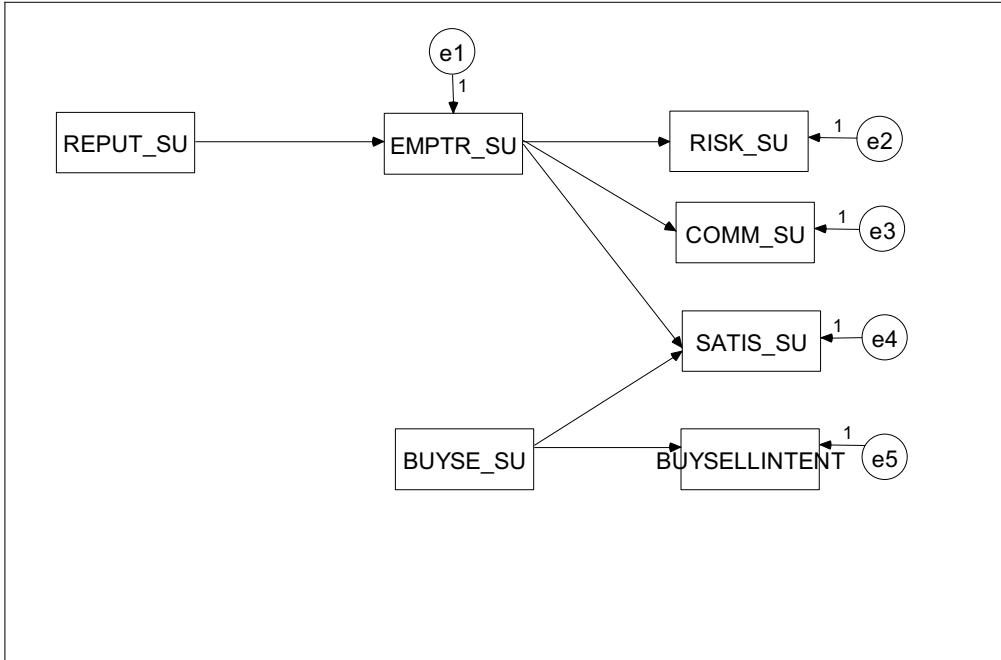


Figure 9: Structural model based upon summated scales (except BuySell Intent)

5.4.5 Limitations in data collection

Since this dissertation relies partly on interviews to obtain contextual data, several potential limitations (Marshall and Rossman 1994) in using an interviewing technique must be recognized. These limitations include concerns regarding bias, since the sample was limited to a small group of key informants, chosen non-randomly with high non-participation rates. Moreover, the interview technique makes replication difficult; invariably, variations occur during the interview procedure, and results may be at least somewhat dependent upon the setting of the interview and the characteristics of the interviewer.

With respect to the quantitative data, the main weakness is the small sample size. A small sample size raises concerns about the representativeness of the sample. In addition when multivariate techniques are used, a small sample potentially violates one of the underlying premises, normally distributed data (Hair et al. 1998). It was, however, deemed that the data were sufficiently well distributed to use multivariate techniques.

5.4.6 Triangulation of data sources

To increase construct validity, triangulation of data sources was used. In our case, triangulation of data sources consisted of interviews and surveys. To increase the study's validity, validation also was obtained by using multiple informants. Feedback from informants increases data validity (Yin 1994). In the pilot study, informants were given the opportunity to read and comment upon their interview transcripts. This activity resulted in no significant changes in conclusions.

5.4.7 External validity or the generalization of results

Generalization in qualitative research is a process of “analytic” and not statistical generalization (Yin 1994). One case should preferably be viewed as one experiment, multiple cases as multiple experiments. Consequently, cases have the same kind of replication logic, where the result from one experiment is generalized to another experiment.

Accordingly, the result from our two cases is not readily generalizable to other EMPs. Nevertheless, using replication logic, if both cases support the same theory, together the findings are more compelling than if only a single case had been used (Yin 1994, p. 31). Therefore, certain results may be generalized, with caution, to other EMPs operating under similar conditions.

Chapter 6: Results and Discussion

6.1 Overview

In this chapter the results from the main study are presented and discussed. The main study is a survey of two populations of buying and selling companies – one population at each case - Printoffer.com and Phonetrade.com. A total of 126 valid survey responses were collected between the two EMPs. The two surveys, first PO and then PT, are presented separately, first with data examination and descriptive statistics, and then with hypothesis testing. Finally, a pooled model is presented.

6.2 Results – Printoffer (PO)

The PO data base contains 91 valid responses. In this section, descriptive statistics for this data set are presented, preliminary conclusions drawing from the descriptive statistics, and the results of the hypothesis testing via a summated-score structural model.

6.2.1 Data examination

Although often perceived as a tedious task, data examination is a critical first step when using multivariate statistical techniques. For example, data must be normally distributed to use most standard statistical tests. By examining data, the researcher also obtains a basic understanding of the data and the relationships between variables (Hair et al. 1998, p. 39). Data examination is particularly critical in this study due to the small sample sizes.

To achieve a basic understanding of the PO survey data, frequency distributions for every variable were examined. A simple diagnostic test consisting of a visual check of the histograms also was performed (Hair et al. 1998, p. 71). A visual examination of variable histograms and box and whiskers plots revealed data that were reasonably normal in distribution.

To sketch a better picture of variable distribution, skewness and kurtosis were calculated. Skewness is a measure of the symmetry of distribution, with

acceptable values between -1 and +1. Kurtosis refers to the peakedness or flatness of distribution when compared to the normal curve. Acceptable values lie between -1,5 and +1,5 (Hair et al., 1998, p. 38).

As is evident from Table 2 (p.90-91), skewness and kurtosis for all variables fall within the acceptable range. This means that the distribution is neither substantially skewed nor peaked or flat. This justifies further analysis using multivariate statistical techniques.

6.2.2 Descriptive statistics

This subsection contains the next step in data analysis, addressing one variable at a time. Means and standard deviations are presented and tentative conclusions drawn. The mean is one of the most commonly used measures of central tendency. The mean of a dependent variable constitutes a preliminary predictor of that dependent variable (Hair et al 1998, p. 150). In other words, knowing the mean provides a basic understanding of how respondents rate each variable.

Starting with the **Reputation** variables, all three have means slightly above the scale midpoint of 4 (4,6, 5,0, 5,2). Recall that these variables were measured using a 7-point Likert scale with 1 = “strongly disagree” and 7 = “strongly agree”. Means above the scale midpoint suggest that respondents perceive the reputation of PO as at least somewhat good. However, a distribution of values near the scale midpoint, with a mode of 4 for all variables, also can be interpreted as respondents being relatively indifferent to the reputation of PO; that is, they perceive that its reputation is neither good nor bad.

Regarding the central construct, **EMP Trust** (Trust in the e-marketplace), the four Competence variables have means ranging from 4,5 to 5,0, indicating that respondents are slightly more favourable than indifferent to PO’s competence in the services it claims to provide. The four Integrity variables generally were rated higher than the Competence variables, with means ranging from 5,2 to 5,5. Finally, the mean of the three Benevolence variables ranged from 4,5 to 4,8. Thus, Benevolence generally is ranked lowest among the three EMP Trust sub-constructs.

In sum, all three EMP trust constructs have means above the midpoint, with Integrity having the highest, followed by Competence, and lastly Benevolence. Therefore, respondents generally believe that PO has a slightly higher level of integrity than competence and benevolence.

The second central construct **Buyer/Seller Trust** stands for buyer trust in the seller and vice versa. The corresponding eight items measure the credibility and benevolence of the counterpart (see Table 2 and Appendix 3). Recall that these statements on Buyer/Seller Trust were answered using the following instructions:

“When judging the statements on the following two pages we ask you to think of the last print buyer or seller that you did business with through Printoffer. If you have not done business with any Printoffer member, please think of how you would like your business partner to be!”

Forty-six (46) respondents indicated that they had bought printed matter, 10 that they had sold, and 35 respondents had neither bought nor sold (=“Neither”). When analyzing all three respondent categories as one group, the eight variables have the following characteristics: the means all approximate 5,0 on the 7-point scale, indicating that trust towards the buyer/seller in each suggested scenario is moderately high.

When analyzing the Trust constructs within the cohorts of Buyer, Seller and Neither, the small sample of sellers (n=10) is inadequate to allow for statistical analysis of this cohort separately. Therefore, this data set cannot contribute to answering the study’s third research question about the difference in trust between buyers and sellers. Nevertheless, comparing the two categories of Buyer/Seller (collapsed into one) and Neither, the following differences are evident: The Buyer/Seller cohort (n=56) has higher means (ranging from 4,6 to 5,7) than the Neither cohort (n=35) with means (ranging from 4,4 to 4,9).

A cross-tabulation using chi-square analysis tests for statistical differences between groups (Hair, Babin, Money, Samouel 2003 , p. 262), such as our categories Buyer, Seller and Neither. This test discovered a significant difference at the $p < 0,05$ level.

The **Intention** variable (Buyintent/Sellintent) was measured using the following statement:

“It is likely that my firm will make a purchase from this seller /sell printed matter to this buyer during the next three months”

The aggregate variable Buyintent/Sellintent has a mean of 4,1. Broken down to the three cohorts of Buyer, Seller and Neither, the Buyer/Seller cohort (N=56) Intention to buy/sell has a mean of 4,4 as compared to 3,7 for the Neither cohort (N=35). A conclusion at this stage is that when buyers and sellers have a real-life counterpart in mind, as opposed to a fictional counterpart, both trust levels and intentions either to buy or sell increase.

Descriptive statistics for the two **Risk** variables reveal that respondents perceive the risk of transacting through PO as being relatively low. The item Risk1 (“The decision to transact involves a significant amount of risk”), has a mean of 2,6. The second item, Risk 2 (“The decision to transact has a low potential for loss”), has a mean of 4,2 and exhibits a much wider dispersion, meaning that the respondents vary more in their opinion of this than the preceding item.

The three **Commitment** items exhibit clear differences. Commit1 (“We are very committed to the relationship with PO”) has a mean merely of 2,2. However, Commit2 (“The relationship with PO my firm intends to maintain indefinitely”) has a considerably higher mean of 4,5. Commit3 (“The relationship with PO deserves our firms maximum effort to maintain”) again has a lower mean, 3,0. Apparently, the respondents are somewhat committed to PO long-term, but not committed to exerting much effort into maintaining this relationship.

Finally, the two **Satisfaction** items have the following characteristics. Satis1 (“I am very pleased with making purchases /selling”) has a mean of 4,5. The reversely scored Satis2 (“I regret doing business through Printoffer”) has a considerably higher mean of 5,9. Judging from these statistics, respondents seem relatively satisfied with the use of PO, more so than they are committed to it.

6.2.3 Scale reliability

We tested all the multi-item scales for their measurement reliability, by calculating Cronbach's Alphas. This is a measure of internal consistency between the items of a multiple-item scale. As can be seen from Table 2, all scales except Risk and Satisfaction have acceptable Alpha values of at least 0,6 (Bagozzi, 1994, in Samouel et al, *forthcoming*). Because of a low Alpha value, Trust3 was omitted from the Buyer/Seller Trust-scale. An initial decision was made to drop one of the two items measuring Risk and Satisfaction. Eventually, however, we decided to keep both items when calculating the average summated scores, because results were changed minimally by excluding either one.

Table 2: Descriptive statistics for the Printoffer survey data (the reversed items – (r) - have been recoded to positive values)

Constructs	Mean	S.D.	Cr. Alpha	Skewness	Kurtosis
REPUTATION			0,73		
Rep1-“...being honest”	5,2	1,26		0,20	-1,31
Rep2-“...concerned about member companies”	4,6	1,11		0,64	0,03
Rep3-“...bad reputation” (r)	5,0	1,61		-0,49	-0,36
EMP COMPETENCE			0,93		
Comp1-“...competent and effective”	5,0	1,48		-0,55	-0,09
Comp2-“...providing transaction services very well”	4,9	1,45		-0,56	0,09
Comp3-“...capable and proficient”	4,5	1,36		-0,26	0,33
Comp4-“...very knowledgeable”	5,0	1,56		-0,61	-0,14
EMP INTEGRITY			0,95		
Integ1-“...truthful in its dealings”	5,5	1,29		-0,48	-0,76
Integ2-“...honest”	5,5	1,28		-0,51	-0,43
Integ3-“...keeps its commitments”	5,4	1,27		-0,49	-0,47
Integ4-“...sincere and genuine”	5,2	1,34		-0,19	-0,88
EMP BENEVOLENCE			0,94		
Bene1-“...acts in my best interest”	4,7	1,32		0,08	-0,54
Bene2-“...does its best to help me”	4,8	1,40		-0,33	-0,21
Bene3-“...interested in my well-being”	4,5	1,31		0,01	-0,31
TRUST IN BUYER/SELLER			0,91		
Tru1-“...frank in dealing with us”	5,3	1,46		-0,34	-0,82
Tru2-“...does not make false claims”	5,2	1,43		-0,38	-0,47
Tru3-“...not completely open” (r)	4,6	1,71		0,10	-1,03
Tru4-“...only concerned with himself/herself” (r)	4,7	1,72		-0,22	-0,54
Tru5-“...knowledgeable”	4,9	1,34		0,12	-0,73
Tru6-“...not concerned with our needs”(r)	4,5	1,72		-0,19	-0,73
Tru7-“...do not trust this seller/buyer” (r)	5,1	1,56		-0,22	-0,86
Tru8-“...not trustworthy” (r)	5,1	1,55		-0,41	-0,53
BUYINTENT / SELLINTENT	4,1	1,74		-0,31	-0,60
RISK			0,07		
Risk1-“...significant amount of risk”	2,6	1,48		-1,03	0,47
Risk2-“...low potential for loss” (r)	4,2	1,82		0,05	-1,10

Constructs	Mean	S.D.	Cr. Alpha	Skewness	Kurtosis
COMMITMENT			0,75		
Commit1-“..very committed to”	2,2	1,24		0,63	-0,92
Commit2-“..intends to maintain indefinitely”	4,6	1,88		-0,41	-0,82
Commit3-“..maximum effort to maintain”	3,0	1,50		0,50	-0,08
SATISFACTION			0,56		
Satis1-“..very pleased with making purchases”	4,5	1,64		-0,31	-0,69
Satis2-“..regret doing business” (r)	5,9	1,40		-0,90	-0,61

6.2.4 Hypothesis testing

This subsection presents the results of hypothesis testing. First, the central constructs **EMP Trust** and **Buyer/Seller Trust** were evaluated. Then the postulated hypotheses were tested. The results of this testing are discussed.

The second-order latent construct **EMP Trust** was hypothesized to consist of the first-order constructs of **Competence**, **Benevolence** and **Integrity**, overall measured by eleven items (see Figure 11, p.94). The overall fit of this model to our data was evaluated. In AMOS language, a minimum fit was achieved, meaning that the software reached an admissible solution. The positive degrees of freedom (41) tells us that the model is over-identified, which is the goal for all SEM models (Hair 1998). However, the Chi-Square value of 93,431 and the probability level of $p < 0,000$ imply that the model is non-significant in statistical terms.² This means, in effect, that the fit of the data to the hypothesized model is not entirely adequate (Byrne 2001, p. 81).

Measuring the fit of individual model parameters (Byrne 2001, p. 75) revealed no unreasonable estimates; for example, no correlations $>1,0$ (using standardized regression weights), negative variances, or covariance or correlation matrices that are not positive (ibid) (see Table 3, p.92).

² When testing SEM models, as opposed to traditional hypothesis testing, the null hypothesis is that there *is* a difference between the data and the model (or more strictly, between the sample and the population covariance matrix). Therefore, the higher the probability value (p), i.e. above 0,001 when the 0,001-level is used to reject a null hypothesis, the closer the fit between the model and the data (Byrne 2001, p. 79)

The standard errors (S.E.) vary between 0,063 and 0,145, appearing to be reasonable, given the seven-point Likert scale. The critical ratio (C.R.) can be used as an approximation of the t-test in traditional statistics. The C.R.-values in this case all are above 2.0, indicating that all estimates are significant at the $p < 0,05$ level (Table 3). Therefore, no item needed to be eliminated from the model (***) in the P-column indicates a level of significance for regression weight at less than $p < 0,001$).

Table 3: Unstandardized regression weights (factor loadings)
- model EMP Trust

			Estimate	S.E.	C.R.	P
COMPET	<---	EMP TRUST	1,154	,145	7,940	***
INTEGR	<---	EMP TRUST	1,089	,123	8,867	***
BENEVOL	<---	EMP TRUST	,902	,122	7,405	***
INTE4	<---	INTEGR	1,000			
INTE3	<---	INTEGR	,903	,074	12,255	***
INTE2	<---	INTEGR	1,003	,064	15,773	***
INTE1	<---	INTEGR	,953	,070	13,684	***
COMP4	<---	COMPET	1,000			
COMP3	<---	COMPET	,731	,077	9,511	***
COMP2	<---	COMPET	,966	,063	15,371	***
COMP1	<---	COMPET	,932	,069	13,453	***
BENE3	<---	BENEVOL	1,000			
BENE2	<---	BENEVOL	1,153	,091	12,647	***
BENE1	<---	BENEVOL	1,093	,085	12,856	***

For **model fit**, measures from three different perspectives should be reported: absolute (overall) fit, incremental (comparative) fit, and parsimonius fit (Hair et al 1998, p.611). These can be viewed as a “basket” of fit measures. These three categories of goodness-of-fit indices measure the degree to which the actual (observed) input matrix is predicted by the estimated model; in other words, how well the data fit the hypothesized model. For the first category we report the CMIN (which is the AMOS equivalent of the Chi-Square (x2) statistics), the GFI (Goodness-of-Fit), and the AGFI (Adjusted Goodness-of-Fit). Table 4 presents these fit indices, guidelines for indices’ recommended values, and the indices’ values for our model.

Table 4: Fit indices for EMP Trust model

Fit index	Guidelines	Model's values
1. CMIN	-	93,43
2. CMIN/df	1-3	2,28
2. GFI	>0,90	0,85
3. AGFI	>0,80	0,76

In summary, our model of EMP Trust shows only moderate fit. Interpreted literally, the test statistics suggest that, given the present data, our postulated model represents an unlikely event (i.e. occurring less than one time in a thousand and should be rejected). However, well-fitting hypothesized models are uncommon in SEM research (Byrne 2001, p. 81). For this reason we proceed, albeit with caution, to treat EMP Trust as a second-order construct. In our structural model, we will include it as a uni-dimensional directly-observable summated Likert-scale.

Next, the predictive power of the model was examined. It is recommended that, instead of model fit, closer attention should be paid to the predictability of the model (Chin 1998, p.13). This is accomplished by analyzing factor loadings. These are the correlation between each variable (or item) and the factor (or construct/latent variable, such as Competence). Loadings show the degree of correspondence between the variable and the factor. The factor loading is similar to the R^2 in multiple regression. The higher the loading, the more a variable represents the factor (Hair et al. 1998, p. 106). Ideally, the factor loadings should be at a level of 0,70 or greater, and at least 0,60. A factor loading of 0,70 indicates that each item accounts for 50% ($0,7 \times 0,7 = 0,49$) or more of the variance in the underlying latent variable (Chin 1998, p.13).

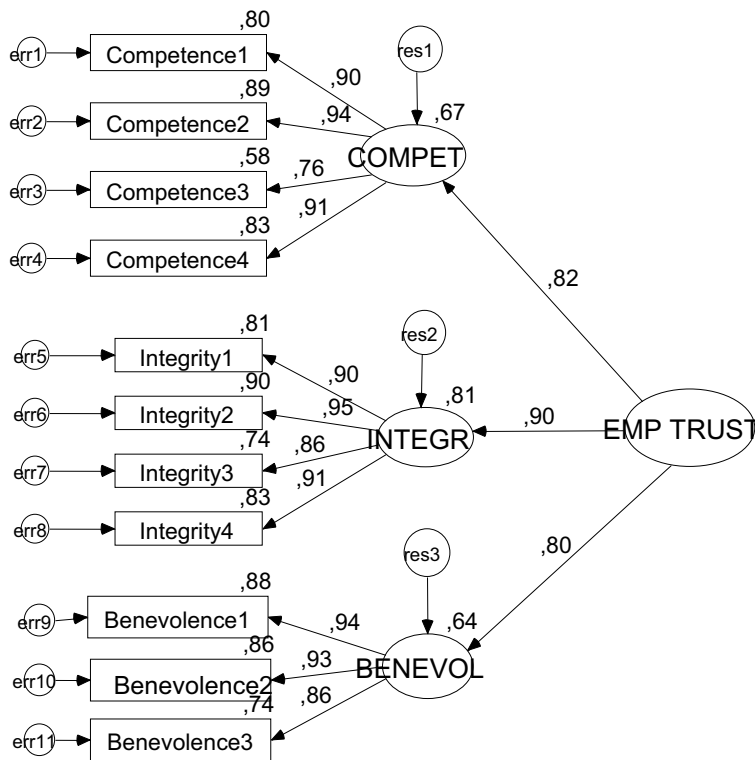


Figure 11: EMP Trust second-order model with standardized regression weights (factor loadings) and variances

As can be seen in Figure 11, the factor loadings of our second-order model EMP Trust lie between 0,76 – 0,95. These can be accepted as significant loadings; in other words, all eleven items do measure the three first-order constructs. These, in turn, are significant indicators of the second-order construct, given loadings of 0,80, 0,82 and 0,90. Because of these high loading values, no item was dropped from the average summated scores calculated for the final structural model.

The covariance values tell us if the different constructs are linked together and to what degree. Figure 11 exhibits that the first-order construct, Integrity, demonstrates the highest degree of correlation (0,81) with second-order EMP Trust, followed by Competence (0,67) and Benevolence (0,64). This means

that the dimension of Integrity explains the largest share and a majority of EMP Trust.

Having evaluated the second-order model of EMP Trust, we now may turn to the other major construct – **Buyer/Seller Trust** – which is a first-order model. A CFA in AMOS revealed that this is a valid model. A minimum fit was achieved, with a Chi-Square value of 41,045 and 20 degrees of freedom, and a probability level of 0,004. Overall, this points to a statistically-significant, over-identified model.

Table 5: Unstandardized regression weights (factor loadings)
– model Buyer/Seller Trust

			Estimate	S.E.	C.R.	P
TRU8	<---	Buy/Sell Trust	1,000			
TRU7	<---	Buy/Sell Trust	,987	,058	16,990	***
TRU6	<---	Buy/Sell Trust	,728	,104	6,987	***
TRU5	<---	Buy/Sell Trust	,705	,068	10,319	***
TRU4	<---	Buy/Sell Trust	,758	,101	7,520	***
TRU3	<---	Buy/Sell Trust	,486	,116	4,202	***
TRU2	<---	Buy/Sell Trust	,825	,064	12,873	***
TRU1	<---	Buy/Sell Trust	,837	,066	12,645	***

As Table 5 displays, all factor loadings are statistically significant. In general, we may conclude that our hypothesized eight-factor CFA model of Buyer/Seller Trust fits the data well. However, the factor loading of the item, Trust 3, is below the pre-determined cut-off point of 0,6 (this is true also for the standardized regression weights). Therefore this item – which measures credibility - was removed from the summated score variable.

After having evaluated the two major trust constructs within the PO data, we now continue to test the hypotheses postulated in Chapter 4. We do this by running a structural model in AMOS, and, in addition, bivariate (simple linear) regressions in SPSS. As we described in the Methodology chapter, we used summated scales instead of the original multi-item scales in order to test a structural model. Table 6 (p.96) presents the descriptive statistics for the new summated-scale variables. The AMOS result shows that this structural

model is admissible, because of positive degrees of freedom (15), but not statistically significant (Chi-square 62,556 and probability level 0,000). Therefore, the overall assessment of fit suggests that the model is not perfect.

Looking at the individual relationships, all hypothesized paths were significant at less than a $p < 0,001$ level, except for Buyer/Seller Trust and Satisfaction (H5) which were significant at the $p < 0,002$ level (see Tables 7 and 8, p.97-98). This means that all hypotheses but one are supported to a greater or lesser degree. The estimates (path loadings) for the structural model vary between 0,25 and 0,79 (see Figure 12).

As is evident from Figure 12, EMP Reputation explained 63% of the variance in Trust in the EMP. EMP Trust, in turn, explained 35% of the variance in Commitment to EMP and 43% of the variance in Satisfaction with the EMP. Buyer/Seller Trust in the EMP explained a mere 21% of the variance in Intention to Buy or Sell. Perceived Risk has the lowest variance (13%) explained by Trust in the EMP.

The large proportion of unexplained variance in each dependent variable suggests that there are other independent variables missing from the current model. For instance, perceived business value could be a predictor.

Table 6: Descriptive statistics, structural model based upon summated scales – PO

Constructs	Mean	S.D.	Skewness	Kurtosis
REPUT_SU (Reputation_sum)	4,93	1,08	0,27	-0,64
EMPTR_SU (EMP Trust_sum)	4,99	1,12	-0,24	-0,27
RISK_SU (Risk_sum)	3,40	1,19	-0,10	-0,10
COMM_SU (Commitment_sum)	3,27	1,27	0,04	-0,71
SATIS_SU (Satisfaction_sum)	5,20	1,28	-0,27	-1,08
BUYSE_SU (Buyer/Seller Trust_sum)	4,98	1,28	-0,00	-0,61
INTENT (Buy/Sell Intent_sum)	4,11	1,74	-0,31	-0,60

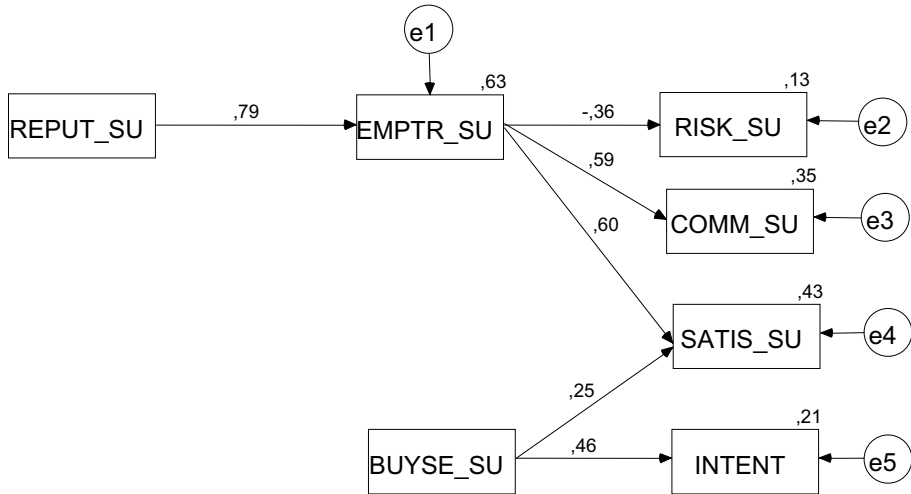


Figure 12: Structural model with standardized regression weights and variances, based upon summated scales (item Trust3 excluded)

Table 7: Unstandardized regression weights – structural model

			Estimate	S.E.	C.R.	P
EMPTR_SU	<---	REPUT_SU	,826	,067	12,419	***
RISK_SU	<---	EMPTR_SU	-,382	,104	-3,660	***
COMM_SU	<---	EMPTR_SU	,668	,097	6,906	***
Satis_SU	<---	EMPTR_SU	,638	,084	7,578	***
Satis_SU	<---	BUYSE_SU	,233	,074	3,146	,002
INTENT	<---	BUYSE_SU	,628	,128	4,915	***

Table 8: Variances – structural model

	Estimate	S.E.	C.R.	P
REPUT_SU	1,154	,172	6,708	***
BUYSE_SU	1,609	,240	6,708	***
E1	,460	,069	6,708	***
E5	2,364	,352	6,708	***
e4	,795	,119	6,708	***
e3	1,050	,156	6,708	***
e2	1,225	,183	6,708	***

Table 9: Hypothesis testing – PO (based upon structural model. Simple regression R values in parentheses).

Hypothesis	R	R Sq.	F	Sig.	Result
H1 – Reputation and EMP Trust	0,79 (0,80)	0,63 (0,64)	152,51	0,000	Supported
H4 – Buyer/Seller Trust and Intention	0,46 (0,46)	0,21 (0,21)	23,89	0,000	Supported
H5 – EMP Trust and Risk	- 0,36 (-0,38)	0,13 (0,14)	13,25	0,000	Supported
H6 – EMP Trust and Commitment	0,59 (0,59)	0,35 (0,35)	47,17	0,000	Supported
H7a – EMP Trust and Satisfaction	0,60 (0,69)	0,43 (0,48)	80,18	0,000	Supported
H7b – Buyer/Seller Trust and Satisfaction	0,25 (0,54)	0,43 (0,29)	37,50	0,000	Supported

Hypothesis 1: Reputation and EMP Trust

As Table 9 summarizes, EMP Reputation positively affects EMP Trust ($R=0,79$), supporting hypothesis 1 (**H1**: Perceived e-marketplace reputation is positively correlated to trust in the e-marketplace). This finding is in line with conclusions by Ganesan (1994), McKnight et al. (2002a), and Koufaris and Hampton-Sosa (2004).

One implication is that PO should work towards strengthening its reputation. Reputation concerns several aspects of a company, like product quality and marketing. As an example, PO could strive towards promoting their reputation for integrity. One possible avenue would be to promote that they do not interfere with transactions. While acknowledging the strong effect of reputation on EMP Trust, one should, however, be reminded that the concept of reputation perhaps is rather irrelevant today. That is to say that PO members perhaps do not have a strong perception of PO reputation to start with. One respondent commented upon this:

"I have no clue as to what 'reputation' Printoffer has. We buying companies do not speak to each other about PO. The only thing you see of PO is what you fill in [the request form]. Therefore you don't form an opinion of PO"

Even if reputation currently is not a strong trust antecedent at PO, it appears worthwhile to think of reputation-building when PO expands its business model. Today PO only distributes requests from potential print buyers to print shops. If PO advances towards actively match-making buyers and sellers, reputation can grow in importance. Having a good reputation also may be crucial if PO faces future competition from other EMPs for printed matter. Given the survey findings on EMP Trust, in which integrity appears to be the most prominent dimension, trustworthiness through integrity logically is one area in which one should strive to strengthen reputation.

Next, **EMP Trust** consists of Competence, Integrity and Benevolence, of which integrity appears to be the most important dimension, as mentioned above (Tables 3 and 4, Figure 11). Although we did not explicitly formulate a hypothesis, the confirmatory factor analysis supports the proposed factor

structure. This then is a confirmation of trust as a multi-dimensional construct.

Therefore, PO should try to increase its perceived trustworthiness by displaying integrity. Integrity is demonstrated by being truthful, honest and keeping commitments. The relatively lower importance of competence and benevolence possibly can be explained by the following: the distribution of print requests from potential buyers to print shops is an automated process. It works as long as the underlying systems are up and running. In this sense, there is not very much that can go wrong and possibly, in the minds of the members, it does not take that much competence to run this service. The benevolence items measure the perceived willingness of PO to act in the interest of the customer, and to help the customer. The relatively low importance of this dimension likely is connected to the competence dimension: if the e-mail request system is functional, the PO member likely does not need any help from the PO staff.

Again, as with EMP Reputation, the question can be asked to what extent trust in PO is a relevant concept within today's business model. It appears that the risk of using PO is minimal as long as PO only distributes requests, as the following open comments illustrates:

"All this about commitment and trust feels irrelevant. Printoffer does not mediate any print jobs, only print requests, which is a completely different matter, not demanding very much commitment or trust. Printoffer does not take any responsibility whatsoever for what happens between customers; it just sees to that the web site works. As such the e-marketplace is good"

"Because you don't have a face-to-face relation with anyone at Printoffer there is nobody to trust"

If both the Reputation and the EMP Trust constructs are not very relevant to respondents, the reason for this could be that (i) PO members do not share information about PO, thus no sense of reputation is propagated, (ii) since PO is not taking part in the buyer-seller negotiation stage, PO members have little reason to either trust or distrust the EMP as such.

Nevertheless, given an extended business mandate or increased competition, trust likely would gain importance. In this scenario, it appears worthwhile for PO to stress mainly the integrity dimension in its dealings with buyers and sellers. One possible attribute to promote is enforcement of strict security of pricing information and other possibly sensitive information by the PO staff.

Hypotheses 2 and 3: Monitoring/Feedback and Buyer/Seller Trust

These two hypotheses are not included in the PO structural model

Hypotheses 4: Buyer/Seller Trust and Intention

Trust in the Buyer/Seller positively affects Intention to Buy/Sell, ($R=0,46$) thus supporting hypothesis 4 (**H4**: Trust in the seller/buyer is positively correlated to intention to purchase/sell). This result is partly in line with the conclusions of Doney and Cannon (1997). The effect of buyer/seller trust on Intentions is only moderately strong, indicating that other factors play a role. The implication is that, with respect to future buying and selling, it is at least somewhat important to strengthen trust between buyers and sellers.

The construct **Buyer/Seller Trust** was accepted as a valid model, consisting of the dimensions credibility and benevolence (see Table 5, p.95). Thus, similar to EMP Trust, trust in the buyer and seller was confirmed to be a multi-dimensional construct. The factor loadings indicate that the credibility dimension is the more pertinent of the two. This result is in accordance with findings of Doney and Cannon (1997) and Ganesan (1994). Therefore, to improve trust in the buyer or seller, their credibility should be promoted.

Hypothesis 5: EMP Trust and Risk

EMP Trust negatively affects perceived Risk ($R=-0,36$), supporting hypothesis 5 (**H5**: Buyer's/seller's trust in the EMP is negatively correlated to perceived risk). This result is in line with conclusions by Pavlou (2002). This means that the more respondents trust PO as an EMP, the less they perceive the risk of transactions with its buyers and sellers. The implication of this result for the EMP is that strengthening its members' trust is important from a risk-reduction perspective, which in turn effects liquidity. The nature of perceived risk for the buyer is illustrated by the following quotation:

"There is only one decisive difficulty with shopping through Printoffer, namely that you can get too many bids and then have to handle all the telephone calls from print shops that want to have the deal"

Hypothesis 6: EMP Trust and Commitment

EMP Trust positively affects Commitment ($R=0,59$) supporting hypothesis 6 (**H6**: trust in the e-marketplace is positively correlated to commitment to the e-marketplace). Thus, the effect of trust on commitment is rather strong. This result is in accordance with the work of Morgan and Hunt (1994), Ganesan and Hess (1997), and Narayandas and Rangan (2004).

The implication of this result is that PO should work to strengthen its perceived general trustworthiness with the intent of increasing commitment. It should be kept in mind that user commitment to PO is low. The commitment construct scored the lowest of any construct in the survey, with a mean of only 3,3 for the summated variable (see Table 6, p.96). Assuming that an EMP strives toward commitment, it is worth considering trust-building as a promising avenue by which PO might increase this commitment. Commitment was theorized to operate on both the individual and the company levels. In our case, the items tapped commitment to the EMP. It can be argued that commitment to the individual buyer or seller is not important. The reason is that new buyers and sellers can be encountered at an EMP for each transaction. However, it is conceivable that, in an EMP, commitment to a buyer or a seller also is relevant. A comment from one of the seller

respondents interestingly highlights the issue of commitment in the ever increasing circle of potential business partners:

“The buyer should have the willingness to make contact directly with a supplier and not always post new requests on web sites like Printoffer. We consider a maximum of three “Printoffer Requests” from the same customer. Thereafter our salespeople decide if they want to continue the relationship with the customer, if so through direct contact”.

From the perspective of the EMP staff it should be important, however, to have the commitment of its members, in order to have the desired liquidity.

Hypothesis 7a: EMP Trust and Satisfaction

EMP Trust positively affects Satisfaction ($R=0,60$), supporting hypothesis 7a (**H7a**: Trust in an e-marketplace is positively correlated to satisfaction with sellers/buyers in the e-marketplace). This is a relatively strong effect, in the same range as EMP Trust and Commitment.

Hypothesis 7b: Buyer/Seller Trust and Satisfaction

Trust in the Buyer/Seller positively affects Satisfaction ($R=0,25$), supporting hypothesis 7b (**H7b**: Trust in the seller/buyer is positively correlated to satisfaction with sellers/buyers in the e-marketplace). The relationship between Buyer/Seller Trust and Satisfaction is statistically significant, although the effect on Satisfaction is considerably weaker than that of EMP Trust (hypothesis 7a). This result partly contradicts the findings of Pavlou (2002), in which buyers’ trust in sellers in an EMP positively affected satisfaction with the same sellers. However, it is possible that the target of satisfaction was unclear to the respondents: The item formulation about satisfaction with “sellers/buyers through Printoffer” can perhaps be interpreted with or without PO in mind. That is, some respondents might think of buyers/sellers as separate from PO as an EMP, while others may include PO in their opinion of satisfaction.

This result provides evidence to support the conclusion that it is not trust in the buyer/seller that primarily affects satisfaction with the EMP. The open survey comments shed some light on this result. For buyers, the main concern perhaps is not trust in the print shop but the amount and quality of the requests, as these comments can highlight:

“I am very satisfied with the response I got from the Printoffer print shops. Despite this, we chose another print shop this time, which offered a lower price”

“Very few offers on our requests, sometimes none. I only get bids on really large jobs. For some printed matter there seems to be no supplier at all. The list of associated print shops must be a falsification”

For the sellers, the seeds of satisfaction may have purely economical grounds:

“For us sellers the price level is catastrophically low. You can sometimes expect that certain print shops get their paper for free”

Nevertheless, from an overall aspect of increasing its members' satisfaction, PO should work towards strengthening its perceived trustworthiness and increasing its perceived level of trust. Trust and satisfaction are two key concepts in relationship marketing, also in those cases where satisfaction drives trust (Selnes 1998).

6.3 Results – Phonetrade (PT)

The PT data set consists of 35 valid responses. In this section we present descriptive statistics for this data set, and the results of the hypothesis testing by bivariate regression models.

6.3.1 Data examination

In the same manner as the PO survey data, the PT data were examined in terms of frequency distributions and a visual check of the variable histograms. This examination of data revealed that three of the EMP Trust items are skewed or peaked above what is considered within the acceptable range of a

normal distribution. Otherwise, the PT data appear to follow a normal distribution curve. Nonetheless, we decided to apply multivariate statistical techniques on this data set.

6.3.2 Descriptive statistics

Table 10 (p.108) presents the means, standard deviation, kurtosis and skewedness of each variable, as well as reliability (Cronbach's Alpha) for the multiple-item constructs. Below we comment upon significant results. As a measure of the data dispersion, standard deviations are reported. None of the standard deviations is large ($>3,0$ on a 7-point scale), indicating moderate variability in respondent opinions (Hair et al. 2003, p.243). In other words, respondents have roughly the same level of agreement.

The three measures of **Reputation** have means between 5,8 and 5,9, on the 7-point scale. Overall, the perceived reputation of PT is high.

The six institution-based trust variables on **Monitoring** have means ranging from 4,5 to 4,9, with Mon1 (effective third-party product monitoring mechanism) having the lowest, and Mon3 (effective conflict resolving authority) having the highest mean. Taken together, respondents only moderately agree with the view that PT monitors its members and their transactions. For the **Feedback** items, the means lie between 4,2 for Feed1 (availability of members' transaction history) and 4,5 for both Feed2 (reliable feedback mechanism for member misconduct) and Feed3 (effective publicising mechanism for members' transaction experience). In sum, for the above two Institutional-trust constructs, respondents score lower on their perception about Feedback mechanisms than Monitoring mechanisms. Stated differently, respondents perceive that there is slightly more monitoring than feedback taking place at PT.

Among the dimensions of the central construct **EMP Trust**, the various measures of Competence exhibit high inter-variable consistency with all means falling between 5,0 (Comp2 – PT performs its role...very well) and 5,2 (Comp4 - PT is very knowledgeable about mobile phone trade). The Integrity items have means between 5,6 and 6,3, the lowest being Integ1 (PT is truthful in its dealings with me) and the highest Integ2 (PT is honest). The third EMP trust sub-construct – Benevolence – has means between 5,4 (Bene3 – PT is

interested in my well-being) and 5,8 (Bene1 – PT would act in my best interest, Bene2 – PT does its best to help me).

Regarding the eight **Buyer/Seller Trust** items, the number of responses is perhaps too few to make a statistical analysis meaningful: only 13 of 35 respondents had either bought or sold via PT. This fact raises questions about the liquidity of PT. The fact that only about one third of the PT members had conducted any deal through PT is possibly explained by a perceived low overall value of membership. This will be discussed further in the Conclusions chapter.

In the same way as for the PO data, an average summated score was calculated for the Buyer/Seller Trust items. The means for this composite variable were: Buyers (n=8) 4,7, Sellers (n=5) 5,3, and Neither (n=22) 4,5. To the extent that any conclusions can be drawn with respect to this small sample, sellers have slightly more trust in buyers than vice versa. Respondents who have not traded via PT (Neither buyer nor seller) have the lowest level of trust. During hypothesis testing these three cohorts were merged into one.

A cross-tabulation using chi-square analysis tests for significant differences between groups (Hair et al. 2003, p. 262), such as our Buyer, Seller and Neither groups. Furthermore, a one-way ANOVA tests the hypothesis that there is a difference in means between two or more independent samples, with respect to one independent variable (Hair et al. 2003, p. 268), in our case the average summated score for Buyer/Seller trust. Neither the cross-tabulation nor the ANOVA computed successfully (in SPSS), probably due to the very small sample size. For this reason we have to accept the summated score for Buyer/Seller Trust averaged over all 35 respondents. The mean of this composite variable is 4,7 with a standard deviation of 1,49.

The mean of the **Intention** variable (Buyintent/Sellintent) is close to the Buyer/Seller Trust mean, namely 4,6 with the relatively large standard deviation of 2,17.

Finally, the concluding variables Risk, Commitment and Satisfaction have the following characteristics:

Means for the two **Risk** items are 3,7 (Risk1 – decision to transact involves a significant amount of risk) and 3,3 (Risk2 – transact...low potential for loss). In general the respondents do not consider it very risky to transact via PT.

The **Commitment** variables exhibit means between 4,8 (Comm1 – very committed to PT) and 5,0 (Comm2 – intends to maintain the relationship indefinitely).

The two **Satisfaction** items have means of 4,8 (Satis1 – very pleased with making purchases/selling) and 5,8 (Satis2 – regret doing business), which is reverse scored (as with all reverse scored items, Satis2 has been recoded to positive values before presented). Thus, it can be concluded that the PT respondents are moderately satisfied using PT.

Table 10: Descriptive statistics for the Phonetrade survey data (the reversed items - (r) - have been recoded to positive values). Risks 1 and 2 were introduced after the survey had started

Constructs	Mean	S.D.	Cr. Alpha	Skewness	Kurtosis
REPUTATION			0,80		
Rep1-“..being honest”	5,8	1,54		-1,19	0,44
Rep2-“..concerned about member companies”	5,9	1,28		-1,30	1,45
Rep3-“..bad reputation” (r)	5,9	1,51		-1,52	1,94
MONITORING			0,80		
Mon1-“..effective third-party product monitoring mechanism”	4,5	1,62		-0,25	-0,13
Mon2-“..effective enforcing mechanism”	4,8	1,30		-0,62	0,94
Mon3-“..help resolve conflicts”	4,9	1,5		-1,04	1,00
FEEDBACK			0,55		
Feed1-“..info about the transaction history”	4,2	1,65		-0,37	-0,49
Feed2-“..reliable feedback mechanism”	4,5	1,58		-0,61	0,31
Feed3-“..publicize their..experience”	4,6	1,54		-0,64	0,22
EMP COMPETENCE			0,94		
Comp1-“..competent and effective”	5,1	1,70		-0,94	0,31
Comp2-“..providing transactions services very well	5,0	1,70		-0,73	0,02
Comp3-“..capable and proficient”	5,0	1,86		-0,57	-0,84
Comp4-“..very knowledgeable”	5,2	1,58		-0,87	0,37
EMP INTEGRITY			0,93		
Integ1-“..truthful in its dealings”	5,6	1,61		-1,17	0,80
Integ2-“..honest”	6,3	1,01		-1,46	2,00
Integ3-“..keeps its commitments”	5,9	1,22		-0,65	-0,79
Integ4-“..sincere and genuine”	6,1	1,21		-1,48	2,33
EMP BENEVOLENCE			0,92		
Bene1-“..act in my best interest”	5,8	1,35		-1,38	1,83
Bene2-“..does its best to help me”	5,8	1,35		-0,62	-1,02
Bene3-“..interested in my well-being”	5,4	1,50		-0,63	-0,42

Constructs	Mean	S.D.	Cr. Alpha	Skewness	Kurtosis
TRUST IN BUYER/SELLER			0,84		
Tru1-“...frank in dealing with us”	4,5	1,91		-0,22	-0,98
Tru2-“...does not make false claims”	4,4	2,00		-0,12	-1,21
Tru3-“...not completely open” (r)	5,2	1,73		-0,87	0,17
Tru4-“...only concerned with himself/herself” (r)	4,4	1,97		-0,11	-1,17
Tru5-“...knowledgeable”	4,9	1,80		-0,77	0,02
Tru6-“...not concerned with our needs”(r)	4,3	2,01		-0,02	-1,30
Tru7-“...do not trust this seller/buyer” (r)	4,7	1,96		-0,43	-0,93
Tru8-“...not trustworthy” (r)	5,1	1,97		-0,81	-0,59
BUYINTENT / SELLINTENT	4,6	2,17		- 0,58	- 0,91
RISK (n=26)			0,73		
Risk1-“...significant amount of risk”	3,7	1,51		-0,26	-0,00
Risk2-“...low potential for loss” (r)	3,3	1,37		-0,18	1,14
COMMITMENT			0,93		
Commit1-“...very committed to”	4,8	2,00		-0,42	-1,15
Commit2-“...intends to maintain indefinitely”	5,0	1,75		-0,49	-0,64
Commit3-“...maximum effort to maintain”	4,9	1,84		-0,51	-0,73
SATISFACTION			0,60		
Satis1-“...very pleased with making purchases”	4,8	1,64		-0,48	0,04
Satis2-“...regret doing business” (r)	5,8	1,54		-0,88	-0,56

6.3.3 Scale reliability

The reliability analysis (Cronbach’s Alpha) show acceptable levels for all multi-item constructs but Feedback.

6.3.4 Hypothesis testing

Due to the small sample size, it was not possible to test a structural equation model. To be able to partly test the hypotheses implied in the PT research model, bivariate (simple linear) regression models were evaluated. To this

end, first average summated scores were calculated for all multi-item scales, in the same manner as for the PO data (Table 11). Second, the resulting new variables were regressed with each other. This resulted in six regression models, which are presented below together with underpinning hypotheses. Great caution has to be exercised when interpreting the results from these regressions (see summary of hypothesis testing in Table 15, p.115). This is because of the small sample size, which means that outliers can seriously affect the results. In addition, the two constructs, EMP Trust and Buyer/Seller Trust, were tested in a confirmatory factor analysis (CFA).

Table 11: Descriptive statistics for summated score variables - PT

Constructs	Mean	S.D.	Skewness	Kurtosis
REPUT_SU (Reputation_sum)	5,87	1,23	-0,98	-0,25
MON_SU (Monitoring_sum)	4,75	1,26	-0,75	1,31
FEED_SU (Feedback_sum)	4,43	1,15	-0,64	0,96
EMPTR_SU (EMP Trust_sum)	5,55	1,23	-1,08	0,89
RISK_SU (Risk_sum)	3,50	1,28	-0,63	-0,18
COMM_SU (Commitment_sum)	4,90	1,75	-0,52	-0,74
SATIS_SU (Satisfaction_sum)	5,30	1,34	-0,24	-0,86
BUYSE_SU (Buyer/Seller Trust_sum)	4,66	1,49	0,08	-1,13
INTENT (Buy/Sell Intent_sum)	4,60	2,17	-0,58	-0,91

Hypothesis 1: Reputation and EMP Trust

H1: Perceived e-marketplace reputation is positively correlated to trust in the e-marketplace

Simple linear regression with EMP Trust as the dependent variable resulted in an R (multiple correlation coefficient) of 0,79 at the $p < 0,001$ level, meaning that there is a relatively strong and statistically significant relationship between reputation and trust in the EMP. This result is in accordance with previously published research (Pavlou 2002, Doney and Cannon 1997).

The implication is that a good reputation results in trust of the EMP. Consequently, a company like PT should work to improve its reputation. Even though the evidence points towards reputation generally not being propagated among PT member companies, reputation of companies or PT can be spread within a company. In light of this, PT has everything to gain by improving its reputation.

The reputation items do not give any leads as to how to achieve this. The pilot study and the open survey comments, on the other hand, indicate that PT should work on its reputation as being a secure platform for trading, as well as providing a solid base of buyers and sellers. Of course, a good reputation must be grounded in reality. Several respondents have mentioned that PT is not as “busy” and thus does not provide enough value to them. Therefore, efforts should be undertaken to increase the EMPs perceived value in terms of attracting buyers and sellers, and having attractive offerings.

Although not explicitly hypothesised, it was assumed that trust in the EMP consists of the latent constructs Competence, Integrity, and Benevolence. To test this hypothesis, a first-order model of **EMP Trust** was run in AMOS. It yielded an admissible solution with 41 positive degrees of freedom (the second-order model was not possible to estimate without modifications, probably due to the small sample size). As Tables 12 and 14 (p.112) indicate, all factor loadings are significant. They vary between 0,76 and 0,99. As Table 14 indicates, Competence explains the majority of EMP Trust, followed by Integrity and lastly by Benevolence. The implication is that respondents trust PT mainly in terms of the EMP’s level of competence, secondly in terms of company integrity, thirdly in terms of company benevolence.

Table 12: Unstandardized regression weights (factor loadings)
– model EMP Trust

			Estimate	S.E.	C.R.	P
INTE1	<---	INTEGR	1,000			
INTE2	<---	INTEGR	,640	,068	9,360	***
INTE3	<---	INTEGR	,632	,107	5,921	***
INTE4	<---	INTEGR	,799	,075	10,616	***
COMP1	<---	COMPET	1,000			
COMP1	<---	COMPET	,938	,118	7,930	***
COMP3	<---	COMPET	1,018	,130	7,800	***
COMP4	<---	COMPET	,960	,092	10,460	***
BENE1	<---	BENEVOL	1,000			
BENE2	<---	BENEVOL	1,083	,164	6,601	***
BENE3	<---	BENEVOL	1,343	,175	7,680	***

Table 13: Standardized regression weights (factor loadings)
– model EMP Trust

			Estimate
INTE1	<---	INTEGR	,909
INTE2	<---	INTEGR	,929
INTE3	<---	INTEGR	,762
INTE4	<---	INTEGR	,967
COMP1	<---	COMPET	,924
COMP2	<---	COMPET	,866
COMP3	<---	COMPET	,860
COMP4	<---	COMPET	,952
BENE1	<---	BENEVOL	,821
BENE2	<---	BENEVOL	,885
BENE3	<---	BENEVOL	,988

Table 14: Variances – model EMP Trust

	Estimate	S.E.	C.R.	P
INTEGR	2,088	,607	3,437	***
COMPET	2,386	,678	3,522	***
BENEVOL	1,185	,408	2,906	,004

Hypotheses 2 and 3: Monitoring/Feedback and Buyer/Seller Trust

H 2: Perceived monitoring is positively correlated to trust in the buyer/seller

H 3: Perceived feedback is positively correlated to trust in the buyer/seller

The constructs Monitoring and Feedback measure institutional trust. Their effect on Buyer/Seller Trust is not statistically significant at the $p < 0,05$ -level ($R=0,25 / 0,13$, and significance $0,146 / 0,472$). These results are contrary to those of Pavlou (2002). The implication is that it is not worthwhile for PT to build institutional trust in the form of monitoring and feedback. With respect to this, it should be kept in mind that 22 of the 35 respondents had not conducted deals via PT, which might have affected their responses. It is likely that when a buyer or a seller has conducted one or more deals via PT, the likelihood of experiencing monitoring or feedback increases.

Hypothesis 4: Buyer/Seller Trust and Intention

H 4: Trust in the seller/buyer is positively correlated to intention to buy/sell
This relationship is relatively strong, as the R of $0,73$ indicates, and statistically significant at the $p < 0,001$ level. This result is partly in accordance with those reported by Doney and Cannon (1997)

The implication of this result is that trust in the buyer or seller increases a counterpart's intention to buy or sell. It should be kept in mind that the Buyer/Seller Trust variable is an aggregate variable, composed of data from the three cohorts (Buyer, Seller, and Neither). Twenty-two of the 35 respondents had not made any deals through Phonetrade. For these 22, it must be assumed that they have some other, perhaps "general" business partner in mind when assessing both trust and the intention to buy or sell.

Hypothesis 5: EMP Trust and Risk

H 5: Buyer's/seller's trust in the EMP is negatively correlated to perceived risk

The above regression model resulted in an R of -0,45, which is statistically significant at the $p < 0,02$ -level. This result is in line with results reported by Pavlou (2002). The implication for the EMP is that earning the trust of its members reduces the members' sense of perceived risk.

Hypothesis 6: EMP Trust and Commitment

H 6: Trust in the e-marketplace is positively correlated to commitment to the e-marketplace

The relationship between EMP Trust and Commitment is relatively strong ($R=0,67$) and statistically significant ($p < 0,001$). This result confirms the results of Morgan and Hunt (1994), Ganesan and Hess 1997, and Narayandas and Rangan (2004). The implication is that strengthening trust in the EMP enhances customer commitment to it.

Hypothesis 7a: EMP Trust and Satisfaction

H 7a: Trust in e-marketplace is positively correlated to satisfaction with sellers/buyers in the e-marketplace

The regression model addressing trust in the e-marketplace and satisfaction with sellers/buyers at the e-marketplace resulted in a strong relationship ($R=0,71$), which is also statistically significant at the $p < 0,001$ level. This result is in line with that of Pavlou (2002). The implication is that satisfaction with sellers/buyers can be predicted by trust in the same e-marketplace. Therefore, to enhance member satisfaction, an EMP like PT should work towards earning the trust of its buyers and sellers.

Hypothesis 7b: Buyer/Seller Trust and Satisfaction

H 7b: Trust in the seller/buyer is positively correlated to satisfaction with sellers/buyers in the e-marketplace

The relationship between trust in the seller/buyer and satisfaction with sellers/buyers is weakly to moderately strong ($R=0,40$) but statistically non-significant ($p = 0,16$). This result contradicts that of Pavlou (2002).

Table 15: Hypothesis testing – PT (simple regressions).

Hypothesis	R	R Sq.	F	Sig.	Result
H1 – Reputation and EMP Trust	0,79	0,63	56,05	0,000	Supported
H2 – Monitoring and Buyer/Seller Trust	0,25	0,06	2,22	0,146	Not supported
H3 – Feedback and Buyer/Seller Trust	0,13	0,02	0,53	0,472	Not supported
H4 – Buyer/Seller Trust and Intention	0,73	0,53	37,82	0,000	Supported
H5 – EMP Trust and Risk	-0,45	0,21	6,22	0,02	Supported
H6 – EMP Trust and Commitment	0,67	0,45	26,76	0,000	Supported
H7a – EMP Trust and Satisfaction	0,71	0,51	33,83	0,000	Supported
H7b – Buyer/Seller Trust and Satisfaction	0,40	0,16	6,41	0,16	Not supported

6.4 Results – pooled data

The pooled data set consists of the combined data bases of PO and PT, with a total of 126 responses. In this final section we present descriptive statistics for the pooled data, as well as the results of the hypothesis testing by a structural model based upon summated scores, referred to as the final model. The justification for pooling the data was presented in Chapter 5 – Methodology.

6.4.1 Data examination

In terms of data normality, there is nothing exceptional to report from the pooled data.

6.4.2 Descriptive statistics

Table 16 (p.117-118) contains the descriptive statistics for the pooled data. Because the data are merged from the two data bases, the means, standard deviations, and distribution variables are roughly the same as for the PO and PT data set. The PO data dominate the pooled data because 91 of 126 respondents (72%) were in the PO sample.

6.4.3 Scale reliability

The Cronbach's Alpha values of measurement reliability are approximately the same as for the PO sample. As can be seen from Table 16, all scales except Risk and Satisfaction have acceptable Alpha values of at least 0.6 (Bagozzi, 1994, in Samouel et al, *forthcoming*). As was the case with the PO sample, both Risk items were used when calculating the average summated scores, because results were changed minimally by excluding either one.

Table 16: Descriptive statistics for the pooled data

Constructs	Mean	S.D.	Cr. Alpha	Skewness	Kurtosis
REPUTATION			0,78		
Rep1-“...being honest”	5,3	1,36		-0,22	-1,07
Rep2-“...concerned about member companies”	5,0	1,29		0,19	-0,88
Rep3-“...bad reputation” (r)	5,3	1,63		-0,68	-0,26
EMP COMPETENCE			0,93		
Comp1-“...competent and effective”	5,0	1,53		-0,68	0,23
Comp2-“...providing transactions services very well”	4,9	1,52		-0,60	0,27
Comp3-“...capable and proficient”	4,6	1,52		-0,26	-0,29
Comp4-“...very knowledgeable”	5,0	1,56		-0,67	-0,08
EMP INTEGRITY			0,94		
Integ1-“...truthful in its dealings”	5,5	1,38		-0,75	-0,06
Integ2-“...honest”	5,7	1,26		-0,72	-0,24
Integ3-“...keep its commitments”	5,4	1,27		-0,52	-0,55
Integ4-“...sincere and genuine”	5,2	1,36		-0,46	-0,72
EMP BENEVOLENCE			0,94		
Bene1-“...acts in my best interest”	5,0	1,40		-0,22	-0,72
Bene2-“...does its best to help me”	5,0	1,45		-0,35	-0,46
Bene3-“...interested in my well-being”	4,8	1,42		-0,06	-0,62
TRUST IN BUYER/SELLER			0,91		
Tru1-“...frank in dealing with us”	5,0	1,63		-0,45	-0,56
Tru2-“...does not make false claims”	5,0	1,64		-0,46	-0,53
Tru3-“...not completely open” (r)	4,7	1,73		-0,16	-0,98
Tru4-“...only concerned with himself/herself” (r)	4,6	1,79		-0,20	-0,76
Tru5-“...knowledgeable”	4,9	1,38		-0,23	0,00
Tru6-“...not concerned with our needs”(r)	4,5	1,82		-0,15	-0,92
Tru7-“...do not trust this seller/buyer(r)	5,0	1,68		-0,36	-0,72
Tru8-“...not trustworthy” (r)	5,1	1,66		-0,59	-0,46
BUYINTENT / SELLINTENT	4,2	1,88		-0,34	-0,76

Constructs	Mean	S.D.	Cr. Alpha	Skewness	Kurtosis
RISK			0,10		
Risk1-“...significant amount of risk” (N=117 (PO:91, PT:26))	2,8	1,55		0,71	-0,20
Risk2-“...low potential for loss” (N=117 (PO:91, PT:26))	4,0	1,77		0,09	-0,89
COMMITMENT			0,83		
Commit1-“...very committed to”	3,0	1,89		0,80	-0,39
Commit2-“...intends to maintain indefinitely”	4,7	1,84		-0,44	-0,77
Commit3-“...maximum effort to maintain”	3,5	1,80		0,37	-0,71
SATISFACTION			0,56		
Satis1-“...very pleased with making purchases”	4,6	1,64		-0,35	-0,55
Satis2-“...regret doing business” (r)	5,9	1,43		-0,87	-0,65

6.4.4 Hypothesis testing

In terms of hypothesis testing, the two central constructs, **EMP Trust** and **Buyer/Seller Trust**, were evaluated; thereafter, the six postulated hypotheses. The second-order latent construct EMP Trust was evaluated through a confirmatory factor analysis, in the same manner as with the PO model (section 6.2.4). The AMOS software reached an admissible solution. The fit indices, recommended values and the model values are exhibited in Table 17. The interpretation of these statistics is that the model fit to the data is not entirely adequate, though better than the equivalent PO model. The individual model parameters revealed no unreasonable estimates; for example, no correlations >1.0 (with standardized regression weights) (Table 18).

The standard errors (S.E.) vary between 0,047 and 0,123, which are reasonable values given the 7-point scale. The C.R.-values in this case all are above 2.0, indicating that all estimates are significant at the $p < 0.05$ level (Table 18). Therefore, no item had to be eliminated from the model.

Table 17: Fit indices for EMP Trust model

Fit index	Guidelines	Model's values
1. CMIN	-	85,243
2. CMIN/df	1-3	2,08
2. GFI	>0,90	0,89
3. AGFI	>0,80	0,83

Table 18: Unstandardized regression weights (factor loadings)
- model EMP Trust

			Estimate	S.E.	C.R.	P
COMPET	<---	EMP TRUST	1,131	,123	9,170	***
INTEGR	<---	EMP TRUST	1,213	,103	11,795	***
BENEVOL	<---	EMP TRUST	1,049	,112	9,371	***
INTE4	<---	INTEGR	1,000			
INTE3	<---	INTEGR	,838	,058	14,496	***
INTE2	<---	INTEGR	,928	,047	19,791	***
INTE1	<---	INTEGR	,926	,061	15,169	***
COMP4	<---	COMPET	1,000			
COMP3	<---	COMPET	,829	,069	11,952	***
COMP2	<---	COMPET	,967	,056	17,329	***
COMP1	<---	COMPET	,963	,058	16,674	***
BENE3	<---	BENEVOL	1,000			
BENE2	<---	BENEVOL	1,039	,063	16,475	***
BENE1	<---	BENEVOL	,995	,062	16,051	***

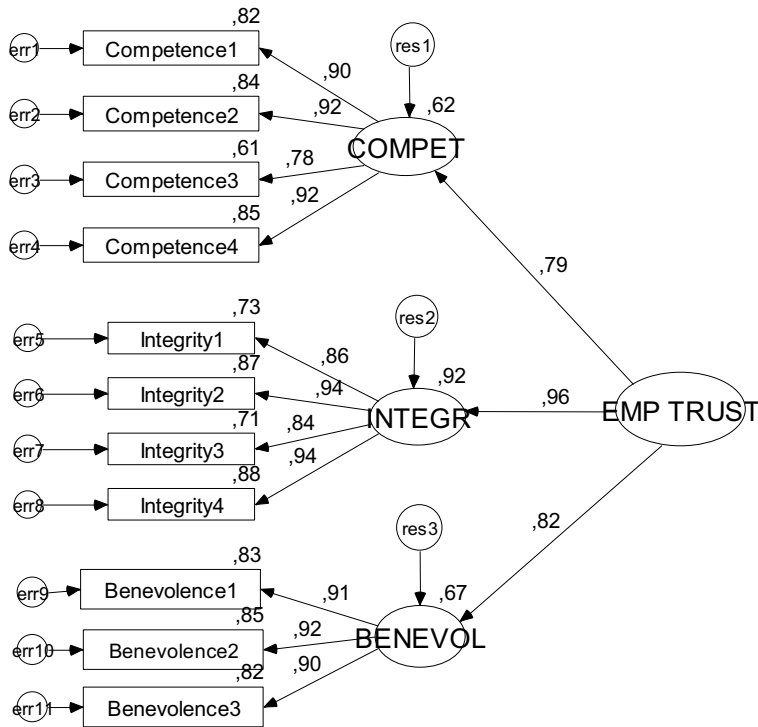


Figure 13: EMP Trust second-order model with standardized estimates (factor loadings) and variances

With regard to factor loadings, the model **EMP Trust** exhibit values well above the designated minimum level of 0,60, ranging from 0,78 to 0,94 (Table 18, Figure 13). It is interesting to note that, in terms of regression weights and co-variances of the second-order constructs, Integrity explains considerably more of EMP Trust (0,92) than with the PO data. Stated differently, for the pooled data, the dimension Integrity appears to be clearly the most important. In addition Benevolence (0,67) explains more than Competence (0,62), which is contrary to the PO model. The PT model could not be analyzed as a second-order construct, likely because of the small sample size, but as a first-order model of EMP Trust Competence ranked first, followed by Integrity, and lastly Benevolence.

Next, a CFA in AMOS revealed that the first-order model **Buyer/Seller Trust** is a valid model. A minimum fit was achieved, with a Chi-Square value of 92,57, 20 degrees of freedom, and a probability level of $p < 0,001$. This points towards a statistically-significant model.

Table 19: Unstandardized regression weights (factor loadings)
– model Buyer/Seller Trust

			Estimate	S.E.	C.R.	P
TRU8	<---	Buy/Sell Trust	1,000			
TRU7	<---	Buy/Sell Trust	1,048	,056	18,696	***
TRU6	<---	Buy/Sell Trust	,802	,088	9,094	***
TRU5	<---	Buy/Sell Trust	,567	,069	8,259	***
TRU4	<---	Buy/Sell Trust	,645	,094	6,846	***
TRU3	<---	Buy/Sell Trust	,475	,097	4,909	***
TRU2	<---	Buy/Sell Trust	,882	,068	13,025	***
TRU1	<---	Buy/Sell Trust	,851	,070	12,198	***

As Table 19 displays, all individual factor loadings are statistically significant. In general, we may conclude that the eight-factor CFA model of Buyer/Seller Trust fits the data well. However, the factor loading of the item, Trust 3, is below the pre-determined cut-off point of 0,6. Therefore this item was removed from the summated score variable. This measure was taken also when calculating the PO summated scale for this construct. The credibility items (Tru1-3) exhibit the highest loadings, thus they explain the majority of Buyer/Seller Trust.

Table 20: Descriptive statistics for summated score variables – pooled data

Constructs	Mean	S.D.	Skewness	Kurtosis
REPUT_SU (Reputation_sum)	5,19	1,19	0,14	-1,09
EMPTR_SU (EMP Trust_sum)	5,14	1,18	-0,41	-0,30
RISK_SU (Risk_sum)	3,42	1,21	-0,22	-0,20
COMM_SU (Commitment_sum)	3,73	1,60	0,28	-0,61
SATIS_SU (Satisfaction_sum)	5,23	1,29	-0,25	-1,02
BUYSE_SU (Buyer/Seller Trust_sum)	4,87	1,40	-0,11	-0,63
INTENT (Buy/Sell Intent_sum)	4,25	1,88	-0,34	-0,76

Regarding the six postulated hypotheses, testing was done by running a structural model with summated scales, as well as doing bivariate regressions. This is the same procedure as performed when testing the PO model. The descriptive statistics for the final model are featured in Table 20. A summary of the hypotheses testing is presented below in Table 23 (p.124). As is evident from the table, essentially the same hypotheses were supported as during individual testing of PO and PT. The direction and sign of the postulated relationships are the same, though the strengths vary somewhat. The one exception is hypothesis H7b (Buyer/Seller Trust and Satisfaction), which in the PT case was rejected as statistically non-significant. With that exception, the implications of the supported hypotheses are valid for both PO and PT individually, and for the two EMPs combined. Therefore, with caution for the relatively small sample size (N=126), it is possible to analyze “trust in e-marketplaces”, that is PO and PT representing EMPs operating under the same conditions. As an example, the failure to reject H1 implies that public EMPs generally should work towards improving their reputation, in order to inspire member companies’ trust in them.

Looking at the individual relationships, all hypothesized paths were significant at less than a $p < 0,001$ level (Table 21). This means that all hypotheses are supported to a greater or lesser degree. The estimates for the structural model vary between 0,29 and 0,80 (see Figure 14).

As is evident, from Figure 14 EMP Reputation explained 64% of the variance in Trust in the EMP. EMP Trust, in turn, explained 40% of the variance in Commitment to EMP and 47% of the variance in Satisfaction with the EMP. Buyer/Seller Trust in the EMP explained 30% of the variance in Intention to Buy or Sell. Perceived Risk has the lowest variance (14%) explained by Trust in the EMP.

As was the case with the PO structural model, the large proportion of unexplained variance in each dependent variable suggests that there are other independent variables missing from the current model.

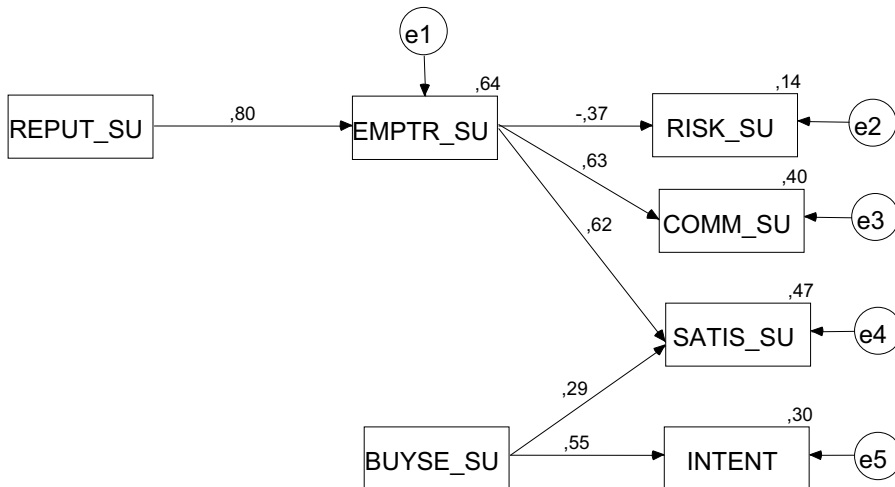


Figure 14: Final structural model with standardized regression weights and variances, based upon summated scales (item Trust 3 excluded)

Table 21: Unstandardized regression weights – final model

			Estimate	S.E.	C.R.	P
EMPTR_SU	<---	REPUT_SU	,789	,053	14,976	***
RISK_SU	<---	EMPTR_SU	-,386	,089	-4,343	***
COMM_SU	<---	EMPTR_SU	,855	,094	9,095	***
SATIS_SU	<---	EMPTR_SU	,641	,067	9,538	***
SATIS_SU	<---	BUYSE_SU	,251	,056	4,454	***
INTENT	<---	BUYSE_SU	,733	,100	7,323	***

Table 22: Variances – final model

	Estimate	S.E.	C.R.	P
REPUT_SU	1,415	,179	7,906	***
BUYSE_SU	1,951	,247	7,906	***
E1	,491	,062	7,906	***
E5	2,440	,309	7,906	***
E4	,774	,098	7,906	***
E3	1,518	,192	7,906	***
E2	1,259	,165	7,618	***

Table 23: Hypothesis testing – pooled data (based upon final structural model. Simple regression R values in parentheses)

Hypothesis	R	R Sq.	F	Sig.	Result
H1 – Reputation and EMP Trust	0,80 (0,80)	0,64 (0,64)	222,49	0,000	Supported
H2 – Monitoring and Buyer/Seller Trust					<i>Not testable</i>
H3 – Feedback and Buyer/Seller Trust					<i>Not testable</i>
H4 – Buyer/Seller Trust and Intention	0,55 (0,55)	0,30 (0,30)	53,19	0,000	Supported
H5 – EMP Trust and Risk	-0,37 (-0,36)	0,14 (0,13)	17,22	0,000	Supported
H6 – EMP Trust and Commitment	0,63 (0,63)	0,40 (0,40)	82,05	0,000	Supported
H7a – EMP Trust and Satisfaction	0,62 (0,69)	0,47 (0,47)	110,20	0,000	Supported
H7b – Buyer/Seller Trust and Satisfaction	0,29 (0,49)	0,47 (0,24)	39,94	0,000	Supported

Chapter 7: Conclusions

7.1 Overview

The conclusions and managerial implications presented in this chapter are based mainly upon the quantitative data presented in the previous chapter. In addition, qualitative data from the main study are discussed. These data were collected via a web survey and during telephone calls to potential PT respondents. To some extent, the discussion also draws upon the pilot study interviews. The use of multiple data sources is consistent with the holistic case study approach taken in this study.

7.2 Overall conclusions

Following mainly the work of Pavlou (2002) this study focuses upon the specific case of online relationship building where two companies that are unfamiliar with each other meet in an e-marketplace and possibly enter into a transaction. This can be labelled initial trust. First of all, the findings reveal that only the very first phase of the B2B buying process is conducted online. Except for the e-mail distribution of requests and offers, any subsequent transactions take place offline in traditional business channels. This is perhaps not a surprising finding in the Printoffer (PO) case, given that it is not within the business role of this EMP to participate in anything else than the e-mail matchmaking between buyers and sellers of printed matter. This offline characteristic is more of a surprise in the Phonetrade (PT) case. PT provides all steps from matchmaking to payment online. Even so, the results showed that only one third of the respondents actually had used Phonetrade.com, for buying or selling to a PT member company. It is safe to assume that out of those, an even smaller number has negotiated or paid online.

Judging from the two examined cases, B2B online trade in EMPs still has a long way to go before it is conducted in a truly online fashion, as in B2C e-commerce. One conclusion of this is that one should be able to investigate trust in the EMP context using tools and theories from the well established B2B marketing area. As an example, the impact of web site user interfaces

upon trust – a much researched topic in B2C e-commerce trust - apparently does not warrant significant investigation in B2B EMPs at their present stage of development. It may be, in fact, that how important trust is in the B2B EMP setting largely is contingent upon whether actual transactions are conducted online or offline.

If the PT sample is representative of the member population, the low percentage of members actually using the web site is disturbing. Although the PT management states that it is relatively unimportant if their members use the web site or not for transactions, we raise the question: if PT members do not transact through PT, either online or offline, then what is the value of membership? A quotation from the main study can illustrate this. The comment was made by a trader, who like several other respondents, appears to have made a sincere attempt to conduct deals on PT:

“I have used the service quite a lot over the last few months. So far I haven’t really got anything out of it, to be honest. I haven’t made any contacts or concluded any deals or anything from it”

Similar remarks have been made by PO respondents. For print shops, the use of PO can be a disappointment. They may, for example, submit numerous offers to perform work, with very few offers ultimately resulting in deals. Print buyers, on the other hand, may experience few or no offers on their requests, at least for non-standard products. Therefore, as both an overall conclusion and a point for discussion, we argue that the importance of trust should be viewed within the larger perspective of perceived value, boiling down to the economic benefit of participating in an EMP.

Doney and Cannon described trust as an “order qualifier”. By this they mean that trust in a company is necessary to have that company even be considered as a supplier, but just having the trust of a company interested in purchasing services is not enough to acquire an order. Our study results suggest something similar, that even if there is trust in the buyer-seller dyad, there may not be any intention to do further business. The hypothesis on trust being positively correlated to intention to buy or sell was supported, drawing on the pooled data. However, according to the qualitative data, trust in the individual sales representative or buying manager is not always enough to actually

conclude a deal. At PO, the prime consideration for the print buyers, at least in the initial stage of a relationship, is the requested price for the products in question. At PT, the overriding concern for both buying and selling companies is the perceived value of the EMP, which ultimately boils down to what the companies can offer each other in terms of requests and bids.

Also, even if there is trust in the EMP, a member might not necessarily be committed to or satisfied with the EMP. In other words, an individual seller or the EMP as a community should not count on “winning an order” merely by earning the trust of the buyer; other factors may be equally or more important. In the EMP context specifically, Brunn et al. (2003) suggest that trust itself is not one of the main components of a successful EMP. On the other hand, trust is crucial in the governance – to be trusted as a fair and neutral EMP – which in turn is necessary to reach liquidity and capture value for the members. Our results possibly support this view.

At both Printoffer and Phonetrade, perceived value of the offerings emerges as the primary consideration for the member companies, as explained above. Even so, the PO personnel strive towards upholding member trust by not engaging in the concrete matchmaking, thus being completely fair and neutral. The PT personnel, in a similar manner, desire that their company be perceived as a fair and trusted EMP. PT is, however, more complex in this aspect because of its online distribution for one of the largest manufacturers.

Table 24: Summary of research questions and findings

<p><i>1. To what extent do different dimensions of trust exist in the specific setting of a public e-marketplace?</i></p> <p>Trust is both interpersonal and interorganizational. Risk and dependence exist in various combinations and strengths. A global market increases the need for trust, as compared to a regional market. Trustworthiness of buyer and seller is demonstrated through credibility and benevolence. Trustworthiness of the EMP is manifested through its integrity, competence and benevolence.</p>
<p><i>2. What trust-building processes develop buyer-seller trust in a public e-marketplace?</i></p> <p>Buyers and sellers make decisions as individuals, typically without access to information about the reputations of potential business partners. Decisions to trust or not are based upon the processes of attribution and prediction. In the absence of previous experience with a seller, the counterpart's competence and benevolence are tested through product samples or low-risk test orders. Trust builds up gradually through a series of successful transactions.</p>
<p><i>3. To what extent does seller trust in buyers differ from buyer trust in sellers?</i></p> <p>The nature of trust is the same, but the need for trust is different. Buyers generally have a larger need for trust in sellers than vice versa. In the PT case, sellers did have to trust buyers.</p>
<p><i>4. Does institutional trust in an e-marketplace influence interpersonal buyer-seller trust?</i></p> <p>No statistical relationship was identified between institutional trust and trust in the seller-buyer dyad, only limited evidence from the qualitative data that institutional trust is relevant.</p>
<p><i>5. Does institutional trust in an e-marketplace or interpersonal trust in a buyer-seller dyad influence a buyer's intention to purchase or a seller's intention to sell?</i></p> <p>The study found a small effect of buyer-seller trust on the intention to conduct new business. Generally, if buyers and sellers have had favorable experiences in mutual transactions their trust in each other increases.</p>

Let us recall briefly the research problem driving our study: What is the role, if any, of trust in building buyer-seller relationships in a public B2B EMP? The two cases provided different solutions to this problem (see Table 24 for a summary of the findings). The PO case implies that, overall, the role of trust is relatively small. Here we refer both to trust in the EMP as a market-maker, and trust in a specific buyer or seller. The reason is that the risk preconditions are present only to a small to moderate degree. This conclusion was supported both by the pilot and the main study. Therefore, the lack of trust probably is not a major hindrance to achieving a transaction between previously unknown buyers and sellers. Buyers and sellers are motivated by and possibly impeded by other factors, like perceived timeliness of delivery. Such a conclusion is in line with the results of Doney and Cannon (1997). They found that although industrial buyers developed trust in both the supplier firm and the supplier's salesperson, this trust did not influence supplier selection. The key criteria for supplier selection were delivery performance and relative price/cost.

Furthermore, our pilot study results suggest that if PO expands its business role into actively engaging in transactions, then the role of trust most likely will increase. If the PO staff, for example, would engage in the matchmaking of print buyers and sellers, they would potentially be suspicious that PO has access to pricing information. This could threaten PO's trustworthiness. This conclusion is supported by PO's own customer satisfaction study. This survey indicated that the sellers, the print shops, hesitate to let PO mediate offers by processing and storing them on Printoffer.com. Such a procedure would be an augmentation of today's "hands-off" approach to match-making on behalf of PO management. The reaction to this suggestion from the surveyed print shops can be interpreted as print shops not trusting PO to process their offers. Given our results, PO management should devote some attention to achieving enhanced member trust, particularly if their current business model is to be expanded.

In the PT case, the role of trust was perceived to be large, both trusting the EMP and the buyer/seller. In the business of trading with mobile phones and accessories, both risk and dependence generally are large, according to the qualitative data. The quantitative data, however, suggest that the level of perceived risk is *lower* than what the qualitative data would suggest (the mean of the risk composite variable is 3,50). Both qualitatively and quantitatively, it

is not clear how perceived risk varies with experience using EMPs. The fact is that a large portion of PO and PT respondents had not actually used EMPs for transactions. Does the perceived risk go up or down if a member has completed a transaction through a given EMP? From the data, it was not possible to draw any compelling conclusions about risk based upon having bought, sold or not used the EMP.

Reliance on trust at PT is utilized as a means to overcome risks in the form of dishonest traders and uncertain delivery times and stock quality. Inspections of stock and a 10% down payment, typical risk-reduction mechanisms for the buyer, cannot altogether alleviate risk. Furthermore, the use of the Escrow payment function is not widespread and only is beginning to gain acceptance. Therefore, trust in a potential transaction counterpart helps many PT buyers and sellers overcome any remaining fears regarding transaction risk so that a successful transaction can take place. Having said this, several respondents reported having participated in business transactions in which they initially trusted their counterparts only to have deals result in failure of product delivery or payment. The quantitative data support the conclusion that trust in the EMP brings down the perceived risk of transacting.

As an overall conclusion it also can be said, with respect to the role of trust, that trust in the EMP breeds commitment to and satisfaction with the EMP, according to our survey. The survey data indicate that satisfaction, as well as intention either to buy or sell, also is influenced by trust in the buyer/seller.

Commitment was hypothesized to be one of the most important outcomes of trust. Results from Morgan and Hunt (1994) suggest that trust breeds relationship commitment, and that the two concepts together mediate such positive outcomes as wanting to stay in a business relationship. In their framework, trust and commitment are not only two independent variables but also the central constructs for successful relationship marketing. Our research model featured commitment as an outcome of trust. Supporting prior findings by Morgan and Hunt, our results demonstrated a positive relationship between trust and commitment, however, with commitment being directed towards the EMP instead of the buying or selling company.

With this result in mind, a difference concerning commitment between the Morgan and Hunt study and ours should be pointed out. While the Commitment-Trust Theory is applicable to mature B2B relationships, we assumed that in the EMP context, commitment of a member company is directed primarily towards the EMP, not towards the company counterpart. The reason is that, during initial trust building at an EMP, commitment to a new business counterpart hardly is relevant. If buyers and sellers can constantly find new business partners in an EMP, why should they be committed to each other in the first place? For example, the print buyer at PO typically receives 10-15 offers for each request, often from new print shops. Therefore, any given buyer can place an order at a previously unknown print shop, and if not happy with the outcome, can try a new print shop with the next job.

Rather, commitment is directed toward the EMP. In that sense, the Commitment-Trust Theory is perhaps of less relevance to our study's focus. On the other hand, commitment appears to be an important factor to develop for EMP management wanting to achieve liquidity. Our data suggest that trust in the EMP positively influences commitment to the EMP, although the level of commitment was found to be rather low. Therefore, there is a large potential for increasing commitment. In the PT case, where PT is one among at least ten similar e-marketplaces, commitment likely is a very desirable attribute. Commitment might be translated into such behaviors as increased willingness to pay membership fees, or to make offers and requests. In the PO case, commitment likely is desirable on behalf of the print shops, because they provide EMP revenue in form of membership fees.

Having concluded that to the extent commitment exists at the initial stage of a buyer-seller relationship at an EMP it is directed towards the EMP, it is worth noting that commitment can exist spontaneously within a *mature* buyer-seller relationship. As Pavlou et al. (2002) point out; as a buyer-seller relationship moves from exploration to maturity, the contribution of trust can change. For example, in a mature online relationship, third-party institution trust diminishes in importance, while bilateral institutional trust, such as company-specific common standards, increases in importance. In the same manner, it is reasonable to believe that the impact of commitment can change during the course of an online buyer-seller relationship. Therefore, the Commitment-

Trust Theory should be applicable to highly-evolved buyer-seller relationships at an EMP. In fact, our study demonstrated the complexity of commitment in mature relationships; in certain instances, for example, print buyers found a new print shop via PO, and this print shop became an established supplier, replacing the previous established supplier. In the PT case, there were examples of traders with long-standing business relationships, apparently committed to each other. These traders might have done business worth millions of dollars over many years.

7.3 Theoretical contributions to the literature

This study was designed drawing from recent literature in e-commerce trust and more established trust research in the B2B marketing area. The research model primarily was rooted in the e-commerce trust studies of McKnight and Chervany (2002) and Pavlou (2002), and the work of B2B marketing researchers Morgan and Hunt (1994) and Doney and Cannon (1997). Morgan and Hunt's Commitment-Trust Theory was used as a general theoretical backdrop.

The main theoretical contribution of this study is the developed research model. Overall, the empirical results support the proposed research model. Therefore, this study expands upon previous work in the area of trust in e-commerce and EMPs in particular. More concretely, the findings lend partial support to the sequential conceptualization of trust antecedents, trust, and trust outcomes (Morgan and Hunt 1994, McKnight and Chervany 2002). That is to say that our study confirms that a trust antecedent like reputation has a positive impact upon trust, which in turn positively affects trust outcomes like commitment and satisfaction.

In addition, our study supports the notion that trust in an e-marketplace (EMP Trust) can best be characterized in terms of competence, integrity and benevolence. Integrity emerged as the most prominent dimension of these three. To the best of our knowledge, this multi-dimensional characterization of trust has not previously been examined and validated in the context of a public B2B EMP. Previous studies have concentrated on examining trust in B2C web vendors or trust in buyers/sellers at an EMP.

In terms of trust in buyers and sellers, the results of this study confirm that credibility and benevolence are two relevant trust dimensions in a buyer-seller dyad. That is, the construct Buyer/Seller Trust was found to be composed primarily of the attributes credibility and benevolence, with credibility being the most pertinent. As is the case with EMP Trust, this finding expands upon previously published research in the relatively new area of B2B e-marketplaces.

Regarding the effect of Buyer/Seller Trust on intentions to buy or sell our study supports findings of previous studies. For example, one of the key findings of Doney and Cannon (1997) was that buyer trust in a supplier firm is positively related to the likelihood of doing future business with the supplier in question. In both of our cases, there was a similar effect, stronger at PT than at PO. However, since almost half of all respondents had not undertaken business with any counterpart at each EMP, the remaining sample which had trading experience was too small to separate in terms of buyers and sellers. Therefore, for the combined populations it is impossible to know if the trust in question is trust in the buyer or trust in the seller; therefore also if the intention to do future business concerns buying or selling.

Finally, in terms of trust and commitment, the study contributes by its finding that buyer/seller trust in the EMP appears to influence commitment to the same EMP, as elaborated on in the previous section. This finding is partly in line with the Commitment-Trust Theory.

7.4 Limitations

The major limitations of the current study relate to its relatively small, non-random sample. The study examined only two cases, albeit both in considerable depth. The answers to our research questions, therefore, are restricted to two EMPs operating in very different industries. This limits the generalizability of our results to EMPs in general.

In addition, the survey samples were small; only 136 surveys were completed, 91 from PO and 35 from PT, which limited analytical power and, in fact, prevented certain analytical steps. We were, for example, unable to compare

buyers and sellers due to inadequate numbers. We also were required, because of the small sample size, to aggregate certain constructs. This created a “limited” research model that may ignore critical variable interactions and effects.

Pooling of data was required, again because of the small samples. Pooling PO and PT data may have led to over-representation of the former, because of the three-fold larger sample size.

The non-randomness of the sample lends itself to potential bias. Survey research has demonstrated that survey respondents generally are more committed or passionate towards a given institution or issue than non-respondents (Schuman and Presser 1981). In the PT case, it is quite likely that respondents were overly positive in their evaluations of PT, thereby inflating trust ratings and commitment to the EMP.

7.5 Managerial implications

The results of this case study can primarily be generalized to the populations studied. Secondly the results can be generalized, although with caution, to public B2B EMPs which share the same basic characteristics as our two cases.

We assume, like several academics and practitioners previously have done, that trust is an important cornerstone in building a successful EMP. A successful EMP has high liquidity and trade volume. The reason trust contributes to this is that it aids in closing deals, building commitment and maintaining satisfaction, all of which leads to continued use of the EMP. It is logical, therefore, that EMP management should initiate and maintain efforts to strengthen trust, both in the buyer-seller dyad and in the EMP itself.

The survey data support the notion that a good reputation has a positive impact on buyers’ and sellers’ trust in the EMP, which in turn leads to the trust outcomes of commitment to and satisfaction with the EMP. Therefore, it appears that management has everything to win by enhancing trust towards the EMP as an institution, including trust in the collective of buyers and sellers and trust in the buyer-seller dyad. Having said this, management also

must consider the perceived value of membership. For PO specifically to be successful, the value of membership must be great enough to justify print shops paying the annual membership fee, and great enough for buyers to be motivated to use the service. In the case of PT, membership value must be high enough for buyers and sellers both to pay the membership fee and actively use the service. With respect to other similar EMPs, management should consider trust alongside overall value.

Current results also support the notion that trust in the EMP is composed of the three attributes: competence, integrity and benevolence. For PO management, as well as for EMP management in general, steps should be taken to increase its trustworthiness in the form of perceived integrity, while PT management should concentrate on enhancing and promoting its level of competence.

Since our results provide support for the notion that trust in the EMP promotes commitment as well as satisfaction, EMP management teams have everything to gain by strengthening trust in their marketplaces. The levels of trust and commitment are low at both PO and PT, particularly at PO. Consequently, the potential for improvement is large.

In terms of buyer-seller trust, our results suggest that buyers and sellers should promote their credibility, first and foremost, if they want to be trusted. Further, our data suggest that trust is built upon the processes of attribution and prediction. Attribution occurs when parties have no previous experience with each other. Prediction enters the picture when the parties have conducted at least one transaction, even if only a “test transaction”. This means that the buyer and seller have interacted with and observed each other, thereby having some experience by which to predict future behavior. For EMP management to promote initial buyer-seller trust, attribution is critical. Optimizing the attribution process can be achieved by facilitating member companies forming pictures of each other, pictures that include information on company credibility and benevolence. Elaborate company presentations on the PO and PT web sites could fulfil this role. This measure would be more crucial for companies which either do not have a presence on the Internet, or have only an inferior web site.

For member companies which have passed the attribution stage of assessing an unknown counterpart, EMP management could take measures to enhance the prediction process, especially with respect to member capabilities and intentions. At PO, one possible measure would be to facilitate the transfer of print samples or test prints from a print shop to a potential buyer. Such a measure likely could be implemented without jeopardizing the integrity of PO as an EMP. At PT, similar test orders could be encouraged by management, with the proprietary Escrow payment function as a guarantee of trustworthiness.

7.6 Suggestions for further research

Trust depends upon preconditions, primarily the nature and amount of risk and dependence. Our two cases involved two very different e-marketplaces in terms of risk profile and market. New research on initial buyer-seller trust should focus upon e-marketplaces where the need for trust is highest. This could be within a certain industry or a certain geographical market. To this end, a study could be performed of several e-marketplaces, in order to statistically validate the findings of this study, as well as extend our research model.

Our results warrant a follow-up study where trust is researched among value-adding variables. Such a study could answer the question of what the role of trust is in the overall evaluation of an e-marketplace. While trust seems important in the EMP environment, it is conceivable that trust is subordinate to other factors such as perceived economic value.

Because of our contradictory results regarding the role of institutional trust, further research should be done in this area. According to the pilot study, at PT, clearly institutional trust appears to be at work. Yet, the survey failed to provide clear evidence of this. It is conceivable that the survey characteristics, in particular the small sample size, caused the survey to have insufficient power to detect the effect of institutional trust. Therefore, a larger improved survey could be conducted across several public EMPs with high risk-high trust trade like Phonetrade, with the intent to examine feedback, monitoring and other variables associated with institutional trust.

The emotionally-based process of bonding was omitted from this study. It is conceivable that when a business relationship becomes long-term, the emotional components increase in importance and the cognitive basis of trust loses importance. In buyer-seller relationships on the individual level, amiability³ has been found to be an important mediating variable in developing trust (Nicholson et al. 2001). A new study can be performed examining established buyer-seller relationships at an EMP to investigate the role of emotional bonds and processes in trust-building, as opposed to the cognitive processes operating in new relationships.

³Nicholson et al utilized the term 'liking'.

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Appendix 1: Definitions of variables, measures and interview guide for the pilot study

Table 1: Preconditions and IT-System Characteristics variables

Variable of interest	Operational definitions	References
Trust precondition: risk	Uncertainty about products and reputation of buyer/seller, and vulnerability to actions of the counterpart.	e.g. Grabner-Kräuter 2001; Friedman et al. 2000, Deelman and Loos 2002, Grandison and Sloman 2000, Lee and Turban 2002, Schoder & Yin 2001
Trust precondition: dependence	Less than total control over the conditions that are necessary for achieving an action or a desired outcome that the counterpart performs.	Handfield & Bechtel 2002, Chopra and Wallace 2003, Schneider 2002
System: security	Authentication of users and protection of confidential company data.	Friedman et al. 2000; Jones et al. 2000; Su & Manchala 1997; Jösaang 1999; Grandison & Sloman 2001
System: information presentation	The organization of information at the web interface and in a broader informational environment like the Internet	Kimi & Choobineh 1998; Wathen & Burkell 2002.

Table 2: Preconditions and IT-System Characteristics measures and interview questions

Variables	Measure
Trust precondition: risk	The extent to which the bought products are direct products, the extent to which complete product characteristics is known, the extent to which seller / buyer identity and reputation are known, the extent to which confidential corporate information is released when transacting. <i>“Are the products you buy through the EMP used directly in your production or are they MROs? Do you know what you need to know</i>

	<p><i>about the product characteristics? Do you know the identity of the buyer or seller? Do you know anything about the seller's / buyer's reputation? Do you issue sensitive corporate information in your requests/bids?"</i></p>
Trust precondition: dependence	<p>The buyer's inability to control that the ordered goods or service will be delivered in the right quantity, quality, and time. The seller's inability to control payment for the goods or service.</p> <p><i>"To what extent can you control when the product will be delivered according to your agreement? To what extent can you control that you will be paid the agreed upon money for the product?"</i></p>
System: security	<p>The buyer's and seller's perception of how well-protected the information in the B2B transaction system is with respect to leakage to unauthorized parties.</p> <p><i>"Is there any sensitive corporate information you provide to the EMP when buying or selling? Do you perceive that the information you provide to the EMP when buying and selling is safe with the EMP? With the buyer/seller?"</i></p>
System: information presentation	<p>The buyer's and seller's perception of the B2B web interface and the way information is organized.</p> <p><i>"How do you perceive the web interface of the EMP for making transactions and the way information is organized?"</i></p>

Table 3: Trustworthiness and Information quality variables

Variable of interest	Operational definitions	References
Trustworthiness: competence	The ability of an online seller to deliver the right products at the agreed upon time, or for the buyer to pay for the products	Chopra & Wallace 2003; Bhattacharjee 2002; Gefen etl. 2003; Lee & Turban 2001; McKnight & Chervany 2002

Trustworthiness: positive intentions	A business partner's respect for privacy/integrity and desire not to commit fraud. The trustee refrains from being opportunistic by not taking advantage of the trustor.	Chopra & Wallace 2003; Bhattacharjee 2002; Friedman 2000; Gefen etl. 2003; Lee & Turban 2001; McKnight & Chervany 2002
Trustworthiness: ethics	A business partner's desire to be honest, fulfill ethical obligations and promises to deliver goods or services, or secure sensitive private or corporate information.	Chopra & Wallace 2003; Bhattacharjee 2002; Gefen etl. 2003; Lee & Turban 2001; McKnight & Chervany 2002
Trustworthiness: predictability	The uniformity of a business partner's behavior in terms of e.g. delivery during multiple interactions.	Chopra & Wallace 2003; Abdul-Rahman & Hailes 2000; Deelman & Loos 2000;
Info quality: message credibility	The information is perceived by the user as accurate, correct, timely, and useful.	Deelman and Loos 2002, Chopra and Wallace 2002, Tan and Thoen 2001, Grabner-Kräuter 2001
Info quality: surface credibility	The design of visual interface, speed of loading, interface usability, and organization of information	Wathen and Burkell 2002

Table 4: Trustworthiness and Information Quality measures and interview questions

Variables	Measure
Trustworthiness: competence	The extent to which a seller delivers the products/the buyer pays for the products along the terms in the contract. <i>“Do you perceive the seller as competent in terms of delivering the ordered product as agreed upon / the buyer competent to pay for the product as agreed upon in the contract?”</i>

Trustworthiness: positive intentions	<p>The extent to which buyer and sellers do not take advantage of each other / are opportunistic by engaging in fraudulent activities.</p> <p><i>“Do you perceive that the buyer/seller takes advantage of you in some way during a transaction?”</i></p>
Trustworthiness: ethics	<p>The extent to which a buyer or a seller fulfils promises e.g. about product delivery and securing sensitive corporate information.</p> <p><i>“Do you perceive the buyer/seller is ethical, meaning e.g. keeping his promises as stated in the contract, or not redistributing any sensitive corporate information of yours?”</i></p>
Trustworthiness: predictability	<p>The extent to which a buyer or a seller delivers a product / makes a payment according to an agreement during multiple transactions.</p> <p><i>“Do you perceive that the buyer or seller behaves predictably, e.g. repeatedly fulfils contractual promises?”</i></p>
Info quality: message credibility	<p>The buyer’s and seller’s perception of the web site message content in terms of accuracy, correctness, timeliness, and usefulness.</p> <p><i>“Do you perceive the information on the EMP web site or in the requests/bids as being credible?”</i></p>
Info quality: surface credibility	<p>The buyer’s and seller’s perception of the visual design of the web site, speed of loading, interface usability, as well as the organization of the information.</p> <p><i>“How do you perceive the way the information is organized and presented on the EMP web site and in the requests/bids?”</i></p>

Table 5: Trust variables

Variable	Operational definitions	References
Trust belief development	A buyer's / seller's belief in the trustworthiness of the counterpart ("very trustworthy – very untrustworthy")	e.g. Abdul-Rahman & Hailes 2000; Chopra & Wallace 2003; Bhattacharjee 2002; Gefen et al. 2003; Lee & Turban 2001;
Trust behavior	Buying / selling a product from/to a specific counterpart under conditions of risk and dependence where there are several sellers / buyers to choose between	e.g. McKnight & Chervany 2001; Lee & Turban 2001; Grabner-Kräuter 2001, Koufaris & Hampton-Sosa 2004

Table 6: Trust measures and interview questions

Variables	Measure
Trust belief development	A belief in the trustworthiness of the buyer / seller at an EMP <i>"What does trust mean to you in a business setting, such as when you buy/sell products at the EMP?"</i> <i>"Do you perceive the buyer / seller as trustworthy?"</i>
Trust behavior	Conclusion of a transaction (buying or selling) at an EMP <i>"Have you purchased a product from a hitherto unknown seller at an EMP? Was trust an issue in this decision?"</i> <i>"Have you sold a product to a hitherto unknown buyer at an EMP? Was trust an issue in this decision?"</i>

Appendix 2a: Themes from the Printoffer pilot study interviews

<i>Company / Theme</i>	Ordfront <i>(buyer)</i>	STF <i>(buyer)</i>	NEA <i>(buyer)</i>	Idébild <i>(buyer)</i>	SDR <i>(buyer)</i>	Teknikmagasinet <i>(buyer)</i>
Bid sorting / Supplier brokering	Price, delivery, known, geographical closeness	Environmental certificate, price, delivery	Price, technical competence?	Price, but feelings of loyalty can take precedence	Price, delivery, print quality	Price, delivery, print quality? A considerably lower price than established print shop can result in a change of supplier
Reputation	Internal, "in house".	No	Internal only, from colleagues. Rumors about bookbinder	Rarely with external buyers, does not want to share "lovely suppliers" with competitors.	Internal only, by accident and informally with colleagues. Direct reputation	Internal only, with colleague
Assessing counterpart /reputation sources	Directly with supplier (phone)	Own experience only (direct trust), web site	Seller web site, reference persons, personal contact	Directly with print shop? To some extent with external sources.		Own experience only (direct trust)
Price control	Desire not to buy print as "old habit". New suppliers charge lower than established	Price always interesting – very large price span in bids	Yes.	Finding if established print shop charges too high. Finding base line price for "rush jobs". Some	Easy way of scanning the market in terms of price if uncertain of proper price. PO an information service for	Uses PO to press down prices. Can result in conflict between wanting an ever lower price and maintaining a good relationship.

	suppliers. Large price span in bids			guilt towards established supplier when doing price control	finding competitive prices, in particular for odd jobs. A good first contact with the market.
New contacts	Advantage to get 10-15 bids per request	To find new suppliers for an odd job	Interesting to get new ideas and suggestions, for a lower cost.	To find new suppliers for odd jobs	Some new contacts via PO

Trustworthiness	Positive when sending test print. Negative when responding slowly	Competence: rather quick gets a feeling for their competence. Fast response and via preferred medium gives competent impression	Competency: know-how Ethics: not keeping promised delivery times	Competency: professionalism, creativity, prompt service “Personal chemistry” “Proactiveness”: helping the buyer to better define need, cooperation.	Ethics: print shop can print on a lower paper quality trying to get away with it	Competence: Having a grip on the deal / production. Technical know-how. Test print Ethics: not sticking to a promise about price
Risk / risk reduction	Want to have supplier in			Risking delayed delivery with	First putting a small order to see how supplier	For larger productions print samples or test print

	<p>Sweden to avoid late delivery, and possibility to closely supervise production. Test prints sometimes.</p>			<p>foreign sellers. Supervising print intake for large jobs, e.g. books.</p>	<p>performs</p>	<p>of ordered product. Good if seller speaks the same language, particular initially</p>
<p>Interdependence / vulnerability</p>	<p>Late delivery has resulted in cancelled courses</p>		<p>New prices can not be charged until prices have been printed. Affects revenue.</p>	<p>Tight deadline for buyer's customer</p>	<p>Important to get delivery in time, large volumes and tight deadlines.</p>	<p>Important to get delivery in time to have place at warehouse.</p>

<p>Foreign seller distrust</p>	<p>Has been warned against Estonian printshop, doesn't want to experiment, foreign bid has to be much lower to be considered. Foreign suppliers cannot be supervised in person.</p>	<p>Tempting with low prices but hesitate in terms of security of delivery. Don't want to be the first Swede who runs into trouble with a foreign supplier.</p>	<p>Foreign sellers can be considered but buyer needs reference person / company.</p>	<p>Political-moral consideration: business should be kept within Sweden. Cannot supervise print intake. Foreign bids have to be much lower to be considered.</p>	<p>Do not want to place order at foreign print shop due to perceived less security (delivery) and responsibility towards end customer. Cultural differences, perceived safer working with Swedish suppliers.</p>	<p>Some skepticism about foreign bids. Print samples not to satisfaction. Bad experience with Estonian supplier: late delivery and poor print quality. No prejudice, based on "hard facts".</p>
<p>Trust</p>		<p>Important to feel trust towards the individual seller of the print shop. Trust promoted if seller knows the print business</p>	<p>Only "simple" jobs to unknown sellers. If established printer messes up order, new suppliers will be seriously considered.</p>	<p>No contracts are written. Trust results in continued business</p>	<p>Trust related to brand name. If a smaller job is performed satisfactorily it can result in larger orders. Important that supplier's back office is synched with individual seller.</p>	<p>A trusted supplier is of great value. Even better if supplier's prices can be pushed down.</p>

<i>Company / Theme</i>	Transform <i>(buyer)</i>	Xtrovers <i>(buyer)</i>	Svensk Byggtjänst <i>(buyer)</i>	Canal Digital <i>(buyer)</i>
Bid sorting / Supplier brokering	Combination of mainly lowest price and speed of delivery	Price important but so is technical competence and capacity	Price, print quality/deliver, good contact person	Price, personal touch, integrity. For regular suppliers: delivery, quality and price
Reputation	No	No. Only in-house (between two purchasers)	External, with former colleagues at other companies	External, partly in-house (ad-hoc)
Assessing counterpart /reputation sources	It is up to the print purchaser to evaluate new sellers.	Always visit sellers web site. Web site an important sign of technical competency.	Ex. colleagues, directly with print shop, reference persons	Ex. colleagues at advertising agencies, print-related companies (e.g. repro)
Price control			Used PO only to assess price level of non-PO print shops	PO gives good “temperature reading” of the market
New contacts	For quick and small jobs, uses local print shops, PO too slow for this. But PO good for getting new contacts	Have used PO since the start. Only one deal so far plus contact with new supplier that will later be utilized.		Use of PO has resulted in supplier switching, regular supplier was discovered to be too high-priced
Trust worthiness	Competence: print quality, delivery, service, capacity. Ethics: seller does not admit problems though it is obvious.	Competence: seller must be able to answer typical questions, e.g. about test print, expected delivery	Competence: ability to handle both text and graphics “Proactiveness”: adding value by providing good solutions	Competence: knows the printing business, “Proactiveness: seller should easily understand buyer’s needs, Integrity: sellers should respect chosen method of contact, keep a rather low profile in selling

Risk / risk reduction	Always demand test prints	Seldom change suppliers due to some uncertainty and vulnerability. Est. suppliers and processes also save money.		If print does not arrive in time can affect buyer's PR campaigns
Interdependence / vulnerability	Very important that print shops meet deadlines		Delivery to wrong addresses, wrong number of books	Very short production/lead times – prompt delivery necessary
Foreign seller distrust	Foreign seller does not matter as such, but important that they keep promised delivery times. Have tried Estonian supplier. Good quality initially but abandoned due to delivery problems.	Prefer Swedish sellers due to language and quicker deliveries. Foreign sellers can be considered for large jobs but relationship has to be established first		
Trust	Seller can mess up one, max two times before trust decreases	If seller can answer well to the check questions trust is acquired. Good communication breeds trust.	Primary consideration when choosing a print shop. Important that personal contact is good	Trust decreases if e.g. supplier promises a delivery time but does not manage to fulfil, without feed-back or explanation provided until too late. Trust primarily related to individual

<i>Company / Theme</i>	Edita <i>(seller)</i>	Elanders <i>(seller)</i>	Lagerblads <i>(seller)</i>
Bid sorting / Supplier brokering	Regular customers (weekly/monthly) are best. No sales work needed.		
Assessing buyer /reputation sources	Checks web sites of new customers. Most larger buyers have own web site.		Finding the buying company on the Internet.
Reputation	No. Print buyers unknown unless previous customers.	Generally no. But eventually recognizes some buyers, some shady, and learn to avoid bidding on their requests. Some large customers may have a reputation, e.g. low-cost bids only. Share some info in house with colleagues	No. A huge amount of print buyers. Almost impossible to find previous supplier for buyer verification.
Price control	Uses request list as a reading of the present market	Uses number of requests as readings of the present market. Believes that buyers use PO to check the price level of regular suppliers with a larger market	Potential buyers might only be after checking prices

New contacts	Around ten jobs via PO, including one of the largest customers today. Easy way to get requests via PO – does not have to use the phone.	Requests from all over the world, only Scandinavian of interest. Very small percentage resulted in deals. PO good as a door opener – providing potential customers and sales leads.	Have gotten 10-12 new print buyers via PO
Trustworthiness	Competence: The buyer should enclose the correct material according to the spec, e.g. original files. The buyer preferably knowledgeable about paper quality, page numbering etc. Ethics: the customer (PR bureau) blames seller to save face before end-customer	Competence: the buyer exhibits some buying competence. If not, the job can be delayed and over budget/bid. Expected “bad” customers can be let off the hook by overbidding. Ethics: the buyer changes the spec during production, makes it more complicated and expensive	Increases if the potential buyer over the phone gives a serious and knowledgeable impression
Risk / risk reduction	Uncertainty about buyer’s willingness or possibility to pay. Makes financial check for all new customers. From risky customers demanding payment in advance.	No risk using PO because the buyer is not anonymous. Always a risk that customer does not pay but seller responsible for doing credit check and writing credit agreement. If the buyer has low buyer competence the job might be lined with problems and less profitable for the print shop.	Uncertainty about customer ability to pay. Makes credit check for new customers, but this info might be outdated. Printing quality generally high today – little need for buyer to supervise the process on site.
Interdependence / vulnerability	Print shop has to take production cost (e.g. paper), a sunk cost if the customer does not pay afterwards.		A customer might not pay for a job, or declare himself dissatisfied with the job. Seldom happens. The majority of customers are good.

Trust	Wants serious customers, but overall trust not as important for the seller as for the buyer.	Not that important for the seller. But of course good to know that the buyer is knowledgeable. Prefer to call it understanding rather than trust. The seller should be pro-active.	Difficult to assess trustworthiness over the phone.
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Appendix 2b: Themes from the Phonetrade pilot study interviews

<i>Company / Theme</i>	Trader 1	Trader 2	Trader 3	Trader 4	Trader 5
Reputation	Checking up on traders through ME at PT. If not a PT member then hard finding reference people. No “talk in the business”. Buyers and sellers are valuable assets for a trader and not shared with others.	Maintains a private data base of established clients and people, who are asked for references about an unknown business partner. Transfer of trust from trusted to unknown business partner.	MM asks Mr E about established PT members. If their reputation is good a deal can be made. PT members inquire of Mr E about the identity and reputation of MM as a new PT member.	Transfer of trust from trusted 3 rd party. Also EMPs have a reputation. E.g. Alibaba.com had a reputation of being visited by “cowboys”.	Concern finding out if new business partners are genuine and honest. Reputation decides further contacts. Own company good reputation must be maintained.
Assessing counterpart / reputation sources	Visiting potential business partner’s web site. Calling potential business partner’s company and asking around. Trying to get a picture of the company.	With unknown business partners asking them for names and phone numbers for three reference persons/companies who have had business with them.	Uses Mr E as reputation source because he might know the potential buyer/seller in question.	Uses Mr E as reputation source. Mr E is viewed as a police/supervisor of PT trading community.	Exchanges reputation info with colleagues responsible for different geographical areas. Uses Mr E also. General info exchange with new contacts to establish relationship.
Meeting place	Finding new business contacts at PT. Posting requests to awake seller curiosity, but		Quick first deal resulted in large interest in PT and was followed by other successful	Trades only via PT because members are guaranteed and registered.	PT a “contact web site”, offers published as bait for new contacts.

	seldom buying anything via PT		deals, with larger quantities than anticipated.		
Trustworthiness	Competence in the form of industry and product know-how.	Showing goodwill/positive intentions by assuming a small risk, e.g. delivering the goods to one's own freight forwarder for inspection. "It's a give-and-take".	Quick and personal reply to questions, in this case by Mr E. Avoiding "tricky" questions about goods, payment etc. decreases trustworthiness. PT "family feeling" and checking of members promote trust. Fast trading promotes trust, slow trading decreases trust.	Trustworthiness increased if potential partner uses standard practices, e.g. payment by TT or check. The question is finding out if the company is actual and legitimate.	Difficult to assess generally. Warning sign: different addresses for delivery of goods and origin of payment.
Risk	Buyer must calculate into the price that 10% of refurbished phones are unusable. New phones can be operator locked the wrong way. Phones can be stolen.	Buyer might not get the phones at all, not as many as ordered, or some phones might not work (approximately 1% with new phones, 10% with refurbished).	As a buyer financial risk: a seller might want money in advance. Also risk of getting no or defective goods.	As a buyer you can lose time and money. A seller can offer stock that is not in possession. A seller risks non-payment.	Buyer might not have the money. Own reputation can be hurt if dealing with companies forging VAT.
Risk reduction	When lacking reputation about seller, paying 10%	Asking for proof of stock, inspections by freight forwarder in	Inquiring for reputation about unknown trading	Inspection of goods and payment by TT	Detailed screening of potential trading

	<p>in advance and the rest after freight forwarder inspection. Goods always inspected before leaving seller's country. Different levels of inspection. Long-term relationships decrease risk, including need for products inspection.</p>	<p>country of origin. Inspections add only marginally to costs. No problem dealing with unknown traders, but certain risk-reducing procedures must then be followed.</p>	<p>partners.</p>	<p>standard way of doing business. PT is safe and secure compared to other EMPs, due to Mr E:s check of company identity, VAT etc.</p>	<p>partners. Often takes months of contacts before first transaction. Only largest customers receive credit. Delivering goods via 3rd party (Mobile ship to hold) to new buyers to develop trust.</p>
Escrow	<p>Used PT Escrow once, but PT did not manage delivery.</p>		<p>Has proprietary Escrow solution</p>	<p>Has not used Escrow because it is too slow, like all such services</p>	<p>.</p>
Trust	<p>Very important concept, like in all business. Mainly because of financial risk.</p>	<p>Important because trade is quicker with it. Without trust, inspections are necessary, delaying shipment 2-3 days. Trust level increases with amount of successful deals, but very rarely 100% trust.</p>	<p>Trust secondary concern. Primary concern is that trade is being made at the EMP. On the other hand, trust in a trading community enables trade that otherwise would not have been made.</p>	<p>Trust and reputation are very important. Tries to stick to established traders, not necessarily look for new traders.</p>	<p>The most important concern when trading, in particular for first transactions. This applies also to companies not on the Internet. Relationship begins with zero trust. Trust mainly at the firm level.</p>

<p>Institutional Trust</p>	<p>Does not think highly of MEs industry and product know-how, but very much respects his member body / contact bank. Members trade with each other <i>despite</i> PT “e-mail bombing” etc.</p>	<p>PT not responsible for trustworthiness of their members. Impossible to thoroughly screen members all over the world.</p>	<p>Very strong trust in Mr Eriksson as “Mr Phonetrade” and PT as an EMP. As a seller, MM would send 1,000 phones to a PT member without payment in advance.</p>	<p>Strong trust in Mr E and PT because of his screening of members – guarantees a certain trust. Trades only on PT, other EMPs only for general information.</p>	<p>Because Mr E has screened PT members in terms of VAT etc., half the job is done for 20/20. PT then can be used for finding new business contacts.</p>
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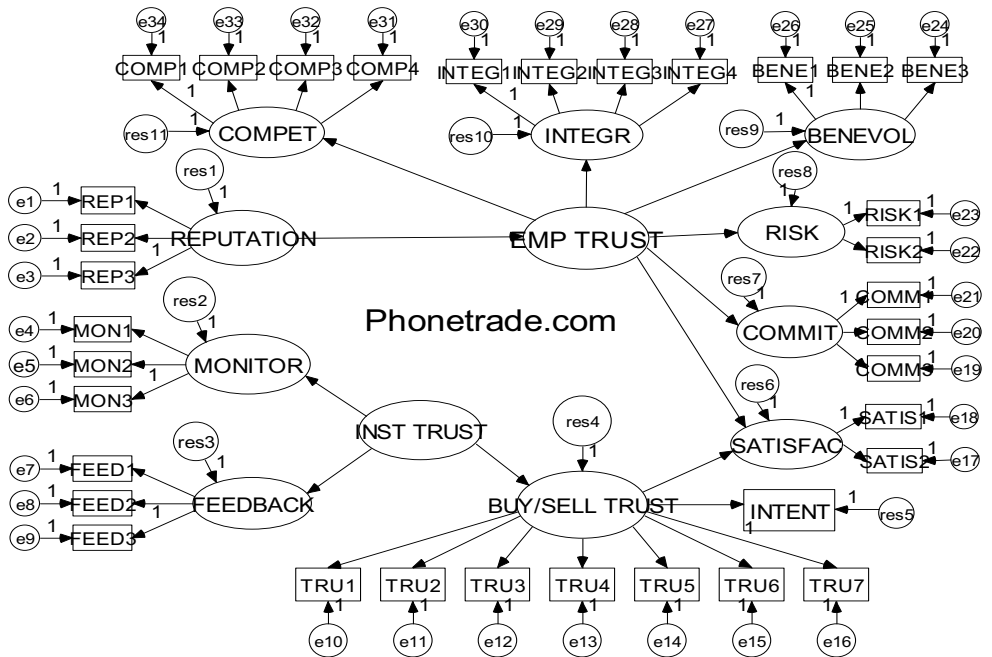
Appendix 3: Survey measures (r = reversed item)

Item	Measures and items
REP	Perceived reputation of EMP
Rep1	Printoffer/Phonetrade has a reputation for being honest
Rep2	Printoffer/Phonetrade is known to be concerned about its member companies
Rep3	Printoffer/Phonetrade has a bad reputation in the print/mobile phone trading market (r)
MON	Perceived monitoring
Mon1	There is an effective third-party authority at Printoffer/Phonetrade to monitor all sellers and buyers and help resolve conflicts
Mon2	There is an effective third-party mechanism at Printoffer/Phonetrade to assure that all products are in accordance with the posted specifications
Mon3	There is an effective third-party enforcing mechanism at Printoffer/Phonetrade to assure that all transactions are conducted properly
FEED	Perceived feedback
Feed1	A considerable amount of information about the transaction history of most buyers/sellers is available from Printoffer/Phonetrade
Feed2	If any buyer/seller misconducts in a transaction, a reliable feedback mechanism is provided by Printoffer/Phonetrade to inform buyers/sellers
Feed3	There is an effective mechanism at Printoffer/Phonetrade to allow buyers/sellers to publicize their purchasing experience with other buyers/sellers
COMP	EMP competence
Comp1	Printoffer/Phonetrade is competent and effective in providing trading services
Comp2	Printoffer/Phonetrade performs its role of providing transaction services very well
Comp3	Overall, Printoffer/Phonetrade is a capable and proficient

	Internet e-marketplace
Comp4	In general, Printoffer/Phonetrade is very knowledgeable about print/mobile phone trade
INTEG	EMP integrity
Integ1	Printoffer/Phonetrade is truthful in its dealings with me
Integ2	I would characterize Printoffer/Phonetrade as honest
Integ3	Printoffer/Phonetrade would keep its commitments
Integ4	Printoffer/Phonetrade.com is sincere and genuine
BENE	EMP benevolence
Bene1	I believe that Printoffer/Phonetrade would act in my best interest
Bene2	If I required help, Printoffer/Phonetrade would do its best to help me
Bene3	Printoffer/Phonetrade is interested in my well-being, not just its own
BUYER/ SELLER TRUST	Trust in Buyer/Seller
Tru1	This seller/buyer has been frank in dealing with us (cred.)
Tru2	This seller/buyer does not make false claims (cred.)
Tru3	We do not think that this seller/buyer is completely open in dealing with us (cred.) (r)
Tru4	This seller is knowledgeable regarding the company's products (comp.)
Tru5	This seller/buyer is only concerned about himself/herself (bene.) (r)
Tru6	This seller/buyer does not seem to be concerned with our needs (bene.) (r)
Tru7	The people at my firm do not trust this seller/buyer (overall)
Tru8	This seller/buyer is not trustworthy (overall)

BUY/SELL INTENT	Intention to buy or sell
Buy/Sell intent	It is likely that my firm will make a purchase from this supplier / sell goods to this buyer during the next three months
RISK	Perceived risk
Risk1	The decision to transact with sellers or buyers at Printoffer/Phonetrade involves a significant amount of risk (r)
Risk2	The decision of whether to transact with sellers or buyers at Printoffer/Phonetrade has a low potential of loss.
COMMIT	EMP commitment
Commit1	The relationship that my firm has with Printoffer/Phonetrade ...is something we are very committed to
Commit2	...is something my firm intends to maintain indefinitely
Commit3	...deserves our firm's maximum effort to maintain
SATIS	EMP satisfaction
Satis1	I am very pleased with making purchases with sellers/sell to buyers through Printoffer/Phonetrade
Satis2	I regret doing business with sellers/buyers through Printoffer/Phonetrade (r)

Appendix 4: Complete SEM model of Phonetrade data, including error and residual terms



Appendix 5: Public, Swedish-based EMPs considered for the case study

EMP	Industry	Geographical area	HQ location
<i>Eu-supply.com</i>	Construction materials and services, e.g. pipework, concrete, staircases, doors, roofing and cables	Western Europe, 12,000 members	Stockholm
<i>Vvs-slussen.com</i>	Housing and construction-related products and services	Sweden. 6,000 registered members. Buyers mostly municipalities and other state agencies	Stockholm
<i>Industrialbuyer.net</i>	Construction, plumbing, industrial machinery, tools, metals and chemicals, plastics, packaging, furniture, IT, electronics	Approximately 2,800 affiliated companies in the Nordic countries	Stockholm
<i>Designmarket.com</i>	Furniture, lighting, textiles and street objects for indoor and outdoor use	Europe. 89 primarily European suppliers. Buyers: architects, interior designers, public purchasers and retailers in Scandinavia	Stockholm
<i>Phonetrade.com</i>	Mobile phones and accessories	Global	Gothenburg
<i>Logitall</i>	IT products, telecommunication and office equipment. "Purchasing partner" for companies buying these products	250 mid-size and large buyers of IT products, both private and public sector. 300 suppliers in Sweden and Norway	Solna
<i>Excesstrade.com</i>	Buying and selling excess electronic components, e.g. integrated circuits, memory components, semiconductors, transistors	Buyers mostly in Europe and USA, sellers also in Europe and USA but a little more global	Gothenburg
<i>Printoffer.com</i>	Printing of mostly brochures, folders, publications, catalogues	Global with Scandinavian focus. 515 print shops from 20 countries and 2848 buyers are members	Falun

