

Impacts of the Implementation of Electronic Invoicing on Buyer-Seller Relationships

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Abstract

In this paper, we examine the effects of the implementation of electronic invoicing on buyer-seller relationships. We apply the framework by Cannon & Perreault [1] to analyze the changes in the relationship connectors between the two parties. Drawing on qualitative interview data from a single case study, we find that the implementation of electronic invoicing has a strong impact on the information exchange component as well as on the operational linkages component. In addition, we find that both parties have made adaptations due to the implementation of electronic invoicing. It was also concluded that the switching costs have increased and the commitment improved between the seller and its customers. While the investments in electronic invoicing usually reduce costs for the buyers, the sellers benefit from the implementation of electronic invoicing in creating long-lasting relationships and even dependence between the two parties.

1. Introduction

Electronic invoicing has been recognized as one of the most important sources of productivity increases in Europe [2]. Some European countries have been more active than others in enforcing the transition to electronic invoicing. As an example, since 2005, Denmark's public authorities primarily receive invoices in electronic format and this has been stipulated by law [3]. The benefits of moving from paper invoices to electronic invoicing are clear. The Finnish State Treasury and some Finnish companies have estimated that an incoming paper invoice incurs costs amounting to 30-50 Euros to the receiver company. By moving to electronic invoicing, these costs can be lowered considerably. According to the European Associations of Corporate Treasurers (EACT), the resulting cost reductions in the supply chain expenditures total 243 billion Euros across Europe [2]. In addition to the monetary savings, there are considerable environmental effects

as the transition from paper bills to electronic invoicing in the EU alone would save over 14 million trees (estimates of, e.g., Pagero and PayItGreen).

Electronic invoicing is not something totally new. Invoices have been transmitted in electronic format for decades. Already in the 1970s, EDIFACT was used by large companies as a means to exchange invoice data. These systems were point-to-point systems, and required somewhat heavy investments in establishing the connection between the two companies or organizations. In this paper, however, we leave these legacy systems out of our scope and define electronic invoices as invoices transmitted through XML-based open standards, e.g., Finvoice or the TEAPSSXML standard in the Finnish context. Our focus is on the automation of invoicing processes and this in turn requires that the invoice data is sent in a structured format. Therefore, invoices that are transmitted as attachments (PDFs etc) in e-mails are not considered as electronic invoices. This is because e-mail attachments do not allow for the invoice data to be automatically processed in the payment system.

The objective in this study is to examine the effects of the implementation of electronic invoicing on buyer-seller relationships. As a conceptual theoretical framework, we use the framework by Cannon & Perreault [1]. They establish a set of relationship connectors: (1) information exchange, (2) operational linkages, (3) legal bonds, (4) cooperative norms, and (5) relationship specific adaptations by the seller or the buyer (see Figure 1 for a schematic overview of the framework). We use these connectors to examine the changes in the relationship between the buyer and the seller. We draw on qualitative interview data on Lindström, a Finnish textile and cleanliness service company.

Our findings indicate that the implementation of electronic invoicing has a strong impact on the information exchange and operational linkages components. In addition, the implementation required adaptations by both parties. These impacts will be

discussed in greater detail in the discussion and conclusions section.

After this introduction, we present the relevant literature on buyer-seller relationships. In the third section, we describe the methodology used in the paper. The fourth section presents the case company and illustrates how electronic invoicing has affected the buyer-seller relationships in that specific company. Finally, the conclusions are drawn in the fifth section.

2. Buyer-Seller Relationships

Theoretical perspectives on forging, ending and running buyer-seller relationships vary in their emphasis on economic and social phenomena, their orientation toward individual or collective action and their development of motives, content and abilities [4, p. 96-97]. A key conceptual division line between various relationships is discrete transactional versus relational exchange [5,6]. In other words, theories can be distinguished focusing on dominantly stimulus-response type relationships and reciprocal interdependent relationships [7, p.10].

Transaction cost economics (TCE) concentrates on the differences between markets and hierarchies for conducting business transactions [8,9]. In order to lower the transaction costs incurred for market transactions, already Llewellyn [10] observed that there are complex “future deals” located between the market and hierarchy extremes. Williamson [9] names these as hybrid transactions and situates them in between discrete market transactions and highly centralized, hierarchical transactions. Relational contracting, therefore, can be seen as a way to lower the transaction costs between the buyer and the seller. TCE suggests that relational contracting develops for transactions of a recurring and non-standardized kind (high degree of asset specificity), where continuity of the trading relation is valued [9].

Another stream of literature in the marketing discipline discusses the relationship value and its dimensions (see e.g. [11]). Here, the relationship value consists of the relationship benefits (e.g. product benefits, service benefits, know-how benefits, time-to-market benefits, and social benefits) and sacrifices (e.g. process costs and price).

2.1. Relationship connectors

To more fully operationalize the buyer-seller relationship concept, we follow the Cannon & Perreault [1] study and use (1) information exchange, (2) operational linkages, (3) legal bonds, (4)

cooperative norms, and (5) relationship specific adaptations by the seller or the buyer as measures for evaluating the buyer-seller relationships. We consider the Cannon & Perreault [1] framework especially suitable for this research on electronic invoicing as these connector elements provide a measure for the relationship and capture aspects of commitment and the expectation of future interactions among the buyer-seller pair [6].

In addition to the relationship connectors, the Cannon & Perreault [1] framework identifies four types of antecedents (availability of alternatives, supply market dynamism, importance of supply, and complexity of supply) of buyer-seller relationships. Availability of alternatives is the degree to which a buying firm has alternative sources of supply to meet a need. Supply market dynamism characterizes the degree of variability of changes in a firm’s supply market. Importance of supply is the buying firm’s perception of the financial and strategic significance of a particular supply. Complex supply needs make it more difficult for a buying firm to evaluate purchase choices a priori, thus increasing the purchase decision ambiguity and risk.

Concerning the six relationship connectors, *information exchange* is defined in Cannon & Perreault [1] as “expectations of open sharing of information that may be useful to both parties”. More open sharing of information is indicated by the willingness of both parties to share important, even proprietary, information. In practice, this might include involving the other party in the early stages of product design, opening books and sharing cost information, discussing future product development plans, or jointly providing supply and demand forecasts.

Operational linkages capture the degree to which the systems, procedures, and routines of the buying and selling organizations have been linked to facilitate operations. At one extreme, the two organizations may operate independently and at “arm’s length”, where there are not interfirm routines and systems. At the other extreme, intercoupled systems tend to specify roles implicitly or explicitly for both parties in a relationship [12]. With operational linkages, activities and processes between the firms facilitate the flow of goods, services, or information.

Legal bonds are detailed and binding contractual agreements that specify the obligations and roles of both parties in the relationship. These contracts provide two primary benefits to exchanging parties. First, legal bonds provide the protections available through the legal system should something go wrong

[13]. Second, they regulate the relationship by furnishing a plan for the future [14].

Cooperative norms reflect expectations the two exchanging parties have about working together to achieve mutual and individual goals jointly. As defined here, cooperative norms do not imply one party's acquiescence to another's needs but rather that both parties behave in a manner that suggests they understand that they must work together to be successful, cf. [15].

Relationship-specific adaptations are investments in adaptations to process, product, or procedures specific to the needs or capabilities of an exchange partner. Whereas the other connectors focus on joint behaviors and shared expectations, adaptive behavior is defined so that it focuses on the individual behavior specific to the other party in the relationship.

In addition to the antecedents and relationship connectors, the framework also distinguishes customer evaluations of the supplier (customer satisfaction and customer evaluation of supplier performance).

The following figure (Figure 1) illustrates the framework. In our research, we are interested in finding out the effects of the implementation of electronic invoicing systems to the relationship connectors depicted in the center of Figure 1.

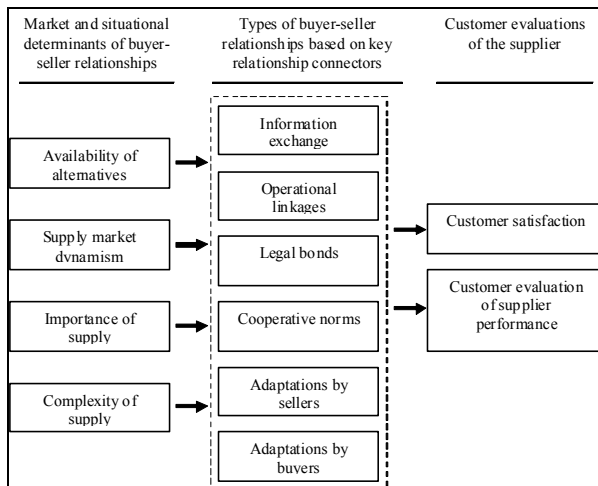


Figure 1. Schematic overview of key constructs relevant to the practice of buyer-seller relationships (Cannon & Perreault 1999, p. 442)

3. Methodology

Our research methodology is case study research. Case study research is especially useful to tackle research questions “how” and “why”. The case study

is the method of choice when the phenomenon under study is not readily distinguishable from its context [16]. In our research, we examine how electronic invoicing affects the buyer-seller relationships. Implementing electronic invoicing through open standards in XML format presents a new area of study and, therefore, we find it practical to use the case study approach in our research. Furthermore, we believe that the case under study has revelatory power and can provide new insights on the impacts of implementing e-invoicing on buyer-seller relationships.

The case approach gives a rich picture and insights through interactions with key players. Key-informant interviewing, structured interviews, and reviews of internal information enabled the researchers to cross-check results from observations and field notes [17]. This involved work with the key players as a group and individually [18]. In the first interview, we focused on the players on strategic level on the organization and involved the CEO, financial manager and the person responsible for invoicing in the case company. The second interview involved players on the process level: two customer service managers and again the person responsible for invoicing, who thus participated in both of the group interviews since she was considered the key informant for the research. After the group interviews, we interviewed this key informant again individually. We designed two separate interview instruments (semi-structured interviews) for the strategic level issues and for the operational level issues. The framework presented in Figure 1 guided the development of the themes covered in the interview instruments. After the interviews the interview data was transcribed and the interviewees checked the written documents for correctness.

The identification of critical incidents also provides a framework for identifying stages of organizational development [19]. We asked the interviewees first to describe the stages of the implementation process and in that way aimed to identify the critical events and issues encountered during the process. This gave us guidance for identifying the relevant issues that were then clarified in the interviews.

Our case company, Lindström, is somewhat a pioneer in the field of electronic invoicing in Finland. Therefore, we find it fruitful to conduct a case study in this organization that has implemented electronic invoicing across the entire organization already in 2003. In addition, we have access to the key informants in the company through the Real-Time Economy research program, which is a collaboration between the Helsinki School of Economics and

several companies. Lindström is actively involved in the Real-Time Economy program.

After having conducted this single case study, our objective is to interview other companies and public organizations to get comparative data on the effects of the implementation of electronic invoicing to buyer-seller relationships.

4. Case Lindström

Lindström is a Finnish textile and cleanliness service company founded in 1848. Lindström's range of services consists of workwear, mat, protective equipment, hygiene, restaurant textile, and shop towel services. Lindström has operations in 18 countries (see www.lindstrom.fi for details).

Concerning the Lindström Group's financial development, in 2007, the turnover grew by 12.4 percent and was 227 million Euros. The profitability of the company improved notably, and the group's net profit before taxes was 26.8 million Euros (15.8 million Euros in 2006). The group's result before extraordinary and profit adjusting items and taxes was 28.1 million Euros (18.3 million Euros in 2006). The consolidated net investments of the group were 12.7 million Euros (20.2 million Euros 2006). The number of the personnel in the group at the end of the year 2007 was 2,311 employees (2,177 employees in 2006).

Competition is intensifying in all market areas. With a strong concept and improvements in productivity and cost efficiency, Lindström aims at maintaining its strong market position in all countries of operation.

4.1. Electronic invoicing at Lindström

Lindström is one of the pioneers in the electronic invoicing scene in Finland. Electronic invoicing was implemented at Lindström in April 2003. Prior to the initiation of electronic invoicing in 2003, all incoming and outgoing invoices were transmitted in paper format via traditional mail. Lindström started to build the electronic invoicing systems with one pilot customer, by using an invoicing period of five weeks. The pilot project was well prepared and the data contents accurately defined with the customer. Since the pilot project, the sales invoicing has been 100 % electronic from the Lindström's point of view: all invoices are sent in an electronic format out of the company.

Invoicing department was the one responsible for the implementation of electronic invoicing. The function of the sales department (sales processes etc.)

has not changed due to the implementation of electronic invoicing. The sales department has naturally been informed about the changes in invoicing procedures.

Lindström uses TietoEnator as the operator to send the invoices to customers. The invoice data are sent to the operator who then forwards them through to the customers' payment systems in the TEAPPSXML format. The TEAPPSXML format was developed by TietoEnator and is essentially a description of the invoice data in XML format. In Finland, there are two main established standards for transmitting electronic invoices: the TEAPPSXML standard and the Finvoice standard developed by the Federation of Finnish Financial Services. Operators basically act as transmitters of electronic invoice data and, for example, handle the conversion of electronic invoicing data from standard to standard and from system to system.

Today, the total number of the sales invoices is approximately 45,000 – 50,000 per month. For the time being, 35 % of all the invoices are sent as online invoices. One year ago the amount of online invoices was only 26 %. The remaining, approximately 65 % of the sales invoices, are forwarded via intermediaries to the customers in paper format. During the last few years, Lindström has done comprehensive marketing in Finland in order to increase the digitalizing of invoicing among its own customers. The goal for the year 2012 is that 80 % of all the invoices are sent as online invoices. According to Lindström, the adoption of the electronic invoicing systems may gain momentum in the future if authorities start to insist on digitalization of invoicing, as has been done in Denmark [3]. Lindström considers the role of book-keeping agencies significant in the marketing, especially in the case of SME companies. In addition, banks have contributed to the marketing of electronic invoicing. The ultimate goal of Lindström is that all invoices could be sent electronically to the customers' systems. Each paper invoice causes extra costs to Lindström.

4.2. Changes in the relationship connectors

In this section, we report the findings from the interviews vis-à-vis the relationship connectors.

4.2.1. Information exchange. One of the most significant changes due to the implementation of electronic invoicing is the more intensive information exchange between Lindström's invoicing department and its customers. The common pilot projects with

the customers, the duration of which depends on the customer and its ability to receive electronic invoices, have been one reason for the increased information exchange. The pilot projects have demanded discussion, communication and exchange of information between the two parties as the person responsible for billing explained: *“We have been discussing, sending messages, exchanging information, making customer visits, going through processes together with the customer”*. As an example, Lindström has gone through all the invoicing processes together with its customers. After the pilot projects, the cooperation has continued, and the personnel have solved invoicing problems with the customers daily. The positive impact as a result of the more intensive information exchange is that the customers are more committed to Lindström. *“The commitment stems from the trust that is generated through electronic invoicing. Paper invoices are sometimes lost in the mail and electronic invoicing is much safer. Trust is also generated through the common efforts in improving the functioning of the electronic invoicing practices.”* Moreover, the greater sharing of information in problem situations improves the quality of invoicing in the future, and facilitates the development as Magnet [20] stated in his article.

Contrary to the invoicing department, the implementation of electronic invoicing has not had an important effect on the sales processes. One of the minor changes has been that the sales persons have to determine whether the customer uses online invoicing, when they negotiate the terms of contract with the customers. In the customer service, the information exchange has slightly decreased due to the better updated customer information that has to be gone through when establishing new electronic invoicing customers and has to be updated regularly. *“Also from the sales’ point of view, it is a significant benefit of electronic invoicing that the maintaining of customer information has become easier in electronic format”*.

The validity of information content in invoices has not been a problem at Lindström since the implementation of electronic invoicing. Instead, various data contents have caused extra work after the pilot projects because all the customers have special needs concerning data content in invoices. Lindström has been forced to go through the whole invoicing material before dispatch and to check delivery addresses and the requirements of data content including customer’s cost pools, e-invoicing address, account numbers and contact persons. The maintaining of the required information requires continuous cooperation.

In addition, there are other laborious effects in the information exchange caused by the implementation of electronic invoicing. *“Our invoicing system allows us to determine the accounts according to each customer’s book-keeping: in a way, we perform tasks on the behalf of our customers”*. Furthermore, if a customer has placed an additional order and this has not been taken into account in the total sum of the quota, the invoicing department has to make a manual adjustment. In the ideal scenario, the system would be integrated with the customer’s system and an electronic message would be forwarded to the very end in order to minimize manual work.

Instead, the time spent for information exchange due to reclamations caused by defects, such as a wrong invoicing price or quantity, has not decreased or increased in the customer service. Thus, the personnel still spends plenty of time going through the reclamations. However, there is one exception that the receiver’s address has not been a reason for reclamation as often as earlier.

A significant part of the reclamations is incurred due to false e-invoicing address. Controlling the address is a real challenge for the sender organization still today. The addresses are formed according to the standard SFS5748 with a maximum length of 17 characters containing the Finnish Tax Administration code 0037 according to the standard ISO6523, the Y-code (8 marks) and additional 5 marks freely chosen, for example a cost pool or a sub-level of organization. The structure of the e-invoicing address is officially defined but they are not certified by any official organization, and, therefore, they are freely formed by each individual organization [21]. The address is established only once for each new customer but they are usually changed afterwards. Especially larger customers tend to alter their e-invoicing addresses as they have several business units.

Furthermore, the speed of information exchange has changed due to the e-invoicing. The speed of invoicing and payment transactions has increased due to the electronic invoicing and due to the outsourced encashment service. The handling process of invoices has been improved and invoices reach customers three days earlier than before implementing electronic invoicing. Since the implementation of electronic invoicing in 2003, invoices have been paid three days earlier on the average, and thus the period of circulation of invoices within the company is three days shorter. One notable reason for shortening of payment times is the externalized collection of charges and therefore a realistic estimate for shortening due to electronic invoicing is only one day. In order to improve the

circle time in the future, the customers' miscellaneous payment terms should be unified.

From the sales' point of view, transparency of information exchange has not improved because the sales personnel are not able to see invoicing information via the current information system. The reporting has also remained the same because the internal reports meant for sales management have been in use both before and after the implementation of electronic invoicing, and all transactions are entered to the ledger according to the same cycle and invoiced every fourth week as earlier.

From the invoicing department's point of view, transparency of information exchange has improved and the exact dispatch time of invoices is easily available. Also, errors in dispatching are automatically reported. In addition, one positive change has been the better control in collecting overdue payments because the ledger is integrated with invoicing; for example, due dates of invoices can be easily changed. From the customer's point of view, if the invoice does not match with the original order they have to correct this manually.

For the time being, there are not ongoing development projects relating to the information exchange. The next project will relate to a transfer of customer's order reference into an invoice. Another project will relate to the form of invoicing material, because the Finvoice standard is insufficient to the purposes of Lindström (data is not transferred clearly to the customers). According to the research conducted by the Euro Banking Association (EBA) and Innopay [22, p.12], the standardization of the electronic invoice as an exchangeable message is clearly needed and there must be flexibility to meet the industry specific and individual requirements. One single standard for all invoices may be hard to achieve. Therefore, the invoice needs to be divided into (1) a generic part containing information about the trading entities and information relevant for a tax settlement, accounting and payment initiation, and (2) an industry specific part with details about the underlying trade and requirements of the authorities, which also require proper definition. The electronic invoice not only contains information relevant to the invoice, but also information relevant to the exchange of the invoice.

4.2.2. Operational linkages. The first of the two significant changes in the operational linkages, due to the electronic invoicing has been the existence of operators between the seller and the buyer. The operator's core role is to operate between the seller and the buyer, and to convert material established by different invoicing systems into the form that is

according to the receiver's requirements. The existence of operators is necessary because it would be too expensive for the sellers to convert all material to the different forms by themselves.

The operators have a significant role in the information exchange between the seller and the buyer, and therefore they should be able to "discuss with each other" and cooperate successfully in order to avoid unnecessary problems, such as disappearing invoices. The checking system between the operators could be one solution to avoid disappearing invoices and to secure seamless information flow from the beginning to the end. According to Lindström, *"operators have a huge challenge to improve their cooperation because it has not been seamless so far"*. One problem has been the conversion wall between the operators because circling systems of operators interpret invoices in different ways.

In addition, according to Lindström, the transition from one operator to another will be a real challenge and a significant obstacle if competition between operators will increase and customers will want to switch operators more often. *"The problem for us is that Lindström should be aware of all switches in their customers' operators in order to avoid transition problems"*. The change of operator codes could be accomplished without problems and extra manual work avoided by using consistent standard of all operators in the EU area. The standardization between operators has been a problem since the beginning of electronic invoicing because all operators have their own requirements and codes. *"Furthermore, sometimes operators make changes in their software without informing other parties and then the invoices get stuck somewhere along the way"*. The extra time and work spent due to the switches of operators is a remarkable change compared to the previous invoicing system.

According to Lindström, the seller produces invoicing material and it should be the operators' responsibility to solve the problems during the distribution process. Sometimes operators make changes to their software without informing about the changes to their partners. This causes delays in the invoice flow and possibly false payment requests to customers. When changes have been done by an operator, the testing should be performed properly. In a case of several operators between the buyer and the seller, it is difficult to investigate where the problem has been originated, for example, if large invoicing material disappears "on the way".

The cooperation with the Finnish operators has been good compared to the operators in Europe. The European operators operate in a different way and require contract directly with an invoice sender. The

European model causes a lot of extra costs in the case where the seller has to pay twice for invoice sending. In the near future, Lindström's main focus is on internationalization and since summer 2007, Lindström has struggled with this problematic issue. Lindström finds that the operators in Finland should be capable to find common policy with the operators in Europe because a single company in Finland has no possibilities to affect the cooperation between the European operators. For the time being, Lindström sends paper invoices via intermediaries to Europe, for example to Denmark and Hungary. The aim for the future is to send the online invoices abroad because customers there are willing to accept them.

The second main change in the operational linkages due to the e-invoicing is a broader contact surface between the buyer and the seller. Different parts in the organization have "discussed" with each other more than before. The contact surface of each customer contains one sales representative, several persons in the customer service department and the personnel responsible for invoicing. The sales persons, responsible for certain products and customers, negotiate contracts and manage customer relationships. The customer service supports the sales representatives in sales and marketing. It is divided into two teams: an active team providing service through the telephone and a team responsible for contracts and the sales ledger. Customers' contact person in issues relating to an invoice belongs to the active customer service team. When customers have complaints or questions about invoicing, their calls can be occasionally connected to several available persons. Usually new customers call to the sales representative if there are some defects in the first invoice. The sales persons are not allowed to log into the invoicing system, and therefore they are not capable to see the invoicing data; for example the delivery time of invoice. In principle, the sales department only sells, and in invoicing issues both the sales representatives and the customer service contact invoicing personnel in order to solve problems. Some customers contact directly the invoicing department in order to discuss about their invoices, and this has been a change compared to the previous invoicing system. Thus, the negative impact has been that new electronic invoicing customers have caused extra work to the invoicing department. Fortunately, this effect was predicted beforehand and Lindström had employed more resources in order to serve new electronic invoicing customers. The positive impact is that the broadened contact surface has increased commitment of the buyer.

These both main changes in operational linkages, the existence of operators and the broader contact

surface, have created dependence and therefore switching costs for both parties.

4.2.3. Legal bonds. Legal bonds between the seller and the buyers have not changed due to the e-invoicing. Customers have not made any new contracts with Lindström. *"They have made agreements with their banks and possibly with the operators"*. However, some minor actions have been made in the seller's side due to the e-invoicing: the customer's readiness to receive electronic invoices has to be defined in the contract. Secondly, the contract information of electronic invoicing customers has been inserted and updated when the customers have implemented electronic invoicing. The contract terms, such as terms of payment and pricing, have also been standardized by Lindström when the customer has implemented online invoicing. For example, a customer may have had different terms of payment in each corporation unit, and after the implementation of electronic invoicing, the corporation has only one term of payment for all units.

Customers have not gained any contractual benefits due to the implementation of e-invoicing. However, the customers have been informed about the economic benefits in the long term generated by electronic invoicing.

The new CRM system at Lindström will have more significant impacts on customers' contracts than the implementation of the electronic invoicing because all customer information including the contracts will be saved in the database of the new CRM system. Therefore, the integration between the electronic invoicing and the contracts will be stronger in the future. For example, all the customers' units can be directed to use electronic invoicing due to the improved technical properties of the new CRM system.

4.2.4. Cooperative norms. In the case of implementing electronic invoicing, the mutual goal before the implementation was to get the most benefits out of the implementation. The customers expected remarkable cost decreases, and those expectations were established mainly among the customers' financial departments, instead of the customers' purchasing departments. In addition, the customers who were involved in the pilot projects had a wish that everything would work perfectly immediately after the first distribution. Lindström's financial department expected that the cooperation with the customers would possibly increase, and therefore additional labor resources were needed in order to serve customers properly. The customer

service had only one expectation that the amount of calls due to disappeared invoices would decrease. All in all, the expectations were positive and hopeful.

Since the first pilot project, the positive goals of both parties have been achieved. *“Invoices have been sent successfully and the implementation schedules have been on time. Moreover, all customers have been satisfied. In the problem cases (most of which have been caused by the customers), the customers have been flexible.”*

The adoption rate of online invoicing among Lindström’s customers has increased at a steady rate (for example, from 26% in 2006 up to 38 % in 2007). One reason for the growth has been Lindström’s activity at the customer interface. *“We have carried out marketing of electronic invoicing by sending marketing letters to the customers twice per year”*. In addition, the salespersons campaign the benefits of electronic invoicing during the customer visits by presenting the potential cost savings. Lindström has not even considered about giving compensation, such as discounts, to the customers because the marketing has been so successful so far. The aim for the future is to continue marketing electronic invoicing more intensively, in cooperation with the banks and the operators. Lindström aims to be a reliable supplier, and, therefore, too fast growth in the adoption of electronic invoicing has not been desirable at the customer service’s expense. Besides, the initiative towards electronic invoicing has come increasingly from the customers.

The e-invoicing has had some impacts on the connector of “cooperative norms”. The expectations of both exchanging parties to achieve mutual goals jointly have increased, and this, in turn, characterizes higher cooperation. Based on the theory, the development of cooperative norms reflects an increased level of trust between the seller and the buyer.

4.2.5. Adaptations by sellers. The adaptations of Lindström, due to the implementation of electronic invoicing, have been *“one-time investments in their nature but not really large system investments and the benefit is remarkable”*. In the beginning, Lindström invested in the system producing a form of TEAPPSXML. The benefits due to the sending of electronic invoices have been so remarkable that the investment in question has already paid itself. The second investment was the system called Workflow, relating to the purchase ledger. These two main investments have been large, but benefits have also been significant. In the future, the investment in a new system that produces the form of Finvoice, is possible.

Due to the electronic invoicing, Lindström has not done any investments in information systems used in the sales or in the customer service and it has presented problems during the last few years. For example, the sales personnel and the customer service are not able to check from their system whether a customer uses electronic invoicing. Many systems at Lindström have been implemented without taking into consideration the invoicing process. The ongoing projects of the new CRM system and the new production systems will solve this problem, even though electronic invoicing is not the only reason for the implementation of those systems.

Due to the electronic invoicing, Lindström has been forced to hire more employees in order to answer for the customers’ demand. The implementation process of new electronic invoicing customers is complicated, because information of each customer has to be checked and investigated in detail, for example the e-invoicing addresses, addresses of various company units and the organization structure.

4.2.6. Adaptations by buyers. Adaptations of buyers, Lindström’s customers, due to the electronic invoicing have been large among the larger customers. They have enormous amount of invoicing material, and therefore the great amount of information has to be determined in their systems. The huge work and the invested money in the customer side bring more commitment to the relationship. It takes a couple of years until the investments made by the customers have repaid themselves. However, in the larger companies, this time period is shorter because volumes are bigger. The electronic invoicing is an effective tool to commit the larger customers and to create stronger partnerships. This was clearly evident when interviewing the person responsible for billing at Lindström: *“The big customers have a huge mass [of invoices] and they put all the data in their systems and become committed in that way...the big customers do not easily change [processes], since it requires a lot of work on their side”*. The adaptations by the buyers, such as investments in information technology, increase commitment both toward the operator and toward Lindström because the switching process from an operator to another becomes more complicated. Furthermore, if customers’ wishes can be fulfilled, it produces trust toward the seller. In addition to the increased commitment and trust, customers’ flexibility will increase.

Lindström’s goal for the adoption rate is that all customers are “online customers” some day. The

short-term goal is that 70 % of customers will receive invoices as electronic form in 2008. The sales personnel makes active and comprehensive work in marketing and a marketing letter is sent to all customers. Since autumn 2007, the initiative for electronic invoicing has been increasingly received from the customers. Lindström interprets that the customers are better informed of electronic invoicing because the banks and the operators have been active in marketing. In addition, the customers' information systems are nowadays ready to accept electronic invoices.

All kinds of customers in spite of their size have implemented electronic invoicing. However, *“there are a great amount of small customers that have too high threshold to adopt electronic invoicing”*. For example, some of these customers do not have network connections, or the number of invoices is so small that the benefits from electronic invoicing would be non-existing. The most important reason why small customers have not adopted electronic invoicing is usually their attitude. In addition, some of the larger customers use scanning and have not the readiness for electronic invoicing yet, but in the longer term they will have.

In the future, the possible adaptation will be related with the customers' human resources systems that should be integrated with Lindström's systems. For example, to get automatically information about the customer's demand for a work-wear would generate huge savings. This kind of integration requires considerable trust from the customer's part toward Lindström.

The both parties, Lindström and its customers, have made adaptations due to the e-invoicing. As stated in the theory part, adaptations contribute to building switching costs and thus the relationship-specific adaptations reflect to calculative commitment in the business relationships. It can be concluded that due to the electronic invoicing, the switching costs and thus commitment has increased between Lindström and its customers, providing value to the both parties to the extent that these investments have reduced costs and created dependence.

5. Discussion and Conclusions

In this paper, we examined six different key connectors between the buyer and the seller. The main contribution of this study is identifying the changes in these six relationship connectors. Our results indicate that one of the most significant benefits due to the e-invoicing has been the more

intensive information exchange, and thus the increased cooperation and commitment between the seller and its customers. Moreover, it was stated that the greater sharing of information in problem situations improves the quality of invoicing in the future. The most significant changes in operational linkages, due to the e-invoicing, have been the entrance of operators and a broader contact surface between the buyer and the seller. Both parties, the seller and its customers, have made adaptations due to the e-invoicing, and it was concluded that the switching costs and commitment has increased between the seller and its customers. In the literature on relationship maturity, mature relationships are sustained by dependencies which are often created by increased switching costs and commitment [23]. While the investments in electronic invoicing usually reduce costs for the buyers, the sellers benefit from the implementation of electronic invoicing in creating long-lasting relationships and even dependence. The findings are summarized in Table 1.

Table 1. Key results

Connector	Impacts
Information exchange	Increased information flow and transparency of information
Operational linkages	The entrance of operators and the broader contact surface
Legal bonds	No effects observed
Cooperative norms	Higher expectations (increased cooperation, increased trust, customers' flexibility in problem situations)
Adaptations by sellers	Investments in information technology, possibility of added value to customers
Adaptations by buyers	Increased switching costs for the buyer (increased commitment and dependence)

To facilitate the widespread adoption of electronic invoicing, the work towards open data standards should be strongly encouraged [24]. In addition, cooperation between the service providers, including operators and banks should be encouraged as they have complementary skills and contributions to make. This work is already being done, e.g., by the European Union. The EU commission has established an expert group to discuss, to promote, and to facilitate the transition to electronic invoicing. The objective of the group is to design a 'European Electronic Invoicing Framework' (EEIF) by 2009. This framework will promote the emergence and the development of open and interoperable e-invoicing

services across Europe. Further research could investigate how these improved standards in the field of electronic invoicing further affect the buyer-seller relationships.

The main limitation of our study is that it focuses on one single company. To extend the current study, we have already conducted preliminary interviews in seven companies and two public organizations.

7. References

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