



Teaching Case

Onboarding customer companies to electronic invoicing platform – developing a marketing and a partnering strategy for Tieto, an e-invoicing service provider

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Abstract

This teaching case deals with onboarding and partnering issues of electronic invoicing service providers. The students are expected to familiarize themselves with e-invoicing, a current form of many-to-many inter-organizational information systems that is being adopted widely, understand the business model of an e-invoicing service provider, and develop an onboarding and a partnering strategy for the service provider. The student (or student case group) is given one out of three profiles of e-invoicing service providers, and the students are expected to solve the case taking into consideration their specific profile. A case discussion is encouraged in class so that the student (given a profile of an e-invoicing service providers) may interact and negotiate with other students (student groups with different profiles).

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Introduction

As Mr. Jyrki Poteri, the head of the Value Networks unit at Tieto (www.tieto.com) sits in the open office in their headquarters located on the seashore just outside of Helsinki, Finland, he admires the magnificent view over the Baltic Sea. The company has only recently moved to this location and is now operating in the very same facilities that used to be occupied by the former Finnish mobile phone giant, Nokia. The walls of the building echo technological history as they have witnessed the rise, thrive, and fall of the pioneer company in mobile business that shaped how the world of today connects and communicates. Only one cardboard box per person was allowed and it was quickly unpacked, so Mr. Poteri can focus on more pressing issues right now.

Indeed, he is currently evaluating the customer listing of his company's electronic invoicing (e-invoicing) services. Having had numerous encounters and discussions with the e-invoicing consultant Bruno Koch from the Switzerland-

based consultancy company Billentis, Mr. Poteri knows that e-invoicing is rapidly gaining ground in all industries and all geographical areas, but still a very large part of the global market is there for taking.¹ Tieto is well positioned as a service provider² to take advantage of this rapid, global progress of e-invoicing. First, Finland is a forerunner in e-invoicing with the highest penetration of structured e-invoicing among companies (b2b), and this fact is working for Tieto on a number of fronts. Second, the core of Tieto lies in its excellent e-invoicing technology, which enables their companies to reap all benefits of e-invoicing. Third, Tieto has expertise on eXtensible Markup Language (XML), which is key in modern e-invoicing solutions.

Tieto enables their customer companies to produce sales invoices in electronic format and, on the other hand, to circulate purchase invoices electronically (approval process and accounting posting), leading to numerous improvements

in the sales invoicing and purchase invoicing processes. Tieto is also a platform³ for electronic invoicing – providing e-invoicing connectivity services so that business partners can exchange e-invoices efficiently.

Despite all the potential, however, Mr. Poteri feels that his unit can further accelerate its growth. Due to the economic pressures stemming from the continuously stagnating economy on one hand, and emergence of new innovative competitors on the other, getting more customers onboard of their e-invoicing platform before the competitors reach them is becoming increasingly important. Of course, one cannot deny the fact that currently Tieto has a strong market position and robust expertise in the business. But for how long? History has taught us that in order to survive in a highly dynamic competitive environment, a company must not only keep up with the competition – it has to be ahead of the competition. Being in the building that used to serve as the headquarters of Nokia constantly reminds Mr. Poteri of the pitfalls of cradling oneself into overconfidence. Thus, relying too much on a strong market position seems like a risk that Mr. Poteri does not want to take.

Therefore, Mr. Poteri feels that something must be done. He thinks that Tieto should review several different options for onboarding business customers onto their e-invoicing platform. Second, he feels that his company should review different options also for interchange and pricing vis à vis the other e-invoicing platforms. Thus, feeling the need for external consultancy on the matter, Mr. Poteri has scheduled a meeting with you to discuss the company's future strategy. Although invoicing processes are not within your core expertise area, he perceives you as a reputable and creative consultant that understands the delicate balance between IT (information technology) and business and, therefore, believes that you would be able to bring valuable insights into the pressing issues at Tieto.

As you enter the meeting room with Mr. Poteri, he offers you a cup of Fair Trade-certified medium roast coffee and starts explaining the situation. First of all, Mr. Poteri wants to gain a better understanding on what kinds of strategies Tieto could use to attract buyers and suppliers to their e-invoicing platform. He explains that getting new customers is especially important now that only a relatively small part of the market is using e-invoicing. Thus, Mr. Poteri needs you to build a clear onboarding strategy for Tieto and discuss potential mechanisms of onboarding business partners (buyers and suppliers). Moreover, he would like you to evaluate possible alternative marketing strategies and their expected impacts on market structure.

In addition, from the service provider standpoint, Mr. Poteri needs you to analyze the alternative strategies of collaboration and non-collaboration with other service providers. Specifically, he contemplates on how Tieto could expand interchange network with other service providers. Further, what pricing models should be used among the service providers? Who should pay and to whom (buyer, supplier, service provider)? Mr. Poteri wants you to analyze the economic grounds of the decisions, taking into account different strategies for revenue gaining.

Mr. Poteri stresses the urgency of this matter since e-invoicing is spreading rapidly globally and in order to stay ahead of the competition one must 'make hay while the sun shines.' He states: 'time is the luxury we do not have right

now, we need to decide on a new onboarding strategy as soon as possible and put it into motion.' While the abovementioned questions are challenging to tackle and your technical knowledge on e-invoicing is limited, Mr. Poteri has high expectations from you. To make the problem more approachable, he wants to thoroughly go over the relevant aspects of sales and purchase invoicing processes before you embark on your consultation journey.

Setting the scene – sales invoicing process and purchase invoicing process

Tieto's Value Networks unit offers its customer companies e-invoicing connectivity services and invoice process automation services. However, before going to the specifics of e-invoicing, Mr. Poteri wants to make sure that you have a good overall understanding of the basics of invoicing, both the sales and purchase invoicing processes. To ensure you two are on the same page, he starts by quoting some numbers Mr. Koch from Billentis has reported him: the total number of invoices in Europe is estimated to have already surpassed 35 billion per year. Approximately half of those invoices are exchanged between businesses, and the other half of the volume is directed to consumers. Industries with the highest invoicing volumes are healthcare, retail, and public sector.

Invoice, Mr. Poteri explains, is one of the basic transaction documents in trade, and is issued from the supplier to the buyer containing information of the merchandise the supplier has provided the buyer with. Usually payment terms of the transaction are included as well. He specifies three main types of invoices: (1) one-time invoices, (2) contract-based recurrent invoices, and (3) hourly based invoicing. Mr. Poteri turns on the projector, and the following figure (Figure 1) appears on the screen hanging on the wall of the meeting room. The figure depicts the core transaction documents exchanged between the buyer and the supplier. To the supplier, sales invoices constitute one essential part of the order to cash process. To the buyer, on the other hand, purchase invoices belong to the purchase to payment process.

Sales invoicing process

Mr. Poteri continues by explaining that a typical sales invoicing process includes two main tasks: drafting the sales invoice and sending the invoice to the customer. First, the relevant information needs to be collected to draft the sales invoice. Customer information and product information need to be brought onto the sales invoice. Whether it is a one-time invoice, contract-based invoice, or hourly based invoice, the supplier needs to include line items to the invoice specifying what goods or services have been sold to the customer. After the sales invoice is done, it is sent to the customer company either in paper using the postal services, in pdf format as an e-mail attachment, or as an e-invoice. The invoice information is transferred into the supplier's accounts receivable (AR) that contains the money customers owe to the supplier on the sale of products or services on credit.

He further clarifies that companies often have several customers and each of them have their specific preferences in what format they want to receive the invoices. Therefore, a

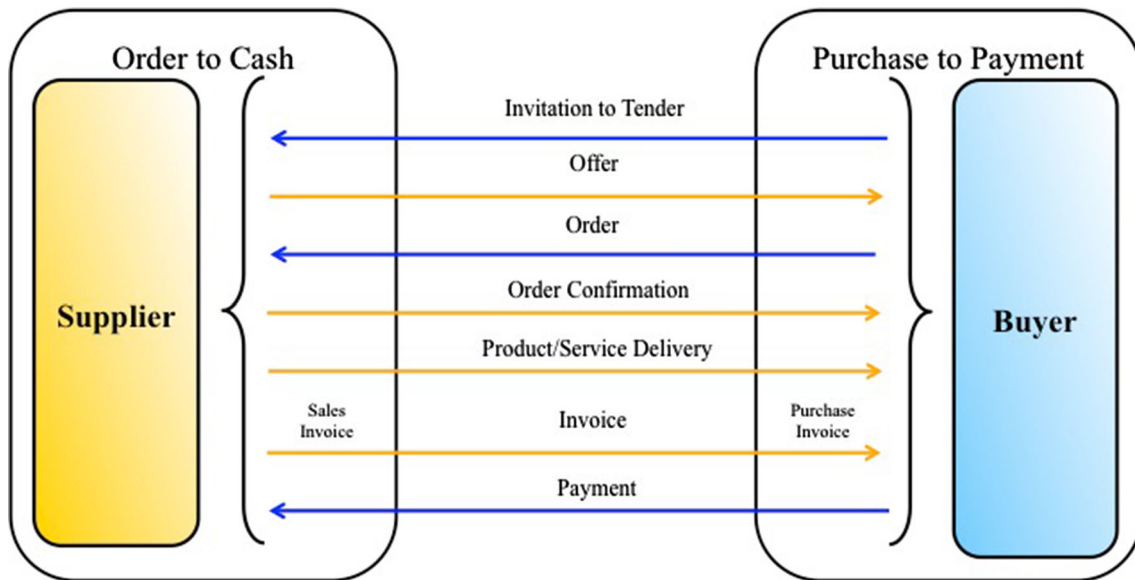


Figure 1 Invoicing as one part of the financial value chain process.

supplier might need to send invoices in paper format to one customer company and e-invoices to another customer. Companies can either cater to these different needs by themselves or, alternatively, use an e-invoicing service provider to whom they send all invoices and then the service provider forwards the invoices to the customers in the proper format. Information on different ways of sending sales invoices in different countries can be found in Itella (2010), he mentions.

Purchase invoicing process

Then Mr. Poteri turns to the other side of invoicing process: purchase invoicing. A typical purchase invoice process includes three main tasks: approval, account posting, and payment. After the invoice is received, it needs to be approved by the person who has ordered the good or the service. In larger companies, financial administration needs to interact with business units in order to get the approval that the purchase invoice is actually a valid invoice that can be paid. After the invoice has been approved, it needs to be posted into accounting systems. Here, internal and external accounting information is posted onto the invoice, he explains. Internal accounting information might include cost pool, project number, site-specific data, etc. Examples of external accounting information are general ledger account, tax codes, etc. After the purchase invoice has been approved and posted into accounting, it can be put forward to payment. The invoice information is transferred to accounts payable (AP) that comprises the buyer's short-term debt accumulated from ordering products or services from its suppliers.

Companies receive purchase invoices in numerous formats: paper, pdf files as e-mail attachments, structured e-invoices in EDI format, and structured e-invoices in XML format. If a company uses electronic circulation of invoices, all invoices are transformed into structured e-invoices. Paper invoices are scanned into electronic format so that they can be electronically processed. Companies scan the incoming

paper invoices by themselves or use a service provider to handle the scanning process. Then, the service provider forwards the invoices in electronic format to the customer company. Information on different ways of receiving purchase invoices in different countries can be found in Itella (2010).

E-invoicing paving the way for business process automation

While Mr. Poteri's bulletin about the invoicing processes was mostly familiar, standard business knowledge to you, things become more interesting as he moves on to explain the significance of e-invoicing in business process automation. Now there is a more passionate tone in his voice – the discussion is clearly moving toward the core of Tieto's business and Mr. Poteri's expertise. He begins by defining electronic invoicing as the sending or making available of a VAT compliant invoice completely by electronic means (Salmony and Harald, 2010). Mr. Poteri argues that e-invoicing can lower administrative costs for companies and, thereby, result in drastic productivity gains (Harald, 2009). Therefore, migrating from traditional paper-based invoicing to e-invoicing has become an important potential driver of competitiveness improvements in the European Union (EEI-3.2, 2007), he states. Thus, the European Commission and the member countries' governments are actively promoting its implementation (Salmony and Harald, 2010).

Different forms of e-invoicing

Going into specifics, Mr. Poteri explains that electronic invoices can be either structured or unstructured. Structured data are usually provided in Electronic Data Interchange (EDI)-based or XML-based format. Typically, each country has developed its own national formats for e-invoicing. Alternatively, the data can be in unstructured electronic format, as in e-mail-delivered and image-based PDF invoicing. You remember receiving such PDF invoices from your telephone operator, and ask Mr. Poteri to clarify the

difference between them and structured e-invoices. He tells that while the unstructured electronic invoicing types are rather commonly used, they are not technically considered as electronic invoicing since they do not allow the real business process automation. For this reason, many large invoice receivers are actively pushing through the implementation of fully structured e-invoicing.

Mr. Poteri glances toward the horizon from the office window as he begins to discuss the history of e-invoicing. Structured e-invoicing was already implemented in the 1970s when the development of EDI standard and EDIFACT (EDI for administration) enabled the transfer of structured data in electronic format between business partners (Haag *et al.*, 2013). As the information technology infrastructures further developed, EDI became a significant source of competitive advantage through cost reduction in the end of 1980s (Bamfield, 1994). However, the EDI standards were partner-specific and used mainly point-to-point connections so the implementation was virtually limited to large corporations.

Recently, new XML-based standards have enabled a shift from point-to-point data exchange to development of network-based many-to-many platforms. The development of such platforms has enabled businesses of any size to embrace e-invoicing as the companies can select any one of these platforms that best fits to their messaging needs. Since many-to-many platforms support the most commonly used data formats, setup costs are decreased and configuration work of the trading partners and the platform is reduced considerably. Implementing XML-based e-invoicing is indeed an attractive investment for all the trading partners as it usually reduces buyers' costs and suppliers are able to create long-lasting relationships with buyers, even to the extent of reciprocal dependence (Penttinen *et al.*, 2010).

Models for e-invoicing

As Mr. Poteri clicks his remote control, the picture on the screen changes and he starts explaining that several models of e-invoicing can be distinguished based on the manner in which e-invoices are transferred between organizations. The figure projected on the screen illustrates the three most relevant models for e-invoicing (Figure 2). Depending on the size of the organization and the nature of the partnerships, an organization can manage the invoicing in-house (supplier/buyer direct model) or to use a professional third party service (service provider model).

E-invoicing market models

In supplier direct model, a supplier embraces an e-invoicing solution using different channels (such as issuing EDI, PDF, or XML invoices via e-mail or customer web portal) for distributing e-invoices to its customers. This model fathoms a one-to-many relationship where one supplier is linked to multiple buyers in terms of invoicing and it is commonly applied among companies sending high volumes of invoices, and especially in B2B activities of small- and micro-sized companies. Supplier direct model enables direct contact with customers, opportunities for a close integration with back office environment and process automation, and gives the supplier influence on e-invoicing functionality. On the other hand, upgrading and maintenance costs of this kind of system tend to accumulate dramatically over the

years. In addition, Mr. Poteri notes that customer adoption may remain low as customers will have to log onto various Web sites or make multiple integration projects, and they do not get a centralized archive for e-invoices of all their suppliers.

Buyer direct model works in a similar way but from the buyer perspective; buyer implements an e-invoicing solution for receiving e-invoices via different channels. The model comprises a many-to-one relationship as one buyer provides an invoicing interface for many suppliers, and it is mostly implemented by large organizations whose suppliers are in competition with other suppliers. Typically, invoices from large suppliers come as a data stream that is imported into supplier's AP system. Smaller suppliers type in the invoice data in the buyer's web portal from where the data can be automatically processed and imported into the AP system. Mr. Poteri clarifies that this approach provides the buyer direct contact with suppliers, and close integration potential, and enables direct influence on e-invoicing functionality. In addition, the buyer is able to reduce the number of trading partner invoicing portals it must interact with. A downside, however, is the increasing amount of costly legal clarification required if mid-sized and small suppliers implement e-invoicing. Moreover, suppliers are not eager to convert their e-invoices into various formats used by different buyers or to initiate multiple integration projects. Mr. Poteri argues that these issues and the suppliers' lack of centralized e-archive for e-invoices will limit the supplier acceptance of buyer's direct e-invoicing system.

Finally, XML-based invoicing systems provide the possibility for interoperable infrastructures enabling many-to-many service provider models instead of partner-specific point-to-point connections between suppliers and buyers (which is often the case in EDI-based invoicing), Mr. Poteri explains with enthusiasm – this is where Tieto, an e-invoicing service provider, comes in. The service provider model is embraced when supplier or buyer wishes to buy e-invoice issuing or receiving from a professional third party, referred to as service provider (or e-invoicing platform). The service provider manages the e-invoice transfer process by translating invoice data provided by the issuer into the format suitable for the recipient. The service provider guarantees essential legal requirements, authenticity, and data integrity. Large issuers and recipients prefer to make full e-invoicing integration into their AR and AP systems, but SMEs tend to choose quicker solutions using, e.g., WebEDI. This way e-invoicing can be in use within hours from making the decision to implement. Using a service provider will gain lower and non-escalating costs as system development and maintenance is taken care by the service provider, and easy and efficient integration to a single point of contact. In addition, complexity decreases as VAT compliance, as well as technical and legal requirements, can be outsourced to the service providers. Counterparts will not have to log onto various different services, but just one.

Three-corner model and four-corner model in e-invoicing

Mr. Poteri changes the slide on the screen again, and new figures appear. He explains that the figures illustrate the two different types of configurations that exist for these third party-operated many-to-many models: the three-corner

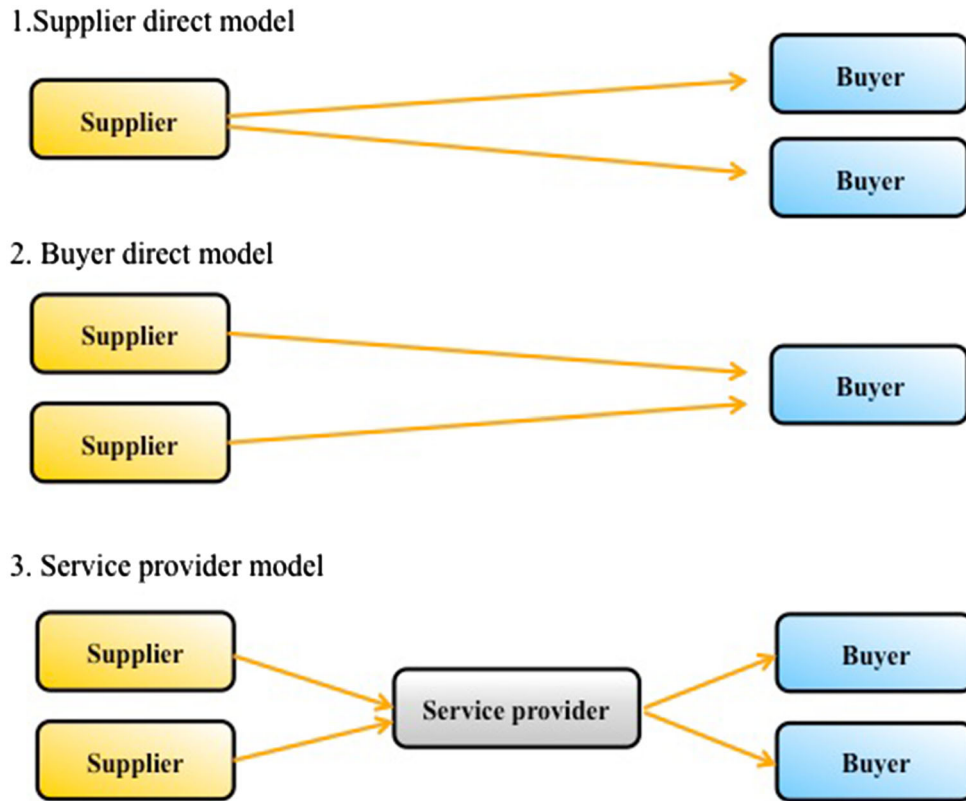
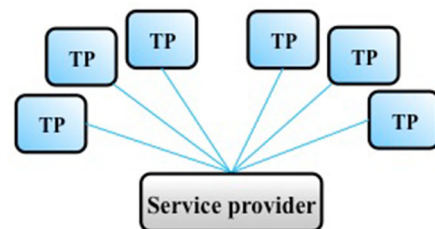


Figure 2 E-invoicing market models.

model and the four-corner model (Figure 3). In the three-corner model, the service provider enrolls all the trading partners (TPs) – buyers and suppliers – to its platform so that different counterparts have separate contractual relationships with the same platform. Businesses are able to reach several trading partners by connecting to a single platform, but they can reach only the ones that are contracted with the same platform. Thus, usually companies need to make separate contracts to multiple e-invoicing platforms.

In the four-corner model, an e-invoicing service provider makes contractual interoperability agreements with other service providers so that interchange between two platforms is enabled. Interoperability in this case means automated services provided by different service providers to each other that relate to implementing and maintaining an interconnection between their systems, and to the transmission and processing of e-invoices in an agreed-upon format (EESPA, 2013). In practice this means that a supplier can choose any e-invoicing platform that has an interchange agreement with the buyer's platform. The supplier's service provider sends the invoice to the buyer's service provider who then forwards it to the buyer. Service providers take care of required conversion of different data formats. Such interoperability agreements are a growing trend in the e-invoicing market, and both businesses and governments strive to further this development (Salmony and Harald, 2010). Moreover, the European E-Invoicing Service Providers Association (EESPA), a trade association representing the e-invoicing industry, strives to further promote the adoption of an interoperable e-invoicing eco-system. Tieto is actively involved in EESPA, and Mr.

Three-corner model



Four-corner model

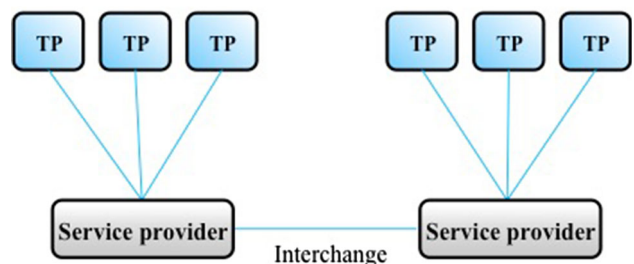


Figure 3 Three- and four-corner models for an e-invoicing service provider (TP denotes trading partner).

Poteri's colleague, Mr. Tapani Turunen represents Tieto on the executive committee of the association. Indeed, Mr. Poteri feels that interchange agreements can make the market more efficient and companies receiving or issuing invoices prefer to have only one platform contact instead of managing multiple

separate contracts. Slightly over half of banks favor four-corner model over the three-corner model in both B2B and B2C areas (SWIFT, 2008).

Benefits of e-invoicing

Mr. Poteri continues by highlighting the benefits of e-invoicing. Since the invoicing process is a central part of any value chain, he explains, improving the process performance will most likely gain benefits for multiple trading partners simultaneously (EEI-3.2, 2007). Cutting printing and postage costs produces some eminent savings, but the most essential cost reductions stem from full automation of the stages in the invoicing process and their integration to business operations (DB Research, 2010). Even savings of up to 80% in invoicing have been estimated (EEI-3.2, 2007). Mr. Poteri starts to discuss the benefits related to costs, environment, security, and service quality in more detail.

Cost savings

Migrating to e-invoicing can provide essential benefits for the invoice issuer in the four stages of the billing process: printing and sending the invoice, payment reminders, remittance and cash management, and archiving. Citing the numbers provided by Mr. Koch in their numerous meetings, Mr. Poteri explains that e-invoicing enables cost savings of as high as 57% per invoice in the aforementioned processes. Moreover, implementing e-invoicing can result in savings between 1 and 2% of total turnover. Additionally, some indirect savings such as transparency in the billing process and improved control can be achieved.

The material and labor costs of printing and sending invoices drops to zero as the whole process is electronic and fully automated. Late payments are often the result of an inefficient invoice approval process. Thus, the need to send payment reminders is reduced as payments are less often delayed, thanks to clients' automatic processing of electronic invoices. Time-consuming and expensive manual process of remittance and cash management will become less costly as remittance is automatized and cash management better optimized. Archiving e-invoices requires a minimal amount of physical storage space since one hard disk can store millions of invoices. Moreover, labor costs decrease as archiving is automated, and accessing the invoices is faster and easier than with paper invoices.

Mr. Poteri stresses that especially the receiver of the e-invoice benefits when the stages of receiving the invoice, importing invoice to AP system, and validation and matching of invoice data are fully automated and real-time. Furthermore, due to fewer errors, the need for dispute handling is decreased, and when required, it can be done more efficiently by exchanging the dispute information in real-time. Also, payment and cash management processes can be made more efficient. Mr. Poteri further cites Mr. Koch's estimations on the saving potential in these processes that can reach even 62% per invoice.

Other benefits

E-invoicing provides some apparent environmental savings as no paper is needed for producing the invoices. In Europe, for example, this has been estimated to save 12 million trees yearly from getting cut down (DB Research, 2010). Paper

invoices stress the environment also in other ways than just by consuming paper, such as energy consumption from manufacturing the invoices and producing envelopes, and emissions and fuel consumption from transporting the invoices. There are many factors in invoice processing that influence the burden put on the environment, such as the number of sheets used in paper invoicing, printing e-invoices, and the extra time spent using computers due to e-invoicing. When all the factors are taken into account, e-invoicing has been shown to be a more environmentally friendly option in terms of cumulative energy demand and emissions of greenhouse gases (Moberg *et al.*, 2008; Tenhunen and Penttinen, 2010).

E-invoicing implementation embodies some promising potential for enhancing the security and quality of invoice data (The EACT, 2007). Fully structured e-invoices are sent via secure Internet connection, and the likelihood of confidential invoice information ending in wrong hands is small compared to traditionally mailed paper invoices. Key data on the invoice are validated as soon as they are sent, and the electronic issuing enables a real-time delivery. The sooner the data on invoice is validated, the earlier corrective invoices can be sent. The issuer also has the control over whether and when customers have received the invoices. Thus, e-invoicing promotes fast and flawless exchange of the correct data. Service levels are improved when invoices are delivered in real-time and are less likely to contain errors.

Assignment

Having given you the relevant background information about e-invoicing and Tieto's business, Mr. Poteri now requests your advice. Remembering the current volumes of invoicing, the potential market value leaves room for service providers to operate, including the emerging new competitors. Thus, he stresses the importance of timely action, as he believes that in the case of a blue ocean technology like e-invoicing, fast acquisition of new customers is the key to winning. Consequently, Mr. Poteri turns to you with a clear assignment consisting of two tasks. Specifically, he wants you to analyze e-invoicing with a focus on the following two topics:

Task (1) *Onboarding of business partners*. What kinds of strategies can be used to attract buyers and suppliers to the e-invoicing platform? Build a clear onboarding strategy and discuss the mechanisms of how to onboard business partners (buyers and suppliers). Evaluate the strategies and their impacts on market structure.

Here, Mr. Poteri is looking for a clear marketing strategy on e-invoicing. What aspects should Tieto focus on when interacting with the potential customer companies? He knows that e-invoicing does good for the environment, lowers processing costs, and can be used as a platform for value-added services such as automated accounting but which ones are critical in marketing e-invoicing to customer companies? Should Tieto use a push or pull strategy in marketing? Which side should Tieto focus on, suppliers or buyers? Can either side be used as a magnet to lure in the other side?

Task (2) *Interchange agreements and pricing*. From the service provider standpoint (keeping in mind the profile given, either Tieto, SPIOS A or SPIOS B), analyze the alternative strategies of collaboration and non-collaboration with other service providers (namely the three-corner and four-corner models). Do you suggest to stimulate or keep



from developing interchange agreements? What pricing models should be used among service providers? Who should pay and to whom (buyer, supplier, service provider)? Analyze the economic grounds taking into account different strategies for revenue gaining.

Here, Mr. Poteri seeks advice on how to deal with other players in the field. Tieto is actively seeking interoperability arrangements with other service providers, but should it try to establish its own three-corner model platform? Obviously, the size of the network has important implications to the value proposition of Tieto.

How about pricing? Who should pay and to whom? Typical arrangement between platforms is that the service providers do not charge each other for the invoice data they exchange. Very often, a larger service provider sets a minimum limit of traffic they want to generate from a smaller service provider so to warrant the work of making the interchange agreement. The service provider charges its customer companies (both suppliers and buyers) a transaction fee for each e-invoice. In addition, the service provider might charge a setup fee from the customer.

As you head back to your own office from the meeting, Mr. Poteri continues to review Tieto's customer listings. However, compared to the stressful morning, he now feels more optimistic toward the future – he is counting on you.

Useful web links

Billentis Market Report

http://www.billentis.com/e-invoicing_ebilling_market_report_EN.htm

EESPA

<http://www.eespa.eu/>

Notes

- 1 See Billentis website (www.billentis.com) for the latest reports on the global e-invoicing market.
- 2 E-invoicing service providers can be defined as platforms that provide connectivity services between issuers (sellers) and recipients (buyers) of e-invoices.
- 3 By platform we refer to a digital service entity that is not limited to the physical infrastructure of the service but typically comprises an assortment of connectivity services and various expert consultancy services.
- 4 This teaching case allows the students to choose between consulting Tieto or either of the two alternative case company profiles, SPIOs A and SPIOs B. SPIOs A and B are imaginary companies, service providers (SP) operating in the field of inter-organizational systems (IOS). Background information of all the three company profiles is enclosed in "Appendix."

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Esko Penttinen is Professor of Practice at Aalto University School of Business. Esko leads the Real-Time Economy Competence Center and he is also the chairman of XBRL Finland. His research interests include adoption of inter-organizational information systems, focusing on application areas such as electronic financial systems and government reporting.

Tapani Rinta-Kahila is a Doctoral Candidate at the Department of Information and Service Economy at Aalto University School of Business. His doctoral dissertation addresses issues related to assimilation of information systems, focusing on discontinuance and inertia.

Appendix: Case company profiles

The e-invoicing service provider market consists of different types and sizes of service providers serving different types and sizes of customer companies. For the purposes of this teaching case, the student is given three profiles to choose from: (1) Tieto – a large international service provider, (2) SPIOs A – a small regional service provider, and (3) SPIOs B – a small start-up service provider.

Profile Tieto: large international service provider

Tieto is a large, international IT company, listed on the Helsinki Stock Exchange with a strong competence and well-established infrastructure for domestic and international e-invoicing. Its global personnel count is around 13,000, and due to its size the company possesses extensive resources.

Tieto has established a network of over 200,000 active trading partners as it has operated in the market already for two decades. Large size, sufficient resources, and substantial experience give the service provider credibility and some leeway in the competitive environment. However, the same factors also limit the service provider's ability to provide personalized service, as the large size accounts for stiffness and the wide client base has required standardization and streamlining of practices to some extent.

Profile SPIOS A: small regional service provider

SPIOS A is a small traditional service provider well familiar with the home market but with little experience in e-invoicing. It has built strong and lasting partnerships with its most important clients as the company entered the market already in 1999. However, it has remained a small player having a total number of clients of only 120. Being a small service provider, its resources are rather limited and this somewhat restrains its capability to implement alternative service models. On the other hand, the service provider has a steady

turnover, trustworthy reputation in the market, and an experienced management committed to find ways of attracting new clients. The service provider's main strength has been the ability to offer highly business-specific service that is adapted to the needs of the regional clients.

Profile SPIOS B: small start-up service provider

SPIOS B is a small start-up e-invoicing platform. The company was founded at the start of this year and is just on the verge of entering the market. It does not have any clients or resources yet, but is currently starting promising negotiations with several companies. The service provider is searching for funding to make its platform operational in the near future. The start-up employs five people, and the staff consists of young and capable IT professionals with a strong vision and fresh know-how on e-invoicing. Being a micro-sized service provider enables a flexibility that the larger actors do not necessarily have due to infrastructural stiffness that comes along the size.