

E-invoicing

Final step of an efficient invoicing process

May 3, 2010



E-invoicing is creating great expectations. Policymakers and interest groups expect the electronic invoice to yield potentially huge savings and open up new areas of business. The interest being shown by companies, however, is muted. Just 22% of companies use e-invoicing and only 5% of invoices are currently sent electronically.

Only integrated processes yield cost savings. The big potential savings come not from spending less on printing or postage, but from using modern, automated processes for all invoice-related tasks. Advocates of the electronic invoice believe that it will trigger these modernisations in a catalytic process, whereas sceptics see e-invoicing as more like the final stage in an already largely automated invoice processing system.

The legal situation and the lack of interoperability are holding back the rollout. Lawmakers need to grant the electronic invoice completely equal status to the paper invoice and to dispel legal uncertainties. Moreover, the technical fragmentation of the market has to be resolved. Each user has to be able to interchange electronic invoices with every other user regardless of the selected e-invoicing provider and its application. Constructing such a network requires a common technical standard that enables interoperability between the e-invoicing providers.

Standard-setting by market participants is desirable. To date no such market standard has become established. The competition between e-invoicing suppliers could be complemented by a level of technical cooperation: service providers, private and public users should jointly define a standard. The adoption of e-invoicing by the public sector would not only provide a boost to the volume of electronic invoices issued, it would implicitly also enhance the legal certainty of electronic invoicing.

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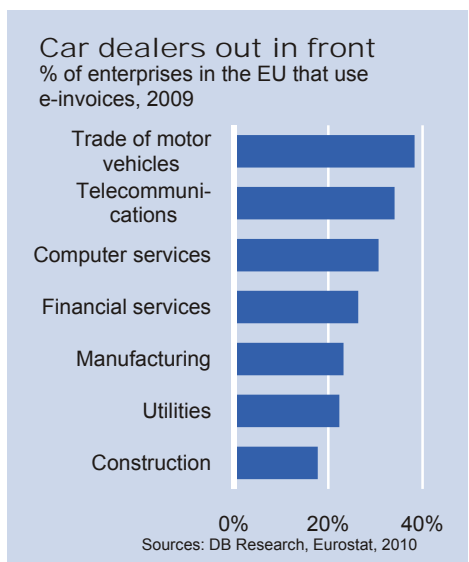
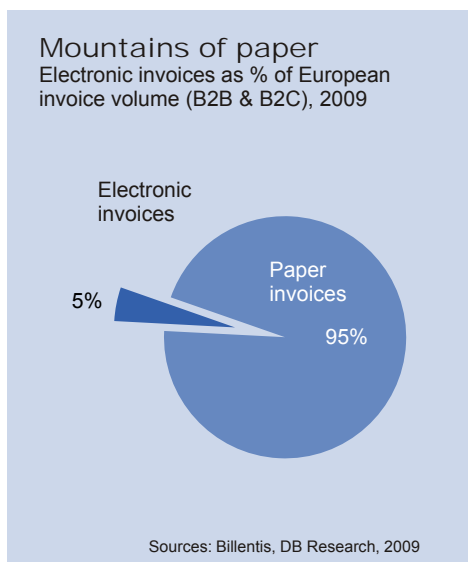
Authors
 Heike Mai
 +49 69 910-31444
 heike.mai@db.com
 Thomas Meyer
 +49 69 910-46830
 thomas-d.meyer@db.com

Editor
 Antje Stobbe

Technical Assistant
 Sabine Kaiser

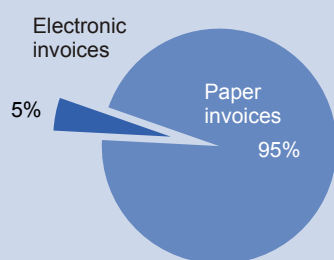
Deutsche Bank Research
 Frankfurt am Main
 Germany
Internet: www.dbresearch.com
E-mail: marketing.dbr@db.com
Fax: +49 69 910-31877

Managing Director
 Thomas Mayer



Mountains of paper

Electronic invoices as % of European invoice volume (B2B & B2C), 2009



Sources: Billentis, DB Research, 2009

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Public interest in e-invoicing

Macroeconomic benefits:

- Company modernisation (assuming a catalytic process is triggered)
- Modernisation of public procurement
- Strengthening of the EU single market
- Fight against tax evasion and accounting fraud
- Showcase for new technology (ideally as a global pioneer)

Source: DB Research, 2009

E-invoicing at Deutsche Bank

Deutsche Bank markets an e-invoicing solution for corporate clients and cooperates with the German electronic invoicing association, Verband Elektronische Rechnung e.V.

In a world of expanding electronic communication it must seem glaringly anachronistic that in 2010 one of the most important documents used in commerce – the invoice – is still predominantly issued and sent as a paper product. In Europe, companies last year issued nearly 30 billion invoices. However, only about 900 million of them were sent electronically to other firms (B2B); 500 million invoices were sent electronically to households (B2C). This means that e-invoices constituted only 5% of total invoice volume in Europe (see chart 1).¹

Politicians and interest groups are displaying a growing interest in e-invoicing. The European Commission is making efforts to evaluate and unlock the potential of electronic invoicing to boost the efficiency of the European economy. The background is the eEurope initiative (and its successors) launched as part of the Lisbon agenda. Moreover, the new Single Euro Payments Area (SEPA) is seen as an excellent platform for innovations in the payment process. And one of these is European e-invoicing.

Efficient electronic invoicing and processing reduce costs, cut red tape, are environmentally friendly and create new business opportunities for the vendors of the corresponding IT solutions. Various estimates project that e-invoicing can potentially yield savings in Europe ranging from EUR 80 bn to more than EUR 250 billion per year.² Furthermore, 12 million fewer trees would need to be cut down each year. It therefore comes as a surprise that e-invoicing has hitherto been adopted so rarely. Have the potential savings been exaggerated, or are there other obstacles?

In this report we intend to provide an overview of the deployment of e-invoicing in business-to-business (B2B) transactions above all, as well as discussing the potential benefits and the barriers associated with adopting e-invoicing and detailing the policy options.

What is e-invoicing?

E-invoicing is essentially the sending of invoices via electronic means. This simple definition belies a myriad of e-invoicing solutions that differ primarily on their depth of integration with other business processes.

At one end of the spectrum there are invoices that are merely sent as PDF files by e-mail. Apart from being sent electronically these invoices are frequently treated like traditional paper invoices, i.e. the recipients print them out and file them away. This simple form of e-invoicing is a very popular mass billing method in the B2C segment, for example for sending electricity and telephone bills. The large number of invoices in these cases means that small unit cost reductions quickly add up to major savings, e.g. from no longer having to pay for postage. Moreover, household bookkeeping methods are in most cases simpler than those used by companies, which means that there are fewer barriers to the acceptance of electronic invoices.

At the other end of the spectrum there are solutions that fully integrate electronic invoices into ordering, bookkeeping and

¹ The figures are taken from the report "E-Invoicing / E-Billing in Europe: Taking the next step towards automated and optimised processes" written by Bruno Koch and Billentis in February 2009. Billentis is a consultancy focusing on e-invoicing solutions.

² See, for example, the report "SEPA: potential benefits at stake" published by Capgemini (2007), p. 28ff. or the report "E-Invoicing 2008: European Market Description and Analysis" produced by the European Banking Association and inno pay.



settlement systems. Especially where suppliers' processes are closely integrated with those of their customers – just-in-time production in the automaking sector is one example – complex systems for e-invoicing do pay dividends. Besides invoices there are other documents that can also be interchanged electronically. Such systems are very efficient, but they are also very specific and costly. That is why such forms of electronic invoicing are currently primarily considered for use in intensive, long-term business relationships where a great deal of trust has been established. With the increasing standardisation and broader adoption of e-invoicing it is, however, likely that more deeply integrated solutions will also become interesting for a wider range of companies.

Electronic invoices can be transmitted directly between the trading partners or via a third party – a so-called consolidator. This gives rise to a variety of e-invoicing models (see box).

E-invoicing models

Biller direct:

- Direct invoice interchange
- Initiative comes from biller
- Popular for B2C bulk invoicing

Buyer direct:

- Direct invoice interchange
- Recipient determines invoice type and format
- Preferred by large firms vis-à-vis their suppliers

Consolidator:

- Invoices are interchanged via a third party, e.g. a service provider or an invoice portal
- Hub for biller and recipient

Integrated processes yield cost savings

The benefits of electronic invoicing seem to be clear. But the lion's share of savings is not made by cutting printing or postage costs but by implementing efficient processes for receiving and dispatching invoices and integrating them with other business operations. Electronic invoices can be processed directly by the companies' other IT systems, thereby averting the costs and potential errors of transferring data across different media.

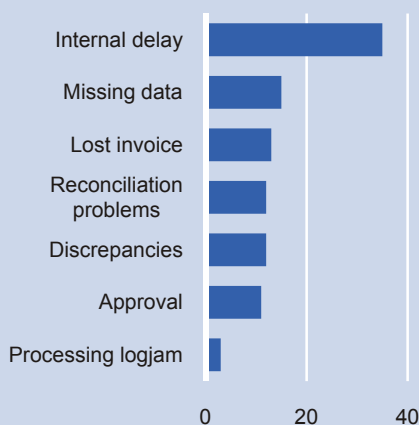
Many companies scan incoming documents and process these electronically in their networks (scanning & recognition). Errors can however creep into the scanning and recognition process, so an inspection (i.e. an additional process step) needs to be carried out. In addition, paper-based invoices can come in numerous shapes and sizes, which makes recognition very difficult, whereas electronic invoices are received in a small number of previously agreed formats.

One good illustration of the consequences of transfer problems is the inability to grant discounts for early payment. Many suppliers give discounts if the invoices they issue are paid quickly. Many customers would like to take advantage of such discounts. Surveys show, however, that primarily internal delay, such as problems with auditing hold up payments and result in the company missing out on discounts (see chart 2).

Optimisation in connection with e-invoicing speeds up invoice processing. The standardised format facilitates checking: does the invoice correspond with the order? Have the services detailed on the invoice actually been provided? Since the electronic invoice already exists as a data set it can more easily be compared with the data from other business units. This means many checks and objections (where necessary) can be executed automatically. In addition, invoice-related payment or production steps can be triggered directly. All in all, archiving is also made easier: an electronic library is sufficient. This will also make accessing archived invoices easier, since instead of searching through dusty filing cabinets the user will simply need to look in the electronic archive.³

Late payment – no discount

Reasons for late payments, % (2008)



Based on a survey of more than 280 US firms

Source: PayStream Advisors, 2009

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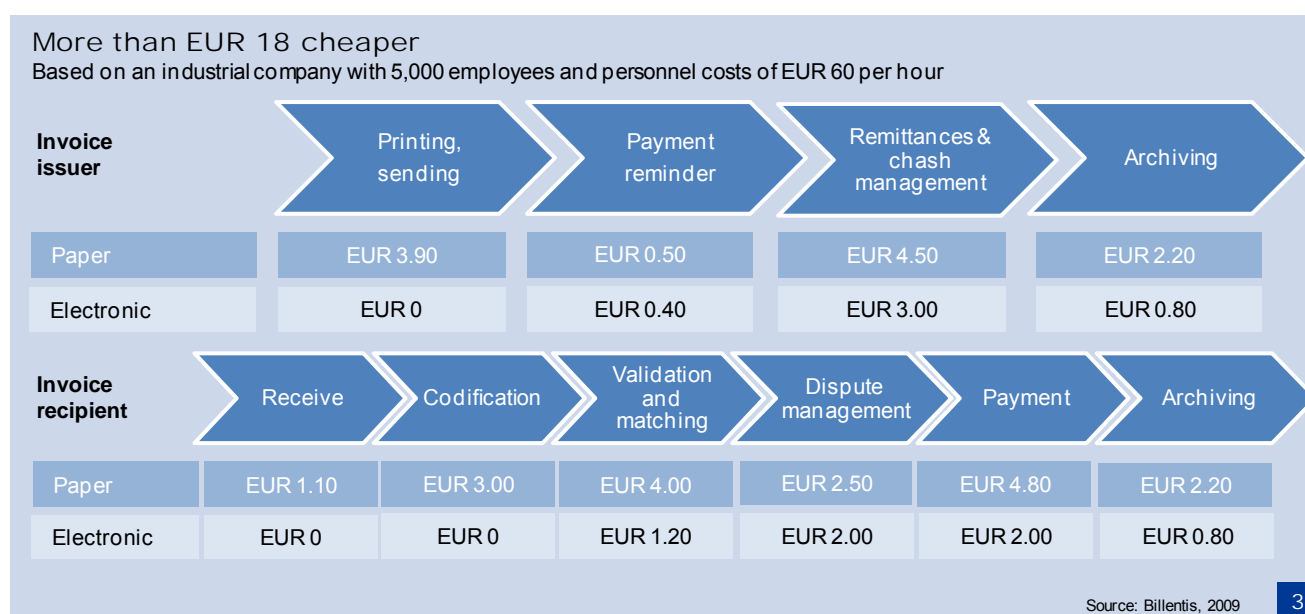
³ Of course there is the job of assuring the long-term usability of the electronic archive. This applies to both the physical storage of digital media and the readability of current storage formats with future readers and software.

How much can be saved?

The above-mentioned efficiency gains generated by electronic invoicing can help to cut costs considerably along the process chain. Under certain assumptions the automated processing of an electronic invoice can cost a total of over EUR 18 less than the unstructured processing of a traditional paper invoice (see chart 3). Of course the volume of savings that can actually be realised depends on the respective conditions and may be higher or lower. As a rule, the approval procedures associated with processing incoming invoices make the task more costly than that of issuing invoices. Accordingly, invoice recipients stand to reap greater savings than senders.

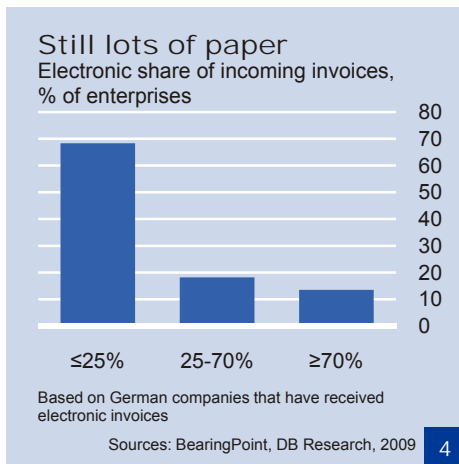
No leap from stone age to modern era

Given the roughly 14 billion B2B invoices that are currently not being sent electronically the projected savings would add up to nearly EUR 260 bn per year – about 2% of EU GDP. This figure is a theoretical amount, though, which would only apply if companies were to change over completely from stone-age methods to state-of-the-art technology. This is unrealistic.



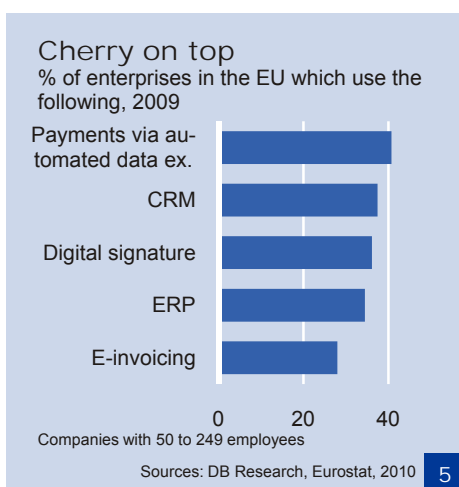
Firstly, very few companies are still living in the stone age of completely unstructured invoicing processes. The comparison is thus based on an exaggeratedly inefficient status quo and overestimates the potential for improvement. Even paper invoices can be processed electronically, for example when they are received and undergo scanning and recognition. E-invoicing would thus only cut out the scanning. Many big companies also already use automated data transfer systems for invoice documentation, e.g. in the form of EDI (Electronic Data Interchange).

Secondly, e-invoicing does not inexorably provide a passage into the modern world since this requires a comprehensive modernisation of invoice processing and its integration with other business operations. If these steps are not taken a large share of the potential savings cannot be tapped. Small and medium-sized firms for instance might accept e-invoicing in order to continue doing business with big companies. Yet, they might do so without completely adapting their processes. This may be sensible given that at the beginning of the transition only a fraction of invoices are processed electronically while the rest are sent via the traditional



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Priority to other improvements



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route. According to a survey conducted by the consultancy BearingPoint, around 70% of the firms responding stated that their e-invoicing share of incoming invoices was less than 25% (see chart 4).⁴ The smaller the volume of electronically processed invoices, however, the less it pays to invest in adapting other business operations. At smaller companies in particular this might be the reason why these investments are not made, which would limit the modernisation effect. This problem is intensified if several e-invoicing solutions are used in parallel – e.g. for different business partners. Additional investments could be required for each individual solution.

For the future many companies are banking on external e-invoicing providers and consolidator solutions: 60% of the firms surveyed by BearingPoint plan to use them. The appeal of this solution is that the provider as a rule finances a large proportion of the investment, takes care of the technical implementation and passes on the costs to the client in line with the invoice volume. This lowers the entry barriers, for as long as only a few electronic invoices are in circulation, the costs also remain modest. In addition, consolidators bundle the invoice streams and ensure that the invoices do not have to be exchanged bilaterally between all the business partners. This reduces the complexity of the network.

Final step or catalyst of an efficient billing process?

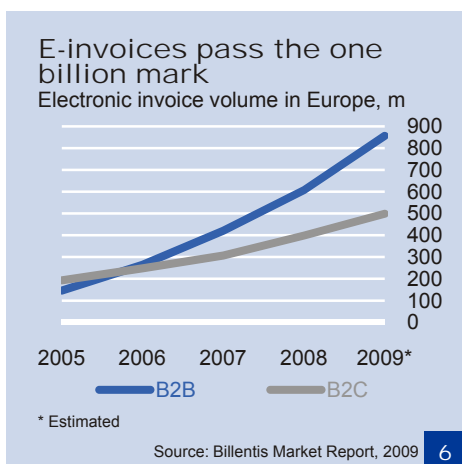
Sceptics regard the electronic invoice as the final step of automated invoice processing. They argue that priority should first be given to other steps, such as the efficient integration of invoicing into a company's IT system. After all, it is the billing process that offers the greatest potential cost savings and not the way in which the invoice is sent. According to this interpretation, the electronic invoice would be akin to a finishing touch, electronically rounding off an efficient invoicing process.

Advocates of e-invoicing believe explicitly or implicitly that the electronic invoice will trigger a catalytic process. They believe it will encourage or compel firms to modernise their processes. Even though the electronic invoice *per se* does not yet constitute a major boost to efficiency, according to this line of thinking it will nevertheless be the catalyst for re-engineering invoicing along the process chain and thereby making it more efficient.

Experience gathered to date however lends more support to the former argument. E-invoicing appears to come at the end of the modernisation process. At medium-sized companies in particular there is a clear trend. More than 40% send payment instructions to financial institutions using automated data exchange, but less than 30% use e-invoicing. Other modern IT-based business applications like CRM or ERP systems and also the digital signature are also in more widespread use than e-invoices (see chart 5).⁵ According to the catalyst argument e-invoicing would have to be a pioneer, however, and pull along other IT segments with it. This is currently not the case. This does not mean that a catalytic process cannot occur, but only that companies currently regard e-invoicing as the final step of an efficient billing process.

⁴ BearingPoint (2009). E-Invoicing-Studie 2009. Berlin.

⁵ A CRM (Customer Relationship Management) system assists in managing the relationship with the client; an ERP (Enterprise Resource Planning) system is a software package that controls and manages the use of resources in companies.



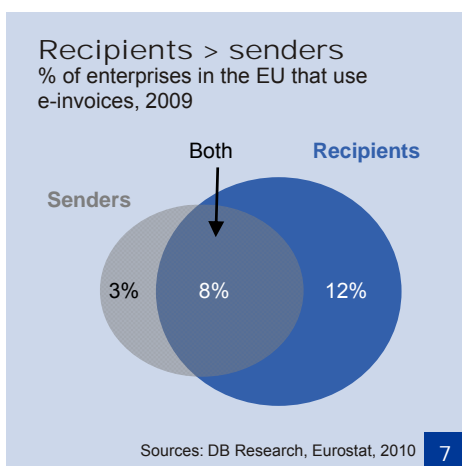
Acceptance in Europe: Few issuers, lots of recipients

The range of different e-invoicing solutions makes an appraisal difficult for there are very few statistics that differentiate between the various types of electronic invoices at present. The empirical findings contained in this report are therefore intended to give an idea of the scale of e-invoicing solutions but cannot fully reflect their diversity.

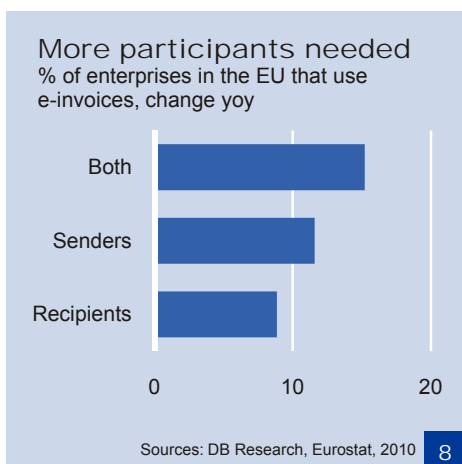
Since 2007 the statistical office of the European Union (Eurostat) has been surveying companies to find out whether they use e-invoicing. According to the data collected, around 22% of companies in Europe sent or received electronic invoices in 2009. The figures do not, however, give any indication about the intensity of use and they do not differentiate between B2B and B2C invoices.

The number of electronic invoices has risen in recent years by some 40% p.a. (see chart 6). The B2B segment has outgrown the B2C segment since 2006. The share of firms using e-invoicing in Europe rose by 17% between 2007 and 2008, and only 8% between 2008 and 2009, though. This means that the growth in the number of electronic invoices is particularly due to the more intensive deployment of the instrument by established users. This comes as no surprise, since companies mostly make a gradual transition to e-invoicing.

What is striking is that nearly twice as many firms receive electronic invoices as send them (see chart 7). Around 20% of firms receive e-invoices, and 11% send them. Just 8% of companies used e-invoicing as both billers and recipients. This indicates that e-invoicing in Europe is driven by a relatively small group of companies that send their invoices electronically. The Eurostat figures probably even overestimate the share of B2B billers as they also include firms that send electronic invoices to end-users – such as utilities or telecom groups.

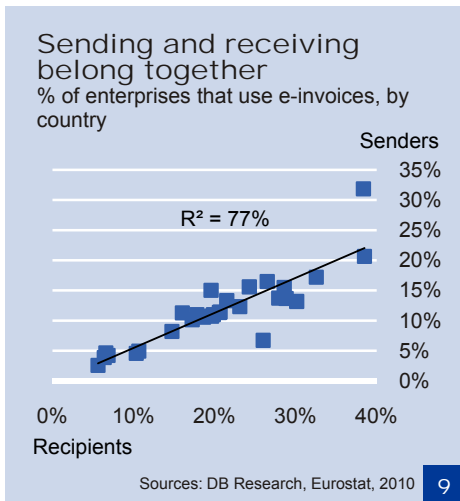


Many companies could also be receiving their electricity and telephone bills electronically (which would among other things explain the higher proportion of recipients). However, the Eurostat definition for e-invoices in the B2B segment is stricter than for invoices sent to consumers. For household consumers a PDF invoice received by e-mail is regarded as an e-invoice. In the B2B segment, by contrast, only invoices that can be transmitted straight into the recipient's bookkeeping system are considered to be e-invoices. This means a greater integration depth is required. In Germany an electronic invoice also has to carry a qualified electronic signature so that companies can claim for the deduction of input tax. An electricity or telephone bill therefore only counts as an e-invoice if it is also integrated in their accounting systems. A simple e-mail – as sent to household customers – is not enough.⁶



Also of interest are the changes within the user segments: the highest increase between 2008 and 2009 was experienced by the group of companies that send and receive electronic invoices (i.e. those that do both). The individual segments have grown much more slowly (see chart 8). For the expansion to pick up once again there have to be enough firms joining in e-invoicing.

⁶ There is no way to rule out that some companies may fail to apply these definitions and supply incorrect details. There are, however, no indications of any systematic distortions. In addition, the differences – for example between the sectors – do appear plausible.

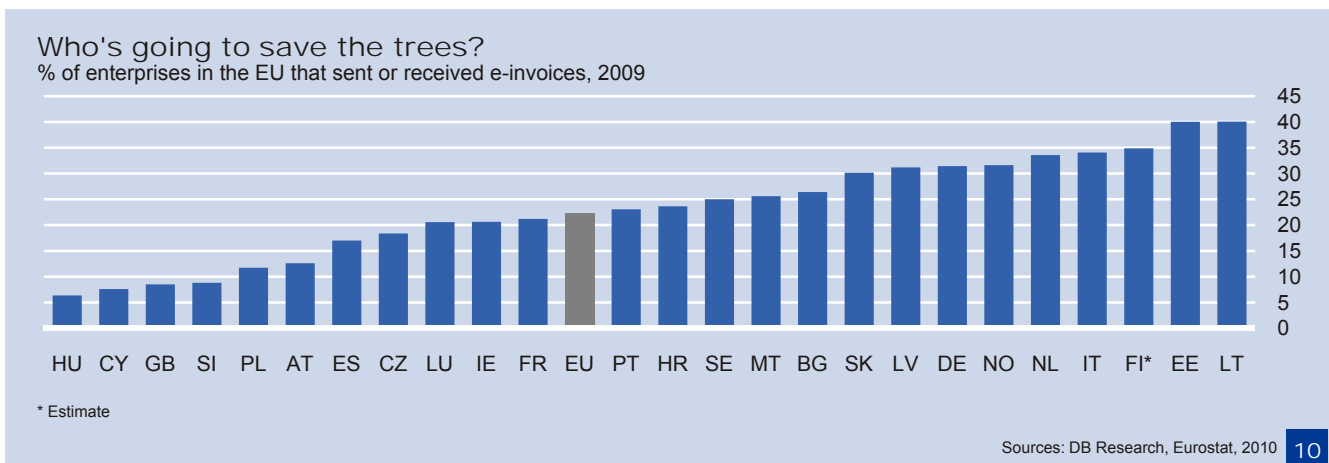


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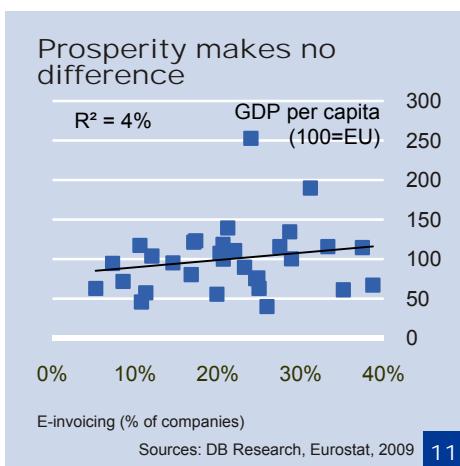
Traditional explanations do not apply

It comes as little surprise that in the European countries where lots of companies send e-invoices lots of companies also receive them (see chart 9).⁷ There are a few outliers: in Bulgaria for instance the share of firms billing electronically is below average compared to those that are recipients, whereas in Sweden it is above average. Overall, e-invoicing is most widespread in Lithuania and Estonia. Around 40% of firms there use electronic invoices – nearly twice as many as the EU average. There are no 2009 figures for Finland; based on the 2007 numbers, however, the share is estimated around 35%. In Germany 31% of firms use e-invoicing. By contrast, fewer than 10% of companies in Hungary, Cyprus or Slovenia use electronic invoicing. It is unpopular in the UK, too (see chart 10).

The adoption of information and telecommunications technology in Europe typically follows a certain pattern: the richer the country and the farther north it lies, the more intensive the use. This applies, for example, to online banking by both consumers and businesses.⁸ On the one hand, this pattern reflects the leading role played by Scandinavian countries, while on the other taking into account the fact that many technologies do not get adopted until a certain level of prosperity has been attained.



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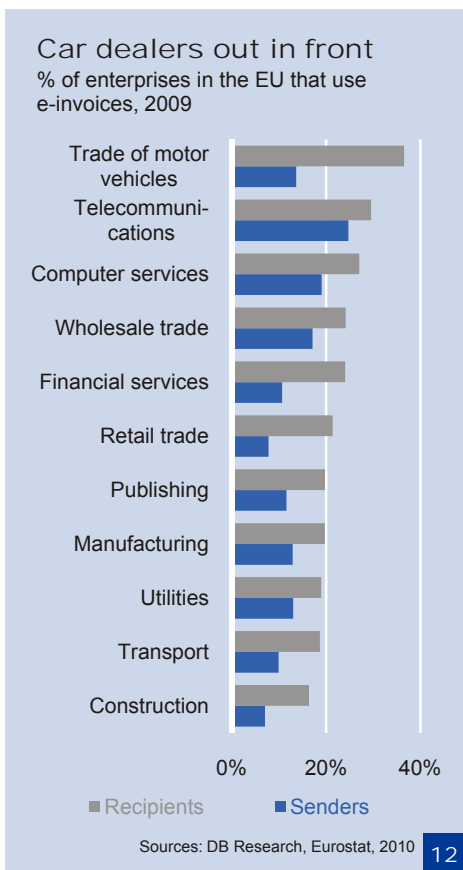
The adoption of e-invoicing does not adhere to this pattern. There is neither a clear North-South divide nor a systematic difference between rich and poor countries (see chart 11). E-invoicing thus follows its own rules, which we shall outline below.

Car dealers receive the most e-invoices, telecommunication firms send the most

The volume of e-invoices and the way they are used differ from sector to sector. In the construction and transport sectors only a few firms use e-invoices. By contrast, car dealers, telecommunication firms and computer services providers are frequent users (see chart 12 on next page). What is also interesting is that the ratio of e-invoices sent to e-invoices received varies sharply. The proportion of e-invoice recipients always exceeds that of e-invoice billers: on

⁷ This cannot be taken for granted. A sectoral comparison in the EU yields an R² of only 22%.

⁸ See Meyer, Thomas (2007). Lessons from differences across Europe: How enterprises use the internet for financial services. E-Banking Snapshot 21. Deutsche Bank Research, and Meyer, Thomas (2006). Online banking: What we learn from the differences in Europe. E-Banking Snapshot 16. Deutsche Bank Research.



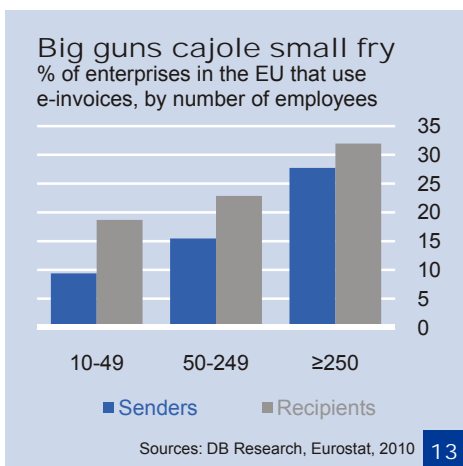
average the number of billers amounts to just 55% of the number of recipients. In the telecommunications sector this figure is above 80% and for wholesalers and utilities this figure is around 70%. In these sectors invoices sent to consumers and invoices from wholesalers to retailers are the respective key factors. By contrast, the share is only 37% in the car dealer and retail segment and 44% in the financial sector.

Several determinants of the adoption of e-invoicing can be derived from these observations. The probability of e-invoicing use rises with:

1. The IT intensity of the sector
2. The number of invoices interchanged
3. The duration and depth of the business relationship
4. The presence of dominant companies

Not only IT-intensive sectors such as computer services but also banks and insurance companies have fewer reservations about e-invoicing. Efficiency-enhancing investments pay off sooner where large volumes of invoices need to be processed. This explains the high e-invoicing share for example in the wholesale trade. The exchange of e-invoices nevertheless often requires specific investments as the processes have to be tailored to certain business partners (see below). This is only worthwhile if the business relationship is longstanding and built on trust.

In the end, one or a few dominant companies can be trailblazers and cajole their business partners to adopt e-invoicing. One example is the auto industry, where some 60% of the big German automakers use e-invoicing. They benefit from their processes being deeply integrated with those of their suppliers. The high e-invoicing share in the car dealing business is thus probably a consequence of the market clout of the manufacturers combined with the fact that the business relationship is geared towards the long term (authorised dealer).



Medium-sized firms are the most interesting target group

It comes as little surprise that large firms make more frequent use of e-invoicing than small firms (see chart 13). What is interesting, however, is that the share of senders among large companies is higher than among the small companies: the figure is 87% of that for recipient firms compared with 68% for medium-sized companies and only 50% for small firms. Presumably the big companies occupy a dominant position vis-à-vis their smaller customers and suppliers on account of their market clout and usually greater technological sophistication.

Little potential at small firms

In nearly 40% of all B2B invoices at least one small firm is involved. This is where the inertia is likely to be most pronounced. Although larger companies can demand e-invoicing from small business partners, the savings are likely to be relatively modest with small firms as a deep integration with their other business processes cannot usually be expected. Invoices interchanged between large companies – more than 23% of the B2B volume – are already heavily automated and optimised via systems such as EDI, modern bookkeeping processes and outsourcing. This trend is likely to intensify but the potential savings are limited by the advanced stage that has already been reached.



Scope at medium-sized firms

At medium-sized companies there is often more scope than at big firms to structure processes in better and more modern ways. At the same time, medium-sized firms offer greater scope for efficient e-invoicing deployment than small companies for instance. That is why medium-sized firms are the most interesting group for e-invoicing: they issue nearly 37% of B2B invoices and receive 40%. They are also under pressure from the big companies: after all, 14% of B2B invoices are sent by medium-sized firms to big companies – and the big companies will increasingly insist on electronic invoices. By comparison, less than 1% of B2B invoices are sent by small firms to big companies.

Need to convince more business partners

Achieve critical mass to make the breakthrough

The most important argument in favour of e-invoicing are the associated potential savings. Even though many an estimate appears overly optimistic the electronic invoice can help to make processes more efficient and thus cut costs. The obstacles to be overcome are investment outlays, the costly and time-consuming implementation and integration in other business processes and the uncertainty as to whether enough business partners also adopt e-invoicing.

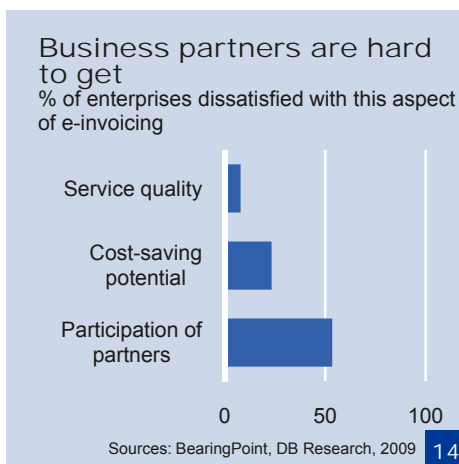
Success hinges on the network effect: the more companies participate, the more beneficial it becomes for each individual company. Conversely, this means that if too few business partners adopt electronic invoicing then it is not worth making the changeover. A critical mass has to be achieved.

The majority of companies that already use e-invoices are quite satisfied with their providers' quality of service and the potential savings, according to a survey conducted in Germany. By contrast, a majority of these companies are disappointed about the unwillingness of their business partners to adopt e-invoicing (see chart 14). This underlines the fundamental problems that currently face e-invoicing in Germany. As long as e-invoicing remains a peripheral issue there will be too many firms that are reluctant to adopt it.

In order to be able to attain critical mass there are two problem areas that need to be addressed. Firstly, there are obstacles of a fundamental nature to be surmounted which make it unnecessarily difficult for billers and recipients to choose e-invoicing. They include legal uncertainties and the investment risks due to the technology-related fragmentation of the market. Secondly, potential measures to facilitate electronic invoicing should be agreed already with regard to the EU single market. A development of national markets with subsequent EU-wide harmonisation would be expensive for all participants and should be avoided.

Establish legal basis

It is absolutely essential for the adoption of electronic invoices that they are accorded exactly the same legal status as paper invoices. This equal treatment was not, however, achieved by EU lawmakers with the directives on invoicing and value added tax in 2001 and 2006.⁹ A report on the impact of these directives, which the European Commission published in November 2008, found that the



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Technological specifications hinder user adoption

⁹ Council Directive 2001/115/EC concerning the rules for invoicing; Council Directive 2006/112/EC on the common system of value added tax.

Legal situation mixed across the EU

exact technological specifications for sending electronic invoices often kept companies from adopting them.¹⁰

Furthermore, the cited legislation granted member states an extensive range of options for transposing them into national law. Accordingly, the member states have passed differing legislation. This heterogeneous legal situation makes companies particularly wary about adopting e-invoicing on an EU-wide basis. Based on the currently applicable guidelines in several EU member states electronic invoices must thus be appended with an advanced or even qualified electronic signature in order to be recognised by the financial authorities for VAT purposes. In other EU member states the prescribed instrument for this purpose is not an electronic signature, but the sending of the invoice via EDI, or via another nationally authorised means of electronic transmission.

Amendment to the VAT directive

The European Commission has recognised the need to act and in January 2009 introduced an amendment to the VAT directive¹¹, which aims to simplify, modernise and harmonise the VAT regulations for accounting, as well as clearing away the obstacles to electronic invoicing.¹² An electronic invoice is thus to be defined in a technology-neutral manner. The validity of an electronic invoice is no longer to be guaranteed by an electronic signature, EDI or the like. Instead, as with a paper invoice the internal auditing of the invoice against the company's own books is to be sufficient. Moreover, the options hitherto available to member states in the transposition into national law will be largely eliminated.¹³ Nevertheless, the legislative process is still ongoing and the outcome might vary from the Commission's proposal of January 2009. The European Council and the European Parliament broadly support the proposals on e-invoicing but they have shown some reluctance to unconditionally abolish the technological requirements as means to prove the authenticity and integrity of an electronic invoice.¹⁴

Exact requirements for invoices

An invoice is, however, not only important for tax authorities but also constitutes one of the most important documents whatsoever in the business process. It serves as the basis and the evidence for bookkeeping and accounting, for levying of excise duties and for the dispute resolution process. External and in-house auditing processes are reliant on the invoice document. This means that the invoice document has to satisfy certain specifications with regard to its authenticity, integrity, verifiability and archiving obligations. Electronic invoices are often not accorded the same legal status as paper documents in these areas, for example in the courts or for customs' formalities. On top of this there are many regulations that pertain to invoicing – regardless of whether they are of the electronic or paper variety – which are purely national and not harmonised across the EU. For example, differing national accounting rules can

¹⁰ PriceWaterhouseCoopers, A Study on the Invoicing Directive (2001/115/EC) now incorporated into the VAT Directive (2006/112/EC). 3 November 2008.

¹¹ COM (2001) 29, Proposal for a Council Directive amending Directive 2006/112/EC on the common system of value added tax as regards the rules on invoicing. 28.01.2009.

¹² See European Commission, Press release IP/09/132, VAT: Commission proposes a review of the VAT rules on invoicing with a view to reduce burdens on business and to help Member States tackle fraud. January 28, 2008.

¹³ Only the decision about whether to require invoices for B2C transactions remains at member states' discretion.

¹⁴ Council of the European Union. Interinstitutional File 2009/0009 (CNS) of 12 March 2010, p. 6, 22. European Parliament, Committee on Economic and Monetary Affairs, Draft European Parliament Legislative Resolution, A7-0065/2010, Amendment 13. 25 March 2010.



Legal uncertainties exist

give rise to different regulations concerning invoice content and archiving obligations.¹⁵

This results in the users of e-invoicing facing unnecessary legal uncertainties and thus also costs. Especially when they enter a market e-invoicing providers have to invest in expensive legal and tax expertise to gain even an overview of the rules in the respective country. This cannot, however, always provide complete legal certainty. Many rules are subject to discretion of the authorities. E-invoicing users therefore run the risk that their electronic invoices might not be accepted by the authorities during a company audit. In practice this can result in potential users deciding against electronic invoicing. A potential remedy would be the option for a company to have its planned electronic invoicing process audited and certified by the financial authorities prior to its first-time use. It is essential that the authorities apply the effective e-invoicing rules clearly, reliably and consistently.

Expert group demands rules be simplified

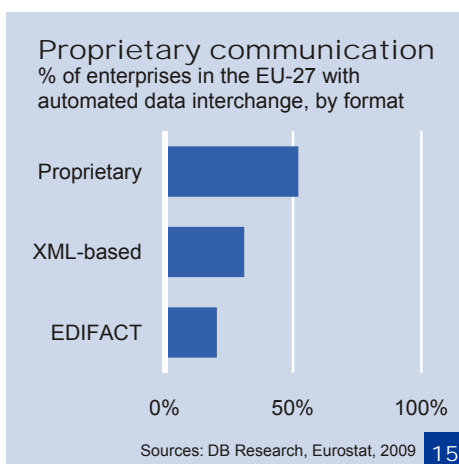
The expert group set up by the European Commission also drew attention to the legal and tax uncertainties in both its mid-term report issued in January 2009 and in its final report published in November 2009. The expert group called for greater efforts to be made to harmonise and simplify invoicing rules in the EU. And it proposes that all member states provide access to their respective national legal and tax requirements for electronic invoicing on a publicly available web page.¹⁶

Attractiveness increases with coverage

Technological standardisation necessary

A critical mass of e-invoicing users is not solely to be measured by the number of firms that operate using e-invoices. The decisive aspect is whether sufficient numbers of users can smoothly exchange and process electronic invoices. The more existing and potential business associates a company can integrate into its e-invoicing system, the more attractive this makes investment in such a system. If, however, the data transfer systems are company specific, electronic communication with other firms is bound to be difficult. Currently the legacy systems used by companies prevent a critical mass from being reached. More than half of EU companies use proprietary formats for automated data interchange, i.e. for all their communications and not only for e-invoicing. Far fewer companies use standardised XML or EDIFACT-based formats (see chart 15).

E-invoicing providers who offer their services as external contractors have not established a market standard to date. Also the high number of more than 400 e-invoicing providers in Europe has contributed to the existing siloed solutions. Clients of one and the same e-invoicing provider are in a position to exchange electronic invoices but sending invoices electronically between clients of different providers is frequently impossible because of technical disparities. To achieve a critical mass of users this technological fragmentation of the market needs to be corrected. This could be achieved by linking up the existing siloed solutions via a common standard. Such a standard would at least enable interoperability between the different e-invoicing providers. For this a basic non-proprietary standard would need to be established and adhered to by all e-invoicing providers. This standard should include both a



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¹⁵ The regulations on the archiving of invoices are to be harmonised across the EU by amending the VAT directive.

¹⁶ European Commission Expert Group on e-Invoicing. Mid-Term Report. January 27, 2009; and Final Report. November 2009.

certain protocol for data transfer and a format that describes the data content. Interoperability would not only make it easier to achieve critical mass but also further expand and promote the existing competition between providers with its positive impact on innovation activity and the value for money offered.

Lack of standards generates investment risk

However, as long as it is unclear which e-invoicing standard will establish itself in the market some companies will shy away from making any long-term investments. After all, with specific investments it is not only the direct expenditure but also indirect costs that play a part. The company decides on a particular e-invoicing solution. This could rule out business associates who do not adopt this system and this may raise the barriers when looking for new suppliers or customers.¹⁷ These indirect costs would not be incurred if interoperability between e-invoicing providers were to be achieved.

Lawmakers, public sector or private-sector market participants?

Who is to set standards?

To date, no generally accepted e-invoicing standard has become established in Europe via totally unfettered competitive processes. The European Commission has recognised that the lack of standardisation in e-invoicing is one reason for the slow growth in user numbers. E-invoicing is one pillar of the strategy of the European Commission to make the EU economy more efficient. It is therefore investigating the organisational and technical requirements for possible standards that could bring to an end the current technical fragmentation. Standardisations have already been accelerated in a number of member states. Given these standardisation efforts the question that arises is: who should set the standards. There are three potential candidates: lawmakers, the public sector as a market-influencing issuer and recipient of invoices or private-sector market participants who can set standards via cooperation and self regulation. Whatever happens, the EU-wide perspective should be taken into account.

Guarantee search process via the market

Lawmakers – at the EU level if at all possible – would be in a position to set a binding standard. The efficiency of a standard for electronic invoices set by a state authority is, however, questionable given the large number of market participants with differing business requirements. Updating technical provisions by using the legislative process is also a ponderous method. A statutory right or even the obligation to adopt electronic invoicing could vastly increase the spread of e-invoicing. Such far-reaching state intervention in the decision-making freedom of economic agents is, however, unacceptable. This would undermine the market-driven process of searching for the best solution (in this case, standard), in which each entrepreneur can judge for himself what is best. Competition and innovation on the supplier side would be choked off: an ineffectual private solution would fail the market test – an ineffectual public option cannot.

E-invoicing in public procurement builds mass and boosts legal certainty

A less invasive measure that the state could introduce – as has been done in Denmark – is to demand electronic invoicing for public procurement. The public sector's market clout would ensure its swift receipt of a large number of e-invoices and implicitly define a standard to which e-invoicing providers could tailor their services. It would, however, have to be ensured that such a standard for public

¹⁷ The impact of such specific investments has been exhaustively investigated by the US economist Oliver E. Williamson. He won the Nobel Prize for his research in 2009.



procurement would also be feasible for invoicing between businesses and consumers. Moreover, such an initiative in public procurement should be harmonised on an EU-wide basis.

Coordination where necessary, as much market freedom as possible

Self-regulation is more market-driven

An agreement between market participants on standards has the macroeconomic advantage over the other above-mentioned options that it will be judged by the largest number of potential users – both private and public. As long as the standardisation efforts are started by joint ventures that include market participants from both the supply and demand sides, user requirements of the represented groupings can be directly taken into account. Here, too, attention should be paid to the creation of standards that can be implemented throughout the EU. However, self-regulation also has its own implementation obstacles to surmount. Voluntary cooperation and decision-making by many equal partners is often costly and time-consuming and only appealing to those involved if they can be expected to yield corresponding business opportunities or cost savings. Realistically speaking, it is therefore to be expected that the cooperation efforts aimed at standard-setting will primarily come from e-invoicing providers; user requirements must, however, definitely be the main focus. Despite such difficulties, standard-setting by market participants is preferable to the other options as it is the most market-driven process.

Public-sector involvement desirable

Since the public sector – as discussed above – can play an important part in boosting adoption of e-invoicing, an active role of the public sector in standard-setting by market participants would be very welcome. A jointly established standard that satisfies public-sector requirements should allow state authorities to promote their declared objective of boosting the efficiency of the European economy by actively using e-invoicing. The use of such a standard by state institutions would have the side-effect for private users of reducing the uncertainty surrounding the legal and above all tax recognition of electronic invoices and boost their acceptance. In Germany, the recently founded *Forum für elektronische Rechnungen* is meant to be a platform for cooperation, bundling state, user and provider interests in order to promote e-invoicing. Although coordinated standard-setting is promising, it will remain open if a critical mass of e-invoicing users will be reached. This is because it remains a market-oriented process with each potential user taking his individual decision whether or not to use e-invoicing.

Coordinated standard-setting by market participants is always complicated by the conflicting imperatives of cooperation and competition and must take this into account. In order to set a standard and to enable positive network effects at all there has to be a precisely defined sphere of cooperation with transparent governance. The services of the individual e-invoicing providers in this network must, however, compete with one another. If a “privately” set standard establishes itself in the market ahead of competing standards the responsible authorities will expect the most competition possible inside the network, i.e. between the services based on the standard.

Experts are working on concrete proposals

A variety of commissions and organisations are already working on the concrete definition of EU-wide standards for electronic invoicing (see box), so that if standards are introduced – by whatever means

Who is working/has worked on e-invoicing and standards?

- European Commission:
 - Informal Task Force on e-Invoicing, 2007
- Expert Group on e-Invoicing 2008-09
- CEN (European Committee for Standardisation)
- European Banking Association (EBA)
- United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT)

Source: DB Research, 2009

– these deliberations could be incorporated. In its final report published in November 2009 the European Commission Expert Group recommended a relatively comprehensive standard for European e-invoicing, based on the Cross-Industry Invoice of the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT).¹⁸ Since the European Commission views small and medium-sized enterprises (SMEs) as the main potential beneficiaries of efficiency gains from e-invoicing, attention should however be paid to simplicity in the structure and networking when formulating standards. A manageable number of obligatory fields and a sufficient number of optional fields could meet the requirements of SMEs on the one hand and large companies on the other. Standardised interfaces to ERP systems and payment transaction modules as well as ease of use, low purchase price and instalment costs are other investment criteria that are particularly important for SMEs.

Don't forget the rest of the world

The exchange of goods and services does not stop at national boundaries. The cross-border trade within the EU represents some 21% of GDP. European exports to the rest of the world make up more than 10% of EU GDP, while imports constitute nearly 13% of EU GDP. So those who focus solely on national or European solutions ignore a not insignificant share of the invoicing volume.

Especially invoices going to or coming from countries outside Europe have to correspond with a wide variety of formats, customs and legal provisions. In addition, they are often part of additional transactions like letter of credit financing. The resulting complexity makes it more difficult to adopt e-invoicing. Specifically companies that do a large amount of foreign business (outside the EU) – their numbers are ever increasing as the globalisation era continues – thus still require special bookkeeping and invoicing processes for this.

E-invoicing has to be taken into account

Potential savings are key

The most important argument in favour of e-invoicing is its cost-cutting potential. Even though the size of these cost savings is often significantly overestimated the boost to efficiency that e-invoicing generates is undisputed, even if only the sending and receipt of an electronic invoice are taken into account. Whether e-invoicing really can become established and deliver the anticipated savings hinges on the readiness of the state and market participants to clear away the existing obstacles.

Legal certainty is a prerequisite

An electronic invoice is only acceptable to a company if it has equal status to a paper invoice in all legal respects. This is where lawmakers need to take action – at best at the EU level. Just as important is the actual implementation of this equal status and consistent application of the legal provisions concerning electronic invoicing by the respective authorities. Particular importance accrues to the reliable tax recognition of the electronic document by the financial authorities.

Achieve critical mass

E-invoicing becomes more appealing to users with the number of business partners who also participate. A network has to be established that allows users to reach all the other users. The providers of e-invoicing applications should thus at least establish

¹⁸ European Commission Expert Group. Final Report of the Expert Group on e-Invoicing. November 2009. p. 59 and Annex 7.



interoperability between themselves via a common standard. In order to develop a standard and establish it in the market the cooperation of all market participants is desirable. Up until now competition has failed to produce a standard that would end the technological fragmentation of the market. E-invoicing providers and user representatives should agree on a standard that meets the requirements of all user groups. The active participation in standard-setting of the public sector in its function as a user would be very welcome. By actively adopting e-invoicing the public sector can play an important part in the rolling-out of electronic invoicing.

Standard-setting, however, has the primary objective of enabling a critical mass of e-invoicing users to be attained. Whereas cooperation is required to establish a network, the ongoing competition between individual service providers with their respective e-invoicing applications must not be impaired. Who will supply and who will use e-invoicing and at which prices, must be the result of decisions made by individual market participants.

Hook up for net gains!

Invoicing and bookkeeping are, however, not the only areas which require modernisation. In fact, European companies are behind the times in many IT-based business applications – although their productivity suffers as a result.¹⁹ Can the electronic invoice trigger a catalytic process that modernises all these business applications in one fell swoop? Experience to date suggests that the answer is no. It appears as if companies have hitherto tended to adopt the electronic invoice to round off their otherwise already modernised processes. E-invoicing is thus more of a final step than a catalyst.

E-invoicing will supersede the paper invoice in the long term

Is paperless invoicing thus just as realistic as the paperless office? No, the electronic invoice will supersede the paper version in the long term, provided that it is accorded the same legal status as the paper document. Why send a piece of paper around the world when an electronic document is more practical and cheaper? This supersession will not, however, be total – niches will remain for the paper invoice, for example for billing to countries outside Europe or between small companies. The process will also occur more slowly and trigger fewer modernisations than some optimists currently expect. E-invoicing only develops its full effect where the e-invoice is deeply integrated with company bookkeeping systems. Simply sending invoices electronically promises to deliver only limited efficiency gains.

Heike Mai (+49 69 910-31444, heike.mai@db.com)

Thomas Meyer (+49 69 910-46830, thomas-d.meyer@db.com)

¹⁹ See Stobbe, Antje (2009). Electronic business in Western Europe: Hook up for net gains! Deutsche Bank Research. E-economics No. 70. Frankfurt am Main.

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Printed by: HST Offsetdruck Schadt & Tetzlaff GbR, Dieburg

ISSN Print: 1612-314X / ISSN Internet and e-mail: 1612-3158