

Itella Information survey: Invoicing in 16 European countries

A quantitative study based on comparative surveys of 9 037 consumers and 4 765 invoice decision-makers from enterprises in 16 countries regarding sales and purchase invoices. Executed in cooperation with Add Value Research Finland and Itella Corporation.

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Invoicing survey

The electrification of invoicing has become a more and more important research subject. However, the use of and markets for electronic invoices are difficult to specify. The normal approach, even among experts, has been not only too broad, but also too narrow. It has been too broad in the sense that value is only attached to comprehensive solutions whose security solutions cover both invoice transfers and payments. It has been too narrow in the sense that the pursuit of comprehensiveness has failed to take into account the silent change in the markets. So, behind-the-scenes email invoices have become more popular than fully electronic invoices, which have been considered more desirable. This is the main result of the research to be presented in this paper, but before going on to consider the results the concept of the electronic invoice must be examined more closely.

Targets and realisation

The main target of this research is to examine the present state of, future plans for, and prerequisites of electronic invoicing in 16 European countries. This approach covers the main types of invoicing, from paper to different electronic channels, such as email, Internet banking and direct transfer to the recipient's invoice processing system.

The enterprise part of this study presents a general overview of electronic and paper invoicing in 16 European countries and includes both outgoing sales and incoming purchase invoices. The survey was directed comprehensively at large, medium-size and smallish enterprises, although micro-businesses with less than five employees were left out of the study. The consumer part of the study concentrates on invoice reception.

This quantitative study is based on comparative surveys using representative enterprise and consumer samples from each country. All in all, 9037 consumers and 4765 invoice decision-makers from

enterprises in 16 European countries were interviewed by phone in their native language. Representative country samples varied from 487 to 1009 for consumers, and from 200 to 457 for enterprises.

What is an electronic invoice?

There is often news of electronic invoices in the media. However, much of this news is not about electronic invoices but other phenomena related to the electrification of invoicing. For this reason it is important to define what an electronic invoice is. According to the European Commission, electronic invoicing - e-Invoicing - is the electronic transfer of invoicing information (billing and payment) between business partners (supplier and buyer). The point of view of the Commission is quite juridical, and on their web pages electronic invoicing is especially related to directives on value added tax and electronic signatures.

The implementation of the electronic invoice presentation and payment (EIPP) solution, also called electronic bill presentation

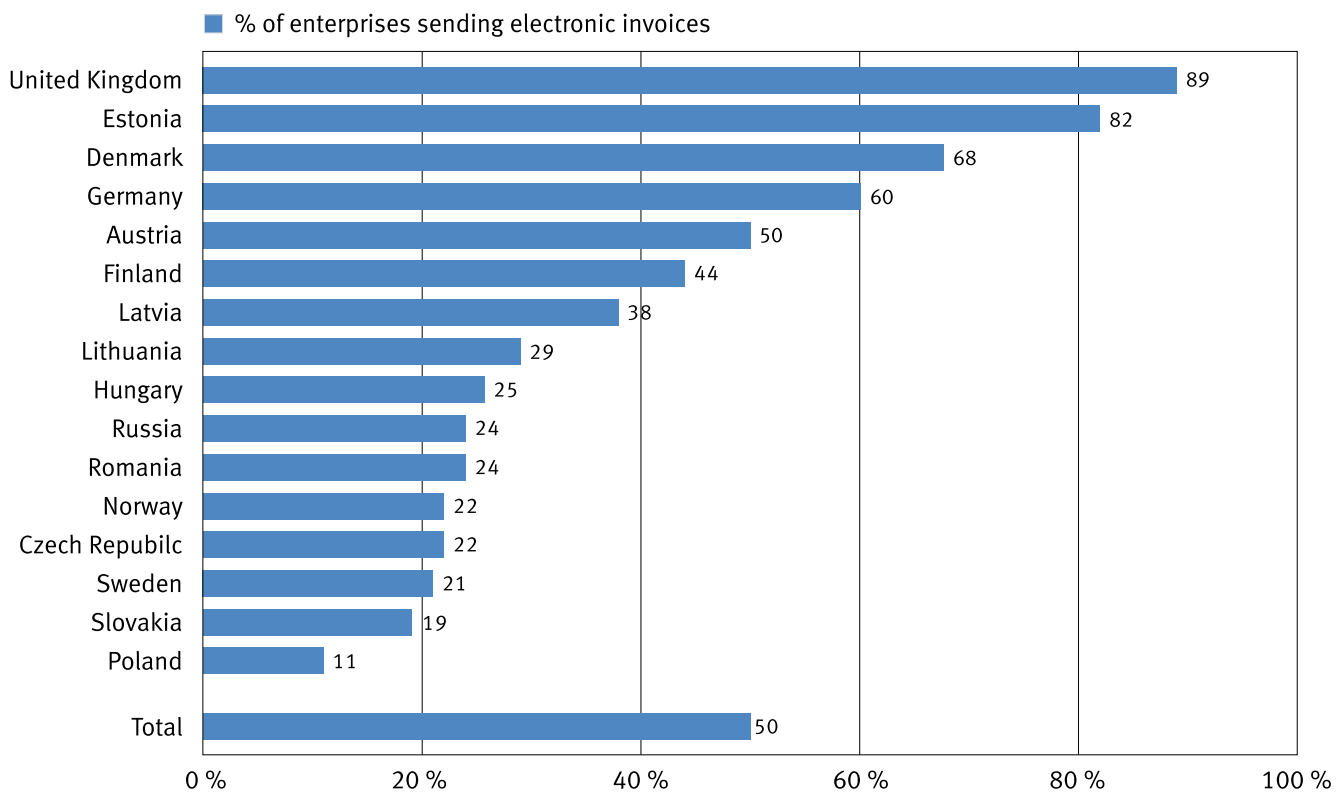


Figure 1. Percentages of enterprises sending fully electronic and email invoices (n = 4765).

and payment (EBPP), is usually set as a target in the development of electronic invoicing. The main terms of e-invoicing slang are very revealing. They reveal that electronification is mostly looked at from the point of view of banks, and the transfer of messages is not considered to be very important. However, it should be noted concerning paper invoices that nobody includes payment in the invoice and its delivery.

The focus of this study is on the delivery and transference of invoices, for which reason the payment and security solutions related to them are outside of the core area of this study. Then again, an electronic invoice can be more realistically and less restrictedly defined, and as a result a more comprehensive picture of the present market situation can be obtained, and will be more reliably measured in the survey research. Here we use the following definition: *an electronic invoice is an invoice that is transferred in electronic format from the sender to the recipient directly, without being written or printed on paper.* Because this definition has a broader semantic area than the general concept of an e-invoice, in this study the term “electronic invoice” will be regularly used in a general sense, and its subcategory “e-invoice” (as it is usually called) will be the term for a fully electronic invoice.

In this definition, the necessary and sufficient condition of an electronic invoice is that it is an electronic operation from end to end. In addition to this, one may require in principle that the invoice can be paid on the basis of this electronic document although, however, the transferring of the invoice does not necessarily involve payment. An electronic invoice defined in this way will not become non-electronic if a parallel paper invoice is sent, or, for example, at the end of the year a paper summary is sent to the tax authorities. However, the so-called hybrid solutions in which invoices received on paper are scanned to become electronic, or paper invoices printed from electronic data, are not electronic invoices. Solutions of this kind can still support the electronification of invoicing.

The present and future of electronic invoicing in European enterprises

The main interest in the development of invoicing is in enterprises. Companies interviewed in 16 European countries send 65% of their invoices to other companies and 35% to consumers. An enterprise sends a monthly average of 510 invoices, and receives 362 invoices. Most invoices are delivered as paper letters, but the different kinds of electronic invoices are also extensively used in enterprises.

About half of the European companies interviewed both send and receive at least one electronic invoice a month, which can be, for example, an email invoice. Both electronic sales and purchase invoice use varies considerably in different countries. The largest number of electronic sales invoice users is found in the United Kingdom, Estonia and Denmark. At the top in the introduction of electronic purchase invoices are the Baltic countries and Denmark. The lowest number of both sales and purchase invoices are transferred electronically in Poland (figures 1 and 2).

The main forms of electronic invoicing are the email invoice and the fully electronic invoice, and the latter can be an Internet invoice, EDI invoice or other inter-company electronically transferred invoice data. Almost every second enterprise sends and receives at least one email invoice in a month. Every fourth enterprise sends at least one fully electronic sales invoice, and every sixth receives at least one electronic purchase invoice in a month. As the size of a company grows, the proportion of electronic invoices it sends and receives also grows. The size effect is strongest in the sending of fully electronic invoices. The effect of company size is slightly smaller in purchase invoices, particularly in fully electronic ones.

The wide-ranging use of email invoices is the most surprising finding of this study. The email invoice is not only a minor solution for small enterprises; it is comprehensively used in all size classes. It has twice as many users as have fully electronic invoices, which, according to the narrow traditional definitions, are the only real

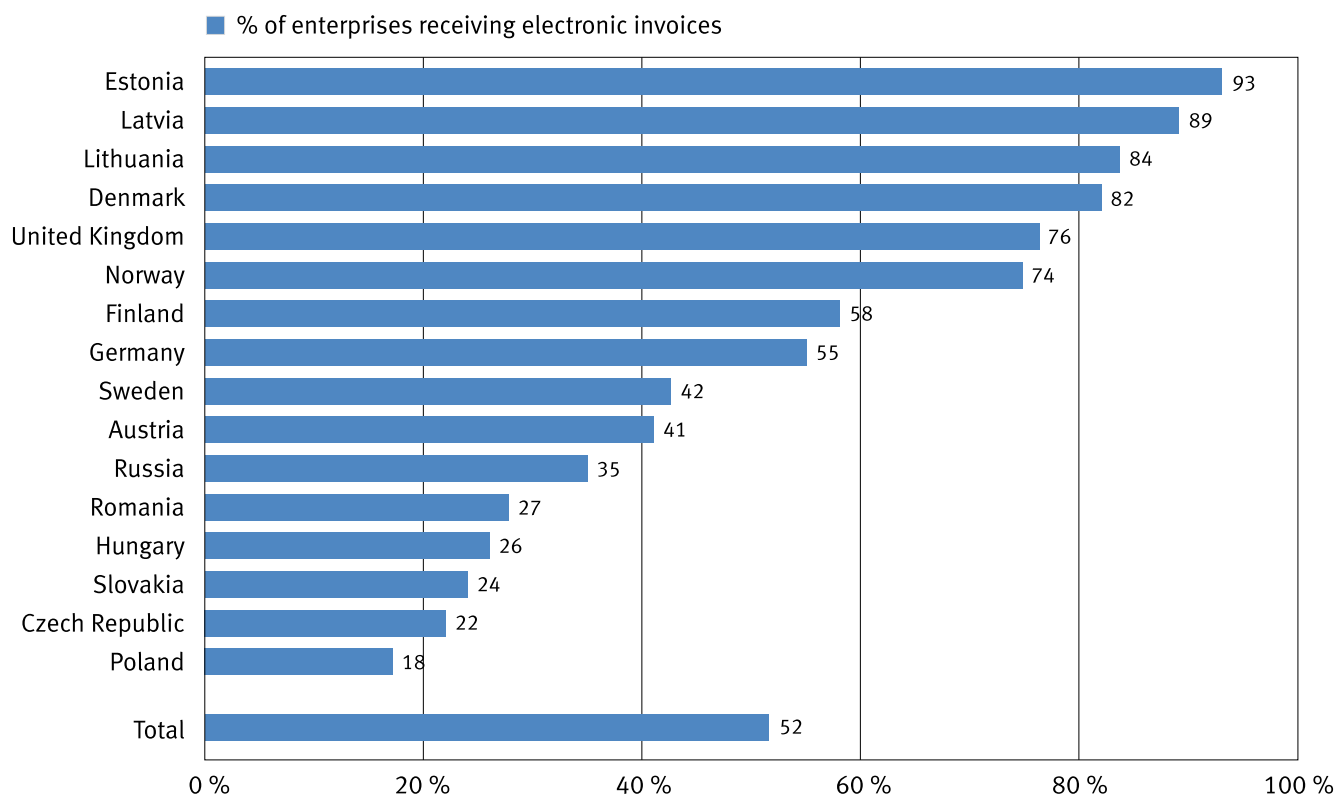


Figure 2. Percentages of enterprises receiving fully electronic and email invoices (n = 4765).

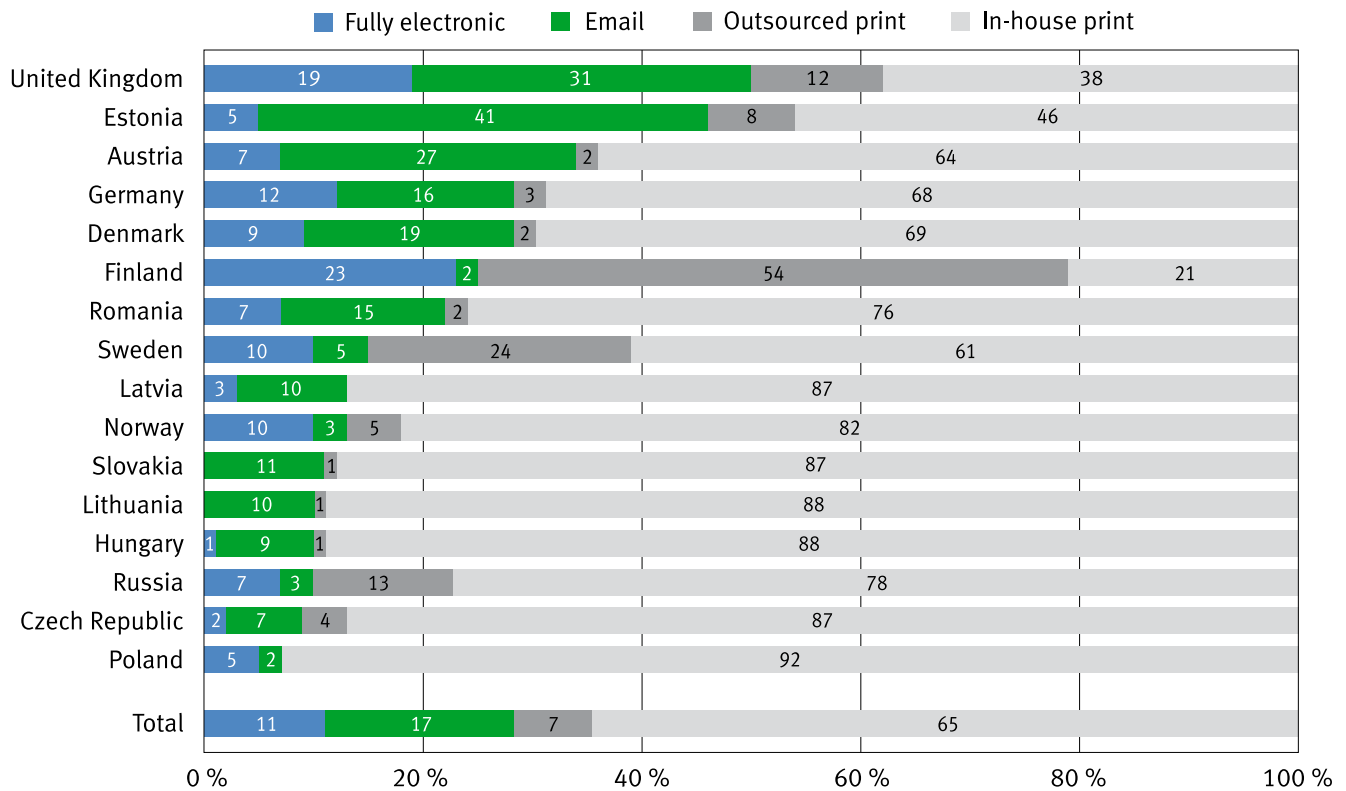


Figure 3. Invoices sent by enterprises according to delivery and processing channels, % of invoices (n = 4765).

electronic invoices, or e-invoices.

What is behind this surprising popularity? The email invoice is fast and flexible. It needs no expensive and time-consuming invoice system implementations. It is immediately available for most enterprises. Email may be the only electronic invoicing channel for small enterprises, but it can also be used as a complement to fully electronic invoicing solutions in any enterprise. The email invoice does not necessarily totally execute the invoicing process, but it enables and quickens many transactions, which would not perhaps even have occurred without email invoicing.

Because electronic invoicing is still in its transition stage, the share of companies which use electronic invoices is distinctly greater than the share of electronic invoices. Even though 50% of the enterprises interviewed send electronic invoices, the share of electronic invoices sent continues to remain under 30%. The share of email invoices is clearly larger than the share of fully electronic invoices sent in Europe, and it is email invoices that dominate electronification in most countries, which is additional proof of the surprising popularity of email invoices (figure 3).

European countries are at quite different stages in the electronification of invoicing and the outsourcing of printing. Fully electronic invoices are stressed in Finland and the United Kingdom. Email invoicing is emphasized in Estonia and again the United Kingdom. The greatest emphasis on outsourced printing is found in Finland and Sweden. Sales invoicing is least electronified in Poland, the Czech Republic, Russia and other Eastern European countries.

Enterprises can be segmented according to their principal ways of sending sales invoices. Cluster analysis (k-means clusters in the SPSS) was used for this, and the best solution split enterprises into five segments. It proved that about 69% of all enterprises are senders of in-house print. Because the invoice volumes of these enterprises are below average, they send only 66% of all invoices. The first segment of in-house print senders sends invoices almost exclusively

to other enterprises, the second segment mainly to consumers. B2B in-house print senders are emphasized in the manufacturing industry, and mainly B2C in-house print senders are stressed in the public sector and small, five-to-nine-employee companies with a turnover of less than €400,000. Both in-house print sender segments have an over 60% share in all other countries except the United Kingdom and Estonia, and a share of more than 90% in Poland, Slovakia and Lithuania.

The third segment, senders of outsourced print, is formed of quite a small share of enterprises. The companies belonging to this segment send their invoices evenly both to consumers and enterprises. Invoice volumes are above average and this solution is emphasized in the trade branch. It is also known that in the real world outsourced print is especially used for consumer invoicing, and a few consumer invoicers with huge volumes also use outsourced printing, although these were not included in the sample for this research. The senders of outsourced print had the highest share in Finland.

The remaining two segments send mainly electronic invoices, and have almost the same share of enterprises in Europe. In the fourth segment, email senders, invoice volumes are average, which again reflects the usability of email invoices, regardless of company size. Emails are sent mainly to other companies, but enterprises in this segment belong to all branches of industry and enterprise size classes. The email segment is clearly the largest in Estonia, covering almost every second enterprise.

The fifth segment, electronic invoicers, sends about half of its invoices in fully electronic format, although they have to use other methods for the other half of their sales invoices. Invoice volumes are clearly higher in this segment in which enterprises have usually implemented electronic invoicing systems and use them mainly for B2B invoicing. This segment is emphasized in bigger enterprises with more than 50 employees and a turnover of over €10,000,000. The segment of electronic invoicers is biggest in Denmark, Finland and

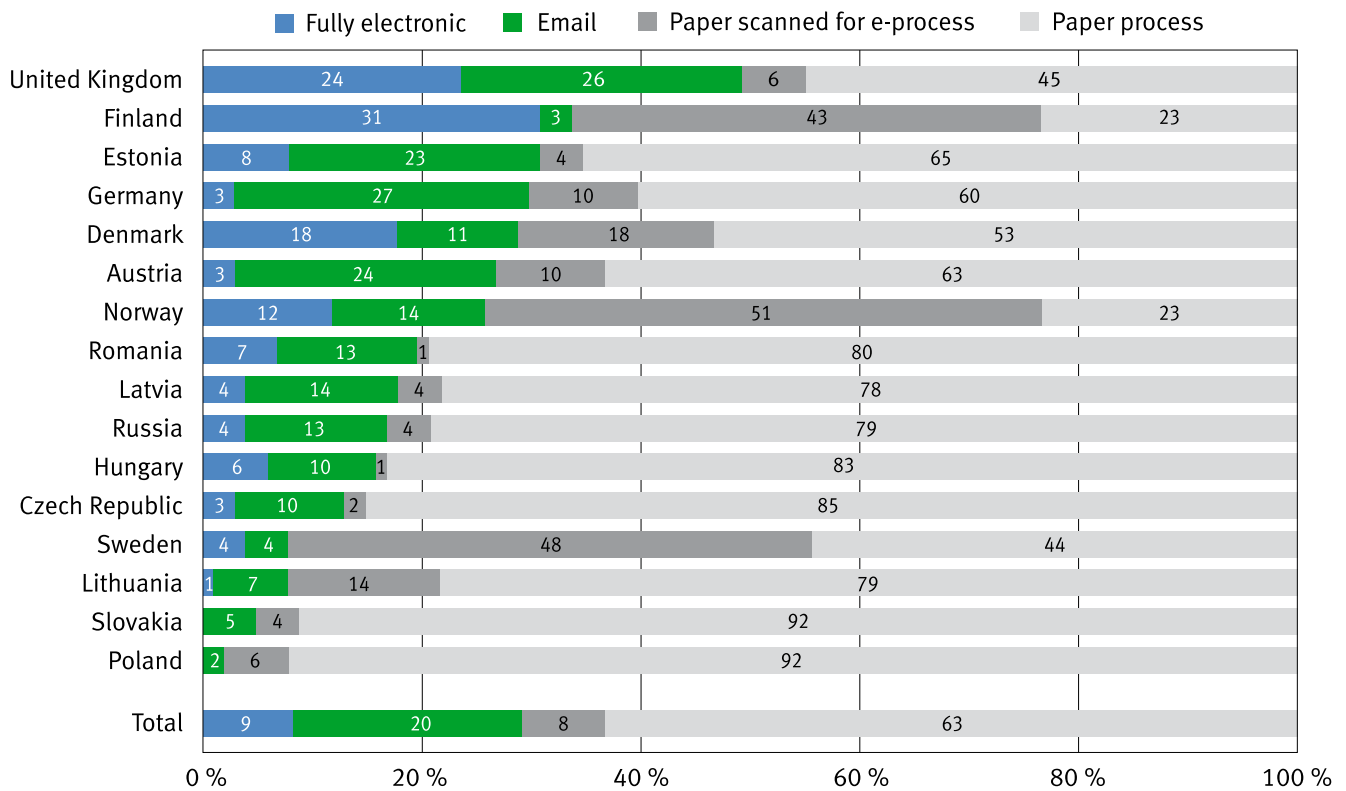


Figure 4. Invoices received by enterprises according to delivery and processing channels, % of invoices (n = 4765).

the United Kingdom.

The shares of electronic purchase invoices in Europe are quite similar to those of sales invoices. About 52% of enterprises receive electronic purchase invoices, and their share of invoices is less than 30% in Europe. Email invoices also dominate the reception of electronic invoices, and again there are quite large differences between countries. Email has a significant share in Austria, Estonia, Germany and the United Kingdom. On the other hand, the focus is on fully electronic invoice reception in Finland and Denmark (figure 4).

The scanning of received paper invoices for electronic processing is particularly emphasized in the Nordic countries. Elsewhere in Europe most scanning is mainly done just for archiving. Scanning is used more by enterprises that have large volumes of invoices, and companies receiving most invoices directly in their electronic invoicing system also do the most scanning for processing. Email receivers scan primarily for archiving purposes, and those receiving mainly paper invoices scan the least, and mostly for archiving, too.

Enterprises can also be segmented according to their main ways of receiving purchase invoices. In this case, the best cluster solution divided companies into three segments. The first and biggest segment receives almost all their invoices on paper. Because invoice volumes to these companies are below average, their share of invoices is only 61%, though their share of enterprises is 71%. Paper reception is emphasized in the manufacturing branch and smallish enterprises with 10–49 employees and a turnover of €400,000–2,000,000. The paper reception segment has a share of clearly over 60% in all countries other than Estonia and the United Kingdom. It has a share of over 90% in Lithuania, Poland, Slovakia and Sweden.

The remaining two segments receive mainly electronic invoices, and it should be noted that the more invoices an enterprise receives, the more advanced will be the electronification of their reception. Enterprises using mainly full electronic reception get almost twice as many invoices as those receiving almost all invoices on paper.

Even those enterprises receiving their invoices mainly via email have invoice volumes clearly above average. In total, 29% of companies receive mainly electronic invoices, but the proportion of invoices these companies receive is no less than 39% of the total volume of all invoices received by companies. The fully electronic reception segment is emphasized in the public sector, and according to country it is biggest in Finland, Denmark and the United Kingdom. The email segment is stressed in the construction and trade branches, and it is clearly greatest in Estonia.

The larger enterprises are more advanced in electronification. Furthermore, in these companies there is confidence that electronification will continue to advance faster. Trust in electronification also becomes stronger the more a company's own invoicing is electronified. Enterprises that send and receive mainly fully electronic invoices are confident of a more electronic future, next come high-level senders and receivers of email invoices, whereas those who send and receive mainly paper invoices make up the tail end.

The most optimistic expectations of the progression of electronification are to be found in the Nordic and Baltic countries. Slower electronification is forecast for Germany and Eastern Europe. Comparison with the earlier invoicing study of five countries illustrates that the share of fully electronic invoices has clearly increased since 2008 in the Nordic countries, but not so much in Germany. The change in the use of email invoices is not known because the share of email invoices was not measured in the previous study. Further, trust in the future increase in electronification has grown remarkably and is most evident in the Nordic countries. In Germany similar progress could not be found.

Table 1 sums up the evaluations of change. Expectations concerning the progress of electronification are compared to the present state of electronification in each country, and 16 European countries are ranked according to that difference in both sales and purchase

invoicing. The fastest change is expected in the Nordic and Baltic countries in both sending and receiving invoices, and the slowest progress is awaited in Eastern Europe, Germany and Austria. It seems that trust in the speed of change is greater in those countries in which there is a more advanced infrastructure for electronic invoicing.

The transfer to electronic mode of those enterprises using paper invoices alone may be a challenge. However, the most obvious alternative to the paper letter has been email, both in sending and receiving invoices. A much bigger threshold in this case is the introduction of fully electronic invoicing systems, and steering paper invoice users to adopt these will not necessarily occur without administrative decisions or additional fees for paper invoices.

Every second enterprise in Europe has at least partly outsourced some financial activities connected with invoicing. Outsourcing has been most popular in Finland and the United Kingdom, and least used in Latvia, Lithuania, Poland and Russia. Every fourth enterprise has outsourced its bookkeeping. One fifth of enterprises have outsourced debt collection, and the same proportion payroll, travel and expenditure invoices. Less-frequently outsourced activities are sales invoice printing, purchase invoice scanning and invoice archiving, each outsourced by every ninth company.

Enterprises were asked how important they evaluate some targets in their invoicing development projects to be over the next 2–3 years. It was not surprising that cost savings proved to be one of the main targets. However, it was striking that saving the environment by using electronic invoicing was considered an equally important target in purchase invoice projects, and even the most important target in sales invoice projects. Green values seem to be a good way of marketing invoicing projects to both customers and suppliers.

Three targets were situated in the middle on the estimation scale. The development of electronic invoicing systems was considered

slightly more important for sales invoice projects. On the other hand, centralizing invoicing to one service unit, FSSC, and decreasing manual work and personnel were estimated to be slightly more important for purchase invoice projects.

Regardless of the fact that every second enterprise has outsourced at least some financial operations, outsourcing of invoicing activities was considered clearly the least important target. Maybe companies prefer to buy invoicing services and are less inclined to outsource invoicing activities, in spite of the fact that the difference can in some cases be likened to a line drawn through water. However, there are two prerequisites which make outsourcing more desirable. Firstly, of those companies that mainly send and receive electronic invoices, more than half consider outsourcing projects of invoicing important. Secondly, interest in outsourcing also grows when something else has already been outsourced in the company and thus a threshold has been overcome.

Consumers as invoice receivers

Consumers receiving invoices in Europe get an average of seven invoices a month. The figure is slightly smaller for the Baltic countries, Russia and the United Kingdom. Most consumers still receive paper invoices in all countries, although those who no longer receive invoice letters can actually be found. In Denmark and Estonia every fifth consumer says they receive their invoices only electronically.

Two fifths of consumers receive at least one electronic invoice during the course of a month. Those who receive at least one invoice electronically are a majority in six of the sixteen European countries studied. The Internet, email, and both side by side are fairly evenly used as channels for receiving electronic invoices (figure 5).

The 41% share of consumers using electronic invoicing means that we are still at quite an early stage of adoption, and for this reason the share of electronic invoices is distinctly smaller, at 26%. The proportions of email invoices and invoices received through the Web are quite close to each other. The single most popular electronic invoice format is the email invoice. On the Web the most popular format is that of invoices received directly to the recipient's own Internet bank. The least used are generic invoice portals, and the reception to a seller's separate web site is quite unpopular, too.

Electronically received invoices have the highest share in the Baltic countries, Denmark and Norway. They are least used in Russia, Poland and elsewhere in Eastern Europe. Email has the biggest share of electronic invoices in most countries, and it is especially popular in the Baltic countries and the United Kingdom. An exception is the Nordic countries, where most electronic invoices are those directly entered into the customer's Internet bank (figure 6). Reception of electronic invoices has increased in Finland, Sweden and especially in Norway since 2006. No similar change has taken place in Germany; there this study has already been carried out three times.

Besides present channels of invoice reception, channel preferences for the next 2–3 years were also studied. In seven countries there is a preference for the majority of invoices to be transferred to electronic reception channels, and in all countries it is hoped to electrify at least one fifth of invoices. The most popular electronic channel is still email, and only in the Nordic countries is it the Internet bank (figure 7). The future preference for electronic invoices is highest in Denmark and Norway, and it has increased most since 2008 in Denmark and Norway, too.

A comparison of correlation coefficients between present use and future preferences for invoice reception channels reveals interesting dependencies. It was found that the reception of several invoices through any channel tends to increase the desire to use this channel

Sales invoices	Change	Purchase invoices
Finland	Very fast	Sweden
Denmark		Finland
Norway		Denmark
Lithuania	Fast	Lithuania
Latvia		Norway
Sweden		Poland
Estonia		Latvia
Poland		Slovakia
United Kingdom		Estonia
Slovakia	Quite fast	Russia
Germany		Germany
Czech Republic		Austria
Russia		United Kingdom
Hungary		Hungary
Austria	Quite slow	Czech Republic
Romania		Romania

Table 1. Enterprise evaluations for increase of electronic invoicing in 2-3 years time

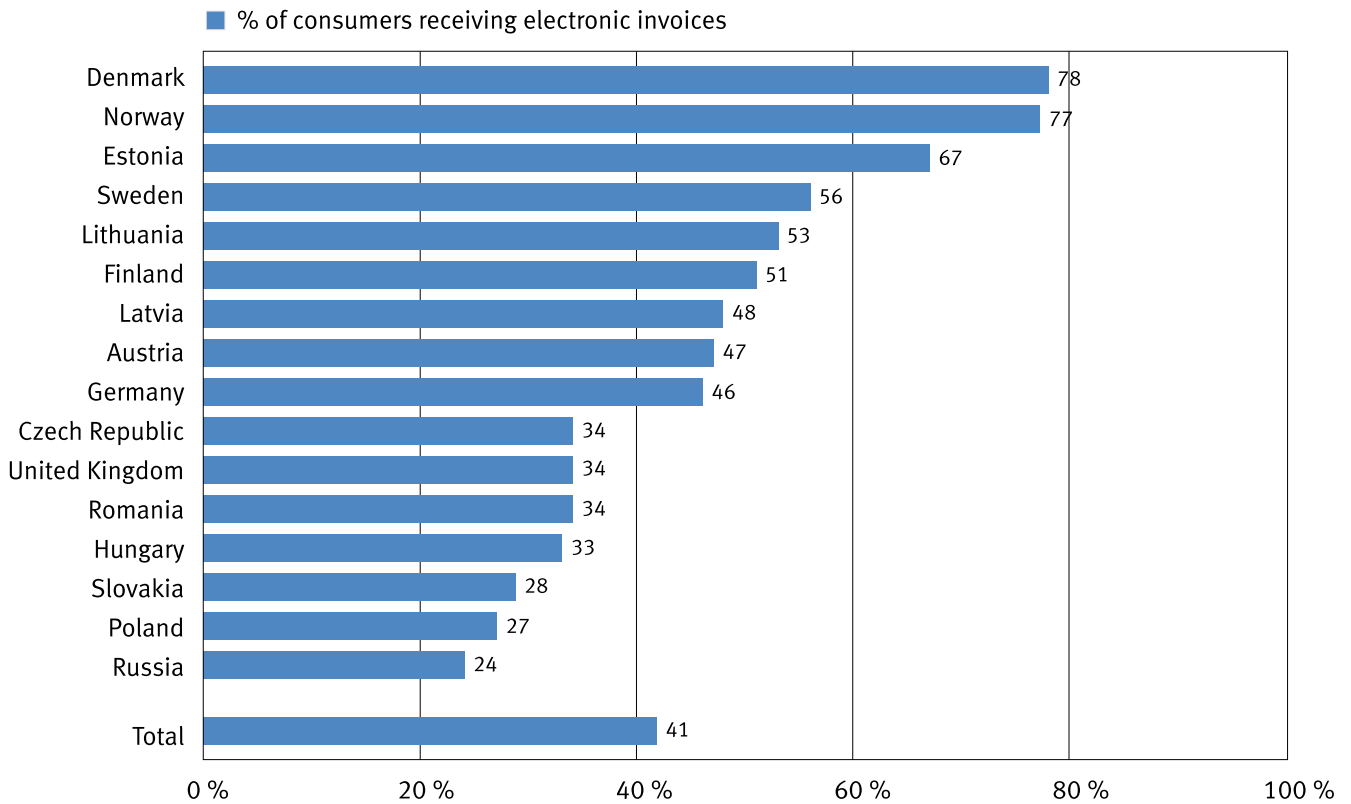


Figure 5. Percentages of consumers receiving fully electronic and email invoices (n = 9037).

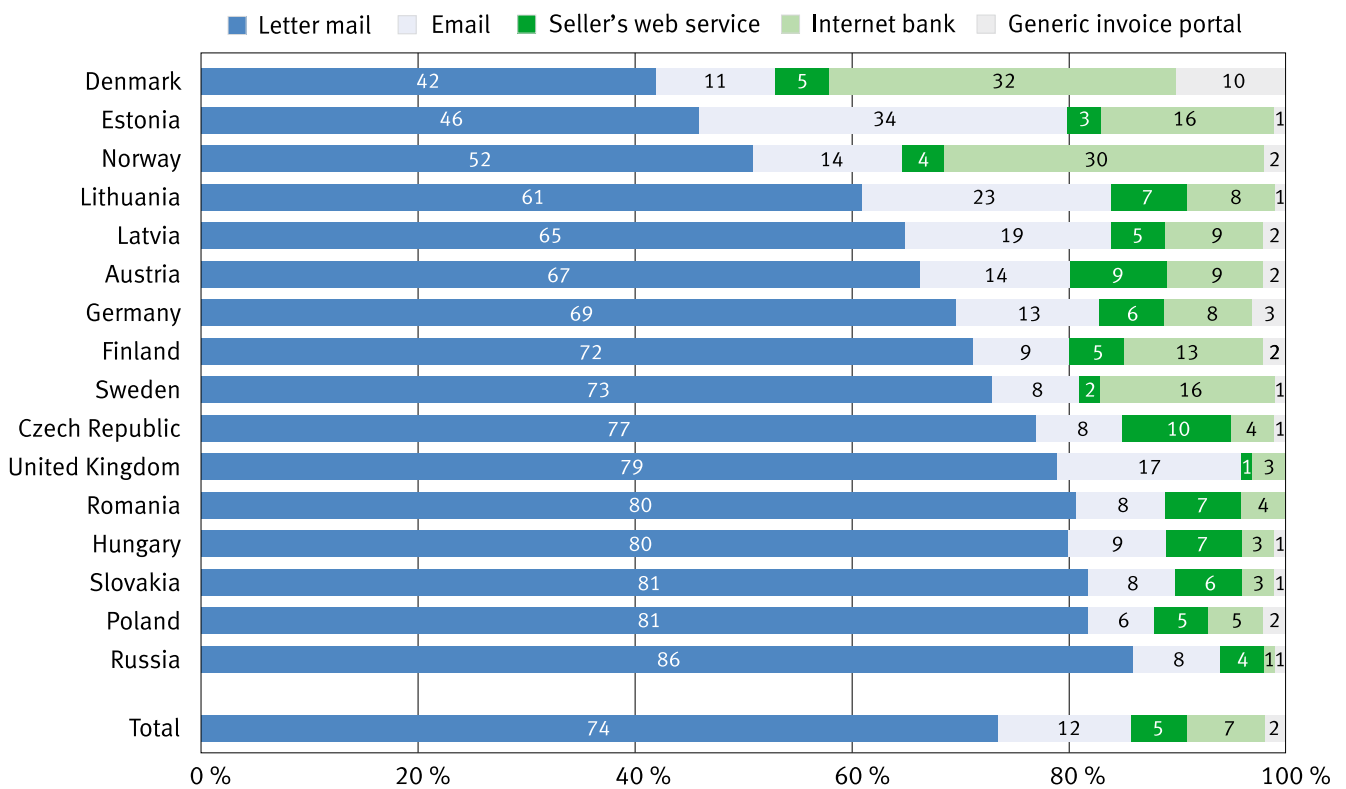


Figure 6. Consumers' present use of invoice reception channels, % invoices (n = 9037).

in the future, too. This is particularly true of email reception. On the other hand, getting an invoice through one electronic channel increases the chances of receiving invoices through other electronic channels as well. Clearly, the strongest confrontation in preferences is between paper letters and email. Those favoring email invoicing wish

to dispense with paper letters, and those favoring paper letters do not want to receive their invoices, at least, by email. On the other hand, all electronic invoicing channels are now used partly in complement, and some preference for parallel use in the future was also found.

The general picture can be clarified by segmenting use and

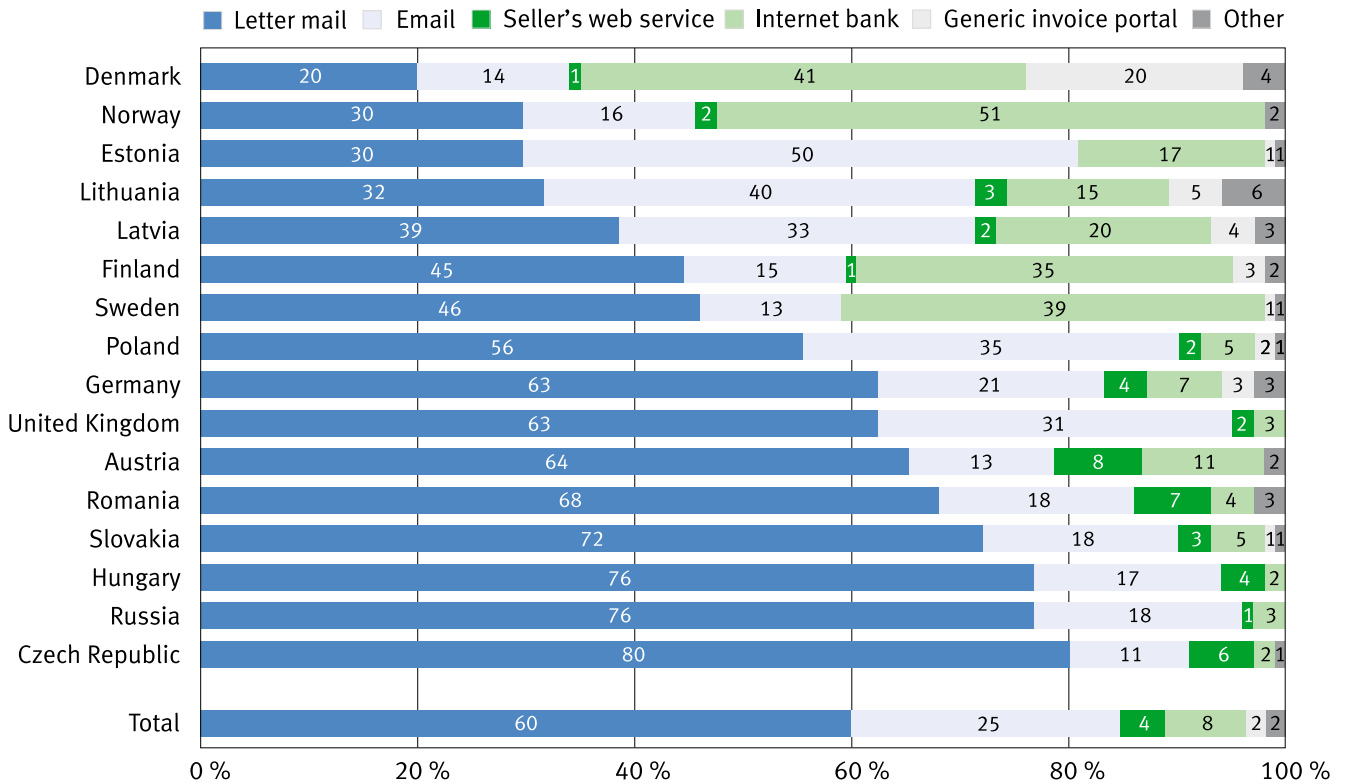


Figure 7. Consumers' future preferences for invoice reception channels, % invoices (n = 9037).

	Use and preference clusters			◀ Big segment
	Paper graspers	Email movers	Net bank movers	
United Kingdom	70	25	5	
Russia	79	16	6	
Poland	66	26	8	
Hungary	75	16	9	
Romania	70	18	12	
Czech Republic	76	11	13	
Slovakia	72	15	14	
Austria	70	12	18	
Germany	65	16	19	
Estonia	34	40	26	
Latvia	46	25	29	
Lithuania	36	33	31	
Finland	50	13	37	
Sweden	44	12	44	
Norway	26	12	63	
Denmark	19	9	73	
Total of consumers %	64	20	16	◀ Small segment

Table 2. Consumer segments of invoice reception change in 16 European countries.

preference groups. This was done by k-means cluster analysis, with the result that the best solution divided European consumers into three invoice reception change segments. The first and largest segment consists of paper graspers, who now receive almost all of their invoices as paper letters and would prefer to continue to

do so in the future. Almost two thirds of consumers belong to the paper grasper segment, and especially females and over-55-year-old consumers are emphasized in this segment.

The second segment is email movers, who now receive many invoices on paper and some via email, and would prefer to receive

most of their invoices via email in the future. Every fifth consumer is situated in this segment and their share of invoices is almost one quarter. The third segment is Internet bank movers, who now receive some invoices on paper, some through an Internet bank, some through other net services, and even some via email. In the future this smallest segment would prefer to receive most of their invoices through Internet bank, but are also prepared to accept other electronic reception channels. Internet bank movers represent 16% of consumers and 18% of invoices.

The paper letter is still used in all three segments, but in the mover segments consumers are willing to give it up. Particularly those consumers who receive more invoices than average wish to change to electronic reception, which can be seen from the fact that, while the share of these movers is about 36%, they receive about as many as 41% of invoices. Those most eagerly moving to electronic invoice reception are male and under 35 years of age.

Each country has its own profile in this change. The Nordic countries are rapidly transferring invoice reception to Internet banking, Finland is, though, behind Scandinavia in this respect. In the Baltic countries, Poland and the United Kingdom, email is clearly considered the most convenient electronic reception channel for invoices. However, in most countries the majority of consumers would still prefer to also stick to paper in the future. Most paper graspers are to be found in the bigger countries and Eastern Europe (table 2).

Summary and conclusions

Every second company in Europe sends and receives at least one electronic invoice a month. Correspondingly, over 40% of consumers receive at least one electronic invoice in the same time period. However, the share of electronic invoices remains below 30%, because paper invoices still dominate the invoicing markets.

There are big differences between countries. In general, Nordic and Baltic countries are the most electrified, and Eastern Europe the least electrified. Advanced infrastructure seems to have presented better prerequisites for adopting electronic invoices. Good examples of this are Denmark and Norway, where two thirds of consumers already receive invoices through the banks' co-operative Internet bank service.

Surprisingly, email invoices are used more than fully electronic invoices, which include safety solutions and payment systems. The share of sent and received email invoices is almost 20% in European enterprises, but the share of fully electronic invoices is only about 10%.

Easily available email offers speed and flexibility, which is needed in daily business. Email invoicing needs no expensive and time-consuming invoice system implementation. It can be the only electronic invoicing channel for small enterprises, but can also be used as a complement to fully electronic invoicing solutions in any enterprise. The typical email invoice is delivered without an electronic signature, and it is possible to send parallel paper invoices for bookkeeping or a summary on paper for the tax authorities at the end of the year.

Less than 10% of enterprises use transition-phase hybrid solutions. Sales invoice data are sent for printing to an outside service provider mostly in Finland and Sweden, whereas in many other countries this service is not used at all. On the other hand, purchase invoices received on paper are scanned to become electronic for further processing and approval mostly in the Nordic countries, and least of all in Eastern Europe.

There is a strong conviction in the speedy electrification of

invoicing in Nordic and Baltic enterprises. Trust in electrification of invoices has grown remarkably in the Nordic countries where comparable enterprise results from 2008 were available for this research. A slower electrification prognosis with continued reliance on paper invoices prevails in Eastern Europe and also to some extent in Austria and Germany.

The use of electronic invoices and willingness to increase their use grows as the number of invoices increases. This is easily understandable in the case of the high variance of invoice volumes between companies, but the same is also true for quite homogeneous consumers, of whom 92% receive 1–15 invoices a month.

At present, almost 75% of consumer invoices are on paper, but consumers are ready to accept that in two or three years time the proportion of paper invoices will have fallen to around 60%. Electrification paths for invoices are country-specific. The Nordic countries are firmly changing to Internet bank reception of invoices. In the Baltic countries and Eastern Europe consumers are now changing to email reception. However, in Eastern Europe, Germany and the United Kingdom the high preference for paper invoices is likely to continue.

Payment of invoices through the Internet provides a natural platform for electronic reception, and those consumers already paying through the Internet are those most prepared to transfer to electronic invoicing. Nevertheless, only 30% of Internet bank invoice payers in Europe wish to transfer to net reception. Around 35% of Internet bank payers believe that the email invoice is the best option for them, and even the paper invoice is considered just as good an alternative by another 35%. However, of those prepared to transfer to net reception, most prefer just Internet bank reception. Therefore, in the long run it seems that the main current will flow in the direction of Internet bank reception in spite of the fact that the path will be long and stony.

Text: Kari Elkelä, Research Manager, Itella Group, Business Intelligence

Study executed in cooperation with Add Value Research Finland and Itella Corporation. The research results and conclusions do not necessarily represent the official opinion of Itella Group.



Itella Information boosts the efficiency of financial information flows and leads the way in electronic invoicing in Europe. Itella Information operates in 15 European countries with a staff of circa 2,000 professionals. Net sales in 2009 amounted to EUR 247 million. Itella Information business group is part of Itella Group. For further information, please visit www.itella.com/informationlogistics.

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