

E-invoicing in Europe: Now and the future

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Bo Harald is Vice President and Head of Executive Advisors at Tieto with whom he had worked closely already during his time at Nordea, since Tieto delivered, among others, its pan-Nordic e-banking solution and was also a close partner when building the e-invoicing service network. Bo Harald chaired the EU Commission Expert Group on e-Invoicing and is an active blogger and speaker in the Extended payments and e-Business area. He was born in Finland in 1948 and graduated from Åbo Akademi (law, economics and business administration) and joined Union Bank of Finland in 1975. He started in trading and loan syndication, as well as establishing of overseas units in Luxembourg, Singapore and London. Bo started promoting and building electronic banking, payments and e-business services in 1979 and became known as Mr E-banking. The Union



Bank of Finland is now a part of Nordea Bank – the largest Nordic bank and a global leader in e-banking and e-business services. Bo Harald was a member of the board of directors and participated in many payment and technology advisory boards before he retired in 2005 and joined Tieto as Head of Executive Advisors. As a part of this task he works with customers from all sectors, with a particular focus on how value can be created by combining business concepts and technology solutions across industries.

ABSTRACT

This paper describes the current state of electronic invoicing in Europe and the key elements of the proposal by the European Commission's Expert Group to move this important issue forward and gain huge benefits for Europe's economy. It shows how the planned European e-Invoicing Framework is expected to establish a common conceptual structure, including business models and standards, and proposes solutions supporting the provision of e-invoicing services in an open and interoperable manner across Europe. It also outlines a set of actionable recommendations and proposals. Finally, perspectives for the future beyond e-invoicing are outlined.

Keywords: *e-invoicing, financial supply chain, European efficiency, e-billing, EU Expert Group*

INTRODUCTION

Migration to structured electronic invoicing has been on the agenda of European Institutions and a number of member states for some years and is receiving increasing policy encouragement.

Electronic Invoicing has been defined as the sending or making available of an invoice and its subsequent storage wholly by electronic means. The e-invoicing process needs to employ fully structured data, which are capable of being automatically processed by senders, receivers and

other involved parties. The transmission of an electronic image of an invoice document, while common, is not strictly electronic invoicing.

Invoicing forms part of the trade process between business parties and is one of a number of steps which make-up the physical and financial supply chain and the related information flows. Many activities are in the course of implementation to facilitate the digitalisation of these processes in the interests of efficiency and productivity. The e-invoice is a pivotal document, whose digitalisation will generate savings in its own right, as well as contributing to many other benefits along the supply chain.

There are fundamental reasons for a widespread and rapid migration to electronic invoicing:

- (i) The digitisation of business processes in general, and e-invoicing in particular, is a prime opportunity to improve the *competitiveness* of European enterprises and raise productivity and customer satisfaction. This can apply to both private and public sector organisations, the latter being able to reduce fiscal pressures and promote efficiency throughout the economy.
- (ii) Migration to e-invoicing creates substantial *cost savings*¹ through a reduction in manual work, material and transport costs. In particular, a full integration of procurement processes, invoicing and payments along the physical and financial supply chain is an essential driver for enterprise cost savings. Additional cost savings arise in fraud and loss prevention and auditing costs for trading parties and tax authorities.
- (iii) E-invoicing can enable accelerated payments, *improve cash flow* and reduce credit losses, with benefits for large and smaller enterprises alike. It can

also form the basis of automated financing facilities which could benefit credit availability to small and medium-sized enterprises (SMEs) and lower their costs. As a pivotal process, e-invoicing acts as a precursor to higher levels of automation in payment and accounting practices within large organisations, who then attract smaller enterprises forming part of their supply chain to take advantage of the same opportunities.

- (iv) Electronic processes enable the transition of the workforce towards *more productive work* in the face of an expected decline in population of working age. E-invoicing can act as a learning and habit-forming vehicle leading to further adoption of electronic practices throughout enterprise activities.
- (v) The adoption of e-invoicing will support the *development of the single market* and the Lisbon Agenda in a number of ways. For example it will support the development of the Single Euro Payment Area (SEPA), contribute to skills transfer between member states and promote greater integration and harmonisation of practices between European enterprises.
- (vi) E-invoicing makes a direct contribution to *saving the environment* and generating carbon savings.

These fundamental drivers could be considered as powerful arguments in their own right, but taken together, it is clear that the rapid mass adoption of e-invoicing should be of the highest priority for European policy makers, enterprises and solution and service providers.

CURRENT PROGRESS

E-invoicing is growing fast at both a national and a global level. For example

Billentis estimates that e-invoicing is achieving growth levels in 2009 of the order of 40 per cent per annum across Europe as a whole. Nevertheless, this is from a low starting point. Country penetration varies across the EU from less than 3 per cent of invoices being in electronic form to over 30 per cent. The number of enterprises employing e-invoicing in one form or another is estimated to have reached 1.4 million out of a total of 23 million in Europe as a whole.

These modest percentage figures hide the absolute fact that there are already over 1 billion e-invoices per annum being traded in Europe — with the above significant growth rates. So progress is significant.

Many enterprises have equipped themselves to undertake e-invoicing either directly with their counterparties or through the use of a service provider. Large corporate enterprises, in particular, have rolled out initiatives, often in partnership with a service provider to automate their procurement and accounts payable management and attract their suppliers into these new processes.

Over 400 e-invoicing service providers are active in Europe, as are a number of industry platforms for supply chain integration. Service providers are increasingly cooperating through interoperability agreements.

In the Nordic area and a number of other member states, banking-led initiatives have complemented those of other service providers, especially to support SME and consumer services through electronic (internet) banking.

The public sector is playing a leading role in a number of member states.

In Spain, e-invoicing to the public administrations will be mandatory for all suppliers, irrespective of size or turnover, by November 2010. For this purpose, a

national structured format called 'Facturae' has been defined in cooperation with the Spanish Banking Association.

The Finnish Government has announced that it will only accept e-invoices from 1 January 2010. All government agencies will be ready to send e-invoices by the end of 2010 at the latest. It is proposed to reuse generally accepted market solutions for e-invoicing (standards, networks and service providers). The programme forms part of the Finnish Government's SEPA migration plan.

In Italy, e-invoicing for the supply of goods and services to the public sector has started to become mandatory under a phased timetable.

The Danish Government and its suppliers have already acquired substantial experience in the conduct of e-invoicing, with savings to society of upwards of €100m annually already achieved. Paper invoicing for trading with the public sector has been abolished since 2005.

Other member state governments are working on similar e-invoicing initiatives, often led by autonomous agencies such as health service providers. The European Commission has launched the PEPPOL initiative (Pan-European Public Procurement On-Line), in which public administrations of multiple member states participate to promote electronic communication between enterprises and public authorities. PEPPOL includes a work stream on electronic invoicing which aims to enable economic operators, with special attention to SMEs, in any European country to send invoices electronically to any European awarding entity.

In addition, the European Commission is implementing a pilot project to enable electronic invoicing within its own purchasing activities.

In overall terms it is reasonable to argue that, given the time it took to

achieve transposition of the applicable Invoicing Directive and for practitioners to respond, progress to date is quite respectable but, of course, so much more can be done.

Reasons for the sometimes slow adoption of e-invoicing, in the face of all the overwhelming arguments in favour, are as follows.

- (i) There is usually resistance to change in financial administration (change which must happen one enterprise at a time — this takes time).
- (ii) Old invoicing software needs to be adjusted to send e-invoices (not a difficult task, but time consuming).
- (iii) Despite the availability of solutions requiring 'Zero IT skills', some market players still consider e-invoicing not easy and not cost-effective enough.
- (iv) A four-corner model for interoperability is lacking — a task for the banks.
- (v) There is not enough pressure from public sector invoice receivers — thus wasting tax-payers' money.
- (vi) Digital signatures are mandatory in some countries (but the new value added tax (VAT) directive for equal treatment will eliminate this and harmonise procedure across the EU).
- (vii) Only mini e-invoice standards are available locally (ISO will solve this).
- (viii) Communication today is difficult (everybody is writing and nobody has time to read). Communication to stakeholders is often neglected. Hence the above message about the massive automation of administrative and tax processes that can be achieved once they migrate to e-invoicing does not get through.

Later in this paper, actionable items to address the above issues will be explored.

THE VISION AND TARGET PICTURE

Looking forward to the time when this proposed European e-Invoicing Framework and all the other initiatives encouraging the wide adoption of e-invoicing have taken effect, it is reasonable to foresee the following picture.

- Within five to eight years at the latest, structured e-invoicing will become the predominant invoicing method throughout Europe and will apply to both domestic and intra-member state business flows. All sectors and market segments will be fully engaged, including consumers, enterprises of all sizes and the public sector. In many countries and sectors, the transition will have occurred much sooner.
- The legal and tax environment for the conduct of e-invoicing will be harmonised across all member states, and trading parties will have access to clear and unambiguous guidance as to achieving compliance with applicable regulations. Electronic invoices will be treated on an equal basis with traditional paper-based invoices.
- Trading parties will have a wide choice of solutions and services to support e-invoicing, which may be conducted on a bilateral basis directly between counterparties or through service providers of various kinds. Trading parties will be able to reach each other in order to conduct structured e-invoicing in a convenient and secure manner with full interoperability.
- Standards for invoicing and related processes will have been widely adopted; in particular, the UN/CEFACT Cross Industry Invoice (CII) standard will have been implemented by the majority of trading parties. Other standards and formats will undoubtedly be in use, and appropriate facilities for format conversion will be readily accessible.
- Much greater levels of interoperability between actors will have been achieved, independent of any single infrastructure or technology and involving levels of interoperability such as business, application and infrastructural layers.
- European enterprises will have made further investments in cost-efficient procurement, payments and accounting processes and the supporting ERP (Enterprise Resource Planning) systems and services. Such processes will require minimal manual intervention, and transaction references will be carried end-to-end to support control and the production of useful and timely management information. ERP systems are fully capable of generating e-invoices both for direct transmission between trading parties and for service-provider processing.
- End users and SMEs in particular will be using low-cost and user-friendly solutions, and external services that can be easily accessed and integrated with internal systems. The absence of IT skills and resources will not act as a roadblock to e-invoicing adoption. Users will be able to reuse investments and business habits to the maximum degree possible.
- E-invoicing will have acted as a spur to the dematerialisation and digitalisation of other business documents and processes. The ecosystem will be open and capable of maximum flexibility and evolution, supporting both European enterprises and links to global supply chains.

The European Electronic e-Invoicing Framework (EEIF) is based on this common vision. The primary objective of the EEIF is to encourage and facilitate European mass-market adoption, and the needs of SMEs, in particular, are given the right priority.

There is a strong emphasis on promoting certainty and quality in the key areas of legal and fiscal compliance, standardisation, delivery systems, inter-operability and implementation planning, all building on the core elements and principles proposed in this document.

It will take time to realise these targets on a European-wide scale. Progress is best achieved by moving forward locally in incremental steps, building on best practice and supported by an overall European framework, the requisite political support and clear communication and promotion activities.

IMPLEMENTATION CHALLENGES

In order to implement the vision set out above, the following efforts are required:

- (i) All stakeholders should continue to measure and communicate the full benefits — both for society at large and for individual enterprises.
- (ii) Solution and service providers should deliver the right products and tools involving little or no IT expertise or investments for smaller enterprises.
- (iii) ERP system vendors and service providers delivering solutions for larger enterprises should propagate standards and maximise interoperability so as to give benefits to both the larger enterprises themselves and other involved parties, while making available appropriate format conversion facilities and the means for compliance with legal and accounting standards.
- (iv) Networks and network-based solutions should be encouraged to adopt open concepts and standardised interfaces so as to make it easier and less costly to connect to a service, easily reach all trading parties

throughout Europe, and switch service or solution provider as required.

- (v) Where trading parties conduct e-invoicing and other automated processes between themselves in a direct bilateral basis, they should nevertheless still use commonly used standards and components.
- (vi) Invoice receivers, especially among larger enterprises and in the public sector, should establish the requirement that structured invoices will become a precondition for their procurement policy, and this should be widely communicated.
- (vii) Transparent pricing and cost recovery of traditional and new invoicing methods should be adopted.
- (viii) It should be clearly communicated that converting documents and data to and from paper or basic PDF formats and a structured data set will entail the loss of value and the creation of unaffordable processing costs. Truly electronic processes are infinitely more valuable.
- (ix) It is important to avoid slow and uneven progress in e-invoicing adoption, as this will inevitably lead to fragmentation, because enterprises are then forced into using partner-specific tools and standards, thus slowing down the adoption of open generic solutions.

It has to be recognised that, even after removing legal and regulatory obstacles, establishing improved interoperability and introducing common standards, progress will be slow unless all stakeholders — not least public policy makers — make substantial efforts. This is to a large extent because SMEs in particular do not value highly time spent on administrative work, coupled with the fact that their individual direct cost savings may be small, given low volumes of invoices received and sent.

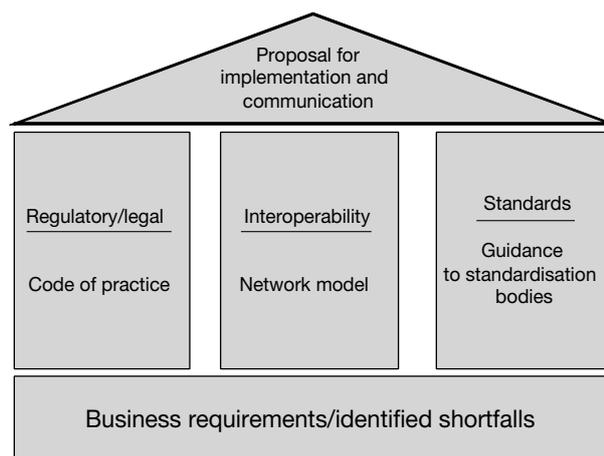


Figure 1 European e-Invoicing Framework

Therefore, it is important to make SMEs aware that adoption of e-invoicing enables follow-on benefits for example in financing, accounting, auditing and financial control.

Actionable items to address these implementation challenges and to accelerate the speed of adoption could be:

- (i) asking the local banking community to join the service providers with solutions needing no IT investment and no IT skill for the SME-sector — networking just like payments (linking in also reputable non-banks). All this to get the mass of SMEs signed up for services.
- (ii) asking the public sector to start saving tax payers money and help SMEs over the digital threshold by setting deadlines for accepting non-structured invoices (paper and PDF)
- (iii) setting similar deadlines in large enterprises and others who have a strong say in relation to their suppliers
- (iv) charging for paper invoices sent and scanning of those incoming
- (v) starting to use services and solutions to turn e-invoicing into automated

accounting, cash flow estimates, VAT procedures, invoice financing, fraud and risk mitigation etc.

- (vi) describing the big picture to customers, suppliers, staff and society at large.

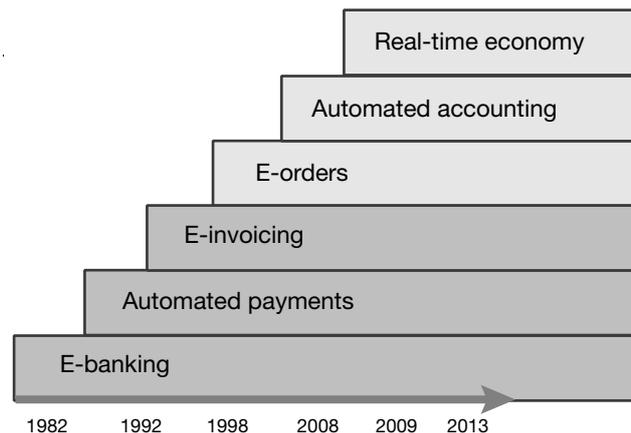
THE EUROPEAN E-INVOCING FRAMEWORK AND BEYOND

The EEIF aims is to establish a common conceptual structure, including business requirements and standard(s), and propose solutions supporting the provision of e-invoicing services in an open and interoperable manner across Europe (see Figure 1).²

Further steps after invoicing would be the integration into more parts of the financial and business value chains. This means moving from e-invoicing (with integrated e-payment) via e-procurement (with electronic catalogues and online ordering), e-trade (with integrated e-financing and digital trade papers) finally to a fully electronic realtime economy (see Figure 2).

To show how this may extend yet further to other industries and yield specific high-level solutions there which build

Figure 2 Evolution towards the real-time economy



upon e-invoicing as a major building block, consider for example the health industry. Here, the complicated, paper-based, multi-party issuance of paper bills, payments and refunds could be entirely automated to improve efficiency significantly in the health sector (see Figure 3).

In this vein it is important to create a critical mass of e-invoicing which will become a platform for the next layers of value-creating services. The following illustrates this in the generic procure-to-pay and pay-to-account domains.

New value in procure-to-pay domain

The first — largely already deliverable benefit — is the payment automation as e-invoicing messages in several standards contain a payment proposal format feeding into ISO20022 SEPA credit payments. The CII Version 2 is naturally supporting this and will spread the capability widely when it becomes the network standard and is increasingly used end to end between sellers and buyers.

The next logical step is that e-invoice service providers will reuse the feed-in portals for e-invoices, the I/D systems and security, the templates for sending and receiving e-invoices and the data elements

used in e-invoicing for generic outgoing and incoming e-rfps, e-offers and e-orders. Invoice financing and order-based financing can be automated and has the potential to make financing for SMEs easier, more cost effective and benefit from trading partners' higher credit rating. Invoice financing is also a risk mitigation tool — in relation to credit risk, currency risks and fraud, as service providers have to identify invoice senders. Additional risk mitigation can be brought in by banks in the form of automatically included payment disturbances reports, easy to use bank guarantees and automated currency hedging and trade finance. TSU-based payment assurance services is a natural part of the risk mitigation packages to come.

In a competitive market, a fair share of the savings achieved in the seller's processes, lower risk levels, better cash flow and cheaper financing will be transferred to the buyer in the form of lower prices. The win-win situation will be achieved on a large scale, however, only if the buyers see the benefit of sellers moving to generic tools and standards. But then the benefit comes both as lower prices and as standardised digital input into the buyer's procurement and payment processes.

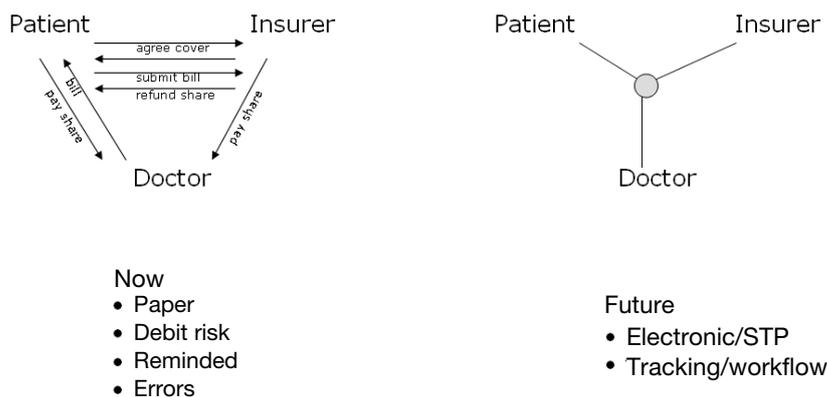


Figure 3 Example: improving efficiency in the health sector

New value in pay-to-accounting domain

The European Commission has set a target of reduction of 25 per cent of the administrative costs for SMEs by 2012. It is evident that only a fast migration to e-invoicing — by lowering the threshold with equal treatment of paper and e-invoicing — will enable this. This is a central part of the VAT directive proposal launched in early 2009. The proposal is also supporting adoption of cash-based accounting for enterprises with less than €2m in annual turnover (over 20 million enterprises in the EU). This development can open up opportunities to save much more on costs and create valuable new services for the segment.

The first level that can be achieved with cash-based accounting — with some adjustments in national legislation — is automation of accounting by linking the electronic invoice (with accounting codes) to payments made and received in electronic bank statements. The next service that can be created is a realtime automatically updated cash flow estimate based on the invoice flow, payment habits and effected payments.

It is evident that this kind of automation considerably lowers the need for

auditing and VAT inspections and forcefully supports the equal treatment principle. When auditing is needed, it too can be automated to a high degree.

Real-time VAT

The present procedures for reporting, accumulating paying and reclaiming VAT are undoubtedly very expensive both for enterprises (and thus also for consumers) and for the tax authorities. With the above development, it should be clarified whether the burden on enterprises could be alleviated by simplification and unification of the rules and by moving to automated direct realtime payment and reclaiming of VAT triggered by the credit and debit of the invoice payment. Payments can be accumulated by service providers and delivered to tax authorities as daily lump sums.

By adding to this unification of reporting codes to the authorities, it can be possible to envisage 50 per cent savings in administrative costs for the SME sector, substantial productivity improvements for their larger trading partners and very large cost savings in the public sector.

This is all doable, and the only real question is whether there will be the political will to do it fast.

On the 13th July, 2010, the Council of the European Union (ECOFIN — the highest political body in the EU) adopted the Directive amending Directive 2006/112/EC on the common system of value added tax. This means that electronic and paper invoices are treated the same for VAT purposes ('Equal Treatment') and ensures technological neutrality in all solutions (ie does not give preference to specific technical solutions such as digital signatures). This very significant step (which effectively removes the previously most significant barriers to e-invoicing — acceptance by tax authorities across Europe) shows that the political will is there and an encouraging signal that e-invoicing is seen as a top priority at the very top political levels. It is to be hoped that this momentum will be sustained.

CONCLUSION

E-invoicing has great potential, and one can see that there are many instances where strong progress has already been made by enterprises and the public sector as they have adopted e-invoicing as an integral part of their business processes.

There are, however a number of barriers still standing in the way of wider adoption, especially by smaller businesses. The key benefits of e-invoicing include enhanced competitiveness, the potential for cost savings, improved cash flow, environmental benefits, more efficient supply chains, the liberation of resources for more productive work, and support for the development of the single market. These benefits are very substantial.

To achieve this vision, implementation challenges need to be tackled and over-

come, including wide communication of the benefits, provision of the right tools and solutions by a range of industry suppliers, the adoption of standards and structured data, the creation of true interoperability with open network concepts, more integrated supply chains and transparent pricing. It is also important to make rapid progress in a coordinated fashion to avoid fragmentation of effort and outcome.

Once e-invoicing has taken hold, many further opportunities for improving the efficiency of other processes and converting old paper-based ones to electronic form lie ahead. Many further steps from e-health, e-government and e-trade will finally lead to a global real-time economy.

REFERENCES AND NOTES

- (1) Concrete figures supporting the massive cost savings may be found in, for example: Politecnico di Milano School of Management (2009) 'Report/Observatory on electronic invoicing and dematerialisation'; Billentis (2009) 'E-Invoicing/E-Billing in Europe 2009 Market Report', Billentis, Wil; Deutsche Bank Research (2009) 'Electronic Business in Western Europe' and 'E-invoicing: Crown or Catalyst of an Efficient Billing Process?', Deutsche Bank Research, Frankfurt am Main; Innopay (2010) 'E-Invoicing 2010. Report on Market Status, Trends and Issues in Europe', Innopay, Schiphol-Airport; Bonpago, University of Frankfurt am Main House of Finance 'Financial Supply Chain Management. Report', Bonpago, Frankfurt am Main.
- (2) Details available at http://ec.europa.eu/internal_market/payments/einvoicing/index_en.htm