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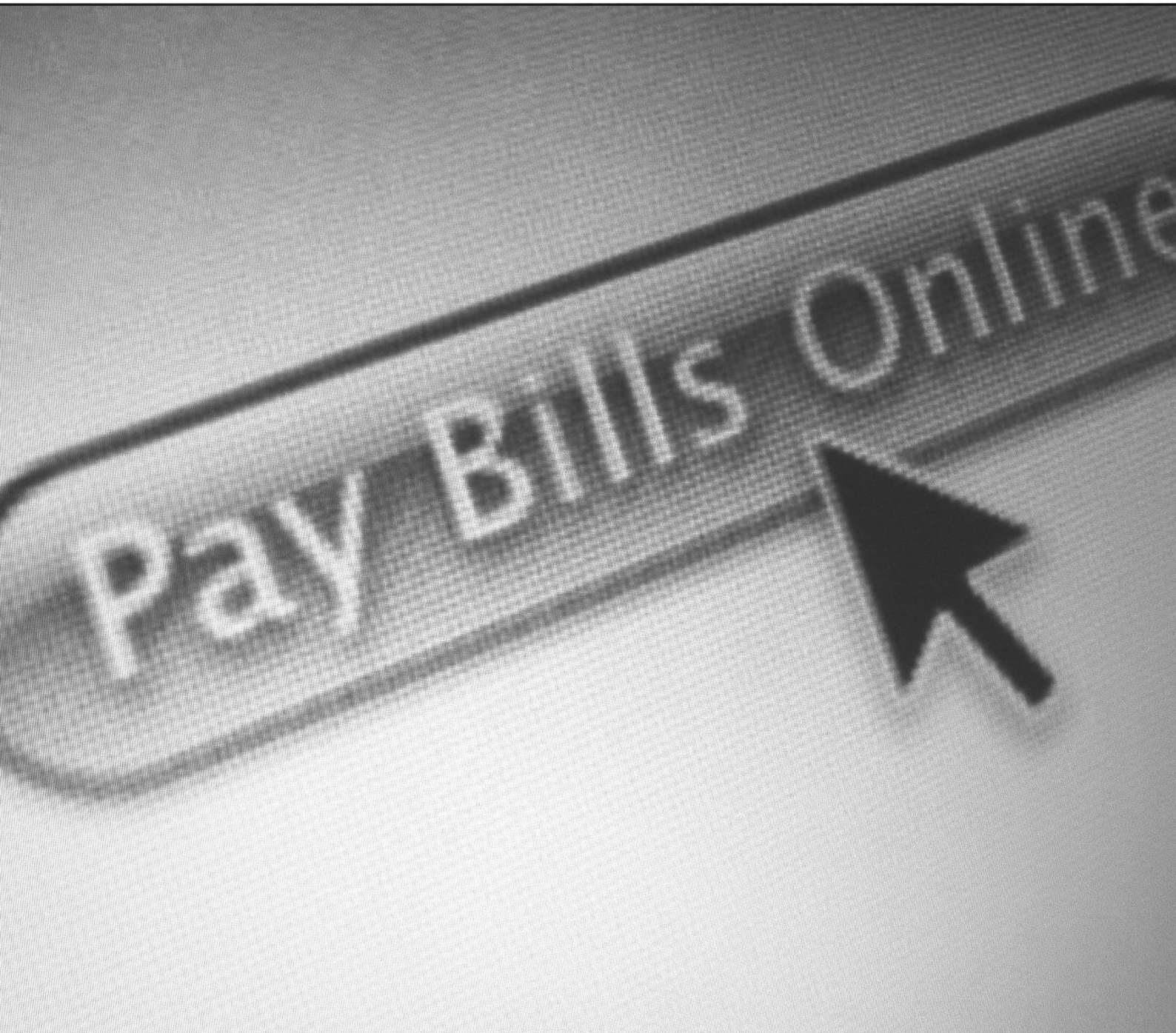
E-invoicing 2010

European market guide



E-invoicing 2010

European market guide

Publishers: Gilbert Lichter (EBA) and Chiel Liezenberg (Innopay)

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Edition

Version 1.0

As new versions are created a document history will be maintained

May 2010

ISBN/EAN 978-94-90587-04-8

Purpose of this document

This is an update of the well-received E-invoicing 2008 report. This document brings together in a single reference guide a description and analysis of the current European landscape for e-invoicing. It is made available in downloadable form only and is a living document, which will be updated as required.

Its objective is to provide general and specialist readers with a description of the market landscape and recent developments in e-invoicing in Europe. The focus of this document is invoicing and e-invoicing in the European Single Market and therefore the document contains limited references to classical international trade procedures.

In the previous 2008 report a number of unresolved issues were identified and suggestions made. Many of these issues are now in the course of resolution and various developments are described. In some cases the need for further effort is identified.

The overall document has been shortened and focuses on a broad market description rather than a detailed analysis. In the main publicly available information has been used and we are very grateful for those who have made available further information and provided us with advice and support.

This document is not designed to set out any intentions or plans for the activities of the EBA itself, nor does it take a particular banking industry perspective. EBA and Innopay take an independent view as regards their individual involvement in other work on e-invoicing.

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Management summary

This report makes available descriptive material and commentary, including definitions, statistics, overviews of countries and initiatives and market trends. These are not comprehensively summarised in this summary except in so far as they are relevant to the key findings, which are set out below.

EBA supported individuals have actively participated in the recent European Commission Expert Group on e-Invoicing (The Expert Group), which produced its final report in November 2009. The executive summary of this report is included as an annex in this document. EBA is very supportive of the recommendations in the Expert Group report and many of the key findings below are consistent with the Expert Group report and with the findings developed in the EBA-Innopay 'E-invoicing 2008' report.

In 'E-invoicing 2008' eight findings were put forward for discussion, all of which remain valid, although they have been re-expressed below in slightly different terms to reflect the latest thinking. Two findings, the need for a common terminology and an inclusive approach to stakeholders have been combined as Finding 7 in this summary and within this finding reference is made to the recent report of the European Expert Group on e-Invoicing, where these themes are discussed. The findings below are considered to be the key issues that continue to require the attention of market participants and public authorities.

Finding 1: e-invoicing continues to grow very rapidly from a low base, but there remain major under-addressed market segments, particularly in the SME (Small and Medium-Sized Enterprises) sector

There are compelling forces at work to encourage the growth of e-invoicing. But although it has been in the 'early stages of development' for over 20 years, it is reported that less than 10% of volumes are currently based on electronic communication instead of paper. Annual corporate and public savings of over €200 billion are estimated to be available across Europe as a whole.

The adoption rate of e-invoicing is accelerating with varying growth rates per country and variations between business-to-business and business-to-consumer invoicing. The Nordic countries are well recognised as leaders, but many other western European countries are seeing strong growth as well. Domestic volumes predominate but cross-border invoicing is also growing, as market integration occurs at both a trade and enterprise level.

In general, the current focus is on outbound and inbound volumes from and to the larger corporate entities and public administrations, especially in the accounts payable area, and mass-consumer invoicing initiatives from utilities and similar entities. The strong market power of these players is driving these developments. The role of the public sector is instrumental in some cases, for example in Denmark and Spain.

The potential for smaller companies considered in their own right is comparatively speaking under-addressed and an emerging need in this space is clearly identifiable.

Finding 2: the European market for e-invoicing services and solutions is very fragmented, and reaching all potential e-invoice users is a key issue, which banks could assist in addressing

A wide variety of e-invoicing services and solutions are offered by over 400 service providers focusing on varying needs and different market segments. This picture has not altered substantially since 2008 although anecdotal evidence would suggest that less than 50 service providers have a real critical mass of customers and business volume. Service providers who act as 'consolidators' and other players, including banks, overlap in functionality and reach. Service providers are often geographically oriented. There are many ways of exchanging invoices including bilateral, 3-party and 4-party models.

To try to deal with this fragmentation and the need for reach, service providers have begun to connect with each other based on interoperability or roaming agreements (the word roaming appears to now be less favoured and market participants mainly talk about "interoperability" agreements). Bank-inspired models have also shown a promising ability to address the 'reach' problem with SMEs and consumers and indeed, where such models co-exist with service provider models, there is an encouraging trend of adoption. Banks have notable assets including trust and experience with payment networks and the ability to provide supply chain financing. Many non-bank service providers bring strong business integration and IT skills and are often used by corporates and banks for business process outsourcing. There are also initiatives, which promote an 'any to any' model, in which trading parties could participate in an open eco-system to exchange messages with their counter-parties.

Finding 3: Aside from overcoming technical barriers, the biggest issue to be addressed in e-business and e-invoicing is the need to convince the management of enterprises to make the business case and recognise the immediate efficiency and cost benefits

Individual enterprises are urgently reviewing the efficiency of their internal processes and their supply chain management. In a world challenged by recession, these issues are assuming increasing importance and the automation possibilities presented often exceed other opportunities to generate immediate value.

Of all the inhibitors, it is clear that the issues around strategic commitment and widespread confidence building are very important. This confidence building applies to large, medium and small enterprises.

SMEs in particular needs to be encouraged by various stakeholders to embrace e-invoicing and for this to happen, a number of initiatives are required to facilitate their engagement. These include:

- Recognition of the needs that are specific for SME to SME e-invoicing.
- Helping SMEs to realise concrete efficiency savings.
- Technical solutions facilitating outsourcing of invoicing in an easy to use manner.
- More transparent communication and support from governments, chamber of commerce and professional advisors for the sharing of best practice.

– Improvements to the legal and VAT rules (these are discussed in Chapter 4).

Finding 4: E-invoicing has been encouraged by the adoption of European legislation supporting e-invoicing but this legislative framework requires further evolution, especially in greater clarity and harmonisation. E-invoicing should not be legally more demanding than paper invoicing.

The proposal of the European Commission to simplify, modernise and harmonise the VAT directive (Directive 2006/112/EC) is a promising development, being less prescriptive of technology, while preserving safety and auditability.

Recently a new draft VAT Directive was adopted as a first step by ECOFIN with the initial support of all EU Member States. Although this piece of legislation will be required to complete EU institutional processes, it is an encouraging development. A commentary on this new set of rules is provided in this document.

It is important that as these new more flexible rules are introduced major efforts are made to achieve harmonisation across the European Union and that a high degree of clarity is provided, especially for 'cross-border' transactions within Europe. This should also apply to other non-VAT regulations that affect e-invoicing although these are not as critical as the VAT rules.

Finding 5: The wide adoption of a standard for the content of an invoice is an important long term goal. However, its absence today is not a 'showstopper' given the diversity of the market and the presence of format conversion facilities. The UN/CEFACT Cross Industry Invoice is a promising development although further work is required to translate its data model into practical implementations.

With the current number of solutions and content standards in use, it is unlikely that a single content standard for the e-invoice will become market reality for years to come. As a starting point, there is a need for a common 'semantic' data model to provide the necessary building blocks and which could over time be used by all trading parties. This semantic data model must be usable in 'simple' SME to SME supply chains but at the same time, be applicable to more complex environments.

The UN/CEFACT Cross Industry Invoice (CII) and the recommendations of a core data-set that can be used for example in SME environments is a promising development. It should now be left to the market to converge the semantic data model into 2 or 3 major syntactical implementations. Developments are taking place so that the data model is expressed in ISO 20022 XML the leading standard for the financial industry in the payments domain.

Until this common semantic data model is adopted by the market, multiple standards will co-exist. Conversion capabilities will continue to be employed to facilitate an environment where practically any e-invoice format can be converted into any other e-invoicing format.

Finding 6: the need for interoperability and reach remains a priority item and should be clearly addressed otherwise e-invoicing will not achieve its potential

The current practices in exchanging e-invoices involve bilateral exchange, 3-party models, particularly in the service provider market, and some growth of 4-party models based on interoperability agreements and the adoption of banking network concepts. These market developments have resulted in a tendency towards separation and segmentation, often described as “silos”.

As trade involves all categories of trading parties (e.g. businesses of all sizes, consumers, government) trading with all other categories of trading parties, this separation and segmentation of models for the exchange of trade information is inhibiting participation by important market segments such as SMEs and steps need to be taken to create a more inclusive environment with greater reach towards end users.

In fact, the current models have largely benefited those enterprises who can dictate the methodology to be used in their individual case (dedicated portal, specific connectivity options, particular standards, etc). For instance where closely coupled supply chains are involved, it has been comparatively easy to deploy EDI or EDIFACT systems in a relatively closed trading environment. However, where a more open environment exists e.g. for general cross industry goods and services and in particular where smaller enterprises are active, current approaches create problems. Smaller enterprises are often forced to adopt multiple channels for invoice presentment and receipt resulting in excessive cost and complexity and lack of reach. The challenge is to create a landscape in which the various models can continue to exist but the required interoperability between trading parties is facilitated and cost effective for all parties.

In order to facilitate interoperability and create reach, the collaborative space should be clearly delineated and developed, within an overall market driven approach. The key components, required to create a truly interoperable environment, include a solution for addressing and routing, the adoption of a consistent terminology, the promulgation of best practices and a need for standard agreements. Such generic requirements should be minimum in the sense of ‘just enough’ to support interoperability without pulling in value added features. There should be no public sector-only requirements towards users, who need to benefit from consistent approaches. Where possible, the re-use of existing models and infrastructures is desirable, although there is always room for new paradigms and ground-shifting innovations. Market forces are best placed to create this environment, although there is an evident need to pursue the issues on a collaborative basis through a roundtable forum.

Finding 7: There is a need to address a number of governance issues for the e-invoicing and related market spaces.

A new opportunity and marketplace, such as that for e-invoicing, requires more than the above-mentioned business and technical programmes. It also needs support in terms of governance. Governance requires people to share a common language and to create supportive and inclusive bodies to deal with the non-competitive aspects of market development. To this end it

is important to develop a common terminology covering business and technical definitions so that both practitioners and end users can develop the requisite knowledge and discover solutions that meet their needs. It is encouraging to see that through numerous forums and initiatives, for example the Expert Group, CEN, PEPPOL and others that this common terminology is developing.

In order to foster an environment that promotes e-invoicing, it is also important to encourage the creation of forums at various levels to advocate adoption. It is noticeable that the European Commission and Member States are supporting these developments and playing an active role in support of private sector developments. It remains important that these forums are inclusive of all stakeholders. A good example of good practice here is the CEN Workshop on e-invoicing. The governance bodies that are created should work together with all stakeholders to improve communication and provide relevant materials to potential users and those who support them.

Further discussion of these topics is brought out in Annex 2 to this guide in the form of the Executive Summary of the Expert Group Report and in the body of this report itself.

1 Introduction to e-invoicing

The transformation from traditional paper based invoicing to e-invoicing is heralded to hold considerable promise by both public and private sector advocates. In Europe alone annual benefits to society of hundreds of billions of euros have been forecast by various commentators. In a digital real time economy the availability of Internet technology, cost pressures and a desire for new sources of value all act as drivers for the adoption of e-invoicing.

Many promising community based and commercial solutions have been launched. Surveys have shown that over half of the companies with larger invoice volumes are planning to implement e-invoicing and archiving and over one third are already involved in some way. Over 70%[1] of such companies have reported increased efficiency.

On the other hand there is much more to achieve. Less than 10% of invoices are in any sense electronic, adoption rates by country and sector are highly variable and the market for electronic invoicing services is highly fragmented. Barriers in the area of strategic commitment, business processes, standardisation, legal clarity, trusted exchange models and reach are felt to exist.

Before examining the current status and issues arising in the development of e-invoicing it is important to understand the background to traditional paper based processes.

1.1 What is invoicing?

The traditional invoicing process has always been part of a wider set of business processes including the placing and acceptance of an order, fulfilment, delivery and payment. This process is the purchase-to-pay process from a buyer's perspective, and order-to-cash from a seller's perspective. In this document, these processes are together called the trade process. From a business process point of view the invoice is consequently never an isolated document but is always the result of, and linked to, other processes.

The invoice is traditionally a commercial document used by buyers and sellers of goods and services. It has grown through custom and practice but usually it has a number of legal requirements imposed on it. In Europe, the most significant of these are tax requirements especially as relates to Value Added Tax (VAT).

Intertwined in the trade process are the physical supply chain, involving the order process, fulfilment and delivery, but also the financial supply chain involving both trade enablement and trade settlement. In the trade enablement stage, processes of qualification, pricing, financing, and assurance are managed and in trade settlement stage, invoicing, payment and any dispute resolution processes are completed. Figure 1 gives a simple overview of the trade process.

[1] E-invoicing and e-archiving, taking the next steps, PricewaterhouseCoopers

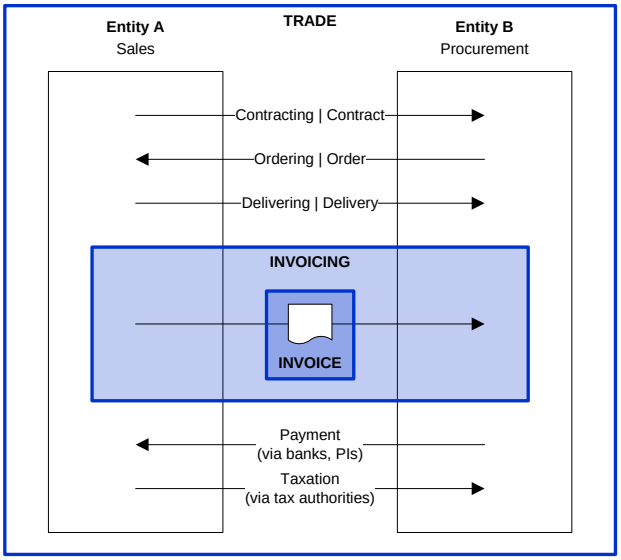

Figure 1: A typical trade process as commonly referred to[2]

1.1.1 The invoice & related documents

In a typical transaction cycle an invoice is generated after completion of the sales and contracting process. Depending on the circumstances of the transaction this may or may not coincide with the actual delivery process but certainly is the cue for the launch of the accounting process whereby an account receivable is created to be settled either immediately or in due course and including the relevant taxation liabilities.

The invoice consists of an itemised account of goods shipped, services performed or work done, an amount expended or owed and a demand for payment. It may contain a range of other administrative or logistics information and usually will state applicable taxes payable. It is the crucial link between the physical and financial supply chains. In traditional invoicing all these features are derived from a single paper document.

An invoice typically contains the following information:

- The word ‘invoice’.
- Date of issue of the invoice.
- A sequential number identifying the invoice.
- Name and address of the buyer and seller.
- Supplier VAT number and buyer VAT number where required.
- Date that the product/service was sent or delivered and details of delivery method.

[2] Payments are indicated as being processed via banks, but could also be processed by Payment Institutions.

- Order number (or references requested by the buyer to be mentioned on the invoice).
- Description of the product(s) or services (quantity and nature).
- Unit price(s) of the product(s), including any adjustments or variations (if relevant).
- Total amount charged (optionally with breakdown of taxes, if relevant).
- Payment terms (including method of payment, date of payment, required account number and reference and details about charges for late payment).

The invoice has a number of variants and related ancillary documents such as:

- **Pro-forma invoices**: prepared in advance of a formal invoice.
- **Credit note**: an advice of a credit to be compensated against account balances payable as a result of a previous invoice.
- **Debit note**: a reminder of an outstanding amount due under a previous invoice.
- **Statement**: a statement of balances owing.
- **Self-billed invoice**: invoice originated by the buyer and sent to the seller to cover goods or services supplied by the seller.
- **Del-credere**: invoice sent to an agent paying for a number of buyers.
- **Factored invoice**: invoice assigned to a third party for financing and collection.
- **Group or consolidated invoice**: a collection of invoices covering a number of sales.
- **Remittance advice**: a notice by the payer to the sender of the invoice that a payment has been made.

1.1.2 Operational and legal requirements

The invoice traditionally responds to two types of requirements: operational and legal.

Operational requirements:

- The invoice provides the link between the order and delivery of goods/services and the related payments.
- It supports the control of the buying and selling processes.
- It may feed enterprise or other systems with management information.
- Invoices form the basis of VAT accounting and VAT refunds and therefore have vital financial significance to an enterprise.

Legal requirements (detailed legal requirements are discussed in chapter 4):

- It supports taxation regulations in the countries where companies are trading.

- It supports compliance with financial and other regulations, such as those covering privacy.
- E-invoicing is highly impacted by the legal and tax rules that surround it, and it is these rules that have largely influenced the development of e-invoicing processes.

The invoice itself is created during all types of commercial transaction and in that sense is 'owned' by commerce in general. An invoice is therefore not a banking document except in so far as banks receive and send invoices in their capacity as businesses. The invoicing process links to the payments process and banks may provide additional services such as processing, invoice distribution, and finance. As has been stated above the tax authorities have also grown to be a key stakeholder.

1.1.3 Exchange of the invoice

Invoices need to be exchanged between seller and buyer. There are various methods for this exchange, as illustrated in Figure 2. The most common methods for paper invoice exchange are mail and in the case of face to face transactions physical handover to the customer.

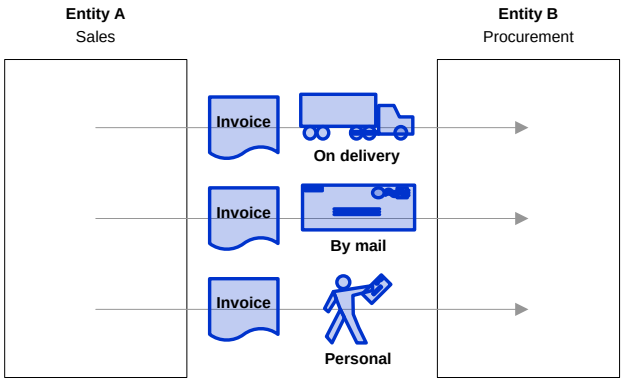

Figure 2: Distribution of physical invoices

Because there are many senders and receivers, both in the B2B and in the B2C context, the delivery of invoices is a vast logistical operation based on the capabilities of the postal system and courier services.

The mail is an open network par excellence. On the receiver's side, everybody can be reached, because they all have a physical mail address or make arrangements for a post office box or similar. The sender can deliver invoices (in an envelope with the correct address format) to any mail service provider of his choosing, confident that every receiver can be reached.

1.1.4 Arguments for the status quo

There are a number of advantages in favour of paper invoicing of which the most notable is familiarity and its accompanying predictability. As a further insight, Logica has researched the main arguments for retaining a paper invoicing process[3]. They point to various reasons for an attachment to paper, such as contractual requirements, legal rules, record-keeping preferences, fear of fraud and immaturity of technology use.

1.1.5 Drawbacks of the physical invoicing process

It is observed that paper remains stubbornly entrenched in the invoicing process among entities of all sizes. This is perceived by all parties to result in:

- **High operational cost for processing the invoice for both the sender and receiver:** the manual processes involved in the handling of invoices are human capital intensive, and allow for errors and delays, which leads to enquiries and even more cost.
- **Protracted invoice-to-pay cycle time:** there is often a lack of integration between all systems interacting with the supply chain, such as accounts payable and receivable, order management, financial systems and inventory management systems. This generates costs in terms of interest and discounts forgone.
  Research by Celent shows that a complete purchase-to-pay cycle takes between 30 and 100 days (Figure 3). The most time-consuming parts of the process are invoice processing and query handling. While the time required for processing an order, fulfil it and send an invoice has shrunk to less than a day for each step, invoice processing takes the same amount of time as it did decades ago.

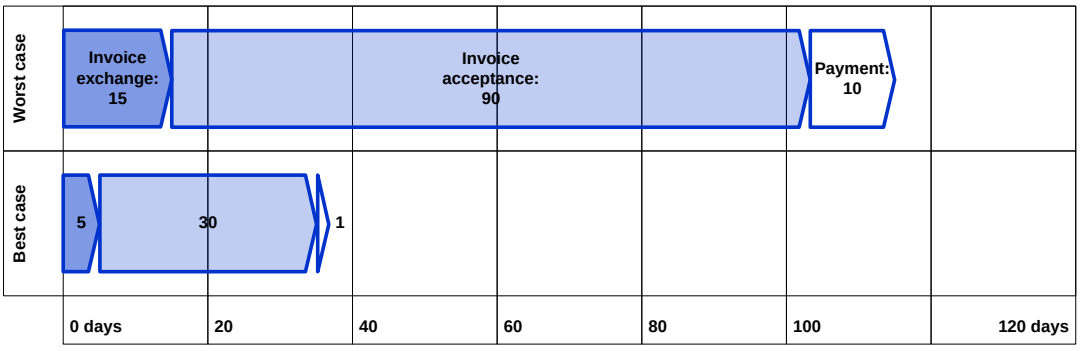

Figure 3: Paper-based invoice-to-pay cycle times (adapted from source: Celent[4])

- **High cost of auditing and fraud and fraud prevention:** there are few process controls, sequential manual approval processes. Auditing of invoicing processes is difficult, inviting un-corrected billing errors and fraud.

[3] 'Navigating the supply chain; the land of payments promise?', LogicaCMG

[4] Scaling the e-Financial supply chain mountain, Celent, May 2004

1.2 Introduction to e-invoicing

E-invoicing is the conduct of invoicing and related processes through electronic channels and is perceived as the solution for eliminating the drawbacks of the paper invoicing process.

A definition of e-invoicing is provided in the EU Council Directive 2001/115/EC of 20 December 2001[5] which aims at simplifying, modernising and harmonising the conditions for invoicing in respect of value added tax, and includes rules on e-invoicing and archiving:

"The sending of invoices 'by electronic means', i.e. transmission or making available to the receiver and storage using electronic equipment for processing (including digital compression) and storage of data, and employing wires, radio transmission, optical technologies and other electromagnetic means". By definition no paper document is involved.

The following terminology is used by practitioners in the current e-invoicing area:

- **Electronic Bill Presentment and Payment (EBPP):** usually consumer-oriented 'bill paying' presented and paid through the Internet. Other terms such as IBPP (Internet Bill Presentment and Payment), EBP (Electronic Bill Presentment) and OBPP (Online Bill Presentment and Payment) are also in use but are not used further herein.
- **Electronic Invoice Presentment and Payment (EIPP)**: originated in the B2B world and describes the process through which companies present invoices and organise the resultant payments.
- **E-invoice and e-invoicing:** these terms are both used as umbrella terms and also used specifically in the context of newer generations of e-invoices and invoicing based on electronic messages involving an end-to-end process with no paper at any stage.
- **EDI (Electronic Data Interchange):** an electronic transfer of data from computer to computer using an agreed structured format that can be generated and read by a computer and processed automatically.
- **ERP (Enterprise Resource Planning) Platforms**: systems that contain many of the tools and software to account for and manage invoices as part of wider corporate processes.
- **Electronic Statement Presentation (ESP):** refers to the electronic presentment of a variety of other commercial documents, apart from invoices, such as account statements, purchase orders, delivery notifications etc. Not included in this definition are many unstructured documents that are exchanged.

See the Glossary in Annex 1 for a complete list of definitions.

[5]The provision of this Directive has now been integrated into the Council Directive 2006/112/EC – common system of Value Added Tax

1.2.1 From a paper invoice document to an e-invoice

As part of this market description it is useful to summarise some of the key aspects of the development of e-invoicing starting with the invoice document itself, then the process of exchanging it and finally the impact on the end-to-end trade process. When it comes to automating the end-to-end trade process many (but not all) regard the invoice as a 'good place to start'.

With e-invoicing, the traditional paper invoice is replaced by an electronic version, which removes many of its disadvantages whilst maintaining the invoice as an intact dataset

The following types of the e-invoice exist:

- **Unstructured invoice document** (e.g. Text, PDF, JPEG, TIFF, HTML or email): in this situation the invoice is created manually or automatically from a system and instead of printing it for submission on the spot or sending out in an envelope, it is compiled into an electronic document. As an alternative, a traditional paper invoice can also become electronic by scanning the invoice into an electronic document.
- **Structured invoice document** (e.g. EDIFACT or XML): in this situation the invoice creation consists of the compilation of the required data into an agreed e-invoice message with a known structure, format and content such as is the case with EDIFACT and XML messages. This means that contrary to the case with a paper document, where the receiver may well be unfamiliar with the format, with a structured invoice message the format is pre-defined and known to the parties involved.

It should be noted that it is generally recognised that the traditional invoice document with all its existing legal and business requirements is not transformed by simply transposing it into an electronic form. A structured format is required to create the real benefits of automated processing and certain steps are required to meet the required legal and VAT compliance requirements. As a result, it is often the case that a paper copy accompanies the e-invoice.

In addition, it should be noted that with the advance of technology some of the unstructured document formats now have capabilities to also contain structured formats, creating hybrid documents.

1.2.2 From paper invoicing and physical exchange to e-invoicing and e-exchange

Moving from a physical exchange process using a postal system to an electronic exchange process creates a number of possibilities:

- **Email:** the traditional invoice exchange by mail is replaced by the exchange through email, containing an unstructured invoice possibly as attachment in MS Word or PDF.
- **Electronic presentment:** in electronic presentment of invoices the invoice is not actually sent to the debtor but is presented in an online (web) environment. The exchange means here that the invoice has been made available in an Internet portal. To inform the receiver an email is often sent to inform the receiver that a new invoice has been created. The

presented data is often unstructured as there may be no technical agreements or standards between sender and receiver. Besides the invoice presentment, the online environment can also provide possibilities to fulfil additional related processes, such as invoice query management, payment execution and workflow.

- **Use of messaging protocols:** messaging protocols are used to exchange structured messages. Examples of such protocols are HTTP, SMTP, AS2, SOAP (Simple Object Access Protocol) and AMQP (Advanced Message Queuing Protocol). Both sender and receiver are aware of and capable of handling the structured documents.

The three solutions are commonly considered to be e-invoicing solutions.

What is interesting to note is that invariably in today's corporate environment invoices are produced and processed in automated systems, then printed and delivered and then reintroduced into automated systems. This is surely not sustainable.

1.2.3 From a purely physical trade process to an e-trade process

There is no generally held and unambiguous definition of the end-to-end trade process as shown in Figure 1. This has resulted in many different e-trade processes and solutions leading to various outcomes in terms of scope. It may be observed that efforts to dematerialise the invoice, and to re-engineer the exchange and processing of invoices, have often been focused on creating an electronic equivalent of the paper document, or supporting the paper based process by electronic means. This has resulted in a wide variety of solutions with different definitions of e-invoice itself, of e-invoicing as a process and of end-to-end trade.

1.2.4 Payments and e-invoicing

The payment aspects of invoicing usually involve the generation of a payment by the invoice receiver in response to the payment details appearing on the invoice.

Payment systems vary across the European market-place. This environment will be progressively impacted through the introduction of the Single Euro Payment Area (SEPA), which will create an integrated payments market based on a set of common payment instruments used throughout the euro area and beyond. This major programme is coordinated by the European Payments Council (EPC), the European Central Bank and the European Commission. By introducing common schemes and frameworks for making electronic payments by means of cards, credit transfers and direct debits, the banking industry will be able to support a much tighter integration benefiting the end-to-end trade process including electronic invoicing. Both current cross-border payments in Europe and current domestic payments will be migrated.

There are important differences in payment habits across Europe and observations on payments in general are as follows:

- There is a greater penetration of electronic payment instruments as opposed to payment instruments such as paper or cash in some countries versus others. This has had an impact on the feasibility and nature of electronic invoicing.
- For those individual users and communities who have adopted Internet banking, there is a greater willingness to contemplate newer solutions such as e-invoicing. The rate of adoption of Internet banking varies considerably.
- There are differences in the way invoice receivers respond to invoices in terms of launching their payment process. For consumers and small business without integrated ERP systems, the payment is made close to the 'invoice reception' process on a one by one basis. For B2B business with ERP systems the payment process is often distinct from invoicing with already established routines for interfacing with banks and their cash management services.
- The use of direct debits can reduce the explicit link between the invoice and the actual payment. Payment generation happens automatically through the banking channel leaving the presentment of the invoice as a separate step from creditor to debtor. Invoice presentment remains important however, especially for reconciliation and invoice query resolution.
- Credit transfers are very often used as part of an e-invoicing solution as being 'push' payments, and are often triggered by e-invoice presentment. There is some reported evidence that invoice senders receive funds faster under such a process than under traditional paper based invoicing, as payers may respond more quickly to an invoice presented in an electronic form because it is easier to handle.

Given that the invoice is in part a request for payment there are obvious synergies between payment systems and the invoicing process. There are a number of solutions in the European market that integrate payments with invoicing. These have often been initiated to cover the B2C space using the EBPP methodology. In a typical case involving a bank solution, the following steps are then involved, as illustrated in Figure 4:

- Invoice transmitted from the seller to the seller's bank and then via the buyer's bank to the buyer.
- Display or download of invoice by buyer through its Internet banking portal or a file transfer channel.
- Following reconciliation the buyer sends a credit transfer request to its bank.
- Payment executed through payment system to seller's bank.
- The seller's account credited with the payment and the seller completes reconciliation.
- Remittance data in the payment is consistent with relevant data elements in the invoice.

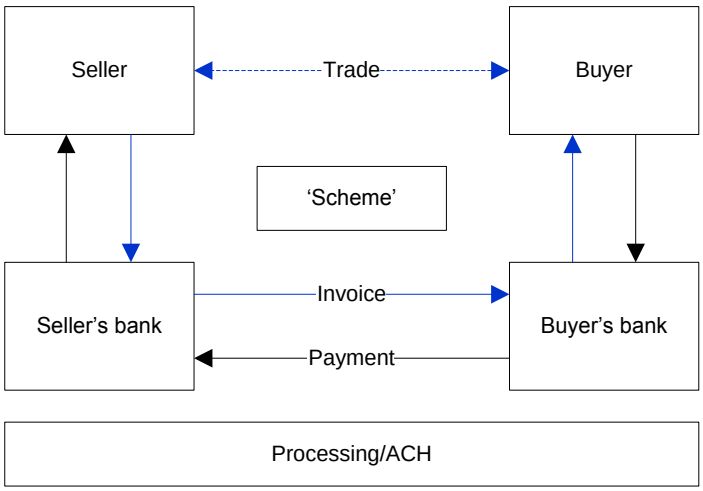

Figure 4: Model of integration between invoicing and payment

In entering the market for e-invoicing services, banking communities see an opportunity to re-use their experience of operating payment networks leveraging common interfaces, standards, wide client reach, ubiquitous sales forces and their trusted status.

1.3 Drivers and enablers

In this introductory chapter it is useful to explain some of the key drivers and enablers that have and continue to encourage the growth of e-invoicing.

1.3.1 Public policy

For some time the European Union has been a strong advocate of e-invoicing with its support for increased economic competitiveness, innovation, the promotion of the 'Information Society' and appropriate legislative intervention.

Recent developments have seen the reinforcement of the Lisbon Agenda (now the 2020 Strategy) and the promotion of the 'Single European Electronic Market' (SEEM), an electronic space in which the different actors in the economy can collaborate without technological constraint". It has been further said that e-business applications and services can be considered the foundation of the SEEM.

National governments of the Member States and a large number of public sector organisations are also encouraging e-invoicing and launching specific initiatives. Specific mention should be made of the Danish and other Nordic activities but others could also be cited throughout the EU, such as in Spain and Italy.

Although the situation is not uniform, the position and support from public authorities is a clear driver for e-invoicing, and, it has clearly become a major public policy priority.

1.3.2 Cost savings

With more than 30 billion invoices sent each year in Europe, the costs associated with invoicing are enormous. Switching to e-invoicing can reduce costs in several ways. The electronic process is faster, reduces float, processing errors, eliminates paper processing, saves postage, reduces failed payments and penalty interest and improve customer relations. Dematerialisation of the process can reap unprecedented benefits, although researchers widely disagree about the extent of potential savings. The University of Hanover calculated potential savings of nearly €135 billion per year, based on an 80% reduction in costs and 30 billion invoices sent per year in Europe. The EACT project Corporate Action on Standards (or CAST) predicts a potential of €243 billion per annum in Europe alone. Under a favourable scenario, Capgemini estimates a cumulative impact of e-invoicing on the market as a whole over a six year period of €238 billion[6]. The underlying differences in the calculations above lie in the assumed cost per paper invoice, not so much in the reduction percentage. The fact remains that the potential savings to society are enormous.

1.3.3 Quality and efficiency gains from technology and dematerialisation

From an end-user perspective, great efficiency gains are expected when moving from paper invoicing to e-invoicing. First, there is a huge potential for better resource allocation in terms of switching manpower from low productivity manual processing towards higher output knowledge-based activities. Second, there is the expected efficiency gain in terms of systems integration, which means that e-invoices can be more easily or even automatically reconciled with purchase orders and deliveries. Third, a reduction in data being re-entered or manually processed will reduce errors in the invoice creation process and in the invoice handling process. Given the dependencies with other processes, errors create serious disturbances in the end-to-end trade process. Overall, increased visibility and transparency of transactions are important benefits.

1.3.4 Single Euro Payment Area (SEPA)

The SEPA program represents the next major step towards closer European economic integration. SEPA will allow customers to make euro payments to any beneficiary located anywhere in SEPA using a single bank account and a single set of payment instruments. There will no longer be any differentiation between national and cross-border payments within the euro zone.

The benefits for corporates include the ability to optimise the use of euro accounts and banking providers, as well as establishing the 'building blocks' for greater end-to-end automation in the financial supply chain[7]. The European Central Bank/ Eurosystem, the European Commission

[6] SEPA: Potential benefits at stake, Capgemini Consulting, 2006

[7] 'Chain reaction or slow burn', IBM Institute for Business Value, 2008

and many bankers see e-invoicing as a key innovative development to be enabled by SEPA[8]. It is clear that there are at this stage varying perceptions among banks regarding the business case for participating in e-invoicing.

1.3.5 Financial management benefits

A closer integration of the physical and financial supply chain gives rise to opportunities to better manage cash flow and liquidity resources, to deploy 'shared service centres' for the centralised control of invoicing and related payment activity and to take real advantage of SEPA. Days sales outstanding can be better targeted for systematic reduction. Accounts Payable can be managed to take advantage of discounting since e-invoicing will usually result in faster approvals thus opening up the potential to take advantage of trade discounts. Banks are able to offer supply chain financing facilities based on invoice receivables and payables especially now that open account trading has grown relative to traditional documentary trade. For banking relationships, the risk profile of clients can be better understood through closer intimacy with their trade process with a benefit to the availability and cost of finance. See chapter 3.2.3 for more information about supply chain financing.

1.3.6 Improved customer relationships

E-invoicing solutions offer the customer choices for invoice presentation, either in a web portal or integrated in its ERP system. This flexibility increases the efficiency of the invoice receiver. Invoice queries are likely to be reduced, which is significant as they can cost each party more than €100 to resolve. The resultant customer satisfaction may be turned into business benefits in terms of increased purchases and cross-selling opportunities.

In general e-invoicing provides an opportunity to enrich customer relationship management provided that the appropriate features and functionalities are built in to the seller's services.

1.3.7 Environmental benefits

Creation and maintenance of a sustainable environment is high on the political agenda of several governments. Migrating from paper to e-invoicing reduces usage of natural resources, especially trees. It has been calculated that a 1,000,000 paper invoices require approximately 400 trees.

[8] 'SEPA: potential benefits at stake', Capgemini, 2008

With 30 billion invoices sent annually in Europe, e-invoicing can save significant amounts of natural resources. A 1% increased adoption of e-invoicing could lead to an annual reduction of tree usage of approximately 800,000 trees and towards reduction of CO_2 emissions.

Such environmental benefits may play an important role in a company's corporate social responsibility agenda.

2 Current status of e-invoicing in Europe

Finding 1: e-invoicing continues to grow very rapidly from a low base, but there remain major under-addressed market segments, particularly in the SME (Small and Medium-Sized Enterprises) sector

There are compelling forces at work to encourage the growth of e-invoicing. But although it has been in the 'early stages of development' for over 20 years, it is reported that less than 10% of volumes are currently based on electronic communication instead of paper. Annual corporate and public savings of over €200 billion are estimated to be available across Europe as a whole.

The adoption rate of e-invoicing is accelerating with varying growth rates per country and variations between business-to-business and business-to-consumer invoicing. The Nordic countries are well recognised as leaders, but many other western European countries are seeing strong growth as well. Domestic volumes predominate but cross-border invoicing is also growing, as market integration occurs at both a trade and enterprise level.

In general, the current focus is on outbound and inbound volumes from and to the larger corporate entities and public administrations, especially in the accounts payable area, and mass-consumer invoicing initiatives from utilities and similar entities. The strong market power of these players is driving these developments. The role of the public sector is instrumental in some cases, for example in Denmark and Spain.

Finding 2: the European market for e-invoicing services and solutions is very fragmented, and reaching all potential e-invoice users is a key issue, which banks could assist in addressing

A wide variety of e-invoicing services and solutions are offered by over 400 service providers focusing on varying needs and different market segments. This picture has not altered substantially since 2008 although anecdotal evidence would suggest that less than 50 service providers have a real critical mass of customers and business volume. Service providers who act as 'consolidators' and other players, including banks, overlap in functionality and reach. Service providers are often geographically oriented. There are many ways of exchanging invoices including bilateral, 3-party and 4-party models.

To try to deal with this fragmentation and the need for reach, service providers have begun to connect with each other based on interoperability or roaming agreements (the word roaming appears to now be less favoured and market participants mainly talk about "interoperability" agreements). Bank-inspired models have also shown a promising ability to address the 'reach' problem with SMEs and consumers and indeed, where such models co-exist with service provider models, there is an encouraging trend of adoption. Banks have notable assets including trust and experience with payment networks and the ability to provide supply chain financing. Many non-bank service providers bring strong business integration and IT skills and are often used by corporates and banks for business process outsourcing. There are also

initiatives, which promote an 'any to any' model, in which trading parties could participate in an open eco-system to exchange messages with their counter-parties.

2.1 Overall dimensions and statistical trends

E-invoicing in Europe forms part of a global trend with North America, Europe and Asia Pacific, being the areas of growing activity for e-invoicing. In all three areas, overall penetration remains relatively low but growing. There is some evidence for a greater focus on EBPP in North America and on EIPP in Europe. Both areas have seen a reasonable adoption of EDI particularly in industries with tight and integrated supply chains. Both Japan and Australia have seen growing activity. It is estimated that Europe accounts for 56% of the e-invoicing market, while North America and Asia-Pacific accounts for 35% and 7% respectively[9].

Country	% of e-invoicing market	E-invoicing adoption (2008 estimate)
Europe	56%	4-15%
North America	35%	3-10%
Asia-Pacific	7%	[unknown]

Table 1: Relative size of e-invoicing market and adoption in three major global areas (Source: SWIFT)

The total number of invoices exchanged in Europe in 2009 is approximately 32 bln (paper and electronic). 50% of this is B2B and 50% is B2C. As many as 200 billion commercial documents, including payroll slips were presented in some kind of standardised form, including the invoice totals mentioned. Figure 5 shows the volume of invoices in some key European countries[10] [11].

[9] SWIFT, SWIFT E-invoicing Consultation, October 2008

[10] 'EBPP trends and the role of the Financial Services Industry', Bruno Koch, Billentis Presentation, 2006 updated in January 2008

[11] 'EBPP/EIPP European Market Overview', Bruno Koch, Billentis

Country	Amount (mln)	Country	Amount (mln)
Germany	6,500	The Netherlands	1,200
UK	4,200	Belgium	900+
France	4,000	Austria	800 (2006)
Italy	3,000	Switzerland	650
Spain	1,800	Finland	400
Sweden	1400	Norway	350

Figure 5: Number of invoices in some key European countries

E-invoicing remains to be mainly a domestic activity, since 95% of all transactions are between entities with the same domiciliation. Nevertheless as intra-European trade grows, cross-border invoicing is also set to grow. Further, at the enterprise level integration is also taking place with the growth of shared service centres which will also stimulate cross-border invoicing.

E-invoice penetration rates are growing fast from a low base. For B2B the total volume of processed e-invoices is expected to reach 1,265 mln, for B2C, volume is estimated as 925 mln in 2010 Growth rates in 2009 are estimated to be 40% for the B2B segment, while B2C growth rate is 25%[12]. The total number of e-invoices sent in 2009 is estimated to be 1.36 bln (against 1 bln in 2008)[13].

Year	2006	2007	2008	2009	2010[14]
# E-invoices In millions	510 B2C: 250 B2B: 260	730 B2C: 300 B2B: 430	1,010 B2C: 400 B2B: 610	1,360 B2C: 500 B2B: 860	2,190 B2C: 925 B2B: 1,265
Market penetration	1.7%	2.4%	3.4%	4.5	7%

Figure 6: Growth of e-invoicing in B2B and B2C segments (Source: DB Research & Billentis)

Adoption rates differ largely per country. The Nordic countries are still ahead in terms of B2B adoption rates (> 12%) followed by Ireland, Spain, The Netherlands and Estonia (6-12%) and the rest of Western Europe (1-6%). Adoption rates for B2C are lower, but follow a similar pattern: the Nordic countries (6-12%) followed by Western Europe (1-6%).

[12] DB Research, E-invoicing, crown or catalyst of an efficient billing process, August 2009

[13] Billentis, E-invoicing market report 2009, 2009

[14] Billentis, E-invoicing Newsletter 2010-1

B2B adoption is mainly driven by Business to Business and Business to Small Business e-invoicing. Adoption of Small Business to Small Business e-invoicing is relatively low.

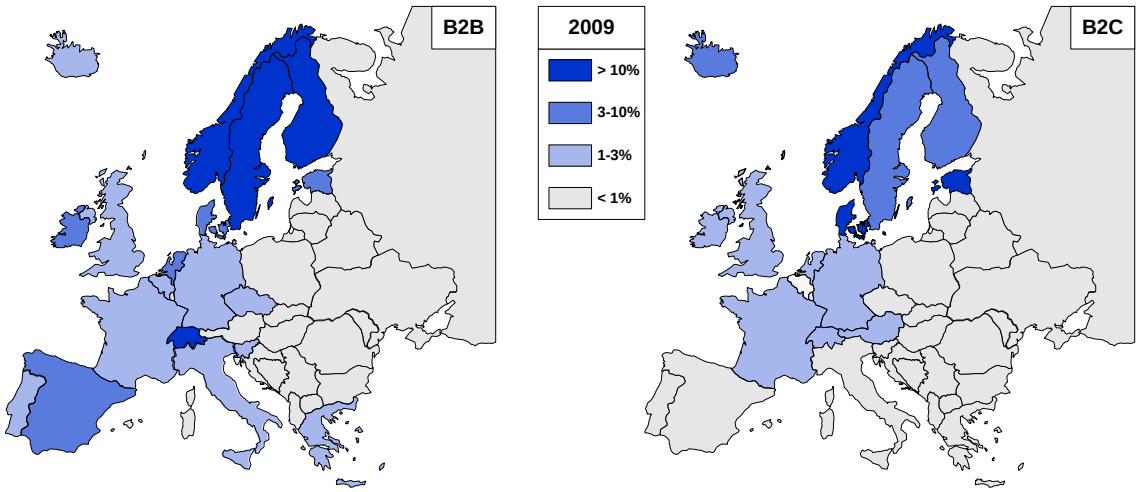

Figure 7: E-invoicing adoption in Europe (source: Billentis)

2.2 Invoice users

Invoice users are the senders and receivers of e-invoices. **The number of users of e-invoicing** is growing fast. Reported growth rates in the B2B segment is 50% in 2009, but also the B2C segment shows significant growth (22% in 2009). The total number of registered businesses in Europe is at least 20 million[15] with some estimates up to 23 million.

The number of consumers participating as receiver in e-invoicing has grown from 23 million to 28 million, a growth of 22%[7]. The total number of consumers in Europe is 490 million[16].

Company size	Amount
SME	~23 Million
Large	~200,000

Figure 8: Total number of European businesses per company size

[15] Enterprise Europe Network, 2010

[16] http://en.wikipedia.org/wiki/Europe

Year	2006	2007	2008	2009	2010[17]
Consumers (% growth)	14.8 mln	18.6 mln (33%)	23 mln (15%)	28 mln (22%)	Not available
Businesses (% growth)	0,35 mln	0,64 mln (83%)	0,96 mln (50%)	1,4 mln (50%)	2,3 (64%)

Figure 9: Number of e-invoicing users, and the growth compared to previous years (Source: Billentis)

Figure 10 illustrates some of the key directional flows of invoices between various market segments. The information is based on Swiss figures and is representative of an advanced European society. In particular it should be noted that over one third of all invoicing takes place within the SME sector and between SMEs and consumers, 43% of invoicing takes place between large entities and consumers, and the rest (principally B2B involving large companies) accounts for around 24% (only).

		To (receiver)				
		Corporate	**Medium**	**Small**	**Consumer**	**TOTAL**
From (sender)	**Corporate**	12%	2%	3%	43%	**60%**
	Medium	7%	10%	1%	5%	**23%**
	Small	0%	8%	8%	2%	**18%**
	TOTAL	**19%**	**20%**	**12%**	**50%**	

Figure 10: Number of invoices exchanged between market segments (Source Billentis & Postfinance)

The above analysis illustrates the importance of creating much wider reach into the SME and consumer sectors. Even if the figures were to be appreciably inaccurate when applied to Europe as a whole, the point still stands.

2.3 The service provider market

The business of service providers in the e-invoicing market is to add value to invoice senders and/or invoice receivers. Such value added services can be categorised, ranging from exchange and conversion services (mainly focused on creation of an exchange network) to complete sourcing of accounts payable or accounts receivable management services.

In Europe there are a large number of service providers and service solutions with a huge variety of product features and business models. This in part is a reflection of the variety of

[17] Billentis, E-invoicing newsletter 2010-1

countries, languages, commercial practices, service concepts, legal environments and implementations of relevant EU directives. Many of the generic models are similar to practices carried out in North America and elsewhere.

The overall number of service providers in the e-invoicing market has grown from 160 in 2006 to 400 in 2009 (see figure 11). Some commentators suggest a continued growth in the number of service providers, whilst others are expecting a major consolidation.

2006	2007	2008	2009
160	260 (+60%)	350 (+34%)	400 (+14%)[18]

Figure 11: Number of invoicing service providers in Europe

There are wide disparities between market shares of the various players. It is believed that approximately 5 players have a market share of more than 20 million invoices[19]. There are approximately 55 players with a market share between 1 and 20 million invoices. Approximately 340 players have a market share of less than 1 million invoices. It is believed that critical mass for e-invoicing service providers is around 1.5 million invoices[19] per annum.

	Volume	# service providers
Large	> 20 million/year	5
Average	1-20 million/year	55
Small	< 1 million/year	340

Figure 12: Market concentration per service provider size

Total revenues generated by service providers in this market are estimated to exceed €1 billion annually[20].

2.4 Key areas of e-invoicing focus

Before examining some key areas of focus for e-invoicing, it is useful to summarise the key drivers for B2B, B2G and B2C e-invoicing.

[18] Billentis, E-invoicing newsletter 2010-1

[19] Bruno Koch, Introduction speech EXPP 2007

[20] 'EBPP/EIPP European Market Overview', Bruno Koch, Billentis

- **B2B**: Business to Business (B2B) and Small Business to Business (b2B) e-invoicing adoption is mainly influenced by a desire to achieve end to end supply chain efficiency. E-invoicing may be (but is not necessarily) linked to a wider automation of the trade process. Given that the entities are taxable the process must fully support the handling of VAT compliance.
- **B2G**: the drivers here are very similar to B2B and b2B and are usually stimulated by the desire of public authorities to improve their own efficiency and also to stimulate e-invoicing and e-business generally in society as a whole.
- **B2C**: Business to Consumer e-invoicing has been motivated by a desire on the part of large organisations to improve their cost structure and effectiveness of accounts receivable collection. In addition it is seen as a convenience to consumers who increasingly are adopting electronic channels for banking, for other financial requirements for money management and for many other lifestyle activities.

There are a number of major focus areas for e-invoicing which are discussed in the next paragraphs.

2.4.1 EDI

EDI is defined by EC Recommendation 1994/820/EC as "the electronic transfer, from computer to computer, of commercial and administrative data using an agreed standard to structure an EDI message."[21]

The adoption of EDI has been a longstanding practice of enterprises who wish to closely couple with their trading partners and exchange trading information in a secure and structured way using clear standards and procedures (B2B). E –invoicing will usually be an integral part of the information exchanged. However, in some countries, the EDI invoice still requires a paper summary, in accordance with national legislation[22].

Initially, EDI was largely adopted by larger corporations and is prevalent in industries such as retail, healthcare, automotive and technology. Newer developments, e.g. web EDI, have increased the adoption of EDI among smaller enterprises, although the adoption rate of EDI is still highest in the group of large companies. The standards approach is often well-established using standards such as EDIFACT, and GS1. Figure 13 shows the adoption of EDI among companies of different sizes.

EDI is often supported by specialist service providers and value-added networks .Often industry-level initiatives such as GS1 for the retail sector, RosettaNet for technology and Odette for automotive provide a governance, standards and rules framework.

[21] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31994H0820:EN:HTML

[22] EU Directive 2001/115/EC

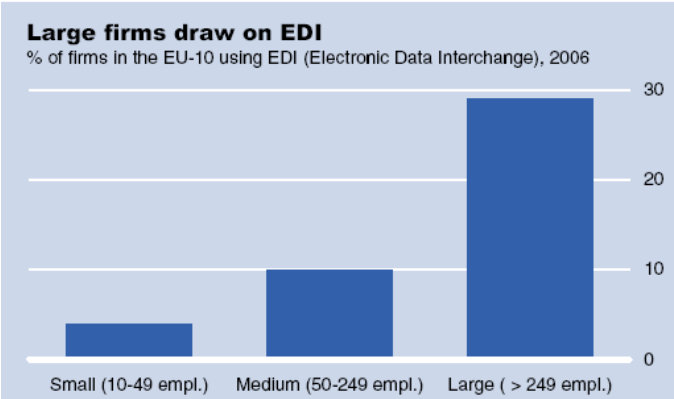

Figure 13: Usage of EDI per company size (source: E-business watch)[23]

Given the fact that in some countries the EDI invoice still needs a paper summary, EDI invoicing does not completely solve the dematerialisation problem.

Figure 14 shows the market penetration of EDI (with paper summaries) and EBPP/EIPP in the last 20 years. Clearly, EBPP/EIPP (i.e. the newer forms of e-invoicing) has now reached the market penetration levels of traditional EDI. The penetration rates in below graph are based on a representative sample of European countries where EBPP adoption is relatively high.

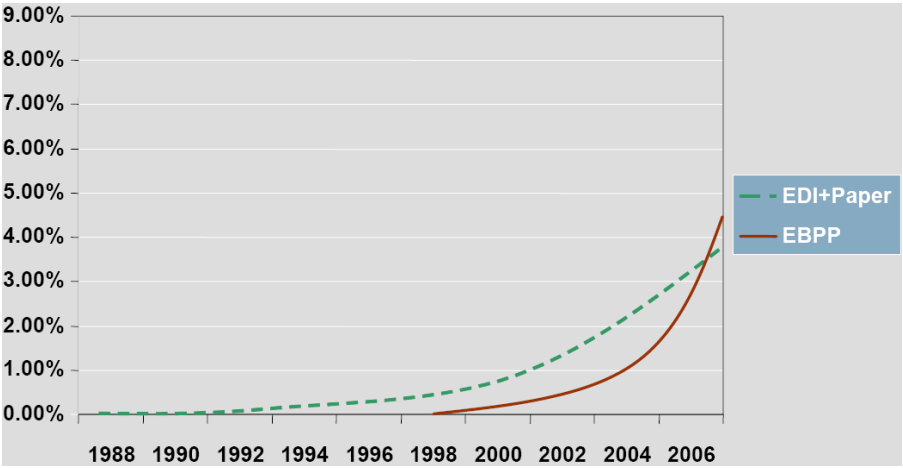

Figure 14: EDI+Paper and EBPP Adoption rates 1988 until 2007 (source: Billentis)[24]

[23] Ebusiness Watch 2006/2007

[24] 'EBPP/EIPP European Market Overview', Bruno Koch, Billentis

Whilst EDI no doubt has a continuing future in its own right, commentators have suggested that EDI will progressively feed volume into alternative e-invoicing systems.

2.4.2 Self-Billing

In self-billing, the invoice is issued by the buyer (usually a large enterprise), on behalf of the supplier, based on the Purchase Order (PO) or the goods delivered. The self-billed invoice is then made available to the supplier, and scheduled for payment by the buyer. Self-billing is becoming increasingly popular not only in production environments, but also in other environments and industries. It has some advantages for the buyer and the seller, such as fewer discrepancies between the PO / goods delivered and the e-invoice, faster payments and a smoother invoice enquiry process.

2.4.3 Buyer and supplier initiatives

One of the main drivers of growth of e-invoicing has been the dynamics of the power relationships inherent in the supply chain. Especially in supply chains controlled by a single powerful entity (including in some cases public sector organisations), e-invoicing solutions have been deployed to facilitate the processing of invoices for that entity as well as to support the efficiency of the entities making up that supply chain.

2.4.4 Accounts payable automation

In the B2B space the automation of accounts payable has been a key focus for large buyers with supply chains for both goods for resale (retailers buying inventories and manufacturers buying raw materials) and goods not for resale such as supplies and services.

Various studies show that organisations spend between €4 and €70 to process an invoice. This includes the cost of receiving and handling the invoice, matching against orders and deliveries and approving payment. Accounts payable (A/P) automation can significantly reduce the cost of handling these inbound invoices.

Major adopting companies press their suppliers to send invoices electronically and may impose an ‘opt out’ rather than ‘opt in’ methodology thus putting additional pressure on the supplier. It has been reported that within less than a year, up to 50-70% of all invoices can be switched to electronic[25].

Successful initiatives in this area have usually been based on the establishment of a substantial programme of automation often involving a shared service centre for supply chain management and ensuring that the footprint required in the supplier’s systems is as small as possible and does not ‘reach back’ too far into the supplier’s systems with resultant complexity and costs. An

[25] ‘EBPP/EIPP European Market Overview’, Bruno Koch, Billentis

up to date explanation of the benefits and processes for Accounts payable has been documented by Aberdeen Group[26].

2.4.5 Accounts receivable automation

It is suggested that accounts receivable automation works best where the biller has very substantial volumes of invoices to collect and this creates a business case for investment in the necessary infrastructure. Utilities and telecom/mobile operators fall into this category and increasingly provide EBPP systems for their very large mass-customer base.

In B2B situations generally, the business case for e-invoicing in the area of accounts receivable has been less easy to establish than is the case with accounts payable. The biller in this situation is dealing with his customer and the customer relationship management (CRM) dynamics are more complex. It is also fair to say that the costs of invoice sending are much lower than handling in- bound volumes and a number of studies have confirmed this.

2.4.6 Total Invoice Management

Total Invoice Management is usually related both to accounts payable and accounts receivable management and refers to the automation of the entire invoice management process, providing fully electronic services but also taking steps to efficiently handle and where possible automate those invoices remaining in paper form using techniques such as scanning, OCR (Optical Character Recognition) data mapping, workflow management, and e-archiving[27].

2.4.7 Different approaches for goods for resale vs. overheads and services

A distinction can be made between a company's 'goods for resale' supply chain and it's 'overheads' purchase activities often called MRO- maintenance, repairs and operations

The 'goods for resale' supply chain involves the ordering and delivery of production raw materials and semi-finished goods. This is at the core of a company's activities, and as a result, it is perceived as mission critical, and is often characterised by longer term partnerships and repetitive order placements. Such an environment is fertile ground for automating the financial and information flows related to the 'goods for resale' supply chain. Both EDI and newer forms of e-invoicing are commonly employed

On the other hand, the 'overheads' supply chain involves the ordering and delivery of auxiliary services and products, such as cleaning, supplies business services, etc. There are major opportunities in this area and has proved a fertile area for e-invoicing adoption.

[26] 'E-Payable Solution Selection: your guide to A/P transformation', Aberdeen Group (2007)

[27] http://www.logicacmg.com/total+invoice+management/350233806

2.4.8 Public sector procurement / e-government initiatives

The initiatives of government to promote e-invoicing are becoming increasingly important as a market influence in some cases driving current activity and in most cases acting as a stimulant for future adoption. The following are the principal activities and these are further described in chapter 3:

- The general activities of the European Commission and Member States in coordinating and launching specific pilots and e-procurement processes. Member State initiatives are sometimes under compulsion of law. A number of governments have recently launched the PEPPOL project to cooperate in this area.
- The specific role taken by governments and public bodies in Denmark, Spain, Sweden, Finland, Italy, representing the currently most advanced public sector initiatives in Europe.

As far as is possible to tell at this stage such public sector initiatives are not designed to create a parallel stream to private sector activity but rather to help deliver and stimulate a common user experience for all situations.

2.4.9 Mass billing and EBPP

Large utilities and similar organizations providing goods and services to a mass customer base are able to make a strong business case for dematerialising consumer bills and making them available usually in an Internet portal. The approach often involves a measure of compulsion either on the basis of: “Unless we hear to the contrary, we will as of [date] cease to send paper invoices” or even contemplate charging for paper.

The provision of e-invoices leads naturally to the payment and hence this type of e-invoicing is referred to as Electronic Bill Presentment and Payment (EBPP). Consumers may seek the convenience of seeing all their main invoices appearing in a single portal and then having the facilities to make the payments. Even where direct debit is commonly used as a payment mechanism for bill-paying, consumers may still appreciate the accessibility and convenient presentation and storage of such invoices in one place. The evolution of EBPP is still happening and is much influenced by the growth and penetration of online banking.

2.4.10 Penetration of online banking

A major driver for the adoption of e-invoicing is the adoption of online banking. Research showed that countries with high online banking adoption rates also show high e-invoicing adoption rates[28]. Figure 15 shows the adoption levels of online banking for B2C and B2B.

In the B2C segment, Europeans use online banking to quite different degrees. In fact, GDP per capita and geographical location, statistically explain around 80% of the variation in Europe – as

[28] Eurostat & DB Research

suggested by a simple regression analysis. The European average (EU-25, 36%) is markedly below the US average (44%)[29].

For the B2B segment, online banking adoption rates also vary per country.

Usage of Internet banking not only depends on the country a business is in, also company size is an important determinant for Internet banking adoption, see Figure 16.

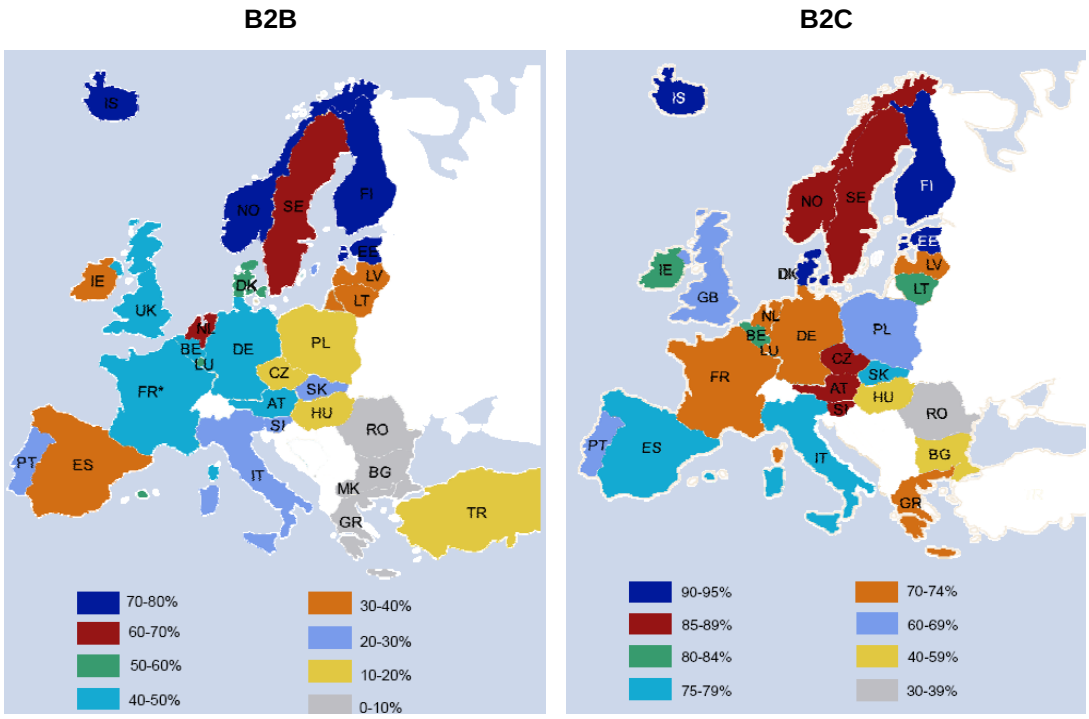

Figure 15: Adoption rate of online banking (source: Eurostat & DB research)

[29] 'Online banking - What we learn from the differences in Europe', DB Research

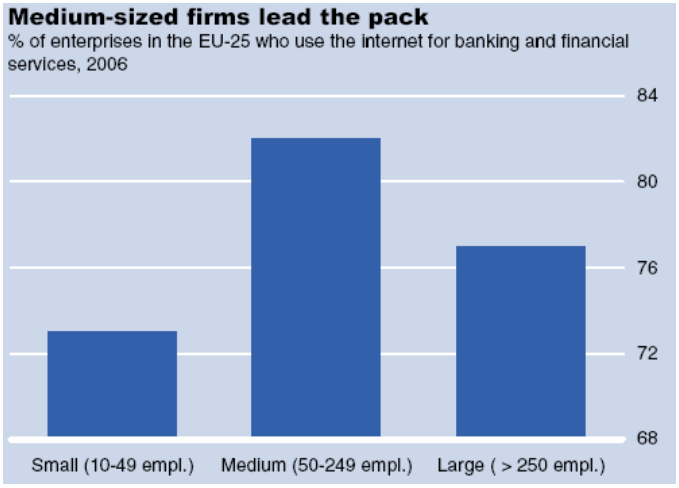

Figure 16: Adoption of online banking by business size (source: e-business watch)

Banking over the Internet is widespread among medium-sized firms. The fact that fewer large firms than medium-sized firms use the Internet for financial services may be surprising, but many large companies employ legacy systems which uses messaging interfaces, such as EDI.

The online banking portal provides a powerful tool for the creation, receipt, management and payment of e-invoices. As these systems have been deployed, they are a strong indicator for the growth in the e-invoicing market on a country by country basis.

The role of banks is further emphasised by the opportunities that the provision of e-invoicing services through online channels gives to offer financing. The existence of a data-file of e-invoices and the insight this brings to a company's supply chain and working capital management, creates a natural platform on which to base lending.

2.5 Service models

The following describes some typical models for service provision. The 'seller', 'supplier', 'biller' or 'invoicer' is described as the sender (and receiver or payee of funds), and the 'buyer' or 'customer' is described as the receiver (or sender or payer of funds). The models are not mutually exclusive and there are many combinations in practice:

- **Seller or biller direct**: an invoice sender (often with the support of a service provider as a technical enabler) sends ('push') or provides a web-site/portal ('pull') to allow customers to review and pay invoices usually electronically as well as access other services. This method is often used by utilities and telecom operators.
- **Buyer direct:** powerful buying organisations require their suppliers to deliver e-invoices directly to their systems, often providing tools to convert accepted orders into VAT compliant invoices. In addition to the use of a buying portal, the sender may use a direct connection or an EDI system. Service providers may be involved as technical enablers.

- **Consolidator:** this is a service provider that processes and distributes invoices on behalf of a range of senders and receivers. As an 'acquirer' of invoices (similar to the payments card processing market), a consolidator will usually set up networks or service bureaus to receive or distribute its customer's invoices. This model provides senders with a specialised channel or switch through which invoices can be routed to customers and in turn allows buyers to access potentially a large number of invoices payable. Such consolidators have often targeted the strong buying and seller adopter organisations discussed in the previous chapter. They seek to add value, in the ways covered below in the paragraph on outsourced service provider roles, stressing their strong IT capabilities, business process engineering skills, their end-to-end view and cost effective processing.

  There are consolidators who focus on the processing and exchange of a complete range of trade documents, of which the invoice is just one, albeit an important one. Others have focused on the invoice at least at the beginning ('good place to start') and then seek to add additional functionality. In this sense it can be said that there are a variety of 'thick' and 'thin' models thus giving users an array of choice of supplier.

- **Aggregator:** often an invoice payer will need to connect to multiple seller direct solutions and/or consolidators. To avoid 'silo' effects involving multiple connections and integration projects, an Aggregator provides bill payers with a single point of contact for as wide as possible a number of invoices on the receiving side. This is considered to be of special value to SMEs and consumers. Again the Consolidator itself may perform this function as part of a total service and in other cases the Aggregator is a different entity for example a bank.

- **Single bank services**: a number of banks have entered the market to compete directly in the consolidator market offering a bundle of supply chain services to typically large corporations and then attracting to its network suppliers and customers of many shapes and sizes. Banks may acquire or work with partners, deploy the necessary technical capabilities and add finance, payment and cash management, and workflow services. Other single bank models include services to payers of invoices in which invoices are received from consolidators or on a seller direct basis and displayed to the bank's customers through the Internet banking portal for payment (EBPP).

- **Bank managed schemes**: bank services often take the form of a collective scheme, where a community of banks cooperates to provide a service based on a set of rules, standards and agreed terminology. Either on a purely networked basis or by creating a central service provider, banks provide secure transport and/or display of invoices to their customer base through their Internet banking portals as well as an invoice submission service for customers typically SMEs. The banks may 'acquire' invoices directly from their own customers, from other banks or from consolidators. Individual banks will then add services in the form of payments and cash management, financing and workflow. In deploying such a model the banks focus on their reach, networking capabilities, trust, security, experience of standardisation as well as specific products.

- **Outsourced service provider roles**: these roles include the supply of services to any part of the invoicing process itself and indeed to other parts of the end-to-end trade process. They may be 'invisible' to the external environment by providing commercial entities with outsourced business integration and processing services or they may also be 'visible' in also providing consolidator services. For many service providers the value added in supporting their customers in de-materialising their end-to-end trade process and/or providing outsourcing services, is the focus of their revenue model.
- **Total invoice management providers:** as described in paragraph 2.4, in an environment where not all invoices are de-materialised, these service providers provide full e-invoicing services and for scanning and/or the parallel handling of paper invoices so as to provide a complete offering. This will often include archiving services.
- **Trade platforms**: these are typically central platforms facilitating a marketplace. Often such providers offer services for both sender and receiver covering multiple processes in the end-to-end trade process. Services offered to buyers ranges form order placement, invoice authorisation and settlement, invoice query resolution and archiving. Services offered to sellers range from responding to an order, invoice creation and exchange, invoice status monitoring and remittance advice.
- **Email service providers**: there are entities who offer techniques for invoice presentment through email. Such services may then link to supplier/bank portals for further processing steps.
- **Communication providers:** a variety of entities provide communication services to the whole trade process and e-invoicing eco system including Value Added Networks (VANs) especially for EDI operators, network service providers and electronic signature services. Scanning services could also be mentioned in this context.
- **Factoring service providers**: factoring is a form of full accounts receivable outsourcing. It focuses on lowering the cost of managing accounts receivable and the risk involved. A factor takes over the accounts receivable administration of an invoice sender. It provides finance by paying the invoice amount to the invoice sender minus an invoice fee. This fee is partly for administration and partly to provide the risk premium for non performance of the debtor. Other factoring arrangements include reverse factoring in which the factor acts on behalf of a large buyer to finance or discount its payables in favour of supplying entities.
- **Software vendors**: vendors of software solutions, such as accounting packages and ERP systems facilitate the internal enterprise processes within an organisation. Such systems may offer solutions for A/R or A/P automation. Some ERP vendors also support processing of business messages in EDI or XML.

2.6 Geographic overview

2.6.1 Austria

E-invoicing in Austria has been traditionally utilised by large companies only exchanging proprietary invoice formats or EDIFACT invoices. Over the last few years the Austrian standardised e-invoicing format ebInterface has emerged which is primarily aimed at SMEs, and this standard has been integrated in some ERP systems. Besides traditional invoicing formats and the XML-based ebInterface also the exchange of PDF-invoices is in use. Widespread use of real structured e-invoicing is still a long-term goal, but the situation is improving year by year.

E-invoicing is heavily promoted by the Austrian Chamber of Commerce through all of its communication channels. The Austrian E-invoicing standard ebInterface is being continuously improved and its version 3.0 will also be ready for use by a significant group of large scale companies.

On the banking side, EBPP GmbH is a shared service for B2C and B2B e-invoicing (led by Raiffeisen).

2.6.2 Belgium

In Belgium, e-invoicing has been implemented by most large buyers active in some of the main industry sectors, such as the automotive-, the electrical-, the chemical industry and the retail sector, towards their first tier suppliers. Emerging Internet technologies such as the adoption of XML (eXtensible Markup Language), has facilitated an increasing adoption of e-invoicing in the SME sector.

In B2C the major banks offer Zoomit, a product of the interbank owned company Isabel, to their Internet Banking users. With Zoomit suppliers can present invoices into the consumers' e-banking portal. Zoomit is based on a 3-party model. The standard used is Finvoice and payments are compatible with the SEPA payment instruments. Today, Zoomit is available to more than 3 million users which represents 82% of the Belgian Internet Banking market and is complementary to Isabel's Business-to-Business e-invoicing solution.

A second initiative is that of Certipost, a company owned by the Belgian Post, which focuses on secure electronic communications and supports e-invoicing as part of a wide service array. Certipost has an interoperability agreement with Isabel eInvoice, Isabel's Business-to-Business solution line.

2.6.3 Denmark

The major focus in Denmark has been the activities of the Danish public sector which started with legislation for e-invoicing in 2005. Messages are submitted in an electronic format, in an agreed standard based on OASIS UBL. Paper invoices are scanned by scanning agencies.

Invoices are transferred to the public sector via Value Added Networks (e.g Prograter, IBM, KMD, Logica etc).

The public sector has introduced Nemhandel (Easy Trade) whereas all kind of e-business messages are included and will be compulsory for the Public Sector by 1 May 2011. Nemhandel also includes a common e-register, to find receivers and senders and by supporting an open infrastructure based on open standard (OIORASP) it is opened up for exchange over the Internet. By introducing a free and simple electronic Internet service the intention is to shift from scanning to e-messages. It is compulsory for the public sector to handle the new version of the format (OIOUBL 2.0) but the older version (OIOXML) has no end date yet.

The bank-owned infrastructure (ACH) PBS (recently merged with Norwegian BBS) together with banks provide support for the public sector initiative and also for separate banking based e-invoicing service, called eFaktura. This service was introduced after the public sector had launched OIOXML but has until today a small market share. The whole environment is stimulated by the public sector initiatives and the banking industry has created a further variety of complementary solutions.

Recently a new venture called Tradeshift has been launched (www.tradeshift.com) offering a new internet based e-invoicing service open to trading parties and service providers.

2.6.4 Finland

Finland is an active e-invoicing country in which a number of active consolidators co-exist with a strongly growing bank scheme all strongly supported by government. In the former space are companies such as Itella (ex Post Office operation), Basware, Logica and Tieto. These firms have expanded outside Finland as their experience has developed.

The collective bank model is based on Finvoice which is an e-invoice for electronic/online presentment by the invoice issuer to the receiver. Finnish banks originally designed it as invoice in machine readable form (XML) enclosed in an electronic envelope to replace the traditional paper invoice. Finvoice can be sent to receivers through banks' online invoice transmission service or by using another invoice service provider. It is a solution suitable for invoicing between businesses of any size, also for invoicing to consumer customers. The Finvoice format is also used in solutions for invoice financing.

In 2009 banks have 129,000 agreements with corporates for using Finvoice and the e-invoice volume in the banks' network has increased by 60%. Banks' e-invoice volume was over 8 million.

State Treasury accepts only electronic invoices from January 2010 and that decision got the SMEs interested in e-invoicing. Also new e-invoice operators entered the market offering web based solutions for SMEs.

2.6.5 France

In France major enterprises are increasingly converting to e-invoicing or have a traditional commitment to EDI. It is however fair to say that France has a fragmented e-invoicing penetration and a current lack of collective initiatives promoting e-invoicing adoption.

On the B2C side this is to some extent a result of the use of cheques throughout French society. France Telecom is a major player as are a number of other billers with a large base of consumer customers. A consolidator in B2C is Telefact, launched by France Telecom and EDF-GDF. Government led initiatives have been notable for example in taxation and purchasing.

In the B2B space, there are a number of operators supporting both EDI and newer forms of e-invoicing such as B-process, Cegedim (pharmaceutical by origin), Deskom and Seres. GS1 is also a popular platform for retail industries.

The banks are active as payment service providers through online banking portals with the potential to expand into e-invoicing, although the engagement of banks is in an early stage of development. It should be noted that B-process mentioned above is a bank owned entity. Factoring is also prevalent.

Among the corporates themselves there is a strong and growing focus on the internal automation of business processes.

2.6.6 Germany

Germany has Europe's largest volume of invoices. With 7000 companies active in EDI and a number of active electronic marketplaces and message exchange platforms, there appears to be strong potential for e-invoicing to further develop.

However, Germany is relatively undeveloped for the newer forms of e-invoicing services. Reasons for this have been explained as the above-mentioned strong tradition of EDI in closely coupled supply chains such as automotive, the major use of direct debit and the strength of seller direct models such as is provided by Deutsche Telekom. The stringent legal requirements imposed by various authorities have also been cited as a reason for slowing adoption.

Service providers such as Crossgate, TecCom, Crossinx, First Business Post, Seeburger, Deutsche Post are, however, making inroads. Recently a German E-invoicing Alliance (VER) has been formed and a number of service providers are engaged in developing an interoperability solution between them.

In the banking industry, all the banking sectors have begun to be engaged. The Deutsche Bank, for example, offers a global product with an integrated cash management component has also recently introduced an e-invoicing solution in the shipping industry and has announced the launch of an 'e-SupplyChain' hub to connect e-invoicing operators.

2.6.7 Italy

A notable initiative in Italy is the CBI (Interbank Corporate Banking) Service managed by CBI Consortium (Customer to Business Interaction), established under the auspices of ABI, the Italian Bankers Association. By leveraging a secure and standardised messaging platform to which 690 banks and over 800,000 corporate entities are connected, CBI is rolling out a service which transmits invoices and other documents between the actors and integrates with payment and financing services. CBI standard has been developed and deployed, based on the UN/CEFACT Cross Industry Invoice format with additional flexibilities using a common header and a message body.

The Italian Government is playing an important role in the e-invoicing adoption, approving the law according to which it will be mandatory to adopt electronic invoices in the relationship with national Public Entities (B2G domain). In particular, Public Administrations will be prevented from accepting other types of billing, besides electronic ones, and from making any payment before having received an invoice in electronic form. The technical rules, to be used to send e-invoices to Public Administrations, are expected to be released within 2010. This measure is in line with the strategic objectives of the Italian Government, namely to accelerate its path of renewal and promote the dissemination of information tools to support the fight against tax evasion. The final aim is to lead the way for the spread of electronic invoicing between companies (B2B domain) with the obvious benefits of transparency and innovation. By the way many local public administrations have already endorsed e-invoicing process achieving notable benefits. The number of consolidators active in Italy is constantly growing.

Certain local governments (Lazio, Tuscany and Piemonte) have already started to use e-invoicing as a way of encouraging the adoption process by their suppliers.

2.6.8 The Netherlands

The Dutch retail sector in the Netherlands has been at the forefront of B2B e-invoicing adoption (over 80% of invoice volume). Other larger companies are also exploring e-invoicing possibilities, most through service providers and/or by scanning paper invoices and producing PDFs. Very few small and medium sized companies have adopted e-invoicing so far.

In B2C the Netherlands is following the global trend of seeing major repetitive billers, such as utilities and telecoms increasingly moving to e-billing by making invoices available in their individual corporate portals. Other initiatives include ‘Via Mijn Bank’ using the proprietary format Standaard Digitale Nota, which has been initiated by the major Dutch banks and a number of consolidators to provide access to invoices through internet banking. These arrangements are managed through a consortium structure organised by the Dutch Bankers Association. In 2010 90% of the online banking population has become able to receive e-invoices in their online banking environment but issues remain to be resolved, both technical and consumer acceptance.

A novel innovation is AcceptEmail, a service through which bill presentment and payment initiation occurs through the e-mail inbox, the latter using online payment channels, such as iDEAL. This service has been adopted by T-Mobile, Wehkamp, Ziggo and others.

Tax regulation is relatively liberal, but this is not sufficiently known by many companies. Accountants and auditors have been rather slow to actively promote sending or acceptance of electronic invoices to business managements.

2.6.9 Norway

Norway has been an innovative market in which telcos and banks in particular have developed solutions. In the B2C segment in particular, the banks through BBS together with other major players such as EDB and other providers of invoice 'hotels' have offered an active consolidator solution and scheme for the whole Norwegian market. The number of registered users for online banking based eFaktura services has grown rapidly with a penetration of nearly 90%.

E-invoicing adoption in the SME sector is growing fast with the adoption of the e2b format. The e2b format will converge with the newly developed Northern European Subset (NES) UBL standard. In the SME sector, Norwegian banks offer also e-invoicing services through their online banking. The Post Office is also active.

Norway is planning to introduce legislation as from 2012 to have NES UBL mandatory for all invoices to the public sector.

2.6.10 Portugal

E-invoice adoption in Portugal is low for both B2B and B2C. Biller portals are mainly used for B2C invoicing. In B2B, traditional EDI systems are used for the exchange of e-invoices. Self billing is also applied in Portugal.

However with a view to stimulating adoption, SIBS, a bank-owned service provider, recently developed MB DOX, a solution for the presentment of electronic invoices to businesses in their banking portals. MB DOX is expected to launch later in 2010.

2.6.11 Spain

The Spanish government is a prime mover in promoting e-invoicing. The standard Factura-e has been made the mandatory standard for all invoices to be sent to the Spanish public administrations as from 2010. The public sector move to e-invoicing and the adoption of the facture-e standard is promoting rapid market development, in which the banks are playing a key role.

The Spanish Bankers Association has been involved since 2004 in the creation of e-facturae and in the development of a rulebook to promote interoperability between banks. The link to

factoring and payments is a major driver for banks to offer e-invoicing services. The current focus is on convergence between the UN/CEFACT and the e-facturae standard.

Aside from the involvement of banks and their customers, other players in the Spanish market are Telefonica in the B2C space and operators such as Seres who provide services to major corporate and the retail sector. Spanish entities are also involved with supply chains where the partners are outside Spain and in that way become involved in e-invoicing.

2.6.12 Sweden

In Sweden, market development has been strong. The main methods used for e-invoicing are EDI-invoice, EBPP (mainly through the banks Internet channels), EIPP, self-billing, invoice-files via e-mail and online services (ASP, web-EDI, etc) and scanning of paper invoices. Over 80 banks provide aggregator services for their customers (both B2B and B2C). The co-existence of and cooperation between non-bank consolidators and bank aggregators is noteworthy. The private sector has many solution providers for e-invoicing, both those focusing on Sweden only and those with a more international scope, catering for the needs of multinational corporations.

The Swedish government promotes e-invoicing by making the handling of e-invoices mandatory for government agencies (implemented July 2008). Currently, suppliers can either choose to send invoices electronically in Svefaktura XML or SFTI EDIFACT format, or use scanning agencies. The latter option will be removed in the following years.

No technical measures are mandatory for e-invoicing in Sweden, as long as the data in the invoice remains unchanged. In relation to archiving of electronic invoices the invoices must be kept unaltered and readable during the entire storage period. The Swedish Tax Agency (Skatteverket) may issue regulations with regards to the control of the electronic transfer of invoices.

2.6.13 Switzerland

In Switzerland more than 2 million consumers can receive electronic invoices in their online banking through two consolidators (SIX Paynet and PostFinance). Most of these invoices are issued by telecom providers, insurance companies, credit- and customer-cards, local communities, electricity suppliers, media companies and authorities. Around 12 % of online banking users are using this function.

In total between 10 and 15 % of the total B2B invoices in Switzerland are exchanged electronically. The vast majority of B2B e-invoices are issued by 7 service providers (B2Bnet, exxtainer, Pentag, PostFinance, SIX Paynet, Swisscom and StepCom). Adoption rates are highest in the retail sector, in chemical and pharmaceutical industry and in the financial industry. Big companies are the main drivers. SMEs are predominantly in the role of sender of e-invoices.

The swissDIGIN-Forum (swiss Digital Invoice) has been established with support of the service providers and user community, to harmonise the requirements and to promote e-invoicing. In

the retail sector GS1 Switzerland defined an EANCOM message. Besides EANCOM/Edifact, service provider's proprietary standards are prevailing with support from software vendors.

The Federal Tax Authority enacted an e-invoicing ordinance in 2002 and several amendments have been made. In April 2009 a member of parliament has submitted a motion that is still pending, declaring e-invoicing mandatory for federal administration. The Federal Finance Administration is currently implementing e-invoicing for incoming and outgoing invoices.

2.6.14 United Kingdom

The UK is a large market with a supportive stance on the part of tax authorities, and therefore a growing interest in and a rising volume of e-invoicing. However, there appears to be a slower take-off in consolidator development and less bank collective scheme development than has been the case with smaller European countries.

It is noticeable that the public sector has not been proactive in promoting e-invoicing then in other European countries although this is not uniformly the case and many National Health Trusts, local councils and other public bodies have pushed adoption.

The UK has been a pioneer in the seller direct sector with many utilities, telcos and credit card companies providing online billing services. With the rapid growth of online banking the need for e-invoicing services coupled with payment initiation would seem to be evident. With a high penetration of direct debit and still high cheque volumes, however, demand has not yet moved beyond the invoice presentment stage. Perhaps the advent of Faster Payments will act as a spur. The bank owned Vocalink and CheckFree a leading vendor have been working on a joint venture called OneVue since 2004, supported by a number of leading banks. Individual banks are also developing services.

Leading consolidators are Accountis (part of the Fundtech group), Burns eCommerce, Microgen, Logica, JP Morgan/Xign, OB10, Royal Mail, and Tradocs. OB10 has created a large UK and international network which it makes available to its own customers and to alliance partners such as Logica . A recent development has been the deployment of e-invoicing services by the Royal Bank of Scotland, who have an alliance with Accountis.

2.6.15 Eastern and Central Europe

- **Estonia:** In B2C, Estonia is amongst the leading countries in Europe with an e-invoicing adoption of 22%. Most used invoice exchange mechanisms are email, online banking and supplier portals. Estonia has a central directory of end-users that have registered for e-invoicing (arved.ee). In B2B Estonia is less developed. Email with PDF is often used by both large and small businesses. Further STP automation of the invoice process by XML messages is beginning to take off.

- **Poland:** Electronic invoicing in Poland is a rather uncommon practice. In the B2C market electronic presentment of invoices via email or supplier portals is starting to take off. Adoption in B2B is nearly 0%. The legal environment for e-invoicing in Poland is complex, with different interpretations of VAT law.

There are other Eastern and Central European countries where e-invoicing is beginning to develop or under consideration, such as Romania and the Czech Republic.

2.6.16 Pan-European e-invoicing

The overwhelming volume of e-invoicing currently takes place on a domestic basis despite the prevalence of cross-border trading. Trading parties often experience difficulty in understanding legal requirements and which country regime applies to a specific transaction. In supporting trading parties in the pan-European dimension a number of service providers and major multi nationals have created compliancy on a multi-country basis, but always refer to the complexity and cost of achieving this. Genuine pan-European initiatives are very few, for example the PEPPOL initiative (Pan-European Public Procurement Online), the activities at the European Commission in promoting solutions, the CEN workshops and service provider initiatives, such as the HubAlliance and discussions taking place among the banks under the auspices of the Euro Banking Association (EBA) and within the SWIFT community.

2.7 Other initiatives

2.7.1 Public Procurement initiatives

- **PEPPOL:** PEPPOL stands for Pan-European Public Procurement Online. The objective of the PEPPOL project is to set up a pan-European pilot solution that, conjointly with existing national solutions, facilitates EU-wide interoperable public eProcurement. The vision of the PEPPOL project is that any company and in particular SMEs in the EU can communicate electronically with any European governmental institution for the entire procurement process. The final outcome of PEPPOL will be an interoperable environment built upon national systems and infrastructures supporting the full cycle of eProcurement activities.[30]. E-invoicing is one of the key areas of focus for PEPPOL.
- **E-PRIOR**[31]**:** E-PRIOR (electronic PRocurement, Invoicing and ORdering) is an e-Procurement platform that can be adopted by public authorities that want to execute a cross-border e-Procurement pilot. It makes use of work done by the CEN workshop on Business Interoperability Interfaces (CEN ISSS BII). E-PRIOR has been developed by the

[30] www.peppol.eu

[31] http://www.peppol.eu/News/news-archive/open-e-prior-release

Directorate General for Informatics (DIGIT) of the European Commission. Furthermore, e-PRIOR will be connected to the PEPPOL infrastructure via its own PEPPOL gateway. Public Authorities can use e-PRIOR to dematerialise their procurement processes such as e-invoicing, through the exchange of electronic documents.

- **IDABC**: IDABC (Interoperable Delivery of European eGovernment Services to public Administrations, Businesses and Citizens) is a programme managed by the European Commission's Directorate General for Informatics, promoting the exchange of information between public administrations across Europe through the use of information technology and harness a more efficient delivery of public sector services to citizens and enterprises in Europe. The IDABC programme produces guidelines for the implementation of e-procurement that can be used by infrastructures such as PEPPOL.
- **Fiscalis**: Fiscalis is an EU Commission initiative under responsibility of the DG-TAXUD. Its objective is to share good practice guidelines between Member State tax administrations. It provides guidance papers on tax audits, training standards and audit facilitation to EU member state tax authorities. Fiscalis has a focus on e-invoicing audit guidelines.

2.7.2 Sector initiatives

Leaving aside strictly commercial services offered by one entity towards the market, the following collective initiatives at sector level are worthy of mention:

- **Aviation sector**: IATA (International Air Transport Association): IATA has set up an invoice system called IATA InvoiceWorks, which provides an e-invoicing service aimed at the air transport industry. Over 230 airlines (out of an approximate 5,500) and 5,550 industry suppliers are linked through IATA InvoiceWorks, covering 93% of scheduled international air traffic.
- **RosettaNet:** RosettaNet allow trading partners of all sizes to connect electronically to process transactions and move information within their extended supply chains. The community is comprised of experts that work together to develop standards that simplify increasingly complex supply chains.
- **Odette (Organisation for Data Exchange by Tele Transmission in Europe):** Odette International is an association of automotive industry groups. It provides a network for e-business communications, engineering data exchange and logistics management for the automotive industry, which link 4,000 businesses in the European motor industry and their global trading partners.
- **Joint Automotive Industry Forum (JAIF)**: the JAIF is the forum for automotive associations. The objective of JAIF is to address global supply chain issues, which span from the raw material supplier to the final customer for vehicles, parts and services, and includes e-invoicing.

- **Chemical industry**: the chemical sector has initiated the Elemica initiative. Elemica is an invoicing system that only necessitates producers to have one single connection with carriers, storage locations and logistic service providers. Approximately 50 buyers in the chemical and other sectors have adopted this form of invoicing and the total number of companies active on the Elemica network is 2500.
- **International trade sector:** Allied to e-invoicing are a number of initiatives that support global trade flows:
- **SWIFT Trade Services Utility (TSU)** is a collaborative centralised matching utility that is designed to help banks meet the supply chain needs of their customers. At its heart lies a Bank Payment Obligation as a trade finance instrument which complements more traditional instruments such as the Letter of Credit. Banks are building individually on the core functionality of the TSU to offer services such as financing, payables/receivables management, logistics and risk mitigation.
- **TradeCard** connects buyers, sellers and their service partners on a hosted, paperless platform and supports a range of services that automate financial processes.
- **Tradocs** is a global trading system that enables businesses to trade electronically by quickly exchanging documents, such as purchase orders and invoices, securely over the Internet.
- **Bolero** is a neutral secure platform enabling paperless trading between buyers, sellers, and their logistics providers.

2.8 Summary of forces at work

It is clear that the following aspects seem to have influenced the penetration of e-invoicing in the countries and sectors reviewed above:

- Size of country in terms of population appears to be a factor, the smaller the easier it seems to achieve higher levels of adoption.
- Awareness and use of technology at all levels is key, for example the use of the Internet by SMEs and the use of online banking are indicators.
- The role of government as a policymaker and public administrations as early adopters is a major influence.
- The availability of easy to use service provider solutions and indeed the size and health of the service provider sector is important.
- Sector initiatives are important especially for closely coupled trading parties but they have a role to play in contributing to a more open eco-system.
- The co-existence of strong service providers and bank delivered schemes appears to be correlated with higher levels of penetration.

- Users who push their suppliers and customers to adopt e-invoicing often on a compulsory basis have had success.
- Whereas considerable efforts have been paid to improving the environment for e-invoicing within specific domestic markets, the cross border and pan-European dimension also requires attention as it is here that the greatest uncertainty arises.
- The burden of legal requirements has an impact but perhaps the clarity of such requirements is more important than the actual substance.

However, despite a 25-40% growth rate of e-invoicing adoption in Europe, overall penetration rates are still below 10%. Based on the material described above and the analysis of various reports and commentaries, it is concluded that the major barriers to adoption of e-invoicing to be resolved in the immediate period ahead are as follows:

- Making the business case for supply chain automation within enterprises both large and small and their customers and suppliers. This can also be extended to the public sector and its suppliers.
- Insufficient harmonisation of legal requirements and the continued lack of clarity in communicating these requirements at both a domestic and pan-European level.
- Lack of standardisation in the content of the invoice.
- The need to support wider interoperability and reach.

These issues are explained further in the following chapters.

3 Making the business case within the enterprise

Finding 3: Aside from overcoming technical barriers, the biggest issue to be addressed in e-business and e-invoicing is the need to convince the management of enterprises to make the business case and recognise the immediate efficiency and cost benefits

Individual enterprises are urgently reviewing the efficiency of their internal processes and their supply chain management. In a world challenged by recession, these issues are assuming increasing importance and the automation possibilities presented often exceed other opportunities to generate immediate value.

Of all the inhibitors, it is clear that the issues around strategic commitment and widespread confidence building are very important. This confidence building applies to large, medium and small enterprises.

SMEs in particular needs to be encouraged by various stakeholders to embrace e-invoicing and for this to happen, a number of initiatives are required to facilitate their engagement. These include:

- Recognition of the needs that are specific for SME to SME e-invoicing.
- Helping SMEs to realise concrete efficiency savings.
- Technical solutions facilitating outsourcing of invoicing in an easy to use manner.
- More transparent communication and support from governments, chamber of commerce and professional advisors for the sharing of best practices.
- Improvements to the legal and VAT rules (these are discussed in Chapter 4).

This chapter covers some general remarks regarding the business case for all enterprises and then covers the specific needs of SME's. It continues with a section on Supply Chain Finance which represents a business benefit arising directly from e-invoicing, and concludes with a section on the importance of communications and sharing best practice.

3.1 Cost and efficiency benefits

All trading parties need to be convinced and see the real benefits of e-invoicing. They should see it as something from which they obtain positive benefits and not just for the benefit of larger entities;

3.1.1 Benefits of e-invoicing for trading parties

The cost benefits have been widely recognised:

- Substantial cost savings for invoice senders and especially for invoice receivers are obtainable. These are considered to be highly material.
- It is increasingly a requirement for doing business with larger trading parties including the public sector- 'e-invoice or no invoice'- in other words it is a mandatory fact of life.
- More efficient physical and financial chain management can be realised on the basis that end to end dematerialisation of processes takes place progressively across the supply chain.
- Better and faster reconciliation of bank accounts and payments flows across these accounts can be achieved.
- Customer and supplier relationships can be improved as trading parties become more connected as a 'virtual entity'.
- Improved control and visibility of customer activities and transactions becomes possible leading to the generation of fewer errors, better risk management and useful management information about customer and supplier behaviour.
- Fewer queries and disputes are generated especially since forward and backward matching with purchase orders, delivery documents and payments can occur on an automated basis
- Improved productivity of company workforce is realised thus releasing resources for more productive work.
- Better working capital and cash flow management is supported based on more predictable payment flows.
- There is an improvement in payments STP because re-keying of payment data can be eliminated by the provision by the creditor of precise payment details and identifiers as an in-built part of the process.
- There are new potentialities to take advantage of discounts from early payments and to generally manage credit terms in a more targeted way. Indeed many companies are currently not in the position to take advantage of discount in any form given the slowness of their accounts payable processing.
- Carbon savings will directly arise from savings in paper.
- As it is a public policy priority, businesses will benefit from the move of the public sector into e-invoicing thereby releasing ripple effects.
- A large number of enterprises have trading activities on a cross-border basis in Europe and e-invoicing will help to facilitate this business and its growth.

3.1.2 Operational cost savings

Traditionally, the business case for e-invoicing has had a strong focus on the potential cost savings from dematerialising the invoicing process. Research into the potential cost savings of electronic invoicing in SME's, shows savings on inbound side ranging from € 10 to € 25 compared to a manual process, depending on the level of automation[32]. On outbound side, cost savings are estimated between € 7 and € 10, depending on the level of automation.

Figure 17 shows the total cost and time per invoice for a manual, a semi-automated and a fully automated solution.

Level of automation	Outbound	Inbound	Total
Manual	14 min € 28.8	10.5 min € 18.55	**24.5 min** € **47.35**
Semi-automated	10 min € 18	6 min € 11.10	**16 min** € **29.10**
Automated	1 min € 3.3	6 min € 10.8	**7 min** **Cost:** € **14.1**

Figure 17: cost saving potential per invoice (Source: 'Electronic Invoicing Initiatives in Finland', Helsinki School of Economics, 2008)

The cost savings elements taken into account in this research are the following:

- Material (paper, printing, postage, envelope, mailing)
- Reduced sales and backoffice cost
- IT and operational efficiency (reduced manual entry in various systems)
- Reduction in Payment fees
- Reduced archiving costs

3.1.3 Extent of automation

Commentators have pointed out the catalytic impact of e-invoicing. They regard the pivotal role of the invoice and the opportunity represented by e-invoicing as the start of a process by which the whole surrounding processes are de-materialised on a progressive basis. Others argue that the e-invoicing process would more naturally be the end point of a process of automation, as it

[32] 'Electronic Invoicing Initiatives in Finland', Helsinki School of Economics, 2008

is the full process of automation and the integration with trading parties that yields the real cost benefits

3.2 Meeting SME needs

3.2.1 High level business requirements

The European Expert Group on E-invoicing identified the high level needs of SMEs as follows[33]:

- The use of a common e-invoice standard which serves the needs of the e-invoicing process and also supports the entire supply chain process.
- Saving money and time through a favourable cost/benefit and ease of use harmonisation, simplification and clarity of legal requirements.
- Communicating and sharing good practices.
- Ensuring a competitive market for solution and service providers in all layers.
- Providing trustworthiness and data protection.

3.2.2 Business and technical models to support e-invoicing

In the corporate to SME market where large buyers receive invoices from smaller suppliers or large suppliers send invoices to smaller buyers, the power distribution in such supply chains is often in favour of the large enterprise and as a consequence, they can enforce their e-invoicing requirements on SME's. Such requirements can include:

- **Choice of e-invoice content standard**: large buyers often impose their e-invoice format on SME's. This can be a proprietary standard, or a more widely adopted standard.
- **Connectivity options**: Large enterprises can require smaller entities to use certain connectivity options for the delivery of e-invoices, such as AS2, or similar communication protocols. In certain cases, it is not uncommon that the larger entity also offers a web portal for the issuance or presentment of invoices, but the choice is often limited from an SME's point of view.
- **Service provider**: Where enterprises have outsourced their e-invoicing process to a service provider or a business process outsourcing partner, smaller entities are often forced to use that service provider for delivery or presentment of e-invoices to that enterprise.

[33] Final Report of the Expert Group on E-invoicing, 2009

In an SME to SME environment, the power distribution is more equal, adoption cannot be enforced by one of the trading entities and one trading entity cannot impose requirements on the other entity. Therefore, to accelerate e-invoicing adoption in the SME sector, a more compelling business case must be developed and implemented by the trading entities, based on SME needs and requirements and based on voluntary adoption.

It would be beneficial if SME's were supported with more choice in approaching e-invoicing rather than always being required to on-board into multiple silo's. This could be provided through a service provider providing a one stop shop and acting as an aggregator for all or most of an SME's invoice presentation. Another model would be the emergence of a true 'any-to-any' eco-system, in which instant access to trading parties is provided through a common channel.

The development of Internet and in particular, Internet based technologies, such as Software as a Service (SaaS) and cloud computing, has led to new models for outsourcing of business processes, especially targeted for SMEs. Software as a Service is a concept that makes it possible to deliver software over the Internet, enabling service providers to deploy software solutions once and make it available to a large number of enterprises. This has significantly reduced the required implementation investment for the end user, and low IT skills for implementation, management and use are required from the end-user.

With the growing adoption of the Internet and Internet based technologies, many more solutions for e-invoicing in the SME market can be based on these technologies, as they effectively allow SMEs to outsource their e-invoicing and related processes without the risk and complexity often accompanied with large IT projects.

It is expected that further technological advancement in the area of cloud computing, a growing adoption of broadband Internet across the globe, and a move towards open and collaborative business models based on open standards and application programming interfaces (APIs), can further accelerate the adoption of business process outsourcing and e-invoicing specifically.

Further work is needed to create more awareness of available technology to address the described issues at management level. In particular work needs to be done in the area of overcoming trust, control, security and privacy issues related to the use of new technologies.

3.2.3 Supply chain finance supported by e-invoicing

Supply chain finance involves the mobilisation of working capital assets inherent in a supply chain to form the basis of transactional finance by banks or other credit granting entities. A general definition of supply chain finance is:

Supply chain finance is a combination of open account and trade financing products, services and technology applications that provide for the financing of receivables, payables and inventory based on the occurrence of multiple supply chain events and typically implemented on a

collaborative basis[34]. Supply chain financing involves a third party providing financing services to the trading parties.

In relation to e-invoicing the most relevant financing categories are factoring, invoice discounting, advances against invoices and reverse factoring.

There is a classic tension in the granting and taking of trade credit to and by buyers of goods. A supplier forced to extend terms by a buyer may enhance their own liquidity by factoring or refinancing its trade debts, or simply carrying them on their own balance sheet. Although this is perfectly feasible, the process involves costs and risks of non-payment/ bad debts.

Increasingly buyers have become more sensitive to their supply chain continuity particularly with the growth of outsourced manufacturing and the retention by the outsourcer of marketing, branding, and other functions. In such a case the traditional tussle to maximise DPO (Days Payable Outstanding) at the expense of suppliers can prove counterproductive.

E-invoicing permits more optimal payables management. In view of the shorter time taken to approve e-invoices, a buyer becomes able to take advantage of prompt payment discounts or so called 'dynamic discounts', which it is often unable to do with long drawn out paper invoice processes. If liquid, a buyer may choose to use its own cash resources to promptly pay suppliers and take advantage of discounts (perhaps a better risk-free return on the cash than money market deposits).

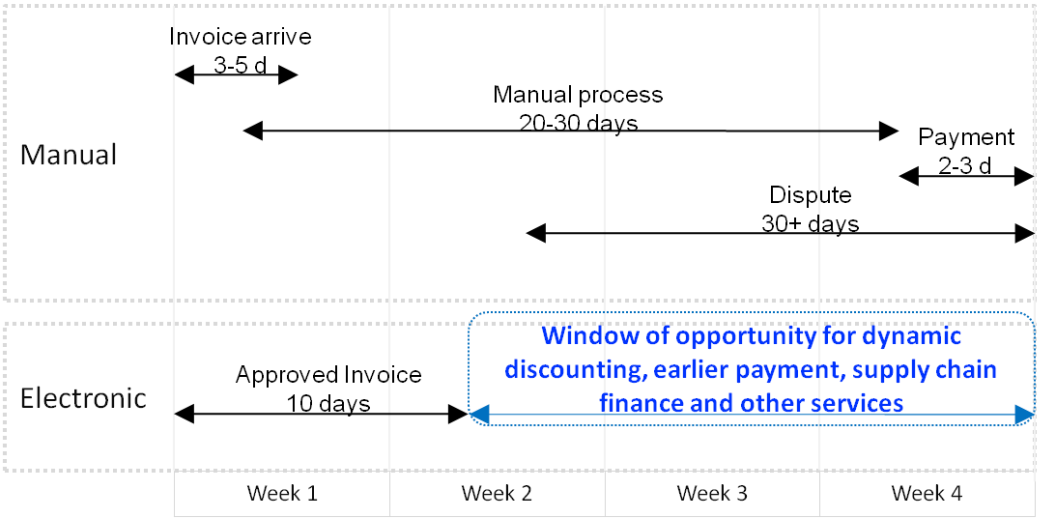

Figure 18: E-invoicing creates a window of opportunity for faster invoice approval (Original by Bottomline Technologies)

[34] Financing Innovations, Sarah Jones, Bottomline Technologies, April 2010

Even if a buyer is not liquid, it may choose to use its borrowing capacity (often on better terms than its SME suppliers), by means of a 'reverse factoring' arrangement and use the cash raised to take advantage of the trade discounts and thereby provide liquidity to its suppliers. A bank offering reverse factoring has the benefit of being secured on a trade debt represented by an approved invoice made available in electronic form. Whatever form a supply chain finance structure takes, the availability of a stock of e-invoices held in accessible form is a key enabler.

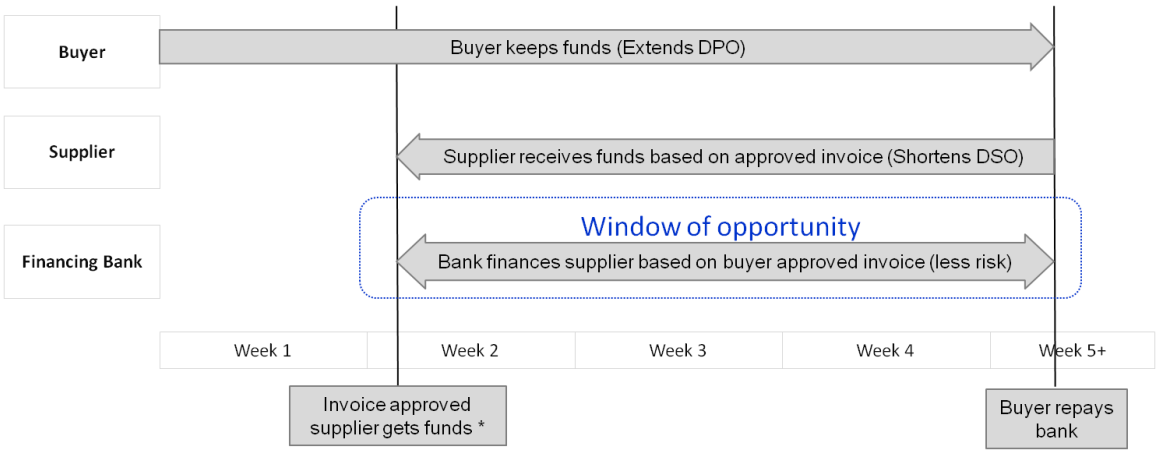

Figure 19: Relieving the tension between supplier and buyer using e-invoicing and supply chain finance

3.3 Communication and sharing of best practices

There is an urgent need for clarity and awareness of the issues and opportunities of e-invoicing, especially on management level of SME trading parties. This communication should encompass, amongst others, the following areas:

- More clarity is needed on the various service and solution providers active in the market of e-invoicing and related domains, such as accountants, Business Process Outsourcing providers, ERP vendors, workflow solutions, e-invoicing and trade platforms. There is a need for a greater level of transparency of cost structures of e-invoicing services, and their cost savings and benefit realisation potential.
- Service and solution providers should provide clear and consistent information about their e-invoicing capabilities and the tools they provide to ensure compliance.
- Governments are responsible for clearer e-invoicing legislation and harmonisation of VAT law is required. Tax authorities should provide more transparent information about their auditing process and the rules they impose on e-invoicing solutions. More certainty is needed by enterprises that the e-invoicing processes in use do meet VAT requirements both written in law and unwritten. Tax authorities should be trained on the auditing of e-invoicing processes.

- Standardisation initiatives or other parties should provide implementation guidelines for the content standards in use. These implementation guidelines should be adapted for use by SMEs. Also implementation guidelines should be available for connectivity standards in use.
- Internal control processes: There is a need to share best practices of internal control processes related to e-invoicing. It must be clear that the protection of trading entities against fraud (false invoices), should be solved by proper control measures in acceptance and handling of the invoice, instead of making it a requirement of the e-invoice exchange mechanism.

It is important that the information that is made available is consistent, accessible and available at low or no cost. Communication measures could include:

- Training of end-users, tax auditors, service and solution providers.
- Country level information desk for sharing of best practices and other relevant information, such as VAT audit requirements.
- Transparent documentation made available by service providers about their capabilities and cost structure.

4 Legal and regulatory

Finding 4: E-invoicing has been encouraged by the adoption of European legislation supporting e-invoicing but this legislative framework requires further evolution, especially in greater clarity and harmonisation. E-invoicing should not be legally more demanding than paper invoicing.

The proposal of the European Commission to simplify, modernise and harmonise the VAT directive (Directive 2006/112/EC) is a promising development, being less prescriptive of technology, while preserving safety and auditability.

Recently a new draft VAT Directive was adopted as a first step by ECOFIN with the initial support of all EU Member States. Although this piece of legislation will be required to complete EU institutional processes, it is an encouraging development. A commentary on this new set of rules is provided in this document.

It is important that as these new more flexible rules are introduced major efforts are made to achieve harmonisation across the European Union and that a high degree of clarity is provided, especially for 'cross-border' transactions within Europe. This should also apply to other non-VAT regulations that affect e-invoicing although these are not as critical as the VAT rules.

4.1 Today's legal and VAT requirements

The current rules for e-invoicing are based on European Union Directives, which have been transposed into Member State laws and regulations. EU Council Directive 2001/115/EC provided for the acceptance of e-invoicing under a number of conditions and these rules were later incorporated in the 2006 VAT Directive and are set out in the box below:

COUNCIL DIRECTIVE 2006/112/EC

of 28 November 2006 on the common system of value added tax

ART. 233

1. Invoices sent or made available by electronic means shall be accepted by Member States provided that the authenticity of the origin and the integrity of their content are guaranteed by one of the following methods:

a. By means of an advanced electronic signature within the meaning of point (2) of Article 2 of Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 on a Community framework for electronic signatures ;

b. By means of electronic data interchange (EDI) as defined in the Commission Recommendation of 19 October 1994 relating to the legal aspects of electronic data interchange ("EDI Recommendation"), if the agreement relating to the exchange provides for the use of

procedures guaranteeing the authenticity of the origin and integrity of the data.
Invoices may, however, be sent or made available by other electronic means, subject to acceptance by the Member States concerned.

2. For the purposes of point (a) of the first subparagraph of paragraph 1, Member States may also ask for the advanced electronic signature to be based on a qualified certificate and created by a secure-signature-creation device, within the meaning of points (6) and (10) of Article 2 of Directive 1999/93/EC.

3. For the purposes of point (b) of the first subparagraph of paragraph 1, Member States may also, subject to conditions which they lay down, require that an additional summary document on paper be sent.

In summary, for e-invoicing to be compliant with law in the European Union, there are a number of major conditions laid down:

- **Acceptance** by the customer: the customer should be able to decide whether to accept or decline e-invoicing by the supplier.
- **Authenticity** of origin and **integrity** of content must be guaranteed. Authenticity means that the declared source of the invoice is the true source. Integrity means that there must be no undetected alteration of data throughout the life of the invoice including the period of creation, transmission, processing and the relevant storage period.
  This can be achieved by means of an advanced electronic signature, by the use of Electronic Data Interchange (EDI)[35] or "other means" accepted by individual Member States.
- The invoice must contain **ten mandatory items of information** with the possibility of an additional four items in specific circumstances[36].
- **Archiving** requirements are specified.

Some of these requirements are discussed in more detail below.

4.1.1 The three technology options:

The EU Council Directive 1999/93/EC defines an **Advanced Electronic Signature** and specifies the following requirements**:**

- Connected to the signer in a unique way.
- It must be possible to identify the signer.

[35] Article 2 of the EC Recommendation 1994/820/EC defines EDI as "the electronic transfer, from computer to computer, of commercial and administrative data using an agreed standard to structure an EDI message."

[36] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:347:0001:0118:EN:PDF, Article 226

- It must be created under the exclusive control of the signer.
- There must be the possibility to trace every subsequent change.

Additional requirements may include:

- Qualified certificate (Art. 2(10)).
- Secure-signature creation device (Art. 2(6)).

The transposition of the Directive on the Advanced Electronic Signature has been completed in different ways in EU Member States.

EDI is defined by the Commission Recommendation 94/820/EC essentially as an electronic transfer of commercial and administrative data using an agreed format, from computer to computer and processed automatically and unambiguously. There needs to be an agreement providing for procedures guaranteeing origin and authenticity of data within such an EDI method.

'Other means' include any other means approved by a Member State that guarantees authenticity of origin and integrity of content.

4.1.2 Archiving

The EU Council Directive 2001/115 defines requirements for the **archiving** of invoices in a secure and safe way for the duration of the storage period as defined by Member States. Consequently the archiving of e-invoices is as crucial part of the process as creation, exchange and settlement.

Conditions for electronic archiving or e-archiving[37]:

- Every taxable person shall ensure that copies of invoices issued by himself, by his customer, or in name and on his behalf, by a third party, and all the invoices which he has received are stored. The authenticity of the origin and integrity of the content of the invoices, as well as their readability must be guaranteed throughout the storage period.

The place of storage:

- Any EU member state, if there is online access to the data.
- Outside the EU, if there is online access to the data and the country where invoices are stored respects European Data Protection principles. Even then Member States can exclude this if there is no mutual assistance Agreement with the latter country. Some Member States do not permit storage outside the EU.

[37] Joostens, Breyne 'Global (E-)invoicing & (E-)Archiving – Increasing efficiency and reducing costs including VAT/GST rules in 41 countries', PricewaterhouseCoopers, 2006

The period of storage:

- The storage period is defined by the individual member state.

The format of storage:

- Member States have the option to require storage in 'original' format: e.g. invoices sent or received electronically, must be stored electronically in most Member States.

Member States have the option to require the storage of additional information.

4.2 Issues and barriers

Among the Member States many of the requirements for e-invoicing have been transposed into national legislation and implemented in differing ways, creating unintended and undesired complexity. At a technical level, the legislation has been disputed with regard to the use of technology[38].

Some of the key issues are:

- Requirements for EDI are much broader and are defined less prescriptively than the requirements for electronic signatures[39], where detailed prescriptions are used. This appears to give rise to a lack of balance between the requirements as to the level of legal prescription involved in each case.
- A number of examples illustrate the variation in national legislation: In Germany a Qualified Electronic Signature (QES) must be used with an e-invoice where the electronic signature method is involved. Other Member States only require an Advanced Signature. In Finland, the exchange of documents without an electronic signature is permitted and encouraged. The authenticity and integrity of the invoice is guaranteed by a strong audit policy focusing on business controls. Only 11 Member States permit the use of 'Other Means'.
- For trade between Member States within the European Union, there is a need for greater clarification on which country legislation applies in a trade between two Member States. In practice, if the company is based in a country with less onerous requirements than the Directive's main rules, it may not be sufficient to comply with the national requirements when dealing with another Member State.
- The use of electronic signatures within the invoicing process as a result of legislative provisions has unanticipated effects. Electronic signatures have to be applied when creating an invoice. It is unclear however, if the signature has to be related to the natural person or the legal entity creating the invoice. Again, regulations for this vary between

[38] Electronic invoicing in and with the European Union, Commission on Commercial Law and Practice

[39] http://www.trustweaver.com/einvoicing.htm

Member States. It is also unclear at what point in the process the signature must be applied: after compilation, after authorisation or after creating the invoice message to be sent out.

- For the receiver to validate an electronic signature, signature validation information needs to accompany the invoice. What this information should include and how this should be included is not clear; other steps to validate signatures are also varying and not clearly defined.
- Invoices must be stored for a period of time as required by local tax authorities. Authenticity of origin and integrity of data must be ensured for the stored invoice. Since there is a -logical- requirement that any stored signed invoice must remain 'valid' during the storage period, the electronic signature information and any associated PKI information to validate the signature must also be archived. Additionally, since signatures may rely on a PKI infrastructure, this too must be aligned to support this kind of validation with the historic PKI information during the complete storage period. Recommendations for dealing with this are made by CEN Workshop Agreement 15579[40]. For an SME this may have a serious impact in terms of cost and complexity.
- In traditional invoicing, with a single instance of the invoice, tax authorities require the invoice to be stored at the sender and receiver side for a minimum time period. In this way, tax authorities are able to verify if the invoice -and the trade and tax specifications it contains- is identical on both sides. Legislation on e-invoicing, particularly in the area of storage seems to build on the notion of a single instance of a document and ignore the fact that there are always multiple copies in a digital world. The focus perhaps needs to be on the uniqueness of the data-set rather than that of the document.

4.3 Approaches to improving the current legal framework

Various views have been debated on how to reform and make more workable the current legal and VAT rules for e-invoicing. In late 2008, the European Commission undertook a review of the current legislative framework for Invoicing, as set out in Directive (2001/115/EC[41]) resp. 2006/112/EC). This review was completed in January 2009[42]. The European Commission (Directorate General for Tax and Customs Union) made a number of proposals for change and presented its report and conclusions to the European Council and the European Parliament, submitting a proposal for a Council Directive amending Directive 2006/112/EC on the common

[40] ftp://ftp.cenorm.be/PUBLIC/CWAs/e-Europe/eInvoicing/CWA15579_2006.pdf

[41] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2002:015:0024:0028:EN:PDF

[42] http://ec.europa.eu/taxation_customs/common/publications/studies/index_en.htm

system of value added tax as regards the rules on invoicing.[43] These proposals have been the subject of discussion for the past 12 months at the European Council and among Member State governments.

In terms of approach the Commission has recommended the principle of Equality of Treatment between paper and electronic invoices. In essence this would mean that the law should prescribe no more onerous legal provisions to e-invoicing as are applied to paper invoices. In his way the current emphasis on technology based " form " requirements would replaced by an approach based on a trading party being" in control" and in a position to demonstrate that the invoice can be correctly reconciled to other key business documents, data and processes. Such an approach would also leave it to trading parties to select the techniques and controls to be deployed, rather than have them prescribed by legislation.

In 2007, The European Commission formed an Expert Group on e-Invoicing, which met in the period 2007-2009 and produced a Final Report in November 2009[44]. The Expert Group has lent support the approach taken by the Commission. Its Final Report states that it supports the vision of a clear, simplified, harmonised, and uniformly applied legal framework for e-Invoicing.

The Expert Group summarised its attitude towards the current legal framework as follows:

- The present European landscape of e-invoicing legislation is disharmonised. The methods set out in Article 233 of Directive 2006/112/EC have been implemented in Member States' national legislation in widely different ways. This leaves trading parties experiencing difficulties in finding the right degree of clarity and legal certainty to encourage adoption of e-Invoicing.
- Internal business controls did not receive appropriate attention in the current legislative framework and its implementation. This is unfortunate because such controls are essential to all invoicing processes and, for most, whose systems are mature and robustly auditable, can actually provide the necessary assurance and without creating technical and operational complexity. The prime means of providing legal certainty in the e-invoicing process should be the administrative, risk management and business control framework of the trading parties. These may include the matching of relevant documents and data throughout the invoicing process, accounting and archiving procedures, and audit-ability by internal and external auditors, or any other means or processes implemented by trading parties that provide the equivalent level of assurance.

[43] COMMUNICATION FROM THE COMMISSION TO THE COUNCIL The technological developments in the field of e-invoicing and measures aimed at further simplifying, modernising and harmonising the VAT invoicing rules, COM (2009) 20 final, 28 of January 2009

[44] http://ec.europa.eu/internal_market/consultations/docs/2009/e-invoicing/report_en.pdf

4.4 Analysis of the new draft VAT Directive by TrustWeaver

The following paragraphs are contributed by TrustWeaver a firm providing a range of e-business solutions and set out an up to date analysis of changes of the new draft VAT directive supplementing VAT directive 2006/112/EC in relation to e-invoicing. The EBA and Innopay are very grateful for their contribution to this report.

The original TrustWeaver publication title is “New EU-rules for e-invoicing by 2013: equal treatment with a twist” (www.trustweaver.com).

4.4.1 Executive summary

As of 1 January 2013, and in some Member States before that date, companies will have more choices as to how they prove the authenticity and integrity of electronic invoices. An electronic invoice will be defined as an invoice that is issued and received in electronic format. Proof of integrity and authenticity of an invoice (paper or electronic) must be available from the issuance of the invoice until the end of the archiving period. Invoices must also remain legible during that time. The new Directive makes a clearer distinction, and creates an explicit hierarchy, between (1) the requirements on the invoice as a discrete object and (2) the objective of those requirements (verifying that a supply actually took place).

It is now clearly established that an invoice is de facto compliant if a taxable person can prove an actual transaction “through business controls establishing a reliable audit trail between an invoice and a supply”. In addition to giving companies this option, which by definition requires a tax auditor to judge an invoice on the basis of combined historical records about the underlying sales or purchase transaction, the Directive maintains the legal certainty awarded to two technical methods for ensuring integrity and authenticity of electronic invoices: (a) advanced electronic signatures or (b) contract-based secure EDI. Member States continue to have the ability to require the information used to prove integrity and authenticity of electronic invoices also to be stored electronically; this option takes on more importance now that methods are available to prove the veracity of an invoice on the basis of additional transaction records proving a supply; such additional records would then also have to be electronically stored and accessible for tax audit.

The requirement for a supplier to obtain the buyer’s prior acceptance of electronic invoicing remains in the Directive.

For the avoidance of doubt, all VAT-able invoices, whether zero rated or not, are governed by the requirements analyzed in this document.

4.4.2 Equal treatment, but as a strictly legal concept

The Commission’s original proposal to delete Article 233 in its entirety has not been followed by the Member States. However, the concept of ‘equal treatment’ has found sufficient resonance to be the starting point and one of the key principles of the new Directive. The new Directive

maintains explicit requirements for the integrity, authenticity and legibility of invoices to be maintained whether they are on paper or electronic. This extension of explicit integrity and authenticity requirements to include paper invoices means that 'equal treatment' has been introduced as a legal concept. This clearly diverges from the more political concept of equal treatment as a way to play down the importance of integrity and authenticity of e-invoices on the argument that these features are in practice not relevant for paper invoices. The legal equal treatment concept, according to which both types of invoices should be free from mandatory form or method requirements, is now firmly codified: from 2013, businesses can no longer be forced to deploy any specific technology or process in relation to e-invoicing. This rule, which does away with the 'form over substance' mentality introduced with the 2001 Invoicing Directive, is reinforced by another new rule: if a taxable person can prove, through business controls establishing a reliable audit trail between an invoice and a supply, it follows logically that the invoice complies with the integrity, authenticity and legibility requirements. This 'substance over form' principle, which is also one of the principal topics of the associated Recitals of the new Directive, clearly articulates the objective of an invoice: it is there to prove an actual supply and therefore its intrinsic qualities as a document become unimportant if an actual supply is otherwise credibly demonstrated.

4.4.3 A reliable audit trail between an invoice and a supply

The new Article 233 text begs the question: "what business controls establish a reliable audit trail between an invoice and a supply"? Based on the legislative history and the text of the new Article 233, one conclusion is that the term 'business controls' designates controls that ensure and record the veracity of the actual sales or purchase transaction being completed; this means that both parties must retain evidence, during the entire storage period, that the goods or services referenced in the invoice have been supplied and paid for, as stated in the invoice, between the named parties. More concretely, evidence of such controls will generally be a combination of transaction-specific documents or messages (e.g. contracts or pre-contractual communications, orders, order acknowledgements, shipment data, delivery information, payment information etc) and associated system records (logged approvals, reproducible data matching logic, mapping tables etc). Where process-only components play a significant role in establishing a strong evidence position, it will be necessary to document such controls and maintain this documentation through their evolution through time. Third party audit reports could also play a role in demonstrating the fulfilment of a sales or purchase transaction.

4.4.4 Existing methods of proving integrity and authenticity of an invoice

The two methods (advanced or qualified electronic signatures and secure, contract-based EDI) that since 2004 have benefited from a presumption of guaranteeing integrity and authenticity of an electronic invoice continue to do so. To avoid any misunderstanding as to the level at which these control methods intervene, the Recitals to the new Directive clarify that they cannot by themselves prove that an actual supply took place. In other words, an invoice that is exchanged

using such controls can be presumed to be intact and come from an identified issuer, but it can never by itself prove an actual supply. This, naturally, is the case with all invoices when viewed as standalone documents and the reason why tax administrations can audit businesses.

4.4.5 Legal certainty?

We will not know for some time how Member States will transpose the novelties introduced with the new Directive. By their very nature, because they were introduced in response to calls for greater flexibility, the new ways to prove integrity and authenticity of an invoice ("any means chosen by the trading parties" or "business controls establishing a reliable audit trail") are open-ended; whether or not they are fulfilled depends on a business's individual circumstances. This means that the tax auditor will, for businesses that choose to avail themselves of these options, become a more central figure in confirming the day-to-day trust that is needed in the triangular relationship between trading partners and tax administrations for the ongoing process of VAT to function smoothly. Naturally, such broad tax verifications of a business's records and processes could always and can continue to be performed to establish the veracity of historical supplies under all compliance options; not even the most secure invoice in the world can conclusively prove an actual supply – the big difference is that under the "reliable audit trail" option such audits become the principal platform for ascertaining the validity of invoices without any reliance on proof stemming from intrinsic qualities of the invoice as an object. This greater openness of the law also means that the divergences among Member States in their audit legislation and practices becomes a greater challenge for companies seeking to build a single approach to compliant e-invoicing across the EU.

It is possible that some Member States will provide more specific guidance on what documents or audit trail information businesses must at retain to use the "reliable audit trail" option. Such definitions would however risk creating another category of specific technical control definitions, which, while enhancing predictability, would reduce the flexibility and freedom of evidence that proponents of these options have sought.

One aspect that requires further analysis in this context is the distinction between goods and services. While the preservation of evidence demonstrating historical use of sophisticated business controls such as three-way-matching of order, delivery and invoice information can be viewed as one way to prove an actual supply of goods, such mechanisms are generally not suitable or available for services. A related observation is that such business controls, if they set an acceptable level of proof upon an audit of the buyer, often do not have an equivalent on the side of the supplier. This may specifically be a concern for situations where many smaller companies supply a large purchasing organization that chooses to rely exclusively on the transaction audit trails in its internal systems; these suppliers (if they do not want to use advanced or qualified electronic signatures to ensure proof of integrity and authenticity as intrinsic qualities of the invoice file itself; they cannot unilaterally use the EDI method)will often not have comparable transaction evidence available and may as a result of the buyer's choice of e-invoicing method need to take elaborate measures to couple records from e.g. disparate

inventory management systems with stored invoices to achieve conclusive evidence of a supply on its side of the transaction.

Similarly, large B2B invoice senders such as certain utilities or logistics companies will face challenges with their heterogeneous customer bases if they wanted to use these new compliance options. Finally, it must be acknowledged that non-structured PDF remains a massively popular invoice format due to ease of creation and communication in business contexts where full automation is not (yet) possible; creating credible end-to-end traceability to an actual supply by linking such invoices with recordable business controls will be challenging for many companies.

4.4.6 Applicable law in intra-Community e-invoicing

The Directive also contains clearer rules on an issue that has long been controversial in relation to intra- Community e-invoicing: is the validity of the invoice governed by the country of the supplier or the buyer? The main rule is that invoicing is governed by the rules applying in the Member State in which the supply of goods or services is deemed to be made (country of supply according to Section V of the VAT Directive). A number of exceptions to this rule apply. Does this mean that only the supplier in an intra-Community supply of goods needs to worry about the validity of an invoice according to its own local standards, and the buyer can stop worrying about compliance under its VAT law? Legally speaking, the tax administration in the receiving Member State may not apply its own rules to determine that the invoice meets the integrity and authenticity requirements; however, since the right of VAT deduction is in the country of receipt, the tax administration will have a natural interest in ascertaining that the invoice is real. This means that the tax administration will need to establish whether the invoice met the integrity and authenticity requirements in the country of the supply. This has been a challenge for the pre-existing compliance methods; one can only speculate about the practicalities involved in establishing country-of-supply compliance for the less defined and standardised “reliable audit trail” option.

4.4.7 Conclusion: a business case for change in 2013?

More freedom of e-invoice form and method means more responsibility and less certainty. Fortunately, the Directive has also reconfirmed the technically defined and highly standardised compliance options which Member States must in all circumstances continue to accept. Businesses will therefore have a real free choice between flexibility and certainty. The general legal and tax culture of each Member State will to a large extent determine the actual compliance risk involved in choosing to rely on the new options of the Directive. In some Member States, CFOs do not lose sleep over the prospect of a full tax audit; in others, both businesses and tax administrations dread the idea of making such deep investigations the rule rather than the unpleasant exception they are today. One thing is certain: businesses will continue to strive for the highest level of legal certainty at the lowest possible cost in their specific circumstances.

As regards legal certainty, we must conclude that the existing technological options are the only way to be certain in advance that e-invoices will be accepted as real and unchanged in all Member States, as well as in all in other countries with explicit e-invoicing legislation. Since these measures have become very inexpensive and easy to use, and due to the fact that the less certain methods now available will in many cases drive up the costs of reliable archiving additional transaction records for the same long storage period as invoices, it is unlikely that the business case for the newly available methods of compliance will be overwhelming for many companies. [End of TrustWeaver contribution].

4.5 Other legal issues

Although VAT is an important and the key issue for businesses and tax administrations throughout Europe, electronic invoicing is embedded in numerous e-business processes within and between companies.

In terms of legal reality, the invoice - whether in paper form or in an electronic format - is an important document in a set of documents related to a transaction. It holds references relating to the customer, products and services delivered; it must be archived together with other supporting documentation (contracts, purchase order, shipping document etc.) and presented to auditors to support balance sheet entries and provides an internal record of transactions. The invoice is integrated in business operations and the underlying processes.

Examples of existing issues are:

- Different archiving rules based on local accounting, commercial and general tax laws (archiving methods and accessibility requirements, place of storage, time of storage), lead to additional complexity for cross-border business.
- Local accounting and commercial law lead to different requirements for invoice content in different Member States.
- Differing accounting requirements making it difficult to maintain the same accounting system for enterprises established in multiple Member States leading to unnecessary administrative burden.
- Different audit practices by tax administration across the EU lead to national adaptations of audit processes in enterprises established in different Member States.
- Customs regulation: imports of goods often must be accompanied by paper invoices; therefore electronic invoices are not accepted.
- Legal evidence of invoices in court procedures may require paper invoices or in case of electronic invoices may require electronic signatures.
- The need for interoperability and harmonization of e-Signature practices across European Member States.

These examples clearly indicate that these issues are not specific to electronic invoicing as such but are embedded in broader legal concepts in national jurisdictions. Many of the provisions covering these areas are not harmonised and most of the applicable legislation is based on national, regional or even local legal and regulatory practices. This potentially increases legal complexity and administrative burden for enterprises.

4.6 Clarity and legal certainty

The Expert Group has stated that, regardless of the way in which the legal framework evolves, all stakeholders have articulated the need for absolute clarity in the specification of legal requirements so as to give legal certainty to trading parties and all market participants. This clarity needs to cover the provisions of actual legislation, its interpretation, the practices of all tax authorities and the way legal requirements are communicated throughout the market.

The need for this clarity is overriding and just as important as the challenging process of harmonization itself. In particular, there should be no deterioration in the understanding of these legal requirements by all stakeholders, stemming from a further round of legislative change. Even when specific national requirements are well understood, there will remain significant challenges when conducting trade and invoicing between Member States. Clarity on this aspect is fundamental.

All Member States are being encouraged to make available clear and unambiguous information on the legal and fiscal requirements for e-invoicing on a public website accessible to all. Such information should be consistently maintained as to accuracy and quality.

4.7 Use of recommended good practice guidelines

The development and use of tools for good practices have been proposed by many stakeholders involved in e-invoicing. Such tools need to be appropriate to the requirements of trading parties, their advisers and service providers.

Trading parties, their advisers and service providers could use tools such as the e-Invoicing Compliance Guidelines developed by the CEN/ISSS Workshop on Electronic Invoicing[45]. These guidelines can be used on a voluntary basis as a self-assessment instrument for auditing and compliance checking of e-invoicing solutions and thereby provides improved certainty regarding the appropriateness of such solutions.

[45] This Workshop is a recognised European standardization activity and supported by more than 60 companies and 10 tax administrations. The Guidelines have been referred for consultation to many stakeholders and after the review period have been published in September 2009 and will be maintained in an open dialogue. More information can be found on http://www.e-invoice-gateway.net.

5 Content standards

Finding 5: The wide adoption of a standard for the content of an invoice is an important long term goal. However, its absence today is not a 'showstopper' given the diversity of the market and the presence of format conversion facilities. The UN/CEFACT Cross Industry Invoice is a promising development although further work is required to translate its data model into practical implementations.

With the current number of solutions and content standards in use, it is unlikely that a single content standard for the e-invoice will become market reality for years to come. As a starting point, there is a need for a common 'semantic' data model to provide the necessary building blocks and which could over time be used by all trading parties. This semantic data model must be usable in 'simple' SME to SME supply chains but at the same time, be applicable to more complex environments.

The UN/CEFACT Cross Industry Invoice (CII) and the recommendations of a core data-set that can be used for example in SME environments is a promising development. It should now be left to the market to converge the semantic data model into 2 or 3 major syntactical implementations. For example the data model could be expressed in ISO 20022 XML the leading standard for the financial industry in the payments domain.

Until this common semantic data model is adopted by the market, multiple standards will co-exist. Conversion capabilities will continue to be employed to facilitate an environment where practically any e-invoice format can be converted into any other e-invoicing format.

5.1 Background

Standardisation of electronic documents, involves the definition of data elements in such a way, that a set of data elements can be interpreted by a receiving system in exactly the same way as the source system. To facilitate this, standardisation efforts involves a multi-level approach:

- **Semantic data model**: this involves the business definition of data elements that are used in a standard including the context in which these data elements are used and the potential interrelationship between the data elements.
- **Syntax or format expression:** the semantic data model can be expressed in a specific syntax (or format) to be used by one or more solutions. The syntax expression defines the data elements in a machine interpretable way. Elements of a syntax expression include the structure and sequence of data elements, a definition of the data type (text or numeric), the length of the data element, the number of specific data elements allowed, etc.
- **Implementation guidelines**: these guidelines are often created and published to give clear guidelines on the implementation and use of a standard within a set of business processes which require interaction between trading parties. It defines (if applicable) involved actors in

a message exchange, the intended (minimal) processing of messages, and allowable responses that are relevant for the interactive business process.

5.2 Current market reality

In today's e-invoicing market, there are a large number of standards in different semantic models and different syntax expressions available for the e-invoice. This variety is mainly caused by the fact that the invoice dataset often responds to specific applications, reflecting country, industry and market segment specific requirements and also is often an element in a larger set of data-sets, such as other supply chain messages and finance specific messages.

Given the fact that trading entities often operate in multiple supply chains, in different industries and countries, businesses must support multiple e-invoice standards. This requires the development and maintenance of mapping tools, which is often a complex and costly process, with a high change of errors and delays.

This challenge is partly addressed by creating an environment where messages containing datasets can be converted to virtually any other dataset. Such conversion capabilities are employed by market players who offer these as services to their end-customers, often as part of a broader e-invoicing service or software module. For the foreseeable future, such conversion capabilities will provide a solution for businesses to reduce the cost of supporting multiple standards.

However, enterprises could benefit from ongoing convergence in the standardisation area. Additionally, conversion of invoices could involve additional legal complexities, as explained in the previous chapter.

In the past few years, many promising efforts have been made to converge the various existing standards and implementations and to create a common semantic model, which is an important milestone in the process to improve the current standards landscape.

There is a need to define a common semantic data model, which is then adopted by a few major market players to express their syntax model, and define the implementation guidelines for this model.

5.3 The standardisation challenge

The definition of a common semantic model for e-invoicing and e- business in general, and the translation into specific syntax expressions, is subject to a number of challenges:

The e-invoice data set should be complete enough to be usable in various domains related to e-invoicing, such as tax settlement, payments & cash management and finance

Given the fact that the invoice is tightly linked to various other domains in the trade process, it should incorporate the requirements of multiple involved domains. This means, that the invoice is input for various other processes, such as tax settlement, payments & cash management, accounting and finance. Similarly, the e-invoice provides opportunities to integrate as appropriate with various other documents in the trade process, such as the purchase order, delivery notification, remittance advice and the payment.

The e-invoice data set should be usable in 'common' SME to SME supply chains

Content standards for e-invoices and trade documents in general are potentially responding to a broad set of requirements, in order to maximise the applicability of the standard in various, both relatively simple and complex, trade environments. As a result, standards are composed of many attributes and data elements, even though a large proportion of these elements are only used in some very specific trade situations.

On the contrary, in most SME to SME trade situations, a core dataset of an invoice is sufficient to fulfil the requirements of such a common e-invoicing process. This data set includes the fields required by VAT legislation and the fields needed to execute a payment. It is suggested by various commentators to split an invoice into a core sub-set and an optional set of industry or sector specific data elements.

Additionally, there has been a lack of clarity and guidance to support the application of standards in such relatively simple supply chains.

5.4 Standardisation landscape

Recent developments in the area of standardisation have shown promising developments towards the creation of a semantic model for e-invoicing that responds to the requirements as stated above.

5.4.1 UN/CEFACT

The United Nations, through its Centre for Trade Facilitation and Electronic Business (UN/CEFACT), supports activities dedicated to improving the ability of business, trade and

administrative organizations, from developed, developing and transitional economies, to exchange products and relevant services effectively. Its principal focus is on facilitating national and international transactions, through the simplification and harmonisation of processes, procedures and information flows, and so contributes to the growth of global commerce.

The commonly used traditional EDI and EDIFACT standards were developed under the auspices of the United Nations and are now the responsibility of UN/CEFACT which is also now developing a new generation of standards based on XML.

The UN/CEFACT Forum for International Trade and Business Processes Working Group 1 Supply Chain (TBG1) develops and maintains standards models, semantics and content in a syntax neutral way to fulfil the requirements of the trade and industry communities in the areas of supply chain and e-procurement covering, purchasing, invoicing, material management and product development.

The UN/CEFACT Forum for International Trade and Business Processes Working Group 5 Finance (TBG5) acts as the coordination point between pure financial services standardisation which takes place under ISO Technical Committee 68 (TC68) and the wider trade domains covered by UN/CEFACT. The key objective is to offer interoperability/convergence between the respective standards. There is an understanding between them to which SWIFT and ISO are also parties. In addition TBG5 holds and leads the project on e-invoicing in ISO 20022.

In relation to invoicing, UN/CEFACT has developed a Cross Industry Invoice (CII) and version 2 has been issued. The semantic data model for this standard can be used in multiple industries and also allows for application in different domains, such as Finance (ISO20022 and SEPA payments schemes) and other trade domains (UBL, GS1).

Further work is needed to make the Cross Industry Invoice usable in supply chains. This work includes the creation of implementation guidelines for the CII, which it is understood will be developed by a group acting under the auspices of CEN. Additionally, the semantic model could be used by market participants and communities to give expression to their own content standard expression. This includes the above mentioned ISO20022 and UBL standardisation initiatives.

5.4.2 OASIS & NES

OASIS (Organisation for the Advancement of Structured Information Standards) is a not-for-profit consortium that drives the development, convergence and adoption of open standards for the global information society. The consortium produces more web services standards than any other organisation along with standards for security, e-business, and standardisation efforts in the public sector and for application-specific markets. Founded in 1993, OASIS has more than 5,000 participants representing over 600 organisations and individual members in 100 countries.

UBL is the product of an international effort to define a royalty-free library of standard electronic XML business documents such as purchase orders and invoices. Besides ebXML, this standard

is considered to be one of the most important for e-invoicing in Europe. It is the base of several country specific standards and it is also the intention to converge it with the UN/CEFACT standards. UBL is the first standard implementation of the ebXML Core Components Technical Specification, which is a concept from UN/CEFACT.

NES (Northern European Subset) is a subset of the UBL standard, defined by a working group with representatives from Denmark, Sweden, Norway, Finland, UK and Iceland. The purpose of the NES subset is to facilitate harmonization of different types of e-procurement documents in countries that are already using UBL or that are considering using UBL 2.0 documents. This provides an opportunity to base e-procurement documents and processes on a coordinated NES subset.

The focus of NES is to define the specific use of UBL 2.0 electronic procurement documents domestically and between the member countries in a number of profiles. These include profiles for catalogues, basic orders, invoice and procurement processes, and profiles for dispute responses[46]. The definition covers semantic interoperability within and between all business sectors, public and private. NES members are also closely involved in the international UBL 2.0 process.[47]

5.4.3 ISO

ISO TC68 which includes providers and users of financial services has a general focus on standards for financial services and is responsible for the preparation of the ISO20022 standards. ISO20022 provides the financial industry with a common platform for the development of messages in a standardised XML syntax, using a modelling methodology (based on UML) to capture in a syntax-independent way financial business areas, business transactions and associated message flows and a set of XML design rules to convert the messages described in UML into XML schemas.

ISO is fully aligned with the development of the UN/CEFACT Cross Industry Invoice and current efforts are being made to adopt the UN/CEFACT CII semantic data model and create an XML expression within the ISO 20022 environment.

5.4.4 CEN/ISSS

CEN/ISSS is one of the three recognised European Standardisation Organisations the others being ETSI (communications) and CENELEC (electro-technical). CEN's ICT activities are mainly in the field of applications, and their documents are usually developed by informal open workshops publishing CEN Workshop Agreements (CWAs). E-business is a specialty, and

[46] http://www.nesubl.eu/documents/nesprofiles.4.6f60681109102909b80002525.html

[47] www.nesubl.eu

CEN/ISSS Workshop eBES is the European Entry Point to the UN/CEFACT e-business and EDI standards process. CEN facilitates workshops; one of them is aimed at e-invoicing with a view to simplifying, modernising and harmonising the conditions laid down for invoicing in respect of Value Added Tax, as well as regulations on electronic signatures and EDI. At present there is a third phase of this workshop in progress. The third phase of the CEN e-invoicing workshop is an important step as it will take responsibility for carrying forward any of the standards recommendations made by the Expert Group.

It will concentrate on the integration of efforts in standards and developments in the areas of standards, compliance, implementation and business process. Four specific projects have been established focussing on 1) sustainable compliance guidelines, 2) electronic invoicing processes and SME enablement, 3) conformance criteria for interoperability and 4) awareness and promotion.

A separate activity will encompass the creation of profiles and implementation guidelines for the UN/CEFACT CII.

5.4.5 GS1

GS1 is a leading global organisation dedicated to the design and implementation of global standards and solutions to improve the efficiency and visibility of supply and demand chains globally and across sectors. The GS1 system of standards claims to be the most widely used supply chain standards system in the world. It pioneered barcodes and is strongly represented in the retail sector throughout the world.

GS1 EANCOM and its XML equivalent provide a standardised and predictable structure for electronic business messages, enabling business partners to communicate business data rapidly, efficiently and accurately, irrespective of their internal hardware or software types. The standards are a subset of UN/EDIFACT. The GS1 XML standards are fully compliant with the UN/CEFACT methodology.

5.4.6 Finvoice

Finvoice is not an organisation as such but a common format for electronic invoices designed by Finnish banks. Finvoice invoices can be forwarded from the seller to the buyer through banks. Finvoice is designed using XML syntax. XML enables the invoice to be represented both in a form understood by the application and, using a browser, visualised in a form corresponding to a paper invoice. The browser representation of an invoice may be printed as hard copy and processed in the traditional way. The Finvoice representation utilises internationally accepted standards. Finvoice is based on ebXML-compliant descriptions and the use of SOAP (Simple Object Access Protocol) and the ePI (electronic payment initiator) standard. It has been adapted for use in Belgium (Zoomit) and Italy.

5.4.7 E-facturae

E-facturae is the e-invoice content standard developed by the Spanish tax administration for the B2B and B2G market. The standard includes the following elements:

- Invoice data requirements of Spanish Tax Administration.
- Specific data for payment and financing (factoring) operative as defined by the Spanish Factoring Association.
- As from 2009, Factura-e version 3.2 is published, addressing specific needs for several industries such as Tourism, Utility, Telecommunications, Healthcare, and Construction Industry.

6 Interoperability and reach

Finding 6: the need for interoperability and reach remains a priority item and should be clearly addressed otherwise e-invoicing will not achieve its potential

The current practices in exchanging e-invoices involve bilateral exchange, 3-party models, particularly in the service provider market, and some growth of 4-party models based on interoperability agreements and the adoption of banking network concepts. These market developments have resulted in a tendency towards separation and segmentation, often described as 'silos'.

As trade involves all categories of trading parties (e.g. businesses of all sizes, consumers, government) trading with all other categories of trading parties, this separation and segmentation of models for the exchange of trade information is inhibiting participation by important market segments such as SMEs and steps need to be taken to create a more inclusive environment with greater reach towards end users.

In fact, the current models have largely benefited those enterprises who can dictate the methodology to be used in their individual case (dedicated portal, specific connectivity options, particular standards, etc). For instance where closely coupled supply chains are involved, it has been comparatively easy to deploy EDI or EDIFACT systems in a relatively closed trading environment. However, where a more open environment exists e.g. for general cross industry goods and services and in particular where smaller enterprises are active, current approaches create problems. Smaller enterprises are often forced to adopt multiple channels for invoice presentment and receipt resulting in excessive cost and complexity and lack of reach. The challenge is to create a landscape in which the various models can continue to exist but the required interoperability between trading parties is facilitated and cost effective for all parties.

In order to facilitate interoperability and create reach, the collaborative space should be clearly delineated and developed, within an overall market driven approach. The key components, required to create a truly interoperable environment, include a solution for addressing and routing, the adoption of a consistent terminology, the promulgation of best practices and a need for standard agreements. Such generic requirements should be minimum in the sense of 'just enough' to support interoperability without pulling in value added features. There should be no public sector-only requirements towards users, who need to benefit from consistent approaches. Where possible, the re-use of existing models and infrastructures is desirable, although there is always room for new paradigms and ground-shifting innovations. Market forces are best placed to create this environment, although there is an evident need to pursue the issues on a collaborative basis through a roundtable forum.

6.1 Exchange models

One of the key functionalities of the service models referred to above is the exchange of e-invoices between a sender and a receiver. For this exchange there are three principal models: bilateral, 3-party, and 4-party models.

6.1.1 Bilateral model

Bilateral exchange models facilitate the exchange of information directly between a buyer and a seller in a one-to-one relation. These can be seller driven or buyer driven and are typically used in the direct models referred to earlier. There is also an approach which supports the concept of an any-to-any model in which trading parties communicate with each other over the Internet, 'just like email' (Internet being in itself a 4-party model, with the user and its ISP on each side).

6.1.2 3-party model

When both senders and receivers of invoices are connected to a single hub for the dispatch and receipt of invoices, it is referred to as a 3-party model. This central hub consolidates the invoices of several receivers and many senders in the case of accounts payable, and several senders and many receivers in the case of accounts receivable processing. Consolidators and trade platforms are usually 3-party models in which both senders and receivers are connected to the service.

The 3-party model in principle can only offer reach to the parties that are connected to the central hub. This means that either invoice senders or invoice receivers often have to connect to multiple hubs in order to increase their reach. To solve limited reach in 3-party models, interoperability agreements between these hubs have been introduced.

6.1.3 4-party model

When senders and receivers of invoices are supported by their own consolidator service provider (for the sender) and aggregator service provider (for the receiver) and both providers are interoperable, it is referred to as a 4-party model. A network, usually based on standards, provides connectivity and the facilities for the secure trusted exchange of invoices and or other business documents. In the 4-party models, the consolidator and aggregator roles are often two different service providers.

Examples of 4-party e-invoicing networks are some of the Nordic e-invoicing schemes such as Finvoice).

6.2 Interoperability between service models

Interoperability refers to the comparatively nascent concept of 3-party based service hubs being connected to one another either in a national context or in a cross-border environment so as to offer a more complete service in terms of reach. It is suggested that roaming may be achieved through a central 'hub of hubs', or through 'hub-to-hub' connections. There are a number of initiatives in this area such as the Hub Alliance and developments in Germany. Interoperability presents a set of issues concerning the maintenance of information integrity and authenticity of origin, as well as compatibility of business models (interoperability).

There is a need for more compelling business and service model(s). In e-commerce, businesses want to maximise the number of trading counterparties they can interact with electronically (reach), without being forced to connect to multiple e-invoicing network instances or operators, used by their trading counterparties.

Many feel that the current industrial structure has too many players, excessive market fragmentation, and a lack of interoperability and thus reach. The current collaboration model between the various stakeholders is felt by many to be inadequate, and there is evidence of a degree of contention/defensiveness for market positions. More clarity is needed on an agreed definition of the collaborative versus competitive space. The prize in terms of market expansion from the creation of a platform for appropriate and targeted collaboration, for example in the area of interoperability, could be large indeed.

There is a growing need to create universal reach, by creating an interoperable environment in which e-invoices can be exchanged between service providers. In such an environment, which could be technically facilitated by the Internet, different network instances can co-exist, compete and interoperate with other network instances, which is key to achieve universal reach.

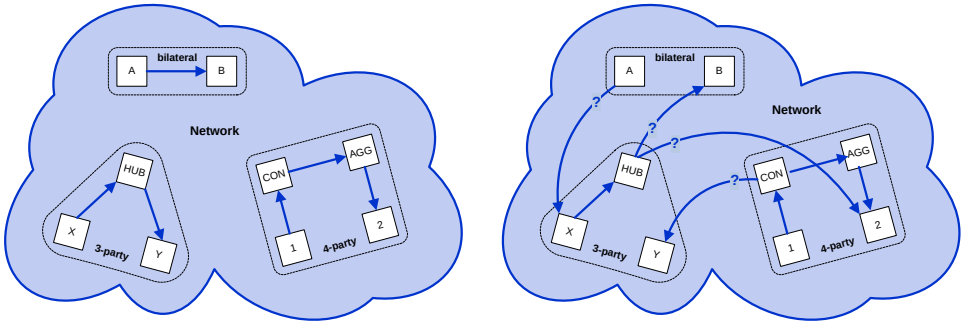

Figure 20: Reach issues with different exchange models co-existing on top of an open network infrastructure (e.g. Internet)

In such an interoperable environment, messages must be moved from one network instance to another. A smooth transmission of messages from one network to another requires an addressing and routing mechanism that is usable within both networks and it requires

adherence to the operating procedures and rules of both networks. This can be done via message brokers, or via interoperability agreements between network hubs.

6.2.1 Message brokers

A message broker is a legal entity, fully participating in both network instances and therefore adhering to the rules and regulations of both network instances. Message brokers are reachable in both network instances, and potentially have capabilities to convert messages to and from the format used in either network instance.

6.2.2 Interconnecting hubs

There are network instances where a central hub acts as a common network infrastructure facilitating the exchange of invoices between network end-points in that infrastructure. Interoperability between such network instances can be achieved by interconnecting the hubs and creating interoperability agreements between the two hubs.

6.2.3 Central directories

A central directory of end-users has been proposed as a public repository of e-invoicing addresses that also could provide information on an organisation's ability to receive and/or send e-invoices or related messages from/to other organisations[48]. An example of such a directory is the eGreenPages initiative.

Such directories are developed to promote interoperability between trading entities and between service providers. There are some challenges related to central directories in terms of privacy/competition concerns, maintainability and indeed many oppose such an idea preferring to see a directory of service providers and their protocols and numbering conventions. This topic and the whole subject of addressing and routing are covered in the Final Report of the Expert Group[49].

6.2.4 Addressing and identification mechanisms

In order to facilitate the routing of messages through multiple network instances and the identification[50] of trading entities within its appropriate network instance, a common addressing and identification mechanism should be defined. Examples of such mechanisms are email

[48] CEN, Cen Workshop Agreement 16050, 2009

[49] http://eur-lex.europa.eu/LexUriServ/site/en/oj/2006/l_347/l_34720061211en00010118.pdf

[50] Identification is not meant here in the sense of 'authentication' but merely to locate and recognise the addressed party

addresses and the IBAN account structure. Such an addressing mechanism should facilitate two routing functionalities:

- To which receiving network instance should an e-invoice be routed
- To which business entity should the e-invoice be made available? Identification of the business entity could be done by the receiving network instance.

There are a number of different initiatives in the area of addressing, routing and identification of business entities. Further work is needed to align such initiatives. The EC Expert group on e-Invoicing provides a number of recommendations to take this work further.

6.2.5 CEN recommendations for interoperability (CWA 16050)

The CEN e-invoicing workshop phase 2 defined a “Framework for Emerging Network Infrastructure of Electronic Invoice Service Providers Troughout Europe”. This framework provides scenarios and guidance recommendations for information exchange and routing of messages between Service Providers. This includes:

- Scenarios for interconnecting service providers
- Criteria for service providers to provide reliable services
- Details for interoperability agreements to be drafted between service providers
- A set of recommendations for electronic ID’s, consisting of customer identification and a customer service provider identification
- Use of confirmation messages
- Guidelines for conversion of messages, and a recommendation for common e-invoice format, including its minimal required data elements

6.3 Next steps for interoperability and reach

The lack of interoperability between service providers is a key issue in the adoption of e-invoicing, especially in open supply chains. Trading entities active in one network instance must have the ability to reach trading entities that are active in other network instances, requiring interoperability between network instances.

Various initiatives exist approaching these issues from different angles and on the different levels of interoperability, ranging from the description of best practices to the implementation of solutions. Further work is needed to seek alignment between these initiatives. Competition and market forces are the key drivers but in a network industry there is usually a need to create a set of minimum collaborative practices.

For most service providers the volume that they process that actually requires interoperability with another service provider is presently rather low. Interoperability needs are met generally

met through bilateral agreements. However, as the market and SME traffic in particular grows, then the requirement for interoperability will become more significant. Some see that traffic captured in an 'any-to-any' network as has been proposed by the recently launched Tradeshift (see chapter 2.6.3) initiative. Others see the need for aggregators, service providers who act as a single point of contact with the eco-system (banks have a growing role in this space) and therefore inter-operate through a four-corner model.

To create a more interoperable eco-system, it is likely that a multilateral network model for e-business will develop over time, based on an agreed set of standards, rules, connectivity options and covered by a governance structure. The beginnings of such an eco-system is emerging as initiatives such as PEPPOL, the CEN Workshop Agreement discussions, and a number of banking industry and service provider projects develop. There does appear to be a need for a broader roundtable to pursue these ideas further, perhaps under the auspices of the proposed Pan-European Stakeholder Forum under consideration by the European Commission following the Expert Group Report.

7 EBA e-invoicing initiative

7.1 Introduction to work

E-invoicing is a growing activity in which banks have already expressed an interest, in many cases by launching actual services

A recently prepared Draft White Paper documents the work of an EBA Working Group set up in May 2008 to examine the opportunity and requirements of banks in e-invoicing. This document is presently under consultation among EBA bank members. This short chapter summarises its key aspects. In due course it is likely that the material or relevant elements of it will be published in the public domain in a form to be determined.

In 2006 EBA constituted an initial study group to investigate the opportunity for its members in e-invoicing. The main activities were the gathering of information and making recommendations for a possible way forward for the EBA community.

The study group completed its task in July 2007 and this led to the EBA Board making the following decisions:

- To engage intensively with industry stakeholders especially at EU level.
- To strengthen resources in the form of a project manager.
- To take the lead with respect to an approach to pan-European e-invoicing by the European banking industry on a cooperative basis.

The EBA Board commissioned the production of the reference guide “E-invoicing 2008”. The work was carried out by an EBA team and the consulting firm Innopay and published in February 2008. The current document is an update of this guide.

Following the formation of the European Commission Expert Group in December 2007, EBA affiliated individuals became active in the Group and EBA became recognised as a leadership body for the European banking industry in this area.

In May 2008 EBA launched a new working group to explore ways in which the EBA and its community of members could take further steps in supporting its members in relation to e-invoicing.

This resulted in the production of a Draft Service Description and Rulebook, which provides a conceptual description of a possible pan-European Service including business and technical rules, based on an e-invoicing network model for the exchange of invoices between service providers. The approach focuses on the B2B and B2G markets and the needs on a pan-European basis.

A business rationale for banks document has also been prepared to set out the basis on which banks may make an internal business case for entering the e-invoicing services market.

The EBA Working Group has also undertaken a conceptual Proof of Concept with nine leading e-invoicing service providers to discuss the validity of the concepts and obtain valuable input to the design process. It is a fact of life that the services market, based on business process outsourcing, is highly diverse and the creation of a truly interoperable eco-system would require participation by many service providers, bank and non-bank.

Since the exchange of the e-invoice and other commercial documents is essentially a document management and delivery activity, it does not carry the functional and risk characteristics of a payment system; this reality supports the notion that an e-invoicing network can support participation of a combination of regulated and unregulated entities.

7.2 Service description and rulebook

This component sets out a description of a possible pan-European service, which could support the provision of e-invoicing services by banks to their customers and where specialist e-invoicing service providers are also included in a number of potential roles. It also includes a set of detailed rules applicable to participants in the service.

The envisaged e-invoicing service described (called 'The Service') could deliver as its mission:

"To create a pan-European network of banks, e-invoicing service providers and e-invoicing initiatives to support mass adoption of e-invoicing through the provision of an environment for the exchange of invoices with optimum interoperability, leveraging the networks and capabilities of all participants and in so going support them in offering services to end-customers"

The objectives of The Service could be to:

- Provide a secure an efficient interoperable platform for the mass adoption of e-invoicing in Europe through the services of banks and specialist e-invoicing service providers.
- To facilitate a pan-European exchange domain for e-invoicing based on standards including content and addressing and a rulebook, between banks and bank and non bank service providers or bank owned e-invoicing initiatives. This exchange domain could include Shared Additional Services, such as mapping tools and message validation.
- To facilitate access by banks to the capabilities of e-invoicing service providers, enabling banks to source e-invoicing capabilities without having to make major investments in their own infrastructure. It enables service providers to leverage their e-invoicing capabilities by offering theses capabilities to banks.
- Customer services towards their trading parties are a matter for banks and service providers in the competitive space.

The Service would be complementary to the services of existing e-invoicing service providers or initiatives by leveraging the networks and capabilities of banks, services providers and bank-owned initiatives on a pan-European basis.

The core value proposition lies in the fact that the European banking industry has access through e-channels to literally millions of customers, who are increasingly being encouraged by larger trading entities, including public sector organisations, to present or receive electronic invoices (and other e-documents) as part of supply chain automation. Whereas these larger entities will often use specialist service providers to provide them with a complex range of services, such service providers may find it challenging to recruit the sheer number of smaller enterprises into their e-channels. In other words there is an excellent fit between the two sides of the market, the growing volume generation of large buyers and suppliers, and the potential mass penetration network effects that could be achieved through banks.

The Service provides the essential building blocks for service participants to support a value proposition towards their customers, who act as trading parties. Additionally, The Service entails a number of shared additional services that can also be used as part of the value proposition for their trading parties.

- **A many-to-many network model** in which messages generally containing standardised formats are exchanged. This model is seen as the desirable mature business model that will develop over time.
- **A many-to-one model** which could act as an 'ignition motor' for bank market presence, in which large trading party volumes are channelled in both directions through existing service hubs.
- A network- based set of services representing a **capability provision**, to assist bank enablement through out-sourcing in an efficient and economic way so banks can "get started" without major up-front investments.

Figure 21 gives a graphical overview of the three network use-cases.

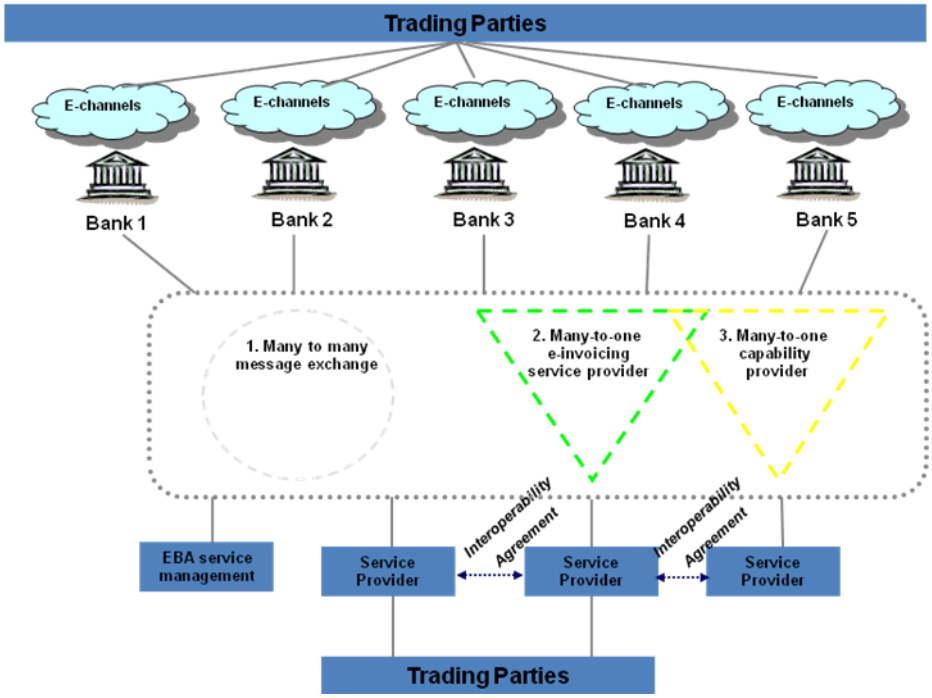

Figure 21: Three network use-cases

The Service Description & Rulebook together with a set of implementation guidelines (to be drafted) constitutes a dedicated framework for this service but potentially could also serve as a generic set of rules for adoption by other services.

7.3 Business rationale for banks to provide e-invoicing services

The business rationale for the provision of electronic invoicing and related services by banks to their customers contains the following elements:

- Understanding the opportunity and the key features of the market landscape.
- Main business drivers for customer adoption focusing on small and medium sized enterprises, but not precluding consumers, the public sector and large corporate entities.
- Business rationale, as to why a customer would look to a bank for these services as opposed to another kind of service provider and makes the case or value proposition from the bank's point of view.
- Comments from early adopter countries on "go to market" strategies giving strong encouragement.

- Helping to develop the business model through an analysis of the value chain and ways of understanding the proportions of value that can be ascribed to its components.

Throughout the work on a pan- European network concept it is important to recognise that many banks have already made the business case for entry into the e-invoicing business and are now seeking a solution to the issue of creating pan-European and potentially global reach. Their business case is therefore an incremental one. For banks that have not entered the business, the EBA work will among other inputs support their evaluation process. These banks are likely to promote a community solution at country level. However such a new community solution may wish to re-use the standards, a rulebook and infrastructure created by a pan-European solution to avoid duplicated investment and project risk.

7.4 Key conclusions

The following conclusions summarise the discussions and sentiments gathered during the Proof of Concept Exercise:

- E-invoicing is growing fast in the EU at around 40% per annum, and with coverage so far of 5-10% of all invoices depending on country.
- E-invoicing is feasible and attractive to trading parties, has a compelling business case, and is well supported by a range of services and solutions.
- The landscape is, however, heterogeneous and fragmented with many business and implementation models (bilateral, 3- and 4-party), different formats, many service providers and supply chain solutions. Adoption is uneven across Europe and different models are common country by country. This landscape is consistent with a relatively new activity.
- Barriers to adoption exist, especially in the area of legal/ tax rules and a lack of EU-wide harmonisation and clarity. This especially complicates intra-EU e-invoicing.
- There is a need for convergence of standardisation initiatives in many areas including invoice content. The implementation of standards for invoice content is an opportunity to introduce efficiency and support interoperability. The UN/CEFACT Cross-Industry invoice is a promising development nearing completion.
- All of the barriers can be worked through- they are not ‘showstoppers’ but an opportunity for further development.
- Initiatives being taken by the European Commission and Member States, and initiatives such as the EC Expert Group on e-Invoicing, CEN and public procurement in some countries should improve the adoption rate.
- Views on the role of the banking industry in e-invoicing varies enormously, some see it as entirely competitive, some as outside the banking domain at least at present, others as an attractive “network” business requiring a collaboration model to build reach and

interoperability. Banks have access to a large SME and consumer base through their trusted e-banking channels.

- Interconnection between service providers is growing based on a '4-party' model provided that trust and reliability is present. The value of interoperability is recognised and the development of a many-to-many network would provide a valuable resource.
- There is clear value in leveraging the large installed base of SMEs linked to banks though e-banking with large corporate and multinational corporations serviced by service providers (including some banks).
- Nevertheless, it is not entirely clear yet which business and technical models will succeed and in what way a fully interoperable eco-system will be created.
- Experimentation and piloting have a key role to play in proving concepts and testing models.
- The Service Description and Rulebook prepared within the EBA represent a promising framework for further discussion.
- The investment by service providers in their customer facing functionality is the key driver for adoption- without an active base of service providers and their installed customer base no interoperability initiative can succeed.
- Interoperability platforms should therefore be light and "just enough", maintaining the maximum functionality and value creation in the competitive space.
- There is a growing case for bringing together a group of service providers in some form implement a network model involving cross-border and multinational flows and building on already existing service provider (including bank-based) networks. The timing of such a development needs further thought.
- Such an initiative should build on the work of the European Commission Expert Group and its proposed European e-Invoicing Framework, recommending as it does:
  - A focus on SME adoption.
  - Harmonisation and clarification of the legal environment.
  - Creation of an interoperable eco-system.
  - Adoption of a content standard as an objective: the UN/CEFACT Cross-Industry Invoice.
  - Establishing an organisational and communications programme to support roll-out.

7.5 Next steps

Following this initial design phase thoughts may turn to putting the ideas into practice at a pace and intensity determined by the industry. For example, the next steps could include the identification of a Service Operator to take responsibility for the initiative. Another approach would be to share the insights more broadly within the industry in the context of a developing a wider eco-system for interoperability. This would allow those banks who are active in the market to inter-operate with service providers of all kinds as they see fit.

EBA is a leading not-for-profit association of banks with members from across Europe and beyond, and acts as a forum for practitioners in the payments and transaction banking industry with a view to the development of new infrastructures and service concepts. It has always handed over or sought to hand over design and architectural work to appropriate operational entities. The creation of the Service Description in no way binds or commits EBA or any of its related entities to offer or deploy a specific service.

Annexes

Annex I: Glossary

3-party exchange model

An exchange model where senders and receivers of invoices are connected to a single hub for the dispatch and receipt of messages.

4-party exchange model

An exchange model where senders and receivers of messages are supported by their own consolidator service provider (for the sender) and aggregator service provider (for the receiver), which are interconnected.

Accounts payable automation

The (semi-) automated management of accounts payable administration by automated processing of invoices. Accounts payable automation requires integration of the invoicing process with accounting software.

Accounts receivable automation

The (semi-) automated management of accounts receivable administration by managing invoices sent and payments received. Accounts receivable automation requires integration of the invoicing process with accounting software.

Advanced electronic signature (AES)

An electronic signature which is uniquely linked to the signer, created using means that the signer can maintain under his sole control and is linked to the data to which it relates in such a manner that any subsequent change of that data is detectable.

See also qualified electronic signature.

Aggregator

Provides bill payers a single point of contact for the reception of bills from multiple senders.

AMQP

Advanced Message Queuing Protocol. A protocol for the secure exchange of business messages via the Internet.

AP

Accounts payable.

AR

Accounts receivable.

AS2

AS2 (Applicability Statement 2) is a specification for Electronic Data Interchange (EDI) between businesses using the Internet's Web page protocol, the Hypertext Transfer Protocol (HTTP). The specification is an extension of the earlier version, Applicability Statement 1 (AS1). Both specifications were created by EDI over the Internet (EDIINT), a working group of the Internet Engineering Task Force (IETF) that develops secure and reliable business communications standards.

Bilateral exchange model

A model for the exchange of information directly between a buyer and a seller in a one-to-one relation. These can be seller driven or buyer driven (see seller direct and buyer direct).

Biller direct

See Seller direct.

Biller portal

Web portal of a invoice provider to which the invoice receivers can log on and check and manage their invoices.

Billing Service Providers

Business providers offering services to senders and receivers involving the sending, collection and administrative processing of invoices.

BSPs

See Billing Service Providers.

Business Process Integration

The activity of integrating various Business Processes.

Buyer direct

Powerful buying organisations require their suppliers to deliver e-invoices or e-invoice data directly to their systems, often providing tools to convert accepted orders into VAT compliant invoices. In addition to the use of a buying portal, the sender may use a direct connection or an EDI system. Service providers may be involved as technical enablers.

CEN

European Committee for Standardisation (CEN) is the European standardisation body for the development of technical standards which promote free trade, the safety of workers and consumers, interoperability of networks, environmental protection, exploitation of research and development programs, and public procurement[51].

Consolidator

Party that provides all or large groups of receivers access to the sender. This party distributes the invoices that have to be sent from one location for the sender.

Content standards

A document established by consensus, and approved by a recognised body, that provides, for common and repeated use, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context (ISO formal definition).

Credit management

The management of invoice collection, outstanding invoices and the associated payment risks and the processing of received payments. The sender can outsource this set of tasks to a BSP or specific service provider. The payment risks can be transferred to the party in question.

Direct debit/authorisation

Payment method whereby consumers authorise a provider to deduct money from their account, either on a one-time basis or on a regular basis.

Dynamic Discounting

Dynamic Discounting is a process which allows buyers and sellers of commercial goods and services to dynamically change the payment terms — such as net 30 — to accelerated payment based on a sliding discount scale. Dynamic Payables Discounting is “Dynamic” in one or more ways. Dynamic Discounting is also known as Dynamic Discount Management, Early Payment Discounting, or Payables Discounting[52].

E-bill

Electronic bill, usually used in the B2C context.

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[51] www.cen.eu

[52] http://en.wikipedia.org/wiki/Dynamic_Discounting

E-invoice

An electronic invoice is a document in electronic form representing an invoice. The electronic invoice can be in a human or in machine readable format, or in a combination thereof.

EBPP

Electronic Bill Presentment and Payment (EBPP), usually consumer-oriented 'bill paying' presented and paid through the Internet. Other terms such as IBPP (Internet Bill Presentment and Payment), EBP (Electronic Bill Presentment) and OBPP (Online Bill Presentment and Payment) are also in use but are not used further herein.

ebXML

Short for e-business using Extensible Markup Language, a modular suite of specifications for standardising XML globally in order to facilitate trade between organisations regardless of size. The specification gives businesses a standard method to exchange XML-based business messages, conduct trading relationships, communicate data in common terms and define and register business processes. See also XML.

EDI

Electronic Data Interchange: An electronic transfer of data from computer to computer using an agreed structured format that can be read by a computer and processed automatically.

EEI Framework

The European Electronic Invoicing (EEI) Framework is the objective of the European Commission's Expert Group.

EIPP

Electronic Invoice Presentment and Payment, Originated in the B2B world and describes the process through which companies present invoices to humans and organise payments through the Internet.

Electronic invoice, e-invoice

See under e-invoice.

End-to-end trade process

The activity or set of activities that result in a trade that is then settled between the trading entities concerned, their respective banks and their respective tax authorities.

EPC

The European Payments Council (EPC) is the decision making and co-ordination body of the European banking industry in relation to payments. Its purpose is to support and promote the creation of a single euro payments area (SEPA) through industry self-regulation. The EPC defines common positions for core payment services within a competitive market place, provides strategic guidance for standardisation, formulates best practices and supports and monitors implementation of decisions taken. The EPC now consists of 69 members, composed of banks and banking associations.

ERP

Systems that contain many of the tools and software to create, account for and manage invoices as part of wider corporate processes.

ESP

Electronic Statement Presentation (ESP) refers to the electronic presentment of a variety of other commercial documents, apart from invoices, such as account statements, purchase orders, delivery notifications etc. Not included are many unstructured documents that are exchanged.

European Single market

Stands for the free movement of people, goods, services and capital.

Exchange models

Exchange models are the models for the exchange of business documents between a sender and a receiver. There are bilateral, 3-party and 4-party models.

Factoring

A form of invoice financing for the seller, where an invoice or a collection of invoices is sold to a factoring company. The factoring company is responsible for collection of the invoice.

Financial Supply Chain

The financial business processes mirroring the business processes, such as qualification, pricing calculations and financing.

FTP

Short for File Transfer Protocol, the protocol for exchanging files over the Internet. FTP works in the same way as HTTP for transferring Web pages from a server to a user's browser and SMTP

for transferring email across the Internet in that, like these technologies, FTP uses the Internet's TCP/IP protocols to enable data transfer.

FTP is most commonly used to download a file from a server using the Internet or to upload a file to a server (e.g., uploading a Web page file to a server).

GS1

GS1 is a leading global organisation dedicated to the design and implementation of global standards and solutions to improve the efficiency and visibility of supply and demand chains globally and across sectors.

HTML

HyperText Mark-up Language. The dominant mark-up language for the creation of web pages. Via labels the make-up of specific text or document elements is laid down.

HTTP

Short for HyperText Transfer Protocol, the underlying protocol used by the World Wide Web. HTTP defines how messages are formatted and transmitted, and what actions Web servers and browsers should take in response to various commands. For example, when you enter a URL in your browser, this actually sends an HTTP command to the Web server directing it to fetch and transmit the requested Web page.

Internet or online banking portal

Web portal of a banking institute on which its account holders can engage in Internet banking.

Invoice

The invoice is a document or a data set formally specifying details of a (or part of a) trade and all settlement related information for the (or part of the) trade, explicitly and separately stating the applicable tax.

Invoice finance

Service provided to either buyers or sellers to finance a purchase.

Invoicing method

Manner, approach and agreements regarding the invoicing process.

ISO

International Organisation for Standardisation. A non-governmental organisation responsible for international standardisation and normalisation, consisting of representatives from national normalisation institutes.

ISO 20022

ISO 20022 is the financial industries common platform for the development of messages in a standardised XML syntax, using a modelling methodology (based on UML) to capture in a syntax-independent way financial business areas, business transactions and associated message flows.

Network instance

A service provider (or a network of service providers) providing e-invoicing services to trading entities.

New legal Framework (NLF)

See Payment Service Directive.

Northern European Subset (NES)

NES was formed in January 2006 with the objective to facilitate the establishment of a common platform for e-commerce in national and cross-border trade. Currently, the initiative comprises government representation from six countries: Norway, Sweden, Finland, Great Britain, Iceland and Denmark.

OASIS UBL 2.0

OASIS (Organisation for the Advancement of Structured Information Standards) is a not-for-profit consortium that drives the development, convergence and adoption of open standards for the global information society. ….

Order-to-Cash

The combined ordering-delivery-invoicing-payment process as part of the end-to-end trade process, from the seller’s perspective.

Payment Service Directive (PSD)

European directive for the harmonisation of the regulatory regime for payment services across EU Member States and introduction of a new EU-wide licensing regime for "Payment Institutions", allowing non-bank payment service providers to offer their services EU-wide on the basis of a license obtained in any one EU Member State.

PDF

The Portable Document Format (PDF) is the file format created by Adobe Systems in 1993 for document exchange. PDF is used for representing two-dimensional documents in a device-independent and display resolution-independent fixed-layout document format. PDF is an open standard, and recently took a major step towards becoming ISO 32000.

PEPPOL

Pan-European Public Procurement On-Line. Consortium of experts, with the objective to make it easier for European economic operators, in particular SMEs, from one country to respond to public procurement opportunities from awarding entities in any other country by using EU-wide implemented interoperable eProcurement solutions.

Physical invoice

The invoice in physical format. In practice this is always the invoice on paper. See also under invoice.

PKI

Public Key Infarstructure (PKI) is a set of hardware, software, people, policies, and procedures needed to create, manage, distribute, use, store, and revoke digital certificates[53].

Print&mail

Creating a paper invoice on the basis of electronic data, making it ready to be sent (putting it in an envelope, addressing it and adding postage) and the actual sending by regular mail. The sender can outsource this set of tasks to a BSP.

Procurement portal

Portals operating as a consolidator in the B2B market. They can provide their services to senders as well as receivers.

PSP

Payment Service Providers. Service provider that offers access to one or more payment method for selling parties that want to offer these payment methods to their customers. Primarily active in the world of online shops.

[53] www.wikipedia.com

Purchase portal

Portal of specific large procurer (receiver) to which his providers (senders) have to be connected to be able to deliver and bill to the procuring party.

Purchase-to-Pay

The combined ordering-delivery-invoicing-payment process as part of the end-to-end trade process, from the buyer's perspective.

Qualified electronic Signature

An advanced electronic signature based on a qualified certificate and created by a secure signature creation device.

A qualified certificate is issued by a certification service provider (CSP). An electronic signature backed by a qualified certificate from an accredited certification authority provides the most enhanced form of certainty to a receiver in relation to data integrity and authenticity of the sender.[54]

Receiver

The party receiving the invoice, usually the buyer or purchasing party.

Reconciliation

An accounting process used to compare two sets of records to ensure the figures are in agreement and are accurate. Reconciliation is the key process used to determine whether the money leaving an account matches the amount spent, ensuring that the two values are balanced at the end of the recording period.

Remittance data

Data containing payment details, used for reconciliation of payment data.

Reverse factoring

In reverse factoring, a bank or factoring company finances the invoice of the supplier based on an invoice that is approved by the buyer.

[54] http://www.out-law.com/page-443

Roaming

A concept where service hubs being connected to one another either in a national context or in a cross-border environment so as to offer a more complete service in terms of reach.

Sarbanes-Oxley Act (SOx)

United States federal law enacted on July 30, 2002. The legislation establishes new or enhanced standards for all U.S. public company boards, management, and public accounting firms. The Act contains 11 titles, or sections, ranging from additional Corporate Board responsibilities to criminal penalties.

Seller direct

An invoice sender sends (push) or provides a portal ('pull') to allow customers to review and pay invoices usually electronically as well as access other services. This method is often used by utilities and telecom operators.

Semantic data model

A modelling technique used in the definition of content standards (and also other areas of information technology) to define the meaning of data elements within the context of its interrelations with other data elements.

Sender

The party submitting the invoice, as a rule the Seller or selling party.

SME

Small and Medium sized Enterprise.

SMTP

Simple Mail Transfer Protocol. Method, and de-facto standard, to transfer emails via the Internet.

SOAP

Simple Object Access Protocol. SOAP is a lightweight XML based protocol used for invoking web services and exchanging structured data and type information on the Web.

STP

Straight Through Processing. The immediate and direct transfer of data from the Financial Supply chain flows in various systems at various parties, including automated reconciliation.

Supply chain integration

The activity of integrating processes that take place along a supply chain, both within and between entities.

Supply chain finance

Combination of open account and trade financing products, services and technology applications that provide for the financing of receivables, payables and inventory based on the occurrence of multiple supply chain events and typically implemented on a collaborative basis[55].

SWIFT

Society for Worldwide Interbank Financial Telecommunication (SWIFT) is a co-operative organisation dedicated to the promotion and development of standardised global interactivity for financial transactions. SWIFT is established by and for the Financial Industry.

Total Invoice Management

An accounts payable and accounts receivable automation solution where an external service provider facilitates the reception, authorisation and processing of all incoming invoices, including paper invoices.

Trade

A voluntary exchange of 'performances' between entities involved in a trade.

Trade platforms

Trade platforms are typically central platforms facilitating the exchange of Trade related documents. Often such providers offer services for both sender and receiver covering multiple processes in the end-to-end trade process.

UBL

Universal Business Language (UBL) is a library of standard electronic XML business documents such as purchase orders and invoices. UBL was developed by an OASIS Technical Committee with participation from a variety of industry data standards organisations. UBL is designed to plug directly into existing business, legal, auditing, and records management practices. It is designed to eliminate the re-keying of data in existing fax- and paper-based business correspondence and provide an entry point into e-commerce for small and medium-sized businesses. See also XML.

[55] Bottomline Technologies

UN/CEFACT

The United Nations' Centre for Trade Facilitation and Electronic Business has a global remit to secure the interoperability for the exchange of information between private and public sector entities. It has developed the UN Layout Key for trade documents and developed UN/EDIFACT, the international standard for electronic data interchange together with supporting components and methodologies.

Value Added Network. VAN, Value Added Network

Value Added Network. Third-party network service provider that offers specialised trade related services to trading parties connected through the VAN.

VAT

Value Added Tax. Tax that is imposed by the IRS with every transaction in the B2B en B2C market. Registration and administration of this tax is subject to legislation and regulations from the IRS in question.

VAT Information Exchange System (VIES)

VIES is an electronic means of transmitting information relating to VAT-registration (= validity of VAT-numbers) of companies registered in EU. Furthermore, information relating to (tax exempt) intra-Community supplies between Member States' administrations is also transmitted via VIES[56].

XML

Extended Mark-up Language. Standard for structuring content. XML is a mark-up language, which means that the content elements are defined by labels, making them recognisable to any application familiar with the labels in question. Agreements about a specific set of labels lead to specific versions of XML.

[56] http://ec.europa.eu/taxation_customs/vies/

Annex II: European Commission Expert Group on e-Invoicing

Executive Summary of Final Report dated 29 November 2009

This report of the European Commission Expert Group on e-invoicing proposes the European Electronic Invoicing Framework (EEIF) as called for in the Terms of Reference created by the European Commission when the Group was established in late 2007.The EEIF is expected 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.

The Expert Group[57] has concluded that it makes sense to define the EEIF as this Final Report containing as it does a set of actionable recommendations and proposals, for which the support of all interested parties should be sought. It is organised as a series of layers, which all interrelate on a coherent basis. It is not itself a formal scheme or contractual framework to which entities or persons are expected to formally adhere. The EEIF however, is a set of coherent recommendations designed to promote the uptake of e-invoicing and which requires a response by identified stakeholders.

The EEIF contains the elements identified in the headings below:

- An introduction and vision
- An overall conceptual structure for the EEIF
- Business requirements for all segments
- Legal and regulatory proposals
- Guidance recommendations for interoperability
- Content standards recommendations
- Organisational proposals for implementation
- A number of annexes including:
  - Code of Practice recommended by the Expert Group
  - Guidelines for small and medium-sized enterprises (SMEs)
  - a draft Communications Plan
  - note on SEPA

[57] See Annex 2 of the Final Report for a summary of the opinion of the dissenting Expert Group member.

- Minimum Core Data Set for an invoice
- Terms of Reference for the Expert Group
- summary of a dissenting expert opinion
- Glossary

This report is addressed to the European Commission, the Member States, including their tax authorities, and a wide range of other stakeholders, including trading parties, their service and solution providers, professional advisers and standardisation organisations. The report has a focus on the needs of SMEs and all those who support, advise and provide services to such enterprises. All are urged to take full account of the EEIF in order to promote mass adoption of e-invoicing.

E-invoicing has great potential and the first chapter records that there are many instances where good 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. While e-Invoicing is already an accepted and rapidly growing practice, there are, however, a number of barriers standing in the way of wider adoption especially by smaller businesses and particularly when it comes to intra-European e-invoicing. 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.

The EEIF sets out a vision for the future European e-invoicing environment and presents a target picture as an objective for all stakeholders:

- Within five to eight years structured e-invoicing will become the predominant invoicing method throughout Europe. All sectors and market segments will be fully engaged.
- The legal and tax environment for the conduct of e-invoicing will have been harmonised across all Member States and trading parties will have access to clear, easy-to-use and unambiguous guidance as to achieving compliance. 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 conduct structured e-invoicing in a highly convenient and secure manner.
- Standards for invoicing and related processes will have been widely adopted; in particular the UN/CEFACT Cross-Industry Invoice (CII) v.2 will have been implemented by the majority of trading parties. Other standards and formats will remain in use and appropriate facilities for format conversion will be readily accessible.

- European enterprises will have made further substantial 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. ERP systems will be 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 services that can be easily accessed and integrated with internal systems as well as being interoperable with external 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 and to the reduction of administrative burdens on businesses. The ecosystem will be open and capable of maximum flexibility and evolution supporting both European enterprises and linkages to global supply chains.

To achieve this vision, implementation challenges will need to be tackled and overcome and are further described in Chapter 1 of this document. Note is taken of the European Commission Action Programme for Reducing the Administrative Burdens in the EU and it is clear that e-invoicing will be a key enabler and make a significant contribution in this direction.

The following sets out a number of key recommendations by the Expert Group (EG) to achieve this vision.

Recommendation 1:

The EG recommends meeting the needs of SMEs as a priority focus, by concentrating on a number of specific business requirements

Recommendation 2:

The EG recommends the harmonisation of and the provision of clarity for the legal and VAT framework across the EU on the basis of equal treatment between paper and e-invoices and supported by a Code of Practice prepared by the Expert Group

Recommendation 3:

The EG recommends the creation of an e-invoicing eco-system that provides maximum interoperability and reach

Recommendation 4:

The EG recommends that all actors within both the private and public sector adopt a common invoice content standard and data model – the UNCEFACT Cross-Industry Invoice (CII) v.2

Recommendation 5:

The EG recommends the establishment of an organisational process for implementation of the EEIF at Member State and EU level

Recommendation 6:

The EG recommends the wide communication of the key messages of this report

Each of these recommendations entails a number of sub-recommendations which are listed in the remainder of the executive summary. Detailed descriptions of all recommendations incl. sub-recommendations can be found in the respective chapters of the report.

Recommendation 1 (details in Chapter 3):

The EG recommends meeting the needs of SMEs as a priority focus, by concentrating on the following list of business requirements

R1.1: The EG recommends the use of a common invoice standard which serves the needs of the invoicing process and also supports the entire physical and financial supply chain process;

R1.2: The EG recommends that e-Invoicing should enable SMEs to create savings in time and money through a favourable cost/benefit equation and that all e-Invoicing solutions and tools should be easy to use;

R1.3: The EG recommends the harmonisation of and the provision of clarity for all legal and compliance requirements

R1.4: The EG recommends to widely communicate and share good practices and to provide wide education and training programmes;

R1.5: The EG recommends to develop and maintain a competitive and trusted market place for services and solutions and assure trustworthiness and data protection.

Areas for improvement have been identified in each case and a detailed set of SME guidelines are provided as an annex to the report.

Responsible for Recommendation 1: All market participants supported by public authorities, based on a mindset that emphasises the virtuous circle benefits to the wider economy and the green agenda, as well as the benefits to individual trading parties.

This focus on SMEs should be adopted immediately and remain a continuous feature of all stakeholder activity.

Recommendation 2 (details in Chapter 4):

The EG recommends the harmonisation of and the provision of clarity for the legal and VAT framework across the EU on the basis of equal treatment between paper and e-invoices and supported by a Code of Practice prepared by the Expert Group

The key components of this recommendation are:

R2.1: The EG recommends that equality of treatment is defined as follows: it should be as easy to issue, send and receive electronic invoices as it is with paper invoices. No legislative or other requirements should be imposed on electronic invoices above those that exist for paper invoices today.

R2.2: The EG recommends that all Member States adopt the Commission's January 2009 proposal for a new VAT Directive (COM(2009) 21 final) and transpose it into national legislation. In particular the provisions of Articles 232–237 of the current Directive on the Common System of Value Added Tax (2006/112/EC) should be removed so as to shift from technology based requirements to requirements based on equal treatment, technology neutrality and internal business process controls.

R2.3: The EG recommends that the European Commission supports the implementation of the Expert Group's Code of Practice based on 11 core principles by means of a European Commission Recommendation, which should also be endorsed by all Member States. When the above mentioned VAT directive is adopted, the European Commission Recommendation will provide complementary support and continuing guidance to all stakeholders.

R2.4: The EG recommends that the proposed European Commission Recommendation should be implemented by all stakeholders in the e-Invoicing environment, including trading parties, tax authorities and service providers.

R2.5: The EG recommends that in the short term, pending the adoption of the new VAT Directive, those Member States who have not yet done so, should implement the option of 'other means' as provided for in the current VAT directive (Directive 2006/112/EC) so as to enable the practical implementation of the Expert Group's Code of Practice.

R2.6: The EG recommends that all above recommendations should be implemented in such a way as that the investments already made by trading parties in their existing e-invoicing a way as that the investments already made by trading parties in their existing e-invoicing solutions are safeguarded.

R2.7: The EG recommends that, regardless of the way in which the legal framework evolves, absolute clarity in the specification of legal requirements should be provided, so as to give legal certainty to trading parties and all market participants. This clarity needs to cover the provisions

of actual legislation, its interpretation, the practices of all tax authorities and the way legal requirements are communicated throughout the market.

Responsible for Recommendation 2: The European Commission and the Member States of the European Union to adopt the recommendations by end-2010 leading thereafter to the appropriate implementation.

Recommendation 3 (details in Chapter 5):

The EG recommends the creation of an e-invoicing eco-system that provides maximum interoperability and reach The following Guidance Recommendations for Interoperability are recommended for the use of all stakeholders:

R3.1: The EG recommends the consistent use of a terminology to describe and clarify the roles and responsibilities of actors;

R3.2: The EG recommends content standards that support the basic cross-industry e-invoicing business requirements;

R3.3: The EG recommends the use of common, non-proprietary European and international information technology standards;

R3.4: The EG recommends minimum business and technical requirements for connectivity and messaging;

R3.5: The EG recommends the development of an interoperable electronic addressing and routing process;

R3.6: The EG recommends the development and deployment of a variety of accepted business and implementation models;

R3.7: The EG recommends the use of well constructed good practice guidelines as self-assessment tools on a voluntary basis;

R3.8: The EG makes specific additional recommendations regarding bilateral scenarios, 3-party and 4-party network models;

R3.9: The EG recommends recognition of the importance of establishing sound and enforceable agreements;

R3.10: The EG recommends to provide interoperability within and between networks and network-based solutions.

The goal of interoperability is to allow information to be presented in a consistent manner between business systems, regardless of technology, application or platform and ensure that trading parties can effectively reach their counterparts.

In a network activity, interoperability can only be created through an appropriate mix of collaboration and competition. The required collaboration should focus on creating a layer of commonly accepted definitions, practices, standards and processes, which serve as the basis on which market players can effectively compete.

In the opinion of the Expert Group there are promising developments and there is no generalised market failure in the development of the required level of interoperability. However,

market developments should be monitored and, where required, further support given for the development of a healthy and vibrant eco-system.

Responsibility for Recommendation 3: The multi-stakeholder e-Invoicing Forum recommended below to operate at European level should take the lead, supported by CEN, the service and solution provider community, as well as community projects, associations and user groups. Progress should be continuously monitored over the next two year period in the expectation that tangible progress will have be achieved by end-2011.

Recommendation 4 (details in Chapter 6):

The EG recommends that all actors within both the private and public sector adopt a common invoice content standard and data model – the UNCEFACT Cross-Industry Invoice (CII) v.2

For the purpose of the following recommendations, the Expert Group defines e-Invoice content standards as being 'the actual data set that constitutes the e-Invoice message and business header'. The long-term e-Invoice landscape needs to contain e-Invoice content standards, but in fewer formats and expressions than exist today as this is a barrier for mass adoption. In this context, the makes the following recommendations:

R4.1: The EG recommends that the UN/CEFACT Cross-Industry Invoice (CII) v.2 is adopted by all actors within both the private and public sector, as the common reference semantic data model upon which future e-invoice content standard solutions are based. CII v.2 is currently the only international data model that covers the requirements of different industries and sectors. It provides the required connection between the various supply chain messages and is integrated with financial services requirements. UN/CEFACT products and standards are recognised and accepted globally.

R4.2: The EG recommends that structured invoices comply with this data model provided that the data elements required by the user are present in CII v.2.

R4.3: The EG recommends that trading parties, service and solution providers and especially ERP & application providers begin migration using the CII v.2 data model either within existing solutions or by converging on new ones.

R4.4: The EG recommends convergence in the area of syntax and methodology expression. This convergence will avoid standards fragmentation and unnecessary cost burdens. Whilst the ultimate goal should be the single syntactical format, it is clearly recognised that in the interim 2

or 3 mutually interoperable syntactical formats would foster mass adoption and provide support for the reference semantic data model.

R4.5: The EG recommends that UN/CEFACT and ISO, as global standards organisations, should continue to collaborate on the development and maintenance of the CII and implement the model in their own interoperable methodologies and data dictionaries to enable maximum integration of the procurement, invoicing, payment and reconciliation processes. This will

continue to foster end-to-end STP and will support migration to SEPA. It will simplify message conversion, integration and communication. It will also help to minimise implementation costs for SMEs.

should continue to collaborate on the development and maintenance of the CII and implement the model in their own interoperable methodologies and data dictionaries to enable maximum integration of the procurement, invoicing, payment and reconciliation processes. This will continue to foster end-to-end STP and will support migration to SEPA. It will simplify message conversion, integration and communication. It will also help to minimise implementation costs for SMEs.

R4.6: The EG recommends inclusion of at least the proposed minimum core invoice data-set, based on the CII and described in Annex 7, in any e-invoicing solution.

R4.7: The EG recommends that users of e-invoice services should complement the recommended single semantic data model with standardised extensions in cases where this is needed by national regulations/requirements or due to industry specific requirements.

R4.8: The EG recommends that UN/CEFACT as the supplier of CII should deliver the mechanism to cater for such standardised extensions and recording of subsequent variant usage of the CII v.2 and to provide more detailed user guidance on the CII v.2.

R4.9: The EG recommends that the European user community should develop clear profiles and implementation guidelines based on common recommendations facilitated through CEN to support the use of e-invoicing and facilitate interoperability. These implementation guidelines should be made freely available and stored publicly. Until full standards convergence based on these implementation guidelines occurs, the use of choreography specifications and format conversion tools will continue to facilitate mapping between standards.

R4.10: The EG recommends that users of the referenced semantic data model should engage actively in the maintenance and further development of CII.

R4.11: The EG recommends that UN/CEFACT completes the necessary components to support implementation of the CII v.2 standard as soon as possible so that the whole package can be launched by the end of 2010.

Responsible for Recommendation 4: As stated above, UN/CEFACT and ISO, as global standards organisations should continue to collaborate on the development and maintenance of the CII. CEN should develop the required set of implementation guidelines as soon as possible and no later than September 2010. All user groups adopt or are helped to adopt the standard, and all service and solution providers (including ERP vendors) are expected to implement in all applications.

Recommendation 5 (details in Chapter 7):

The EG recommends the establishment of an organisational process for implementation of the EEIF at Member State and EU level.

The Expert Group makes concrete proposals as to how the implementation of the EEIF should be organised. The implementation of these recommendations will require determined efforts by all stakeholders in the coming period.

Two clusters of activities need to be led and managed, being development and advocacy on the one hand and standards on the other:

Development and Advocacy

A first cluster of required activities involves the continued development and advocacy of e-Invoicing among all interested parties and stakeholder groups. The strong leadership of the European Commission and certain Member States now needs to be complemented by activity at the level of all Member States. Two levels of activity are recommended:

R5.1: The EG recommends Member States to set up national e-Invoicing bodies.

R5.1.1: The EG recommends that each Member State should create or mobilise a new or an existing body to act as the champion and advocate for e-invoicing in their environment. Such bodies could be created or mobilised as appropriate by government, the private sector or a mixture of the two.

R5.1.2: The EG recommends that the composition of such bodies should be balanced and represent a cross-section of interested stakeholders. It is essential that advocacy and development activities are now centred in the Member States to ensure proper engagement and integration into the commercial, taxation and procurement practices of each country environment. These bodies could be mobilised immediately.

R5.2: The EG recommends to set up a pan-European e-Invoicing Forum.

R5.2.1: The EG recommends that there should be a multi-stakeholder e-Invoicing Forum at European level, made up of 1 or 2 representatives of the Member State bodies meeting quarterly (or as required more frequently).

R5.2.2: The EG recommends that ten further seats should be added for experts, constituencies missing from the national selection processes, pan-European associations, and the Commission etc. The European Commission should ensure a balanced composition of interested stakeholders.

R5.2.3: The EG recommends that the body should elect a Chair and a Steering Committee and be supported by a Secretariat provided by the European Commission, who should take a pro-

active role. It should have the necessary resources to undertake wide communication and maintain an active website.

R5.2.4: The EG recommends that the Commission should continue to drive the development by establishing the Forum for at least an initial period of two years as no market driven body able to take on this task has been identified.

R5.2.5: The EG recommends that the body should have the following concrete tasks in full liaison with the national e-Invoicing bodies:

- Support and monitor adoption of the Invoicing Directive and other regulatory simplification and harmonisation recommendations;
- Maintain and further develop the Code of Practice;
- Support and monitor adoption of the CII and give continuing guidance to relevant standardisation bodies for further development of standards;
- Support and monitor roll-out and observance of the Guidance Recommendations for Interoperability;
- Monitor adoption rates of e-invoicing and identify and share best practices;
- Identify and promote EU-wide action harmonisation programs – such as automation of procurement, accounting and financing enhancements etc. – building on the e-invoicing platform;
- Undertake communication and promotion, regulatory relations, and stakeholder consultation and take responsibility for the proposed communications plan described in the next recommendation;
- Provide an environment for the progressive maintenance and further development of the European e-Invoicing Framework, as required.

Standards

For standards, the recommendations are as follows:

R5.3: The EG recommends to take forward the CII v.2 content standard: including the preparation of a set of European implementation guidelines to be completed as soon as possible and no later than September 2010;

R5.4: The EG recommends to further develop the Guidance recommendations for interoperability including questions relating to addressing and identifiers;

R5.5: The EG recommends to develop reference implementation models and best practices for standards implementation.

R5.6: The EG recommends to formulate and channel specific requirements for the further development of the UN/CEFACT CII v.2 data model.

R5.7: The EG recommends to continue the current CEN Workshop and enhance its activities to take account of the Expert Group recommendations.

Responsible for Recommendation 5: The European Commission and Member States to establish the proposed forums by September 2010 with the engagement of all stakeholder groups. CEN is to facilitate the continuation of its Workshop in synchronisation with these activities.

Recommendation 6 (details in Annex 5):

The EG recommends the wide communication of the key messages of this report

R6.1: The EG recommends that the adoption of the EEIF should be supported by a soundly constructed and well-executed communications plan. A proposal is set out as Annex 5.

R6.2: The EG recommends that the key objectives of the communication plan should be the following:

- to ensure that e-invoicing moves towards the top of the agenda, in view of its huge potential benefits to the economy and society;
- to promote the EEIF and support its adoption by all stakeholders as appropriate to their situation;
- to create consensus, drive convergence, and reduce duplication;
- to ensure market adoption of e-invoicing by SMEs as well as large corporates and public administrations;
- to receive feedback in order to continuously improve the e-invoicing environment. In support of these objectives, the following activities and approaches are recommended:

R6.3: The EG recommends to widely disseminate the EEIF, commencing with its publication and followed up by an open conference to take place during the first half of 2010 as part of a consultation process.

R6.4: The EG recommends that communication should be tailored towards 'multipliers and enablers' such as EU Member States, service providers and other influencers as well as towards end-users.

R6.5: The EG recommends focussing on communicating elements which directly drive and accelerate take-up of compliant electronic invoicing, avoiding legal (mis-)interpretation.

R6.6: The EG recommends that all communication efforts should be consistent and sustained over time and actively crafted for the various target audiences.

Responsible for Recommendation 6: The European Commission, Member States, all interested stakeholders and (in the future) the European e-Invoicing Forum and the equivalent forums at Member State level. These activities should commence immediately following publication of this report.

Conclusion

It is important for all trading parties to recognise that e-Invoicing is working and legally accepted today. Already today multiple VAT compliant e-Invoicing solutions are available for trading parties.

However, there are a number of hurdles which represent major challenges for cross-border electronic invoicing and for an accelerated uptake of e-Invoicing, especially among SMEs.

The Expert Group is convinced that the above recommendations and the provisions of the EEIF meet the needs of all stakeholders and in particular SMEs.

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About the Euro Banking Association (EBA)

The Euro Banking Association plays a major role in the financial industry as the largest network of payment practitioners with a pan-European mindset and vision. The EBA provides a country-neutral forum for discussing and driving pan-European payment initiatives. It is therefore well-positioned to actively support banks in their continued migration to the Single Euro Payments Area (SEPA) and in other bank-driven initiatives requiring hands-on co-operation at a pan-European level. The EBA was founded in 1985 by 18 commercial banks and the European Investment Bank, with the support of the European Commission. Today, the EBA includes over 175 member banks from the European Union and across the world.

www.abe-eba.eu / www.ebaportal.eu

About Innopay

Innopay is an independent full service consultancy firm specialised in electronic payments and related financial services. Key focus areas include online payment, mobile payment, e-invoicing and e-identity. Innopay's practice covers strategy & business development, product development & management and knowledge transfer. They use a multi-disciplinary approach covering commercial, operational and technical aspects. Combined with strong and proven project management capabilities they have a track record in taking new payment products and services from 'powerpoint to production'.

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