European Multi-Stakeholder Forum on e-Invoicing

2013

Electronic Invoicing in public procurement: Activity 2 – Experience and Good Practice

Contents

E-invoicing in public procurement

Preamble

This Position Paper has been produced by Members of the European Forum during the session 2012-3 as part of the Activity on Experience and Good Practice, where public procurement was selected as a promising area for the adoption of electronic invoicing.

The replacement of business processes based on paper documents with the exchange of information in electronic form is a highly beneficial global trend, and the competitiveness of European economic activity will benefit from this migration. Such electronic information exchange will play a prominent role in achieving the Single Digital Market, as set out in the Communication "A Digital Agenda for Europe", one of the flagship initiatives of the 'Europe 2020' strategy; the uptake of electronic invoicing has for some time been an identified priority within the Digital Agenda.

Electronic invoicing has been achieving growing but varying rates of adoption and is potentially capable of achieving critical mass in many industry sectors in the short to medium term. This is owing to adoption by the public sector in a number of Member States and generally to private sector adoption through supply chain automation. An active electronic invoicing service provider and solutions industry is supporting this growth. It is, however, recognized that further efforts are required in order for electronic invoicing to achieve its full potential, especially bearing in mind the needs of small and medium-sized enterprises (SME).

The Commission established the European Commission Expert Group on electronic invoicing, which adopted its Final Report in November 2009 and the recommendations made by the Expert Group, were taken up by the Commission in its Communication entitled "Reaping the benefits of electronic invoicing for Europe". The latter Communication stated that the Commission would like to see electronic invoicing become the predominant method of invoicing in Europe by 2020. As announced in that Communication, the "European Multi-Stakeholder Forum on Electronic Invoicing (electronic invoicing)", hereinafter referred to as 'the Forum', was established in 2010 and one of its tasks is defined as:

'To bring about an exchange of experiences and good practices that facilitates the emergence of interoperable electronic invoicing solutions.

The European Forum should identify practices which have proven to favour the uptake of electronic invoicing at national level. This benchmarking exercise should also cover the conditions for successfully replicating the approach in other Member States. A number of specific topics could be addressed in the benchmarking, such as:

- the role of service providers and banks to foster electronic invoicing adoption
- SME targeted initiatives
- Public sector measures (e.g. in electronic procurement) that can accelerate the uptake of electronic invoicing'

The Commission has established a strategy for e-procurement and which stated that "the ultimate goal is "straight through e-procurement with all phases of the procedure from notification (e-notification) to payment (e-payment) being conducted electronically". This was further emphasized

in the European Parliament Report A7-0083/2012 on "a competitive digital single market – e-Government as a spearhead" which calls for electronic invoicing to be made mandatory for all public procurement by 2016.

During discussions within the Activity 2 task group of the European Forum on Experience and Good Practice, it was determined to focus the work on the adoption of electronic invoicing in public procurement on producing a position paper addressing three issues:

1/ the business case;
2/ potential infrastructural channels for electronic invoicing adoption in the public sector;
3/ and standards issues with specific reference to the public sector

For the latter work item the task group worked closely with the standards stream of work being carried out in the EU Forum at the same time.

This position paper includes reference to evidence gathered from country delegations within the Forum and the experience gained so far in electronic invoicing in the context of public procurement.

Background

Electronic invoicing requires the complete removal of paper from the invoicing process. Many large corporate enterprises and many public administrations throughout the world are already realizing the major benefits of automating their business processes, of which electronic invoicing is a conspicuous and effective example.

Acceptance of e-Invoices by government will make the public sector much easier to do business with, and facilitate payments to suppliers including SMEs with potential cost savings and liquidity benefits.

There are four good reasons for adopting electronic invoicing in the public sector:

1. Electronic invoicing is supportive of public policy priorities for economic growth, deficit reduction and financial transparency.
2. It will specifically make a material contribution to public sector cost reduction and efficiency.
3. It will also provide major benefits to private sector suppliers and clear opportunities for the public sector to act as a catalyst for the wider adoption of digital processes with the resultant productivity gains throughout the economy.
4. Its ease of implementation can be demonstrated with reference to many private sector and national public sector experiences, and with reference to the extensive range of existing market solutions and shared service platforms: 'Big bang' IT projects are not required. Transition costs are modest.

The business case for public sector buyers

For both corporate and public sector trading parties, the manual processes involved in handling paper invoices are labour-intensive and lead to errors, delays and long payment cycles. Manual approval processes and limited process controls lead to uncorrected billing errors, potential fraud, and difficulties in achieving accurate audits for all parties.

By moving to a process that handles invoices electronically, buyers and suppliers achieve material cost and efficiency gains by removing delivery and print costs, by removing the need to archive paper, and to purchase envelopes, paper and stamps. Even more significant cost savings are obtained through work flow, process improvement and administrative efficiencies at all levels. At a minimum, greater transparency is built into the whole procure-to-pay cycle.

For public sector buying organizations, the cost benefits take the form of direct cost reductions in back office processing and invoice reconciliation. The introduction of electronic invoicing creates the potential for releasing resources for engagement in more productive work whilst protecting front-line services. The buyer establishes a more stable and satisfied supply chain, and will see measurable error and fraud reductions. The environmental benefits of electronic invoicing are also significant. Electronic trading systems will allow access to transparency of spend, and simpler financial reporting right across government.

In addition, once the pivotal e-invoice process is created, it is an enabler for the implementation of full end- to-end e-procurement (from e-catalogues to ordering and payment). It is important to make a distinction between the complex internal change management required to adopt full e-procurement with the comparatively straightforward step of adopting electronic invoicing. This modular step then creates the potential for the step by step adoption of e-procurement.

The adoption of electronic invoicing will create spill-over effects to economy as a whole as the public sector acts in a catalytic capacity and acts as an electronic invoicing role model, together with the large enterprise sector.

There is a global dimension to electronic invoicing which is an integral component of new global trading practices in the networked economy and is an indispensable part of creating competitiveness. Consequently it is so much more than the modernization of a traditional business process. It takes place at the point of convergence between the physical and financial supply chain where the processes associated with orders, manufacture and delivery meet contractual arrangements, risk analysis, credit, financing and payments. It will almost always stimulate wide-ranging productivity enhancements right along these value-chains.

The business case can be established with reference to the clear benefits arising from the benefits described above. This then needs to be complemented with material on the implementation aspects covered in a later section below. It is proposed that the business case can be built on the basis of a series of questions:

While it may be difficult to obtain aggregated facts and statistics for the entire public sector, it may be possible to obtain data from a sample drawn from central government ministries and departments, regional and municipal authorities and a variety of public agencies and arm's length bodies to answer these questions.

Question 1: How many paper invoices are processed in the public sector?

Rationale

This is the key measure; accounts payable management is essentially a transaction driven process requiring human resource, and the higher the volume of transactions, the greater the human resources involved. The volume of invoices also drives other costs and benefits; as well as invoice processing, invoices must be archived, retrieved and subsequently destroyed.

Comment

The number can also be used to derive other benefits, for example the carbon footprint – invoices are made of paper (usually two copies plus an envelope) and are delivered by mail; there are industry standard measures that can be employed to obtain headline statistics.

Question 2: How many people are employed within the accounts payables departments within the public sector?

Rationale

Staff reduction / staff efficiency is one of the key benefits of electronic invoicing. Typically there is one member of staff employed to process 10 000 – 12 000 invoices per year, so an organization processing 100 000 invoices per year will employ 9 – 10 staff in Accounts Payables (in addition to post-room staff).

Comment

World class enterprises can process 125 000 invoices per person per year when electronic invoicing is deployed, particularly if deployed alongside a robust procurement system. Many organizations redeploy staff to more added value activities, rather than mundane transaction processing.

Combined with Q1.we can benchmark the efficiency of Accounts Payable management.

Question 3: What is the cost of processing a paper invoice in the public sector?

Rationale

A headline cost can be derived from the answers to Q1 and Q2. However the costs will vary dramatically from department to department, depending on the geographical location of processing, the volume of transactions, the technology deployed, and process efficiency. This needs to be studied in more detail.

Comment

Independent studies in industry suggest that the cost of processing a paper invoice (to the buyer) is around EUR17 per invoice. Deployment of electronic invoicing can reduce total processing costs by between 40% and 60%. Estimates vary very widely as to the actual savings obtainable from the use of invoicing depending on the degree of automation involved. At the very least savings to both buyer and supplier of EUR 2-5 have been estimated rising to the range of EUR 6-11.

Source	Sender	Receiver
Billentis report 2012 "E-Invoicing/E-Billing. Opportunities in a challenging market environment"	6.4	10.9
European Commission Expert Group on e-invoicing final report (November 2009)[1],[2]	9	11
Spanish Ministry of Industry, Tourism and Commerce e-invoicing Manual, 3rd edition (2013)[3]	2,85	2,86
EUROPEAN COMMISSION QUESTIONNAIRE on e-Invoicing – Danish answer	2	2
EUROPEAN COMMISSION QUESTIONNAIRE on e-Invoicing – Austrian answer	4,75	

In the Press release accompanying the announcement by the European Commission of a proposed draft directive on the use of e-invoicing in public procurement in June 2013, Commissioner for Internal Market and Services Michel Barnier said '….switching from paper to fully automated invoicing can cut the costs of receiving an invoice from EUR30-50 to EUR1'.

Question 4: What is the on-time payment performance of the public sector? How many (%) invoices are paid on time?

Rationale

Failure to pay on time causes undue stress on the supplier (particularly SME's), the buyer and the accounts payables department. It is also now relevant in the context of the EU "Late Payments Directive" (which has been transposed in National Laws on 16.03.13) which states that public authorities will have to pay for the goods and services that they procure within 30 days or, in very exceptional circumstances, within 60 days.

Comment

Many corporations are including on-time payment statistics as part of their Key Performance Indicators. There is a substantial improvement in KPI's when electronic invoicing is deployed as invoices are delivered and processed quickly, efficiently and directly in to the accounting system of the buyer. No invoices are lost. This measure is not about paying early – but paying on time – to the agreed terms.

Question 5: What are the requirements for archiving of invoices in the public sector?

Rationale

Regulations in Europe require that buyers retain invoices for 6-10 years.

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[1] http://ec.europa.eu/enterprise/sectors/ict/files/finalreport_en.pdf

[2] The figure used here is just a mean value of the figures used in the Business Case for SMEs (page. 76). Lack of reliable statistics and robust models discouraged further refinement.

[3] http://lafacturaelectronica.es/descargas

Comment

Archiving is expensive, as documents must be stored in a dry environment, indexed and kept in an orderly fashion to allow quick retrieval. At the end of the retention period documents are [normally] securely destroyed.

Archiving is often outsourced. If a public sector organization processes (say) 50 million invoices per annum and they are archived for 6 years, there will be a minimum of 300 million documents in storage. Note// suppliers also have to archive the same document so the number doubles.

Electronic invoicing allows for the efficient archiving of electronic documents, recognizing the challenges involved and provided it is executed in a safe and controlled way

Question 6: What is the extent of outsourcing Accounts Payables processing in the public sector?

Rationale

Accounts Payables is a labour intensive environment. In the private sector, many corporations have outsourced this activity; the processing is often undertaken in lower cost regions in or close to the home country or to Eastern Europe or Asia taking advantage of lower labour costs.

Comment

Inefficient / human intensive processing is often reorganized into shared service centres and/or relocated to take advantage of lower labour costs. There is a growing trend in USA to reduce offshore processing and retain US jobs, but this requires greater efficiency; using technologies such as electronic invoicing.

Question 7: What is the supplier distribution to the public sector? How many are SME's?

Rationale

The efficiencies gained by electronic invoicing are of particular relevance to SME's – costs are reduced, invoices are delivered quickly (instantly) and payment cycles are improved.

Comment

The business case for SMEs is considered by many as the weak link for e-invoicing adoption. The challenges such motivation, investment, cost-benefit, learning effort deserve special attention and the deployment of easy-to-use solutions, such as portals. This topic is the subject of a separate activity within the EU Forum.

Of potential interest to SMEs is the potential deployment of supply chain finance services, in which payables, as represented by invoices, are used to form the basis of accelerating payments to suppliers by means of transactional finance facilities, which are then repaid from the proceeds of the invoice at the original due date.

Making electronic invoicing happen

There are a number of challenges involved in making e-invoicing happening both generally and in the public sector in particular. Acceptance by enterprises of all sizes as well as society at large is important as a pre-condition. Critical factors are the public sector's readiness to take advantage of e-invoicing, to make the necessary organizational adjustments across multi-level public organizations, and apply the necessary funding. These challenges are further compounded by the technical and commercial issues in creating widespread interoperability, the required control of one-time and running costs (and potentially duplicate costs during transition) and overall risk management during a market disturbance.

Given that the invoice is produced in order to trigger a payment and is also of significant value as a fiscal document, it is important that e- invoicing is implemented in a safe and controlled manner.

Naturally the associated costs and challenges need careful management. But these challenges are manageable and containable through exercising disciplines such as: scope and scale management, the deployment of pilots, project phasing, the avoidance of over-ambitious centralized IT projects, and by progressively building confidence and competence. There will also be the need to provide a smooth integration between the inbound invoices and the buying organization's ERP (enterprise resource planning)/back office platforms. For this and to help overcome the negative consequences of multi-level and de-centralized operational responsibilities in the public sector, the deployment of shared service centres is a valuable approach. The private sector has already shown the way forward in the use of shared service centres and other aspects too such as the on-boarding of suppliers. Suppliers need to be provided with a manageable choice of easy-to-use access channels, and facilities for archiving and up to the minute monitoring, all aspects being supported by timely communication and training requirements.

For public sector buyers subject to the Single Market Act and seeking to support pan-European public procurement there are requirements to provide channels for Europe-wide suppliers supporting ease of use and integration on a Europe-wide basis

 It is important to recognize that many forms of electronic invoicing are comparatively easy to implement and will deliver benefits immediately. As advantage is taken of the opportunity for further automation and integration progressively higher financial benefits can be obtained. The adoption of electronic invoicing processes for business-to-government transactions can be achieved with comparatively little up-front investment as there are many proven solutions including those offered by well-established service providers that issue, receive and process electronic invoices. Indeed, the solutions and services industry is already well seeded with many world class providers operating in a competitive landscape.   For electronic privacy and non-repudiation, there are a number of established trust infrastructures that can also be re-used by the public sector.

There needs to be a sound business case for suppliers Some key pointers for this are 1/ a need for no or limited IT investment , 2/ the potential for receiving faster payments and 3/ the potential for the re-use of solutions for B2B in the B2G environment.

Likewise service providers who are likely to be crucial in supporting implementation and ongoing operations will be looking for limited silo effects and limited additional IT investment essential, an attractive business model for commensurate effort/investment, opportunities to optimize their pre-existing installed supplier base and the opportunity to maintain forward momentum for electronic invoicing adoption in the market as a whole.

An important aspect of implementing electronic invoicing in the public sector is the question of mandatory or voluntary adoption. By this is meant the policy instruments to be deployed, such as:

1. a compulsory mandate for the entire public sector;

2. a provision that all public sector buying organizations must at least provide the option of electronic invoicing,

3. a recommendation in favour of electronic invoicing but leaving implementation as a matter of local autonomy,

4. Or a mixture of all these.

The approach to implementation is clearly a policy or even a political decision and must involve the wider community The diversity of the public sector is not likely to favour a 'one size fits all' approach. Reference should be made to the implications of any particular solution on the wider market in terms of impact, complexity and benefits delivered. Nevertheless the existence of a strong policy direction, a suitable support infrastructure and a number of representative pilots on a meaningful scale is likely to create momentum. As the benefits are proved the pressure towards compulsory adoption can be applied.

Given large variances in the size, procurement profile and management readiness among public sector organisations, it is not possible to identify a single model for the identification of transition costs. An impact assessment is required for a range of representative buying organisations. The costs and challenges to be managed have been spelt out above. It is the contention of this paper that private sector experience has demonstrated that the creation of major IT projects is not required and that electronic invoicing can be straightforwardly implemented and then built upon to obtain progressively more valuable benefits. There are already a number of case studies that can be accessed, including those where shared service centres have been deployed. It is understood that the government is considering a wider roll-out of such capabilities and it would be very valuable to consider the case for electronic invoicing and the wider roll-out of e-procurement as an integral part of the business case for the shared service centre concept. This is often done in the private sector.

The European and global picture

An annual report (2012 edition) by the Swiss consulting firm Billentis points to the cost of processing individual invoices of EUR 30-50 in paper form reducing to EUR 10 and as little as EUR 1 for electronic invoicing in semi-or fully automated form (Finland) and similar proportions from a study in Italy. In analysing a typical medium sized company, Billentis identified savings in the core processing areas alone (invoice reception, coding, validation and matching, dispute management, payments and archiving) amounting to 62% of the cost per invoice reducing from EUR 17.60 to EUR 6.7 (i.e. approximately £10 per invoice). The same study provides estimates for the UK public sector of potential annual savings in the region of £4bn being about 1.8%of total procurement and is referenced in a summary article by Ricoh on the estimated potential savings available annually across the EU.

Another way to approach these savings is with reference to a number of reports containing estimates of the benefits of electronic invoicing for the economy as a whole. The European Association of Corporate Treasurers (EACT) stated that 'realising electronic invoicing could reduce annual supply

chain costs by €243bn across Europe as well as help streamline government and help drive innovation'. Another estimate states that by moving all of Europe's annual 16bn paper business-to-business invoice transactions to electronic there are €100bn in savings possible. Government purchases in the European Union account for around 16 % of GDP (€1,500bn approx.)

Within the European Union, a number of Member States are grasping the electronic invoicing opportunity. Electronic invoicing is already pervasive in the Nordic region, where Denmark for example has led the way in insisting that all transactions with the public sector are e-Invoiced. Other Member States such as Austria, Greece, Portugal and Spain see electronic invoicing as a natural development in times of austerity and belt-tightening in the public sector. Germany has recently announced a number of measures including a standards initiative to support electronic invoicing. Despite these efforts, there is evidence of a fragmented and incoherent environment, in terms of standards, channels, technology etc. and these aspects requires attention from policy makers.

The Commission is addressing the question of the use of electronic invoicing in public procurement and on the 26 June 2013 issued a press release and a number of related documents, including a proposal for a European Union (EU) Directive, on e-invoicing in public procurement[4]. The draft directive proposes the establishment of a European e-invoicing standard which is expected to improve interoperability between different mainly national e-invoicing systems. Aside from the direct savings, it is designed to help boost the uptake of e-invoicing in Europe. The draft Directive is said to form part of a range of measures to promote a broader move towards automated end-to-end procurement from order to payment.

The initiative is designed to promote interoperability, which allows information to be presented and processed in a consistent manner between business systems, regardless of their technology, application or platform. Full interoperability includes the ability to interoperate in terms of content (semantic), format (syntax), and transmission. Semantic interoperability implies that the precise meaning of the exchanged information is preserved and well understood in an unambiguous manner, independently of the way in which it is physically represented or transmitted.

The new European standard will be drawn up by the European Standards Committee (CEN) in the form of a semantic data model for the core e- invoice. A semantic data model means a structured and logically interrelated set of terms and meanings. The standard will be technology neutral and therefore independent of the infrastructure or solution employed, including the standards data format. Presumably, the expectation is that the semantic data model will become an overarching layer in the commonly used international and national format standards. These will then become interoperable through the availability of mapping software able to identify the bedrock of common definitions and meanings inherent in the data elements being transmitted. The forthcoming Directive will require all public agencies to support the new standard and to be able to process invoices received in that form.

Further afield, Brazil and Mexico have implemented mandatory electronic invoicing programs for all business-to-business and government transactions and significantly, President Obama's government has announced that "the US Department of the Treasury plans to deliver a quarter of planned $2.1bn federal government efficiency savings, by mandating that all Treasury bureaus implement electronic

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[4] http://ec.europa.eu/internal_market/publicprocurement/e-procurement/e-invoicing/index_en.htm

invoice processing by the end of fiscal year 2012 and that all vendors submit invoices electronically by the end of 2013". Other US public agencies such as the Federal Reserve and the Department of Veterans Affairs are also implementing electronic invoicing. Other initiatives in India, Korea, Russia and Turkey are noteworthy.

Infrastructural channels for electronic invoicing

Multiple channels are available to support the flow of procurement of procurement and electronic invoicing transactions into a public sector buyer organization. The channels illustrated below represent an array of the principal electronic invoicing modalities supported by the market. Clearly an evaluation of the right mix or portfolio of solutions is required to optimize the environment for buyers and suppliers alike. This diagram emphasizes the 'post-contract award' stages as channels for pre-award communication are likely to be even more heterogeneous, ranging from 'unstructured' Internet communication to a prescribed procurement platform or channel.

Infrastructural Solutions for e-Invoicing (B2G)
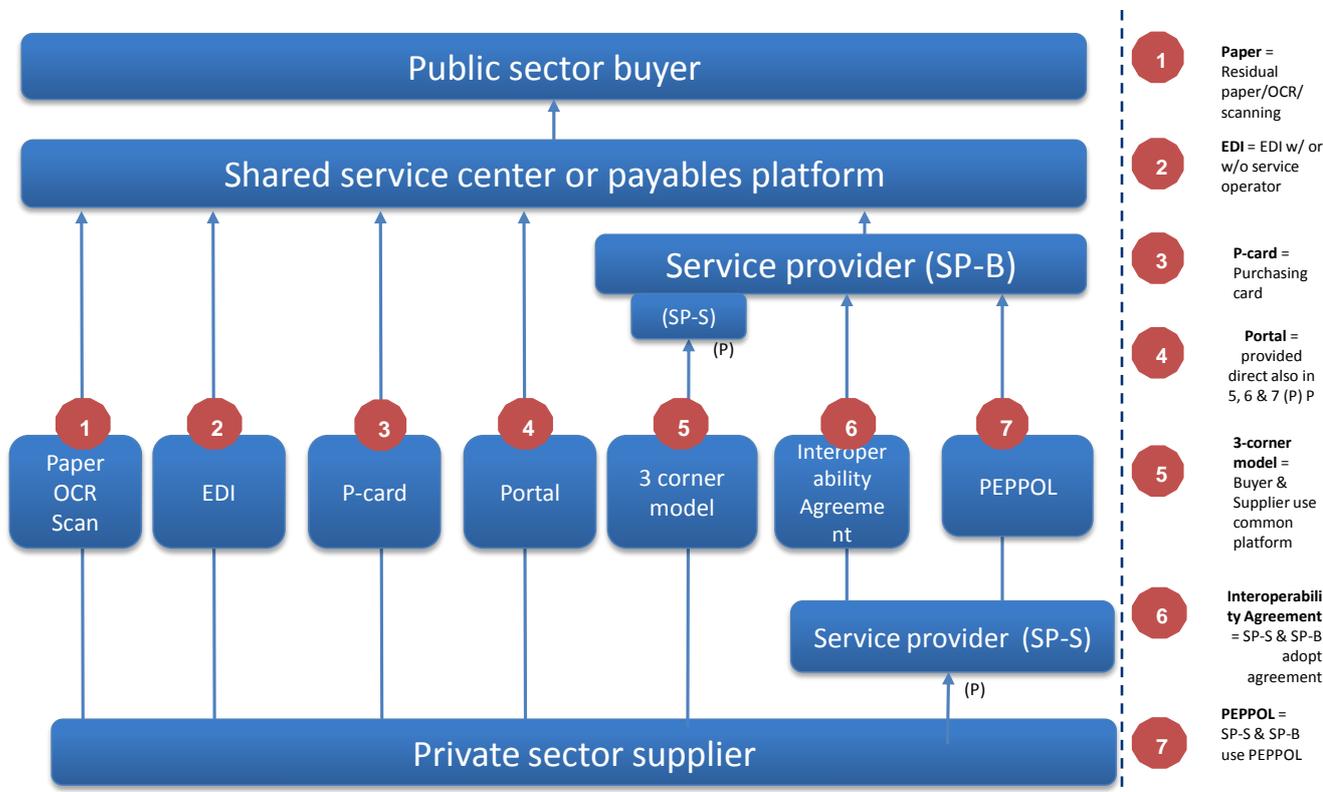
The diagram above illustrates the existence of a shared service platform acting on behalf of a range of public sector buying organizations. It will be very common for public sector organizations to reap the available economies of scale by sharing platforms and resources and for this reason this model is illustrated. The centre and the attached electronic invoicing service provider platform will be either contracted from the private sector, or be a public sector organization. Where a single public agency has sufficient scale or otherwise justifies the investment, it may deploy its own dedicated platform rather than use a multi-user shared service centre. This platform will still be 'shared' among the community of users within the buying organization.

The range of channels illustrated provide a range of alternative ways of providing e-invoices to the buyer, ranging from scanning/OCR, EDI, Purchasing Card , and service provider platforms. For lower volume suppliers various options for portals are provided, whereas for higher volume suppliers integrated file transfer is provided. Interoperability is present in various ways.

A Purchasing Card is a form of charge card, which allows goods and services to be procured without using a traditional purchasing process and which provides the necessary documentation to the trading parties. It is generally used for low-value purchases although not exclusively.

The way in which these channels may be offered is further reflected in the guiding principles set out below.

Recommended Guiding Principles for an implementation architecture for electronic invoicing channels

A number of recommended principles are listed below as the basis for implementation architecture for the channels described above:

1. Think in terms of an open architectural framework to allow support for a range of features and functionality. Incorporate modularity to allow progressive development.

2. Capitalize on learning and adaptation from the private sector and other (country) public sector experience on a systematic basis

3. Take steps to minimize project implementation and financial risk and install relevant checks, balances and oversight and observing the usual good practices for open tendering and benchmarking.

4. Undertake a full appraisal of the value and benefits of the use of Shared Service Centres, which could be aligned with specific public sector activities and functional clusters.

5. Provide a reasonable choice of solutions for suppliers based on business benefits and take care regarding the privileging of particular solutions through a neutrality of approach and where possible maximizing the re-use of existing capabilities and tools.

6. Take steps to support ease of integration and on-boarding for all players especially for SMEs and micro-enterprises.

7. Ensure support for interoperability on a pan-European and global basis.

8. Supply solution and service providers with guidelines, tools and open source software to ease roll-out.

Standards

This section raises the importance of standards and discusses the relevance of the issue for policy-makers considering the adoption of electronic invoicing in the context of public procurement.

It is first important to define what is meant by standards. 'Standards' can refer to business practices such as rules for the conduct of business, and also to technical standards for use in the automated environment. For electronic invoicing and indeed for most e-business transactions these standards are helpfully divided into layers: the semantic, the format or syntax, and standards for transmission. All three layers require standards.

In the exchange of an (e-) invoice between a sender and a receiver, termed the trading parties, they (or their service providers) need to be able to agree on a number of key aspects, the most important being:
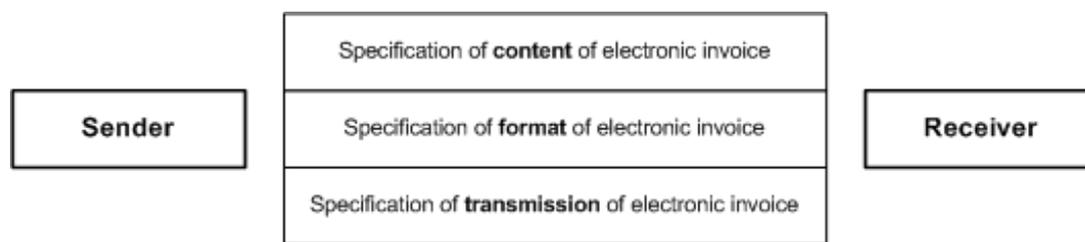
At the first level, the data structure of the 'content' is described by a methodology company or industry practice and is often expressed in a so-called 'Semantic Data Model', which can be defined here as a structured and logically interrelated set of terms and meanings for use in a commercial context.

At the second level, the physical representation of this content in a structured electronic message is termed the 'format'. A format is representation of the data in a machine-readable form, which is structured and where the data elements are logically related to each other and potentially to other data elements outside the invoice; it will usually be expressed in a syntax. Syntax is the machine readable 'language' or 'dialect' used to represent the data elements. Correct deployment of the 'format' allows for automated processing of the 'content'.

At the third level, transmission refers to the aspects of delivery or making available the e-invoice from sender to receiver and includes the network modality, the transport protocol, addressing and routing.

It is generally accepted that the adoption of standards in these areas will assist adoption by delivering interoperability and removing direct and externality costs. It should also be recognized that the absence of such standards has not impeded market growth so far given the availability of tools and capabilities to agree on and process transactions at the business level, and to map, convert and translate data held in different formats, as well as a variety of techniques used in the transmission area. Nevertheless in a domain as big and ambitious as the automation of public

procurement there is an expectation that greater use and specification of standards will be very useful. Standards are particularly relevant to the promotion of interoperability. Interoperability as a general concept relates to the pervasive ability of all users to reach and communicate with all other users relevant to their business. It also relates to the more practical aspects of 'network interoperability', where important networks of intermediaries and their customers are able to interoperate on the basis of agreed standards, protocols and practices.

The initiative of the EU Multi-Stakeholder Forum on electronic invoicing in supporting the development of a Semantic Data Model, as an enabler for interoperability, is a sensible step, which will assist with the standardization of the semantic layer referred to above. It will be helpful to agree on this single semantic data model, and then recognize that various syntactical expressions will co-exist based in time on the same semantic model.

In the second layer covering data formats there are a number of public standards as well as a range of proprietary standards for electronic invoicing data formats in use and the prospect of agreement on a single format is unlikely given the diversity of industries, geographies and business requirements involved. However if the various standards-setting organizations for the data formats were to use the Semantic Data Model, interoperability will be enhanced.

Despite the comments made above about the difficulty involved, a further course of action could be to promote further convergence among a number of promising XML based data formats, such as the UBL 2.0/2.1 format (and various variants in common use) and the UN/CEFACT Cross Industry Invoice. Germany has recently developed the FeRD standard which will support the already mentioned XML standards but also provides convenient container for the carriage of a human readable version (PDF) of the e-invoice for those who feel this is of value. Given the unique position of the public sector, it may be possible to force convergence, provided that the power is used collaboratively and respectful of the various interests involved in the eco-system.

A single 'default' standard is often deployed within interoperable networks, and this often extends to standards in the third layer covering transmission. Such interoperable networks should be encouraged as supportive of overall electronic invoicing adoption.

These brief remarks on standards are intended to complement the specialist standards work stream being conducted by the Forum.

Country experiences

Denmark, which has arguably the greatest experience (over 8 years) in the implementation of electronic invoicing in the context of public procurement, has identified the following good practices through its National Forum:

- Clear rules on what is required of the suppliers, including a mandatory invoice standard and a scheme for unique identification of public institutions/receivers

- A reasonable migration plan with sufficient time to implement solutions in the market

- Tools, open source components and guidelines that are freely available for IT-vendors. This makes it cheap and easy for them to incorporate in their solutions. Make sure they can also be used business to business

- Guidance to suppliers on what to do and what benefits they can gain

On the negative side, Denmark commented on practices that appear to inhibit the development of electronic invoicing in public procurement

- Scanned invoices

- Suppliers not being made aware of the benefits of electronic invoicing

- Unrealistic requirements from public buyers and unclear and confusing instructions and guidelines

In Sweden, e-invoicing has been mandatory for all central government agencies in Sweden since July 2008. As a next step in the government's e-procurement initiative, all agencies with more than 50 employees will also be mandated to handle orders electronically during 2013.

Key features are as follows:

- • Government agencies are obliged both to be able to receive and send electronic invoices, in Svefaktura format (a national subset of UBL 1.0 established in 2004).

- • Paper invoices (permissible unless required in the commercial contract) are scanned and interpreted with Optical Character recognition (OCR), normally by the government agencies' service provider.

- • Government agencies handle supplier invoices, both paper and electronic, in a workflow application.

- • Government agencies are encouraged to require e-invoices in commercial contracts, but this is not yet mandatory for suppliers.

The regulations on e-ordering will be set up in a similar way.

Below is a summary of the experiences made both during the change process and afterwards.

Factors supporting adoption are:

1. Clear political backing is essential to send the right signals and draw attention to the initiative. The National Financial Management Authority (ESV) was appointed to lead and coordinate the change programme.

2. Coordination & knowledge transfer is provided by ESV, which organizes newsletters, guidelines, checklists and seminars for the project managers.

3. Common standards and infrastructure makes it easier for everyone. The use of a common standard is important… This has made communication with suppliers easier and ensured supplier connections could be reused. ESV has entered into framework agreements for the infrastructure (both work flow application and a service provider, for messaging, archiving, scanning, printing and an invoicing portal).

Challenges have been recognized as:

1. The on-boarding of suppliers is a critical challenge, which can be assisted by the provision of multiple channels for invoice delivery. This also manifested itself in an identified need for a Shared Service Centre to provide a central coordination point.

2. Need for long term commitment and follow-up with sustained support to the program is required.

Even though it has not been made mandatory, local authorities and regions in Sweden are using e-invoicing and e-procurement in general to an even larger extent than the central government agencies.

Below are listed a number of other country experiences and practices that appear to be working and which could be transferred in an appropriate way from one Member State to another. The section does not attempt to conduct a country by country review but focuses on the practices with examples. From responses to questionnaires released by the EU Forum it is clear that at this time the general adoption of electronic invoicing for public procurement is in its early stages across Europe and there is a high degree of fragmentation, many announced but unsatisfied intentions, and inconsistency between Member States. The Single Market is far from a reality in this area.

The key practices worthy of comment are as follows:

•   Mandatory adoption: In a number of countries electronic invoicing towards the public sector is mandatory (Denmark, Norway) or require public sector agencies to accept e-invoices (Sweden, Finland). Others are well on the way in these directions (Austria, Belgium).. The UK has recently indicated that it will be implementing electronic invoicing for central government procurement. More progress appears to be correlated with higher levels of compulsion.

•   Standards: Countries that have seen adoption have fostered standardization of data format, e.g. Sweden and Denmark. Spain Belgium and Austria have also promoted a single standard, although these may be substituted with international or EU accepted standards in due course Germany has developed a standard (FeRD) through its national forum and steps are being taken to develop policies towards public sector adoption of electronic invoicing. Some countries will allow the scanning/OCR of paper invoices as a step on the way.

•   Choice of channels and support for suppliers, including the PEPPOL infrastructure: Austria will provide 4 options and others have fostered a choice of tools, methods and channels e.g. in the Nordic countries. The Netherlands is working on a country interoperability scheme called Simpler Invoicing. The creation of an active solution and service provider industry appears important and with it the benefits of solution neutrality.

•   Central Infrastructure: there are a number of specific public sector-created technical platforms or gateways. It is not easy to evaluate their performance or critical role. The fragmentation that they bring in terms of role, architecture, features and functionality bears further analysis from a Single Market point of view and perhaps they should be more transparent to end-users. The UK is developing large -scale Shared Service Centres and others have shared services in all but name.

•   Legal certainty: this is important for all jurisdictions, and is a necessary, if not sufficient condition to foster electronic invoicing adoption. The transposition of the VAT Directive (45/2010/EU) is important and nearing completion although there are exceptions

to be addressed and a number of country-level legal requirements, which could be reviewed in the interests of harmonization. A number of areas such as archiving rules and the specific requirements relating to electronic invoicing towards the public sector are also important. In addition to countries mentioned already, France and Italy have taken steps to clarify the rules for electronic invoicing in relation to the public sector.

Country experience is likely to evolve rapidly in the months ahead, in particular in the light of the European Commission's proposed Directive on electronic invoicing in public procurement. It is recommended that the EU Forum continues to monitor and make recommendations in this important area and remain in close touch with the National Forums.

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