

The adoption of e-invoicing in public procurement

Guidance for EU public administrations

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Executive Summary

This Guidance Paper is addressed to all those involved in the implementation of electronic invoicing in public procurement. It supports public sector entities throughout Europe responsible for policy-making, promoting or otherwise facilitating the adoption of e-invoicing, as well as contracting authorities which implement e-invoicing solutions. It will also be useful for suppliers, service and solution providers.

The successful implementation of e-invoicing is not just a technology project. Success stems from the management of people, stakeholders, business processes and automated IT systems. This Paper describes the key decisions, phases and critical elements of an e-invoicing programme, including a step-by-step guide on how to implement it.

The purpose of the document is to provide specific guidance for the implementation of the European Directive on electronic invoicing in public procurement (2014/55/EU), now being transposed into Member State law, whereby all contracting authorities engaged in public procurement will be obliged to support e-invoicing by 2018, or up to 18 months later in the case of smaller contracting authorities. In particular, all EU public bodies will be expected to implement the provisions of Directive 2014/55/EU requiring them to adopt e-invoicing based on a standard for a core European invoice.

The European e-invoicing standard, which creates a semantic model for the core information elements of an electronic invoice is now under preparation by the European Committee for Standardization, CEN, and will be approved and published by the early part of 2017. The Directive also requires the relevant standardisation body to select a limited number of syntaxes (machine readable language), developing the appropriate syntax bindings and guidelines on transmission interoperability, in order to facilitate the use of such standard.

Under the terms of the Directive, Member States shall ensure that contracting authorities are able to receive and process electronic invoices from suppliers which comply with the European standard on e-invoicing and with any of the selected syntaxes. The implementation of the new European standard represents an opportunity to set more ambitious goals and wide ranging e-invoicing programmes, realising the significant cost savings and efficiency for both contracting authorities and their suppliers. Where existing e-invoicing solutions are already in use they can remain in place or be developed to achieve even greater volumes.

This Guidance Paper reviews recent developments in e-invoicing, how to implement the provisions of the directive and a number of implementation approaches. While there are still some perceived barriers to a wider e-invoicing adoption, these are discussed below and carefully addressed. The business case for e-invoicing is strong and in addition to cost savings and efficiency creates the potential for prompt payment, reduced fraud and error and greater transparency brought about by digital processes. There are many role models for success in e-invoicing in both the public and private sectors in EU Member States and across the globe.

The perspective of the buying or contracting organisation is fully discussed as are the needs of suppliers and the requirements of the connection between the trading parties and the various platforms that support them. Service and solution providers play an important role as 'connectors' supporting large and small organisations with invoice processing and value added

services. In addition, a variety of EU solutions and tools provided by the European Commission and Member State investments can be re-used by contracting authorities of all sizes.

1. Purpose and intended audience

This Guidance Paper is provided to decision-makers who have responsibility for electronic invoicing (e-invoicing) as part of public procurement in all public sector organisations throughout Europe.

These include:

- 1) Government decision-makers responsible for policy measures e.g. mandating, promoting or otherwise facilitating the adoption of e-invoicing by contracting authorities.
- 2) All public sector contracting authorities affected by such policies, their economic rationale and the Directive 2014/55/EU. These include departments and agencies of central government, regional and local authorities of all sizes and autonomous public sector organisations.

The Guidance Paper will also be interesting to suppliers, and service and solution providers, which support both contracting authorities and their suppliers.

Its purpose is to provide decision-makers with guidance on the requirements of European Directive 2014/55/EU, whereby all contracting authorities engaged in public procurement will be obliged to support e-invoicing by 2018, or up to 18 months later in the case of smaller contracting authorities (see Section 3 of this document). It is hoped that Member States and contracting authorities will find it a useful source of information when planning and implementing the e-invoicing Directive.

The Guidance Paper has been prepared by the European Multi-Stakeholder Forum on e-invoicing, which is chaired by the European Commission. This body brings together representatives of EU Member States and other experts on a regular basis to discuss and make recommendations to the Commission on how to promote and implement the practice of e-invoicing, which is viewed as important to the Digital Agenda and the Single Market. The document itself was prepared by an Activity Group of the EMSFEI, which has specifically focused on the adoption of e-invoicing in public procurement.

The Guidance Paper is designed to explain the issues that might arise during the transposition period and help decision-makers to adopt the best approach for their organisation. The paper is intended to cover the following:

- An in-depth assessment of the thought process and steps which a public authority needs to go through to fully implement e-invoicing in public procurement.
- On the basis of this assessment, to identify a list of items to which the public authority will need to pay attention and on which it will have to take decisions.
- To present some 'options and considerations' to help the contracting authority answer questions or address the potential problems and to identify items that may be problematic.

2. Background

Many large corporate enterprises and many public administrations throughout the world have adopted e-invoicing and are already realizing the benefits of automating their business processes.

Further propelled by legal requirements through the Directive, acceptance of e-invoices by government will make the public sector much easier to do business with, and facilitates prompt payments to suppliers including SMEs, with potential cost savings and liquidity benefits.

The adoption of electronic invoicing in the public sector can make various contributions to economic well-being:

1. It is supportive of public policy priorities such as public sector deficit reduction, financial transparency and promotion of sustainable development.
2. It will specifically make a material contribution to public sector cost reduction and efficiency.
3. It will also provide benefits to private sector suppliers and create opportunities for the public sector to act as a catalyst for the wider adoption of digital processes in common with the private sector.

Its ease of implementation can be demonstrated with reference to many successful private sector and national public sector experiences, and to the extensive range of existing market solutions and services. 'Big bang' IT projects are not necessarily required and transition costs are modest.

E-invoicing involves the removal of paper from the invoicing process and its replacement with a variety of digital processes. It comes in many forms across the global economy and includes models based on direct connections between contracting parties, on the creation of e-invoicing 'hubs' and networks, and/or on the use of a large number of third party service and solution platforms.

In some countries e-invoicing is largely motivated by fiscal considerations and the need to improve tax collections associated with the supply of goods and services. In other environments the motive is creating efficiency and value through digitization, or a combination of benefits.

The European Union and Member States have in recent years taken a number of steps to promote e-invoicing as a public policy priority in support of the Single Market and Digital Agendas. Relevant EU measures and policy declarations have included:

- The VAT Directive 2010/45/EC placing e-invoicing on an equal footing with paper invoicing
- The Commission communication "Reaping the benefits of electronic invoicing for Europe" COM(2010) 712 final.
- The Commission communication "End-to-end e-procurement to modernise public administration" COM(2013) 453 final.
- Resolutions and supporting decisions of the European Parliament and Council.
- The Directive 2014/55/EU on e-invoicing in public procurement.

Readers are referred to these documents and in particular to the preamble to the 2014/55/EU Directive for a full background to the EU encouraged move to e-invoicing.

Based on the above, there is clear public policy support at European Union and Member State level, and consequently European public administrations of all kinds are now directed to adopt e-invoicing.

In particular, in the coming years, all EU public bodies will be expected to implement the provisions of Directive 2014/55/EU requiring them to adopt e-invoicing based on a standard for a core European invoice. Member States are encouraged to set up national strategies with detailed action plans to ensure a consistent implementation of e-invoicing in the national context.

3. Implementation of the e-invoicing Directive in a national environment

3.1. Definition of e-invoicing in Directive 2014/55/EU and its implications

Directive 2014/55/EU (the Directive) provides a clear definition of an electronic invoice:

“Article 2 Definitions: For the purposes of this Directive, the following definitions shall apply: (1) ‘electronic invoice’ means an invoice that has been issued, transmitted and received in a structured electronic format which allows for its automatic and electronic processing;”

The Directive establishes that the Commission will request that the relevant European standardisation organisation will draft a European standard for the semantic data model of the core elements of an electronic invoice (the ‘European standard on electronic invoicing’). In this case the relevant standardisation organisation is CEN, which has created a CEN Project Committee - CEN PC434 - to carry out the work. A ‘semantic data model’ means a structured and logically interrelated set of terms and their meanings that specify the core elements of an electronic invoice.

The Commission requires that the European standard on electronic invoicing complies at least with the following criteria:

- it is technologically neutral,
- it is compatible with relevant international standards on electronic invoicing,
- it has regard to the need for personal data protection in accordance with Directive 95/46/EC, to a ‘data protection by design’ approach and to the principles of proportionality, data minimisation and purpose limitation,
- it is consistent with the relevant provisions of Directive 2006/112/EC,
- it allows for the establishment of practical, user-friendly, flexible and cost-efficient electronic invoicing systems,
- it takes into account the special needs of small and medium-sized enterprises as well as of sub-central contracting authorities and contracting entities,
- it is suitable for use in commercial transactions between enterprises.

The Commission has also requested that the relevant European standardisation organisation provides a list with a limited number of syntaxes which comply with the European standard on

electronic invoicing, the appropriate syntax bindings and guidelines on transmission interoperability, in order to facilitate the use of such standard. 'Syntax' means the machine readable language or 'dialect' used to represent the data elements contained in an electronic invoice and for structuring messages correctly based on the 'semantic' data model. Computer systems have the ability to communicate using various syntaxes (grammatical structures) but conveying the same semantic meanings. This capability, or 'semantic interoperability', is particularly important because it allows computer systems, which use different syntaxes, to understand the meaning of the messages they exchange, because the dictionary, 'semantic' data model, that they refer to is the same.

The European standard is now under preparation in the CEN PC 434 and will be approved and published by the early part of 2017. Under the terms of the Directive, Member States shall ensure that contracting authorities and contracting entities are able to receive and process electronic invoices which comply with the European standard on electronic invoicing in any of the selected syntaxes. The supplier must transmit the e-invoice to the contracting authority's reception point.

Such structured e-invoices may be created in a supplier's own systems and delivered directly to the buyer's system. Alternatively, a supplier can use a service or solution provider to create a structured e-invoice conforming to the standard from invoice data provided to it, for example, in the following ways:

- In an electronic data file
- Through a portal
- From data supplied in a machine-generated PDF

Although this is a less reliable method of automation, the structured invoice may be created from data contained in a paper document, or in a humanly generated PDF, and extracted through scanning and OCR (optical character recognition).

As required, service and solution providers will present the costs and benefits of these various modalities including their technical implications, their ease of use, and consistency of data integrity. Such solutions are diverse and offered in a highly competitive landscape.

Once the structured e-invoice is created either by the supplier itself or by a service provider it is then delivered to the buyer. In all cases, it is usual that the electronic invoice and its information elements are validated for completeness and accuracy before being remitted to the buyer's system. This avoids multiple errors and manual intervention. In turn, a buyer will perform a number of checks and business approvals.

The use of the European standard necessarily entails the transmission or delivery of a structured invoice compliant with the semantic data model and the syntax bindings. However, it is perfectly possible to present invoice data in a structured electronic format in a human readable representation, such as a PDF or through an automated interface, for visualisation and convenience and as a complement to the structured invoice. Some points arising.

1. Providing a human readable representation to accompany the structured invoice is a common practice and may be rendered or provided at any stage in the process.

2. Some electronic invoices are described as 'hybrid' invoices, in which the structured format and human readable representation actually sit side by side in a container and this approach is finding support.
3. A visual representation could accompany a structured invoice, or be rendered from the structured invoice, as required at any stage and by any actor in the process. Some parties find the use of a commonly shared visual representation as convenient for readability and common understanding.
4. It also possible to embed a structured format inside a PDF.
5. Since the fundamental process for producing an electronic invoice compliant with the European standard is based on invoice creation, processing and delivery in a structured digital form, the human readable representation is usually a companion and cannot be a substitute for the structured e-invoice itself.

The use of a visual presentation is subject to the rule: 'No compulsion, no prohibition'.

The structured invoice remains the principal reference instance.

3.2. Implementation approach

The Directive does not itself create a mandatory requirement for the parties, contracting authorities and their suppliers, to move to e-invoicing exclusively based on the European standard. Member States may retain e-invoicing based on existing national standards and indeed are not forced to move away from traditional invoicing. Having said this, the arrival of a European standard creates an opportunity for wide harmonization and a concerted process of adoption across national public sectors and the EU as a whole.

There are various ways in which the public sector at national level may wish to implement or further expand the usage of electronic invoicing and ensure market adoption. To make all this happen, policy-making, government regulation and the distribution of operational responsibilities are all critical factors for the success of e-invoicing activities.

The approach for the implementation of e-invoicing compliant with the requirements of the Directive will depend on its existing adoption within a national public sector. The new Directive forces a discussion as whether and to what extent, different e-invoicing methods will 'co-exist' within a particular public sector, or whether the policy will drive towards 'convergence' based on the European standard.

In relation to the development of a suitable policy framework, the central authorities will typically wish to establish a national strategy with detailed action plans to ensure the implementation of e-invoicing, including the requirements for e-procurement (if applicable) and e-invoicing in public procurement, decisions about the degree of compulsion to be mandated, the various modalities and standards to be adopted, and a determination as to whether a centralised or de-centralised infrastructure will be deployed (see Chapter 7).

As for operational roles, the likelihood is that procurement of goods and services and follow-up actions such as e-invoicing will continue to be managed by individual public sector organisational units, as self-accounting bodies, but these functions will now need to be

organised for electronic transactions based on the three possible processes, depending on central policy decisions:

- Individual public sector organisations may be integrated for operational purposes into a centrally provided infrastructure, such as a national portal or set of gateways through which public sector transactions are captured and then distributed to the various central, local and autonomous bodies making up the public sector.
- In the absence of any centrally provided guidance, contracting authorities may be entirely free to decide on and implement their own e-invoicing or e-procurement model.
- Alternatively, contracting authorities may be required to establish their own e-invoicing modality, but in accordance with centrally provided guidelines or standards.

In all cases they may consider the use of ‘shared services’, the use of third-party e-procurement and e-invoicing solutions and services, and the degree of integration between pre-award and post-award processes, as discussed elsewhere in this Guidance Paper.

In implementing e-invoicing there are choices to be made in relation to inclusion of e-invoicing within the e-procurement process. It should be stated that e-invoicing and e-procurement should not be conflated; they involve distinct processes. Depending on the contracting authority's intention to digitise the entire process, the possible scenarios are as follows:

- An **end-to-end approach**, whereby both pre-award and post-award phases of e-procurement are automated through an end-to-end change programme. Pre-award refers to the award of the contract to a supplier. After the award of the contract the ordering process starts, which kicks off the post-award process. E-invoicing becomes a process in the post-award phase, resulting in a fully integrated approach to the automation of e-procurement. It is not so common that the organizations implement the pre-and post-award processes at the same time. Often it is a modular approach, see below.
- There is also the scenario to implement e-invoicing as a **stand-alone project**. Automating pre-award procurement presents different challenges in terms of the complexity, and the inevitable need for more human intervention. E-invoicing is a more straightforward implementation forming part of the transaction processing chain: ‘order-invoice-payment’, and often managed separately in the ‘Finance’ rather than the ‘Procurement’ environment, although the invoice approval process can involve many parties within the organisation.
- A third scenario is to take a **modular** approach in the implementation of end-to-end automation by implementing each discrete element (such as notification, access, submission, award, ordering, invoicing, payment) as a single programme, while ensuring their close coordination and coherence.

3.3. What are the requirements for the implementation of the new EU Directive?

In implementing the new EU Directive and European standard, what is the minimum that a contracting authority needs to do and what further could be achieved?

Scope: the e-Invoice Directive shall apply to electronic invoices issued as a result of the performance of contracts to which Directive 2009/81/EC, Directive 2014/23/EU, Directive 2014/24/EU or Directive 2014/25/EU applies. These govern public procurement.

This Directive does not apply to electronic invoices issued as a result of the performance of contracts falling within the scope of Directive 2009/81/EC, where the procurement and performance of the contract are declared to be secret or must be accompanied by special security measures in accordance with the laws, regulations or administrative provisions in force in a Member State, and provided that the Member State has determined that the essential interests concerned cannot be guaranteed by less intrusive measures.

The interpretation of this article is that only contracts signed as a result of a tendering process, which was above the EU threshold for inclusion in the Official Journal, are covered by Directive 2014/55/EU.

Requirements: a public administration is obliged to accept and process electronic invoices, which comply with the European standard for e-invoicing, whose reference has been published pursuant to Article 3(2) and with any of the syntaxes on the list published pursuant to Article 3(2), from these suppliers. These invoices must have been issued, transmitted and received in a structured electronic format which allows for its automatic and electronic processing.

Public administration accepting such electronic invoices, and processing the electronic invoice in whatever manner they decide, will be compliant with the provisions of Directive 2014/55/EU.

Therefore, they cannot refuse electronic invoices which meet the above conditions solely on the grounds of non-compliance with requirements (for example national or sector-specific requirements, or additional technical requirements of any kind) other than those specifically provided for in this Directive.

Timescale: The Directive 2014/55/EU states that Member States shall adopt, publish and apply the laws, regulations and administrative provisions necessary to comply with this Directive at the latest by 27 November 2018.

By way of derogation from paragraph 1, Member States shall, not later than 18 months after the publication of the reference of the European standard on electronic invoicing in the *Official Journal of the European Union*, adopt, publish and apply the provisions necessary to comply with the obligation contained in Article 7 to receive and process electronic invoices.

Member States may postpone the application referred to in the first subparagraph with regard to their sub-central contracting authorities and contracting entities until 30 months after publication of the reference of the European standard on electronic invoicing in the *Official Journal of the European Union* at the latest.

Upon publication of the reference to the European standard on electronic invoicing, the Commission shall publish in the *Official Journal of the European Union* the final date for the bringing into force of the measures referred to in the first subparagraph.

Minimum compliance strategy: contracting authorities will wish to ensure that the necessary technical infrastructure be deployed to receive invoices conforming to the European standard in the required formats. Once received, the Directive does not require the contracting authority to do more than 'process' such invoices. This can be done in a fully automated way, especially if the

contracting authority is already processing e-invoices, or in a semi-automated way, or the invoices can be simply converted to a human readable form (using available technology) and processed manually. In addition, as stated above, contracting authorities are free to continue to process other invoices according to existing formats and processes, and are not compelled to promote or foster the conversion of existing invoice volumes to the new standard.

Consequently, the authority can leave it to suppliers to choose whether to adopt the standard and render invoices in the format and neither encourage nor discourage its use. This can be described as a **minimalist** strategy - the lowest level.

Build on the minimum requirements: it is recognised that the minimum requirements are a starting point and likely to evolve as the e-invoicing journey progresses. Advantage can be taken of the opportunity presented by the new European standard to implement it in a more ambitious and wide ranging e-invoicing adoption programme, realising the significant cost savings and efficiency benefits for both the contracting authority and its suppliers. For this, contracting authorities would think about moving towards completely automated processing of e-invoices after they are received.

Such a strategy may be carried out on a **staged basis** and once attained could be described as a **maximalist** strategy - a recommended objective by many commentators. The road towards the maximal strategy will include making decisions about the further evolution of an existing solution based on other standards and the question of convergence towards 'exclusive' use of the European standard. A maximal strategy will involve establishing the necessary facilities to receive and automatically process such invoices on an end-to-end basis, including validation, business checks, approval, posting to systems and archiving. The following quotation from the Directive makes this point well:

'The benefits of electronic invoicing are maximised when the generation, sending, transmission, reception and processing of an invoice can be fully automated. For this reason, only machine-readable invoices which can be processed automatically and digitally by the recipient should be considered to be compliant with the European standard on electronic invoicing. A mere image file should not be considered to be an electronic invoice for the purpose of this Directive'.

4. What are the barriers to the adoption of e-invoicing?

This section concerns questions as to what barriers may prevent public sector organisations from accepting electronic invoices from their suppliers and small to medium sized businesses from having the ability to issue e-invoices and how can these barriers be removed.

While there are still factors, or perceived barriers, hampering a wider e-invoicing adoption, these can all be overcome as described below. The striking evidence for this is the already proven ability of many public sector organizations and private sector companies to successfully implement e-invoicing and to receive, process and settle very high volumes of compliant e-invoices from their suppliers. Many case studies testifying to this success are available. (See Annex 1) These successes are themselves a force for the removal of barriers.

The paragraphs below discuss a number of barriers that are often cited:

4.1 Is there a lack of policy direction?

Across the European Union there is wide variability in the policy support given by governments to encourage e-invoicing adoption. Some Member States have been enthusiastic early adopters. In others there has often been no political or government voices to champion e-invoicing at a policy level, but this is changing. As e-invoicing is articulated as a public policy priority, the public sector will hear the message loud and clear reinforced by legislative measures to require public contracting authorities to embrace e-invoicing by 2018 (EU Directive 2014/55/EU). Both central government and decision-makers in regional and other authorities are becoming more active in articulating policy in favour of e-invoicing adoption. Aside from leadership at higher management levels, a favourable mind-set among operational management at public authority level is also required and there is evidence that this imperative is being taken on board as the pressure to seek public sector savings intensifies. Member States and contracting authorities at all levels should be able to meet and exceed the demands of the EU Directive and recognise the cost savings and efficiency benefits.

This barrier is removed through policy leadership and creating championing roles, where senior leaders are appointed to champion and advocate the initiatives throughout the public sector, including best practice examples and experiences in other public sector environments.

4.2 Is the value proposition clearly understood?

A barrier to e-invoicing adoption has been a mind-set that the benefits of adoption only lie in a set of rather minor operational savings. Nothing could be further from the truth. The acceleration of transparent digital processes is unleashing value scarcely thought about a few years ago. The very material cost savings and efficiency benefits have been well documented as set out in the next section on building the business case.

There are a variety of other value added opportunities such as the availability of electronic invoice 'big data' on what is actually being spent by a buying organisation creates enormous potential for assessment of spending patterns to complement other sources of spend analysis.

The electronic invoice also creates an avenue for the raising of finance based on accessible and transparent digital information. An analogy can be drawn with the use of the bill of exchange used for raising finance for centuries in the paper world. An electronic invoice is a claim on a trade debtor, and is fully transparent and assignable. The result is the potential for further development of a financial marketplace of considerable attraction to small and medium-sized businesses based on invoice discounting and so access the liquidity tied up in trade payables. This process is aided by a more rapid invoice approval cycle which considerably extends the 'window of opportunity' for the provision of finance or the making of early or prompt payments. Paper invoices sitting in the 'in-tray dead-zone' are dematerialised and unlock working capital earlier in the procure-to-pay process.

A separate chapter covers the creation of the business case.

4.3 Are there any legal barriers?

There are no fundamental legal barriers to e-invoicing. VAT and other legislation places e-invoicing on the same footing as paper on the basis of equal treatment. This applies to buyers, suppliers and their service providers. The fiscal rules give taxpayers good choices in terms of compliance and there are many tools and processes to support requirements for authenticity and integrity and process quality. The tax invoice, in whatever form or forms the fiscal

authorities require, can be easily created, delivered and archived. However, Member States have implemented or retained national legislative requirements which vary from country to country, creating a degree of complexity for e-invoicing across borders. There are a number of sources both public and through service and solution providers for the dissemination of clear information on the legal requirements for e-invoicing, which should alleviate any concerns regarding legal barriers.

4.4 Is there a lack of interoperability?

Multiplicity of non-interoperable standards can result in excessive complexity, legal uncertainty and additional operating costs for organisations using electronic invoices across Member States.

The creation of a European standard on electronic invoicing - as called for in Directive 2014/55/EU - will set out the core elements which an electronic invoice must always contain, facilitating the sending and receipt of electronic invoices between systems across Europe.

The key benefit to using a common European e-invoicing standard is the consistent application of common terms and data structuring guidelines amongst trading partners ensuring their systems are 'speaking the same language'. As e-invoicing adoption in Europe increases, a common language and understanding of these terms and practices will spread out, fostering integrity and interoperability.

Although the use of the European e-Invoicing standard will be very helpful, its completion is not a pre-requisite for e-invoicing adoption by contracting authorities. Any delay in the introduction of e-invoicing would mean that its benefits are postponed. The new standard will to a large extent be based on existing specifications and on work which has already been undertaken by CEN, therefore it should not be radically different from most of the publicly available standards already in use.

Technical standards are typically not visible to end-users. E-invoicing software and service platforms usually contain all the functionalities to transform data from source to the rendering of a compliant e-invoice into the buyer's host system, including mapping one format to another.

When the new standard is available it will be implemented as a normal change request and find widespread adoption. The new standard is expected to bring benefits in terms of clarity, interoperability, reducing dramatically implementation costs and generating further savings. It will help the e-invoicing habit to move from critical mass to becoming the predominant e-invoicing method.

The 'barrier' is removed through communication on the role of standards and how they can be managed with minimal technical engagement.

4.5 How to build the competency for managing change?

Concerns have often been expressed about issues of confidence and competence in the implementation of change programmes in the public sector. A certain level of business, technology and project management skills are of course required to implement e-invoicing. Creating commitment and building an in-house knowledge base and capability are important.

Competence of an in-house or externally contracted nature needs to be acquired to address project management, the delivery of supplier readiness, the execution of invoice reception and processing, and the integration of inbound data with host accounting and enterprise resource

planning (ERP) systems in a secure and robust environment, just to name a few of the requirements. Care must be taken to include the transformation of established accounts payable procedures, the control over standing financial instructions, the separation of duties and enhancing the capabilities of legacy finance systems. Appropriate testing programmes need careful management.

The public sector as whole has varied information technology and little uniformity across its processes. Clearly a large authority will face different challenges when compared with a smaller authority. The consequences are that each implementation is thought to be different and potentially challenging.

There are a number of mitigating factors for this latter challenge to be considered:

First, the basic process of receiving and processing e-invoices can for a large part be considered as common to all organisations, both private sector and public sector. In that sense, it is possible to implement tried and tested uniform processes for most aspects and then focus on those areas of relevance to a specific authority such as in systems integration.

Second, reference should be made to a number of EU solutions and tools provided to public sector bodies by the Commission and Member State investments and which can be re-used by contracting authorities of all sizes. These include:

- PEPPOL¹ (Pan-European Public Procurement Online): a set of technical specifications that can be implemented in existing e-procurement solutions and services to make them interoperable across Europe. PEPPOL enables trading partners to exchange standards-based electronic documents over the PEPPOL network, linking contracting authorities with their suppliers through a network of Access Point providers. PEPPOL has used the results of the CEN Workshop on Business Interoperability Interfaces for Public Procurement in Europe (CEN WS/BII) to develop implementation guidelines known as PEPPOL BIS (Business Interoperability Specifications). The standardisation framework and specifications developed during the PEPPOL project are now maintained by OpenPEPPOL, the international non-profit organisation set up by European governments in September 2012.
- Open e-PRIOR²: an open-source e-procurement platform that allows the implementation of interoperable electronic services within any public administration. It is connected to PEPPOL via its own Access Point and supports electronic submission and opening of tenders, e-catalogues, e-orders and e-invoices. The Open e-PRIOR package also includes a web portal allowing suppliers, such as SMEs, to manually encode their invoices via a web form.
- The Connecting Europe Facility³ (CEF): a 2014-2020 EU funding programme supporting the establishment of European network infrastructures in the fields of energy, transport and telecommunications. CEF Telecom is anchored to the Europe 2020 Strategy and contributes to achieving the targets of the “Digital Agenda for Europe” initiative. Parts of the CEF funding are available in the form of grants allocated following competitive calls for proposals.

¹ <http://www.peppol.eu/>

² <https://joinup.ec.europa.eu/software/openeprior/description>

³ <https://joinup.ec.europa.eu/community/cef/home>

CEF encourages the re-use of tools and services ('building blocks') developed by Member States in different large scale pilots that can be used by any public and private entity to establish cross-border digital services. The following building blocks are available for re-use: e-Invoicing, e-Delivery, e-ID, e-Signature and automated translation.

- The outcome of the e-SENS e-invoicing pilot, in term of implementation and best practices.

Thirdly, there are a wide variety of capabilities made possible through procuring solutions from private sector providers, which is the common approach used when e-invoicing is implemented in large private sector organizations. Because these implementations exist and have been completed many times before, there is a rich choice of providers of project and integration management, business process outsourcing (BPO), and e-invoicing services. These deliver fully functional solutions with containable risk. The rapid development of BPO, shared service centres and cloud-based 'software as a service' platforms will ensure that e-invoicing can be implemented quickly and with minimum impact on the contracting authority environment. The process must be accompanied by precise requirements definition and close business management is essential in all partnering programmes.

Fourthly, there are a growing number of well-established supplier networks, where the experience gained from implementing e-invoicing across the world for major multi-nationals and governments reduces the workload on a relatively inexperienced public sector commissioning body. This especially plays to the challenge of supplier on-boarding which is perhaps the largest success factor in delivering e-invoicing.

This 'barrier' is removed through building an appropriate level of in-house expertise, re-using both public and private sector building blocks and capabilities, intelligent partnering, and re-using established supplier networks. If undertaking a wholly self-managed project, organisations must be fully aware of the significant learning curve required to in effect duplicate what many others have already achieved.

4.6 How to engage with suppliers?

Up to now, the public sector has often resisted the concept of 'mandating' supplier participation in e-invoicing, despite this approach being highly effective. A strong message is needed towards suppliers to motivate their adoption and giving them clear incentives to engage. It has been found that the best results come from a 'mandatory' message, coupled with a reliable invoice status service, so that vast numbers of incoming and outgoing inquiry calls can be eliminated.

There are successful public sector experiences from Member States that have already adopted e-invoicing in a large scale (see Annex 1).

Existing networks of suppliers can be mobilised to on-board the supplier base and provide the required interoperable eco-system, as well as providing easy to use interfaces.

The 'barrier' is removed through following the advice set out in the section 6.2 on Suppliers.

5 Building the business case for public sector buyers

For a long time, there has been a comfort-zone around the use of paper invoices and few other business disciplines have resisted digitisation for as long as invoicing, for no good reason. But there is a strong business case for e-invoicing adoption.

The experience of many users is that they have been able to reduce processing costs by 50-75%, with a return on investment of over 60% p.a. These potential benefits typically represent 'low-hanging fruit' and generate a rapid return on investment. There is a wide variety of case studies available. Independent research suggests that the cost of processing a paper invoice (to the buyer) is around EUR17 per invoice. Estimates vary widely as to the actual savings at individual organization level obtainable from the use of invoicing as they depend on the degree of automation involved. An in-depth analysis of the Politecnico of Milan shows that the net benefits are 4-12 euro per invoice in case of VAT compliant e-invoicing and up to 65 euro per cycle in case of full integration of the trade process⁴.

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 went further than the above and said '...switching from paper to fully automated invoicing can cut the costs of receiving one invoice from EUR 30-50 to EUR 1'⁵.

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 workflow, 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 enhanced by the effects of scale which apply incrementally in a maximalist scenario. 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. Not least, there is a benefit in terms of the reduction in tax evasion and fraud arising from transparent electronic invoicing.

It is recognised that the potential for cost savings is dependent on the degree of automation targeted and delivered. A 'minimalist' approach will deliver very modest savings and may

⁴ Politecnico of Milan - Presentation "Process Optimization and Saving Potential with e-Invoicing" at the EXPP Summit in Munich, Germany.

⁵ http://europa.eu/rapid/press-release_IP-13-608_en.htm

actually cost rather than save money. A 'maximalist approach will also require investment, but is likely to deliver significant savings and benefits, especially if evolved towards full automation. Automating the entire end-to-end e-procurement chain and ensuring the use of automated matching of orders to invoices, work flow technology and well executed integration with the organisation's host systems will deliver more savings than a semi-automated approach.

The adoption of electronic invoicing will create spill-over effects to the economy as a whole, as the public sector acts in a catalytic capacity. The public sector can be a role model for e-invoicing. 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 boosting competitiveness.

When preparing a business case and evaluating the benefits of e-invoicing it is important to gather some facts and figures on the current activities undertaken and use these as a basis for further analysis. 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.

Statistics can also be used to derive other benefits, such as 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. Key questions are:

Question 1: How many invoices does your public sector organisation currently receive?

Obtaining the answer to this question is a key starting point for building the business case. Accounts payable management based on traditional paper invoices is essentially a transaction-driven process requiring human resources, 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. Being an activity based on scale the benefits of automating inbound invoicing will be greater when dealing with higher volumes.

Question 2: How many people are employed within the accounts payables department within your public sector organisation?

Greater productivity and efficiency are key benefits of electronic invoicing. Typically, there is one member of staff employed to process 5,000 – 15,000 invoices per year in the Accounts Payable department, so an organisation processing 100 000 invoices per year will employ around 10 staff (in addition to mail clerks)⁶.

Large-scale 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.

⁶ Source: E-Invoicing / E-Billing – Key stakeholders as game changers, Billentis, 2014

Combining the number of invoices (Q1) and the number of staff employed to process them enables the organisation to evaluate the scale of extensive savings and the potential release of resources for more productive work.

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

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.

Question 4: What are the requirements for archiving of invoices in your public sector organisation?

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

Archiving of paper 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 organisation processes for example 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 and costs involved and provided it is executed in a safe and controlled way.

Question 5: What are the opportunities for 'outsourcing' or 'shared services' for Accounts Payables processing?

Accounts Payable is a labour intensive environment. In the private sector, many corporations have outsourced this activity; the processing is often undertaken in lower cost environments or through sharing services to create economies of scale. The question of outsourcing needs to be discussed, also in the context of working with a number of other public sector organisation in a shared services centre. Care must be taken with outsourcing to ensure compliance with archiving and data protection rules.

Question 6: What is the distribution of suppliers to the public sector? How many are SMEs?

It is important to understand the composition of a public sector organisation's supplier base in terms of size, significance and any special characteristics. For example, the management of contractors requires a different approach to major corporate suppliers. The efficiencies gained by electronic invoicing are of particular relevance to SMEs – costs are reduced, invoices are delivered quickly (instantly) and payment cycles are improved.

Question 7: What is the on-time payment performance of the public sector? How many (%) invoices are paid on time?

It is worth gathering statistics on the current performance of your public organisation in terms of on-time or late payment of invoices. Failure to pay on time causes undue challenges on the

supplier (particularly SMEs), the buyer and the accounts payables department. It is also now relevant in the context of the EU "Late Payments Directive"⁷ 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.

Many enterprises are including on-time payment statistics as part of their Key Performance Indicators. There is a substantial improvement in KPIs when electronic invoicing is deployed as invoices are delivered and processed quickly, efficiently and directly into the accounting system of the buyer. No invoices are lost.

E-invoicing properly implemented for maximum automation should ensure that the public sector pays its suppliers more promptly or at least more predictably. Because e-invoices are received in a transparent way they can be rapidly processed, reconciled and approved for payment often within 5 days. This compares with the frustrations of paper invoices which can get mislaid, delayed and may take up to 20 days or more to be approved.

Given the improved processing environment, it is a matter of management judgement as to whether payments are made according to an agreed and predictable timescale, or more promptly. The ability of the buyer to take advantage of trade discounts, which are elusive to the paper process, is also a major benefit. As already stated, suppliers may also have the opportunity to use 'approved to pay' invoices to raise liquidity through early payment and invoice discounting options.

The opportunity to pay suppliers promptly should be factored into the business case as a clear economic benefit and a means of de-risking and stabilising the supply chain.

6 How to deliver an efficient e-invoicing system

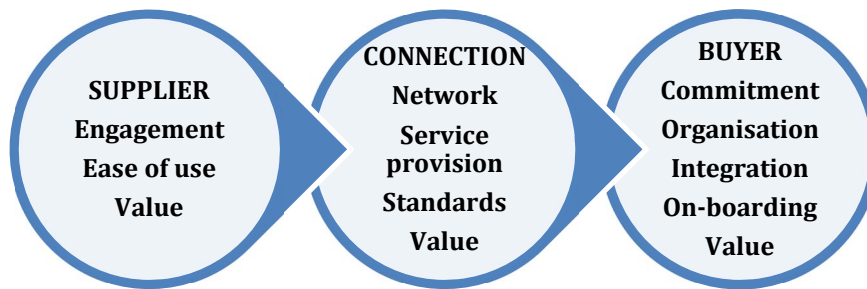
This question is considered from the perspective of:

- The buying contracting authority
- The suppliers in the private sector
- The connection layers, which bring buyer and supplier together

The successful implementation of e-invoicing is not just a technology project. Success stems from the management of people, stakeholders, business processes and automated IT systems.

Success factors have been discussed under three headings: the Buyer, the Supplier and the Connection layer that brings them together, as below.

⁷ Directive 2011/7/EU of the European Parliament and of the Council of 16 February 2011 on combating late payment in commercial transactions (Text with EEA relevance).



6.1 The world of the Buying organisation

Create commitment

Buyer organisation mobilization is the biggest challenge but the greatest source of benefit for e-invoicing adoption. Without a motivated and committed buying organisation nothing will happen.

To create commitment, the following activities are conditions for success:

- Make it clear at high level that e-invoicing is an important public policy priority and a requirement for public sector efficiency and cost savings for the taxpayer.
- Create political and policy commitment at senior and operational level within all contracting authorities starting with those with the most meaningful volumes and savings potential.
- Recognise that e-invoicing has its own business case and, although it can and should be linked to an end-to-end e-procurement strategy, the case for e-invoicing adoption can be assessed as an automatable 'finance and administration' process in its own right. This is a substantial source of value creation.
- Develop a business case with a high level of ambition at each contracting authority. Target savings of up to 60% of current accounts payable costs from a fully automated solution.
- The business case can be substantially impacted by a decision to utilise a shared service model.
- Address change management issues by involving people as actors of change and build the commitment of management to the project plan.
- Learn from and compare with private sector experience and relevant public sector role models and building blocks.
- Work in stakeholder forums and build contacts for the exchange of best practice.
- Leverage the benefits of using digital data and information right across the organisation and in the supply chain - this means that e-invoicing becomes a platform for further value-added through leaner processes spreading upstream and downstream.
- Spend analytics of the invoice at line item level provides an unrivalled source of data on spending and will complement other sources of similar data.

- Early invoice approval creates the opportunity for early payment or supply chain finance for the supplier, based on invoice discounting, if the parties so agree.
- Manage the policy-making, management and operational issues set out in the opening section of this paper.

Build the organisation for implementation

The buyer's implementation organisation (or unit) for e-invoicing needs to be created, or identified. Some of the key issues will be:

- Decide on whether the overall approach will be a centrally managed or a de-centralized model, whilst avoiding 'mega' projects.
- Decide on whether to 'make or buy' e-invoicing services. If outsourcing is the preferred option, then formal procurement procedures will need to be followed.
- Establish the necessary project governance model with a properly balanced business and IT focus.
- Create project ownership and the right blend of skills and organisational perspectives to ensure tight project management and risk containment.
- Consider the use of 'shared services' models to create economies of scale and scope among a number of public sector organisations cooperating together.
- Consider the support from e-invoicing partners with experienced BPO skills and service provider/network capabilities and reach.
- Evaluate existing building blocks and tools and the organisations that make them available.
- Consider a step by step implementation to reap quick wins.

Plan for appropriate level of integration and automation

The question arises as to what is the targeted/feasible level of automation within the buyer's organisation?

The answer depends on the objectives of each contracting authority, taking into account the national legal and policy context. However, if the public sector ambitions are high then a plan for full integration should be considered, from e-invoice reception through workflow to ERP and to capture, for example, 80%+ of invoice value and volume in the first 2 years of the programme, as follows:

- A step by step approach is commonly taken, which may start with initially identified volumes, which could be processed on a semi-automated process when received, but rapidly proceed to volume growth and full automation.
- If also implementing automated e-procurement at the same time ensure a 'joined up', but modular approach.
- The Purchase Order is an invaluable 'linking pin'. It links the procurement and invoicing processes. Leaving aside the challenge of automating the pre-award procurement process, the benefit of automating the purchase order and linking this to invoicing and the subsequent payment process should be emphasised given its control and compliance benefits. The process can be automated on a step by step basis.
- Assess the state of host ERP systems and handle upgrades (if required) and/or install a foreground workflow engine as a component of the implementation. ERP systems, their

preparedness and functionality are a vital ingredient in building seamless end-to-end e-invoicing.

6.2 Engaging with suppliers

There are three areas of focus on suppliers:

Supplier engagement

- Seriously consider a mandated or compulsory approach for supplier adoption.
- Suppliers may resist but will usually recognise the benefits of e-invoicing once tasted.
- Incentives such as on-time or earlier payment can be very attractive such as 'x' days from invoice receipt. The supplier needs a business case too and recognisable value creation.
- It is important to have a strategy for implementing the 'long tail' of smaller suppliers, ensuring, at a minimum, the availability of web portals for e-invoice creation.
- Education, training and contact with suppliers is essential.

On-boarding

This is a key criterion for success and the activity that will make the difference.

- Consider the various e-Invoicing models described in section 6.3.
- A 'direct' or DIY model is possible but involves repeating already well-established processes. Contracting authorities should enter a 'self-managed' project cognizant of the management challenges involved. This said there are a number of successful examples of this approach.
- Partnering with relevant stakeholders, such as Chamber of Commerce, can be very effective; also involve (i.e. procuring solutions from) service or solution provider(s) that have a proven track record in supplier on-boarding. Such supplier networks will already have significant populations of on-boarded suppliers.
- The use of a four-corner model that ensures suppliers are free to select their preferred e-invoicing service provider has proven to be successful in certain countries with central government leadership and where standards based solutions and channels have been made mandatory. In such a model, where suppliers choose their own service platform, the supplier still has to be made ready to operate within the system.
- Take great care creating a government gateway or large-scale portal and expecting suppliers to use it as a technical capability without extensive on-boarding support. They won't just come because it is there.
- Consider the value of mobilising e-banking portals to integrate suppliers, subject to agreement with the banking community.
- It should be possible for a supplier to be on-boarded for e-invoicing using automated 'click' processes without onerous agreements and creating a 'ready to go' starting point without mandatory testing.

Ease of use

E-invoicing should be easy to use for suppliers and provide interfaces and tools that suit their circumstances, size and IT sophistication.

- There should be a choice of channels and interfaces. An SME may be happy with a portal and medium-sized and larger business will wish to have integrated file transfer options.
- Create uniform processes including data quality validation for suppliers based on defining the essential data requirements for a compliant invoice. Compliance is an important feature of the proposition for both supplier and buyer.
- Ensure that suppliers have access, if they so wish, to a human readable version of any invoice delivered to a buyer.
- There should be limited or no IT development required to small suppliers for using e-invoicing solutions, for example based on 'cloud' services, and it should not be more difficult to use than an e-banking, online ordering or tax reporting service.
- Take care before creating a public sector 'silo'. Suppliers will not appreciate a situation where different requirements, channels, and processes are used for B2G invoices and not reusable for B2B. Suppliers should be able to use the same solution whether the buyer is in the public sector or the private sector or both, ideally on a cross-border basis.
- Provide support for archiving, tax compliance, and other value-added areas as the supplier may choose to use.

6.3 The connection layer

This is the piece that joins supplier and buyer together. Often this area receives more attention in discussions of e-invoicing than the foregoing issues around the needs of buyers and suppliers themselves. When this leads to the under-estimation of the issues raised in the preceding sections, it is unfortunate.

However, the network delivery and transport infrastructure layer is very important and must be well performing and secure - as is the case for the majority of implementations to date. The technologies of the Internet are the basic building block and these can be deployed successfully. Three areas are focused on here, the organisation of invoice reception points, the connection with suppliers and a summary of the various infrastructural options commonly deployed.

Invoice reception points

At least three approaches are commonly adopted for the reception by the public sector of e-invoices from suppliers:

Centralized: In this model all public sector invoices in the whole country are received at a central point through a single portal or gateway, which will offer one or more protocols or standards for the invoice message. The single gateway may be operated by a public sector organisation or by a service provider on its behalf. This centrally managed approach may provide a number of benefits. The same level of reception service is provided regardless of the size of the contracting authority. In terms of deployment, every single contracting authority is immediately enabled at insignificant cost, given the economies of scale. The centralised approach may also provide mitigation of the non-conformance risk, since it could allow performance upfront of validation checks (format, structure, data, semantic, cardinality etc.) leaving to the contracting authority responsibility for checking business rules and contractual compliance. Fiscal aspects could also be addressed by upfront capture of tax and secure archiving. For suppliers a single gateway to the public sector offers predictable access. On the potentially negative side is the question of complexity and the appropriate and timely routing of items to thousands of receiving entity processing systems, not to mention the single point of failure represented by the single gateway.

It may also complicate related e-procurement processes, which will usually need to be conducted on a more decentralised basis.

Decentralised: In this model, public sector invoices are received by each individual contracting authority within the public sector. Each would establish its own gateway, and then channel received items through its validation checks and directly into an automated processing environment, using application programming interfaces. As discussed in prior sections of this guidance paper, a contracting authority may choose to postpone the implementation of fully automated processing but take a step by step approach starting with automated reception accompanied by manual or semi-manual processing. The fully decentralized approach allows each self-accounting contracting authority to choose the e-invoicing method that suits its purposes.

Hybrid approach: In this model a group of contracting authorities, for example with common functional characteristics such as a regional hospital group, or a collection of smaller or regionally-based municipal authorities, or a number of central government departments, may choose to combine forces and establish a shared reception point. Typically, the shared reception point would sit inside a shared services centre that would also carry out the post-reception validation, processing and payment functions.

The three above approaches and combinations thereof need to be weighed in the context of governance structure, culture and tradition, and management policy of the public sector organisations concerned.

Connecting suppliers

Another major question is the establishment of a way of connecting suppliers into the reception process as already mentioned above. This is achieved by the use of networks, either state-provided, or through established supplier networks.

Mention has been made above to the existing European Union solutions such as PEPPOL and Open e-PRIOR, as well as existing and emerging frameworks at Member State level (see Annex 1 for some examples). These should be appropriately leveraged if they meet the needs of single or groupings of contracting authorities.

At this stage of market evolution, the major proportion of e-invoices are carried by means of solutions and networks provided by service and solution providers, which operate in a highly competitive market. Networks can usually interoperate with each other. Such already established networks of suppliers are capable of expansion to include new suppliers. Network solutions find their origin in various departure points such as supplier network models linked to existing e-invoicing services, to directly connecting ERP systems and various procurement systems. A variety of service and solution providers undertake a range of services including invoice creation, invoice transmission, validation and compliance checking, archiving and a variety of value-added services. A solution provider may orchestrate a solution which is carried out entirely within the user environment. They may also be equipped to provide for the carriage of important related documents and data-sets, such as purchase orders and delivery notices in a usable and configurable way.

Standards are growing in importance as scale builds but e-invoicing software and service platforms are adept at format conversion, data mapping and rendering invoices in the form that the trading parties wish to see. Service providers should be able to support open and commonly used standards for both payload and transmission.

It is important to select service providers based on a set of criteria chosen in advance on an objective basis. Parties should not become 'locked-in' to particular solutions or services. This does not mean that a trading party can avoid making a commitment to use a particular channel or service at a point in time, but there needs to be choice of channels and no 'lock-in' by which we mean the ability to switch provider with minimum disruption and within a reasonable time-frame.

Direct connections between trading parties can be established but they can be costly and complex creating instability and risk, and can negate 'network' effects i.e. the well-known principle that networking creates mutually reinforcing growth in usage.

Service providers are able to take advantage of Interoperability arrangements between themselves, as is the case with the PEPPOL Transport Infrastructure Agreements (Pan-European Public Procurement Online) and the EESPA Model Interoperability Agreement (European E-Invoicing Service Providers Association) and to create a wide interoperable ecosystem, in particular for gathering invoices from across the EU under the public tendering rules. Interoperability arrangements are not just a matter of technical connection as they need to be underpinned with robust contractual frameworks and compliance disciplines, if the interests of trading parties are to be fully protected.

The connection layer must never become a technical burden and disincentive to participate. It is important to stress that e-invoicing and related processes are mission-critical and must achieve security and robustness equivalent to other similar systems. This covers both fault-tolerant technology but also contractual agreements and legal compliance.

Some examples of infrastructural channels

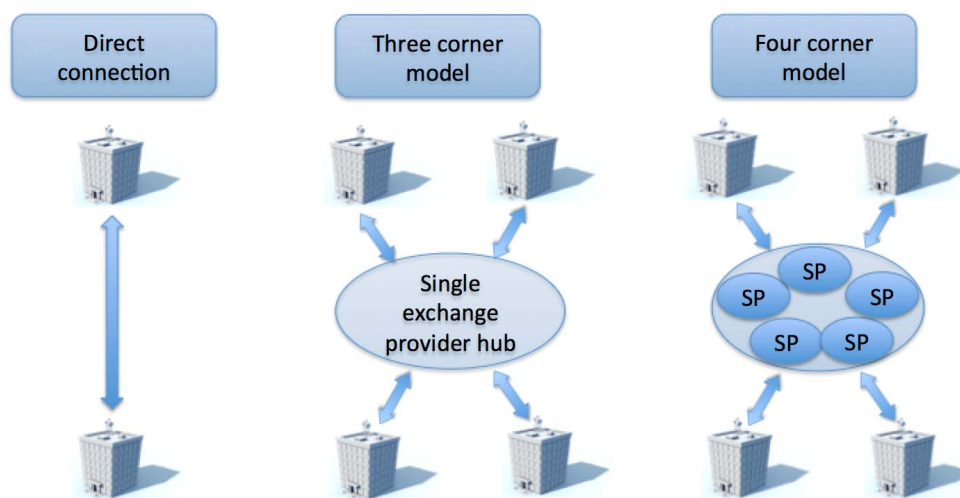
Bearing in mind the points made in the preceding two sections, multiple channels are available to support the information flow relating to procurement and electronic invoicing transactions to and from a public sector buyer organization and their suppliers. The models and tools illustrated below represent an array of the principal electronic invoicing channels supported by the market. An evaluation of the right mix or portfolio of solutions is required to optimize the environment for buyers and suppliers alike.

It should be clear that the Directive 2014/55/EU requires contracting authorities to accept e-invoices conforming to the new European standard and implementing it in a number of selected syntaxes. It is not prescriptive about the infrastructural channels to be used. The **e-invoicing models** described below provide alternative ways of exchanging e-invoices between the contracting authority (buyer) and its suppliers.

Direct connection between trading parties can be established to exchange invoices. While this e-invoicing model can be easy to implement, it will require new test procedures when the individual suppliers change their IT environment and can be complex and costly to manage.

Three-corner model is an exchange model where senders and receivers of invoices are connected to a single service provider platform or hub for the dispatch and receipt of messages. The key benefit of a 3-corner model is that the service provider can offer a tailored and granular service to both buyers and suppliers, while a drawback is that suppliers can be forced to work with many service providers simultaneously when their customers are using different providers.

Four-corner model is an exchange model where senders and receivers of invoice messages are supported by two service providers, one for the sender and another one for the receiver. The key benefit of a 4-corner model is the freedom for both the buyer and the supplier to choose their preferred service provider. As an example, the PEPPOL network is based on a 4-corner model where Access Point providers ensure the validated exchange of electronic invoices between the trading parties.



Examples of other **e-Invoicing solutions**, ranging from EDI, purchasing cards, web portals and shared service centres are described below.

EDI (Electronic Data Interchange) is the electronic transfer of structured data (commercial and administrative) using agreed message standards, from computer to computer. There are many EDI standards, some of which address the needs of specific industries or regions. Data formats and transportation layers can vary. The trading partners agree on the specific information to be transmitted and how it should be used.

Web portal (or Supplier portal): a web-based application used for online submission of individual invoices, allowing suppliers to present invoice data to their customers for matching and approval. Suppliers can also see a history of all the invoices they have submitted to their customer without having direct access to customer systems. All the transactional information is stored in the data centres of the contracting authority (or with a third party service provider) that provides the invoicing web application. Portals are also a feature of three-corner and four-corner models as a means of delivering data and monitoring the status of transactions.

Shared service centre is a centre and the attached electronic invoicing service platform that is either contracted with the private sector business process outsourcing provider, or established by 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.

P-card (purchasing card) is a form of company charge card that allows goods and services to be procured without using a traditional purchasing process. P-cards are usually issued to employees who are expected to follow their organization's policies and procedures (source: Wikipedia). The e-invoice is embedded in the process.

Other solutions: although this is a less reliable method of automation, the structured invoice may be created from data contained in a paper document, or in a humanly generated PDF, and extracted through scanning and OCR (optical character recognition). The use of a 'hybrid' invoice (PDF with embedded structured data) may also be considered. (See section 3.1 for more information).

7 Making an electronic invoicing project happen: the steps to success

The following sets out a checklist of the key steps to be taken in implementing an e-invoicing programme within a public sector contracting authority, including preparation, design, execution, deployment and maintenance. Key success indicators have been included to support monitoring and decision-making activities.

Target groups: This checklist supports the needs of two main target groups within the public sector:

1. Public policy units responsible for defining e-invoicing policies and legislation, which then form a national policy framework for use by all public sector contracting authorities based on the considerations set out in Section 3.2 above (not repeated here). For this target group the preparation and implementation design phases are of critical importance.
2. Public entities which implement national policy frameworks and establish specific e-invoicing solutions. The latter may be based on the use of centralised or national solutions or on locally procured solutions, depending on the national policy framework, as discussed in Section 3.2 above. This target group also includes public entities responsible for the implementation of national IT infrastructure and centralised components of an e-invoicing solution.

7.1. Preparation

For Target Group 1, this phase addresses the needs of public sector entities responsible for e-Invoicing policies and legislation and the creation of a national policy framework. Depending on the national context and whether e-invoicing legislation and national standards have already been implemented, the path to implement Directive 2014/55/EU and its required deliverables might vary in each Member State. Within the preparation of the national policy framework, it is important to decide:

- Whether to mandate e-invoicing. If making it mandatory, consider a two-step approach:
 1. Mandatory for public administrations to be able to receive e-invoices also below the thresholds (the Directive 2014/55/EU makes it mandatory only for e-invoices above the thresholds)

- 2. Mandatory for suppliers to send e-invoices
- Decide how to mandate/require e-Invoicing:
 1. By means of legislation
 2. By including in procurement tenders a requirement for the use of e-invoicing
 3. National guidelines and recommendations to the public sector

For Target Group 2, the public entities implementing specific e-invoicing solutions, the preparation phase includes the following:

- Establish objectives and time-scale based on the national policy framework and the requirements of the Directive 2014/55/EU and the need for the implementation of the EU e-invoicing standard.
- Prepare a business case – to be updated during the project phases
- Organise continuing senior management and political sponsorship
- Undertake market and technical research and consider benchmarking with successful similar projects
- Analyse the supplier base to understand their requirements and preferences – checking national practices (e.g.: e-invoicing formats) and commonly used e-invoicing mechanisms to avoid substantial changes and effort to achieve higher acceptance among trading parties
- Elaborate a change management plan with project milestones
- Decide how to implement or require e-invoicing by suppliers, in accordance with the national policy framework
- Establish whether the project is a single contracting authority specific or based on shared services in collaboration with other contracting authorities

7.2. Implementation design

This phase addresses the needs of public sector entities responsible for designing an e-invoicing solution, based on business requirements gathered from its main stakeholders.

- Resolve the mode(s) of e-invoicing to be employed and the target architecture, especially whether based on a centralized or decentralized solution with the appropriate governance arrangements
 - Solutions and services should be based on open standards and channels and not lock in the parties.
- Assess the potential for use of EU solutions and tools provided to public sector bodies by the Commission and Member State investments and which can be re-used by contracting authorities of all sizes (as set out in Section 4.5 above) as well as solutions provided by private sector service providers. These include:
 - The PEPPOL framework to implement interoperable e-invoicing and e-procurement solutions (see section 4.5)
 - Open e-PRIOR, the open source e-procurement solution from the European Commission (see section 4.5)
 - The use of CEF e-Delivery building blocks⁸ (see section 4.5)
 - Many private sector e-invoicing services, supplier networks, business process outsourcing providers (BPO) used by private and public sector organisations

⁸ https://joinup.ec.europa.eu/community/cef/og_page/catalogue-building-blocks#eDelivery

- Determine whether e-invoicing will be fully integrated, stand-alone or have a modular link to other post-award processes and tools (e.g.: catalogues, ordering) and to the pre-award phase
- Specify the approach to standards:
 - Implement the new European standard as required by Directive 2014/55/EU
 - On the buyer side (receiving entity): fully support the mandatory e-invoicing standard. It is important that the structured invoice data can be automatically processed.
 - On the supplier side (sending entity): encourage the issuance of e-invoices compliant with the mandatory standard
 - Visualisation (human readable invoice information) may be provided at any stage in the process.
- Design efficient invoicing processes to optimise resources, identify bottlenecks and improvements:
 - Map the process and workflow from reception to processing and archiving,
 - Address compliance with tax and other regulations
 - Assess existing status of automation and systems/skills to identify gaps and improvements
 - Design change the management processes
- Select the e-invoicing model(s), solutions and tools to be implemented (see section 6.3)
- Address compliance with tax and other regulation
- Determine the integration/ ERP/workflow strategy
- Determine whether to outsource (procure solution) or build the solution in-house, or a combination
- For the connection space: determine network, connectivity and exchange mechanisms:
 - Select the approach for network connectivity and the reception of delivered invoices and related documents and messages, based on interoperable networks
 - Establish Service Level Agreements (SLAs)
 - Provide interoperability tests for service providers, software vendors and those trading parties operating their own software (including message conformance and transmission)
- Set up supporting tools for:
 - Format guidelines
 - Format validation tools
 - Test beds for interoperability

7.3. Stakeholder management and on-boarding

This phase is relevant to all public sector entities setting up e-invoicing solutions in their organisation.

- Involving ERP vendors:
 1. Establish a communication channel for dialog with ERP vendors - local and global vendors, and with local software houses delivering the implementations.
 2. Develop an informative website including a roadmap for on-boarding so the vendor can easily understand the process ahead
 3. ERP vendors should be required to support the e-invoice standard for sending and receiving.

- Mobilising service providers:
 1. Establish a communication channel for the dialogue with service providers
 2. Develop an informative website including a roadmap for on-boarding
 3. Service providers should be required to support the e-invoice standard for sending and receiving, an open infrastructure and the selected e-invoicing model and tools

- On-boarding suppliers (on the buyer side):
 1. Determine the supplier on-boarding strategy, outlining how suppliers are to be connected to the e-invoicing solution.
 - Determine responsibilities for the on-boarding of suppliers
 - What kind of actions are to be taken to initiate supplier on-boarding?
 2. Define requirements and tools for on-boarding:
 - Define on-boarding procedures, including reporting
 - Design efficient data quality management tool to be implemented and governed
 - What kind of test procedures (or self-conformance tools) are available?
 - How are suppliers informed about options, requirements, tools, contact persons, etc.? Consider channels such as Chambers of Commerce, associations, information services, etc. to encourage suppliers to engage
 - Establish a website with all relevant information required by the supplier base

7.4. Project execution

This phase is relevant to all public sector entities setting up e-invoicing solutions in their organisation.

- Create a strong process owner and project management team
- Use agile method to ensure that every stage of the project is validated
- Provide informative guidelines and any required training to involved personnel
- Set up a communication process for the wider organisation
- Define the adoption and execution plan
- Implement the decision about 'making or buying' e-invoicing solutions and services
 - If outsourcing is preferred, prepare and conduct the tender to initiate formal procurement procedures and select service/solution provider(s)
- Ensure that the e-invoicing solution/services support the requirements identified
 - Consider re-use of existing national/central solutions
 - Ensure solutions for SMEs are available (for example providing an online form for sending e-invoices without technical effort)
- Provide the supplier support capability
- Establish buyer side integration capability
- Clarify roles of Finance team/ Procurement team to require e-invoices
- Establish key performance indicators and a quality assurance process:
 - Implement an efficient Data Quality Management tool
 - Set up procedures/tools to identify and explain error

- Set up procedures/tools for error handling & disputes
- Set-up the test environment: perform technical review of test data; ensure users evaluate and approve test data for accuracy and completeness.
 - Consider the inclusion of the testing & conformance services in the e-invoicing solution that has been procured (if applicable)
- Support early adopters
- Build processes for problem identification and resolution
- Allocate extra resources for the transition from go-live to the steady state

7.5. Deployment and maintenance

This phase is relevant to all public sector entities in charge of the governance, maintenance and wider adoption of the e-invoicing solution(s).

- Ensure governance of the legal, operational and technical framework
- Support continuous improvement and monitoring
- Establish capacity building activities to foster adoption
- Deploy maintenance routines and ongoing support
- Ensure communication
 - Internal and external communication (to suppliers, ERP vendors, service providers, press and to the public sector)

8 Key success indicators

The following list of key success indicators for e-invoicing will support public entities in assessing the performance of their implementations and identifying the key areas which will require improvement.

- Number and percentage of public entities enabled
 - It is important to track who in public sector is able to handle e-invoicing.
 - By monitoring adoption, it is possible to identify public entities that do not have the capability to receive e-invoices.
- Number of public and private entities enabled
 - Publish information about entities capable of sending and receiving e-invoices
- Number of e-invoices in percentage of total invoice volume
- Percentage of errors in format
 - Error tracking, to see how much time is allocated on errors.
- Percentage of errors in content
 - Errors in content is discovered when the e-invoices are processed
- Number of Disputes
 - For internal purposes it could be considered to track Disputes (incl. the invoice amount, the delayed payment, the time spent for disputes)
- On-time payment statistics

ENDS

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ANNEX 1

E-invoicing national approaches, case studies and presentations

Electronic invoicing in France – CEN WS/BII 3 Seminar, 2/12/2014

http://www.cenbii.eu/wp-content/uploads/eInvoicing-in-France_Amadieu.ppt

E-invoicing in Italy: the technical rules and implementation path – CEN WS/BII 3 Seminar, 2/06/2014

http://www.cenbii.eu/wp-content/uploads/20140602_Electronic-Invoicing-in-Italy.ppt

Electronic Invoicing: the next steps towards digital government

<http://www.sopo.org/assets/electronicinvoicing-thenextstepstowardsdigitalgovernment.pdf>

Implementing European standards in Sweden

<http://www.cenbii.eu/wp-content/uploads/Experiences-Sweden.pdf>

NemHandel - open shared e-business infrastructure

<https://joinup.ec.europa.eu/community/epractice/case/nemhandel-open-shared-e-business-infrastructure>

NHS eProcurement Strategy

<http://www.gov.uk/government/publications/nhs-e-procurement-strategy>

Norway as a front runner for eProcurement in Europe

http://www.anskaffelser.no/sites/anskaffelser/files/20140704_status_in_norway_final.pdf