Euro Retail Payments Board (ERPB)

Report from the ERPB Working Group on E-invoicing solutions related to retail payments

ERPB Meeting 28 November 2016

Contents

1. Executive summary

In November 2015, the Euro Retail Payments Board (ERPB) decided to launch an analysis of the landscape for Electronic Invoice/Bill Presentment and Payment (EIPP/EBPP[1]) solutions in Europe. This was expected to identify the main issues and barriers that the market is facing in terms of take-up and in terms of required support for Pan-European integration of the solutions landscape.

The ERPB decided on a step-by-step approach for the initiative and initially set up a Working Group composed of members from organisations represented in the ERPB from the supply-side and demand-side of the market, together with other relevant experts. The Working Group was expected to undertake a first set of work streams pursuant to its mandate.

In an introductory section, the mandate of the Working Group and its methodology are briefly summarised. The Working Group first conducted a Survey, and analysed the findings to identify the main issues and barriers to a more concerted take-up of EIPP. The report was then drafted to present the Working Group's main findings and conclusions. First, the report presents an overall description of the landscape for EIPP services, provides some statistics regarding the current coverage derived from the Survey and other sources, the characteristics of the solutions analysed, and the Working Group's vision on how the future landscape could develop in the coming years. Critical success factors are discussed to provide inspiration for initiatives to improve EIPP adoption. Under the heading of barriers and issues the Survey addressed both the supply-side and demand-side in order to understand the obstacles encountered in the development of solutions, especially in relation to individual customers, SMEs and microenterprises, whilst not forgetting the needs of the mass-billers, which provide the bulk of invoices for payment. The full results and interpretation of the Survey results are detailed in an Annex to the report.

Analysis of the current landscape for EIPP services reveals the current growth trends in service penetration, the willingness of the various providers to expand their engagement, and their high expectations for the future. Nevertheless overall volumes are still relatively low and there are major disparities in terms of coverage by geography. This is partially explained by a high degree of domestic 'centricity' and a lack of interoperability. In terms of implementation modes, the majority of the solutions are operated by payment service providers (PSPs) or specialised EIPP providers, or both, often in partnership. Existing SEPA payment schemes are broadly used and major e-invoicing, both international and domestic, standards are widely accepted.

Analysis of the issues and barriers resulting from the surveys points to the cost and complexity of current solutions and a lack of interoperability, which creates obstacles to achieving reachability. Other issues include lack of financial and digital inclusion in some markets, the entrenchment of current payment habits, and the persistence of administrative barriers in some countries.

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[1] EBPP means Electronic Bill Presentment and Payment and is an alternative term for EIPP, common in the North American market. For the purposes of this document EIPP is used exclusively (see glossary in Annex 8.1

The critical success factors are those that the Working Group regards as necessary for the success of solution providers and their business customers in their goal to increase EIPP take-up. The absence or only partial fulfilment of them are clearly linked to the past failure of EIPP initiatives. These factors are: the need for a compelling value proposition for all the entities in the business chain, customer centricity, achieving critical mass, and a clear response to security and trust-related expectations on the part of users.

The Working Group worked in a collaborative way to frame Options that the ERPB could consider in taking further decisions on next steps to foster EIPP penetration and usage in Europe and these form the concluding section of the report. These Options could solve or reduce the impact of the described issues and barriers and could foster the identified critical success factors. Three dimensions are defined as a means of articulating these options for further investigation:

- **EIPP solutions and services need a well-articulated value proposition:** all actors involved in the EIPP business chain need clear and tangible benefits, which add value in terms of efficiency and user experience, and contribute to a positive business case that facilitates uptake. This applies, in particular, for PSPs, e-invoicing solution providers, and suppliers (payees) implementing such solutions, and also of course for buyers (payers) using the resultant services.
- **EIPP solutions and services need to be customer centric, cater to segment-based needs and improve trust:** to facilitate uptake solution providers (be it PSPs, e-invoicing or ERP solution providers) must deliver excellence in serving the needs of their customers. Most importantly, the services need to protect customer interests, ensure secure data protection, be easy-to-use and implement in diverse channels and for different payer segments: varying from elderly and/or physically impaired to digitally experienced consumers, microenterprises and SMEs. Customer centricity incentivizes providers to achieve better network effects and critical mass by focusing on target segments, such as large billers, including public administrations, and consumers highly comfortable with using electronic payments and online banking facilities.
- **EIPP solutions and services need a set of minimum requirements at the level of business rules and technical standards that will promote interoperability in domestic markets and create growing pan-European reach:** such minimum requirements can be considered as building blocks for developing new EIPP solutions and services that will be integrated into a European-wide network model. This will eliminate market fragmentation over time. Developments in the payments industry such as Instant Payments (SCT Inst.) and PSD2 (i.e. the introduction of payment initiation and account information services) are likely to introduce further competition into the retail payments market and motivate various third party providers to become non-bank PSPs, aiming, for example, to fully digitize invoicing and payment processes in the business-to-consumer/SME/microenterprise domain.

At the organisational level, an option for supporting the delivery of further EIPP solutions at country, community and pan-European level lies in promoting inclusive cooperation among all actors. This will be essential to address network

externalities, to create network effects, and promote best practices and common standards. This cooperation model should create a level playing field and include within its scope solutions based on PSD2 and Instant Payments.

2. Introduction and background

The Working Group was mandated to focus its analysis on EIPP services which are provided by payment service providers (PSPs) and third party e-invoicing service providers enabling consumers, SMEs and micro-enterprises to consolidate the management and payment initiation of received e-invoices in a seamless and fully digitized way throughout SEPA (ref. [7.1]). The processing of e-invoices within enterprise resource planning (ERP) systems and other areas relating to the internal organisation of users is out of scope.

It should be mentioned that other European bodies are currently undertaking activities related to e-invoicing:

- The European Multi-Stakeholder Forum on E-invoicing (EMSFEI), set up by the European Commission, brings together stakeholders from national e-invoicing forums and actors from the market. It aims to promote e-invoicing at European level and to advise the European Commission on all aspects of e-invoicing adoption.

- The European Committee for Standardisation (CEN) is working on a European e-invoicing standard focused on B2B and B2G segments. Its main scope, enshrined in EU Directive 2014/55/EU and endorsed by EMSFEI, is the definition of a core semantic data model for an e-invoice and the selection of compliant syntaxes for use with the model. Latest information indicates that CEN is considering future work on B2C requirements for inclusion in the semantic model.

An initial analysis undertaken by ERPB Secretariat in 2015, was reflected in the ERPB Secretariat Note issued in November 2015, which pointed out that current EIPP solutions are mainly national in coverage and use varying business and technical standards. It identified a number of issues and barriers that hinder greater adoption and the pan-European development of EIPP.

The ERPB decided to extend its initial analysis by organising a Working Group composed of stakeholders and experts from the supply-side and demand-side of the market. Its mission is to review the landscape, to consider its possible future evolution, to undertake an analysis of issues and barriers, and to explore options for tackling them. The Working Group's focus has been on services provided by PSPs or e-invoicing service providers as well as on the technical standards and business rules on which these services are built.

As required in its mandate, the Working Group has carried out survey work to gather and analyse information related to EIPP characteristics, current issues, and barriers. Two distinct Surveys were addressed, to organisations from each of the supply-side

and demand-side, based on content, distribution procedures and methods of consolidation defined in advance by the Working Group.

More detail on the Survey methodology can be found in the Annex 8.1.

In addition to the analysis of the Survey results, the Working Group made use of valuable inputs from their respective organisations with regard to the future of the EIPP landscape and to the options proposed for the way forward.

3. Overview of the current and future landscape of EIPP solutions

3.1. Description of EIPP services

E-invoicing can be defined as the set of processes exclusively based on automated electronic means for the delivery and processing of e-invoices (or e-bills), and in the case of EIPP for the presentation of invoices and their payment involving the business biller and usually their customers in the consumer and small business segments (B2C and B2b).
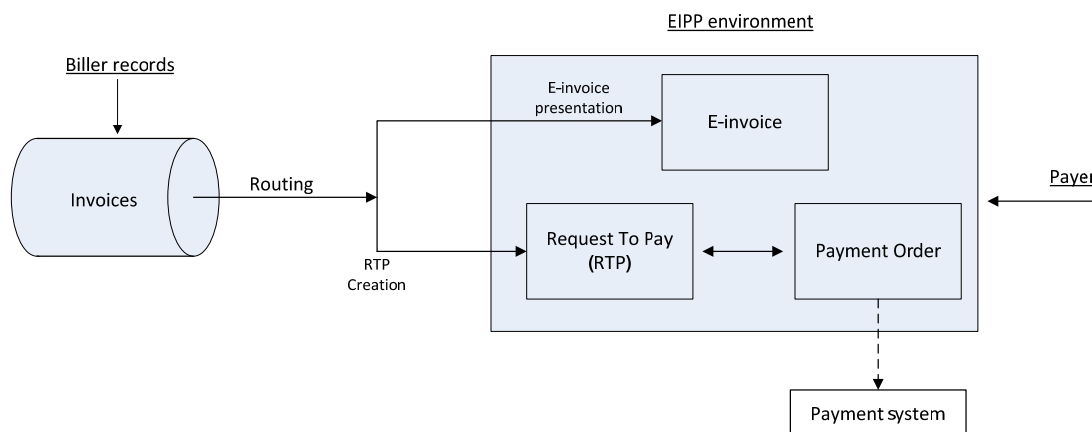
A typical process for an EIPP solution is illustrated above. This process is a component of the financial supply chain of enterprises. The schema below describes the main use cases in the supplier and buyer domains.

*Supply Chain Finance (in B2B)
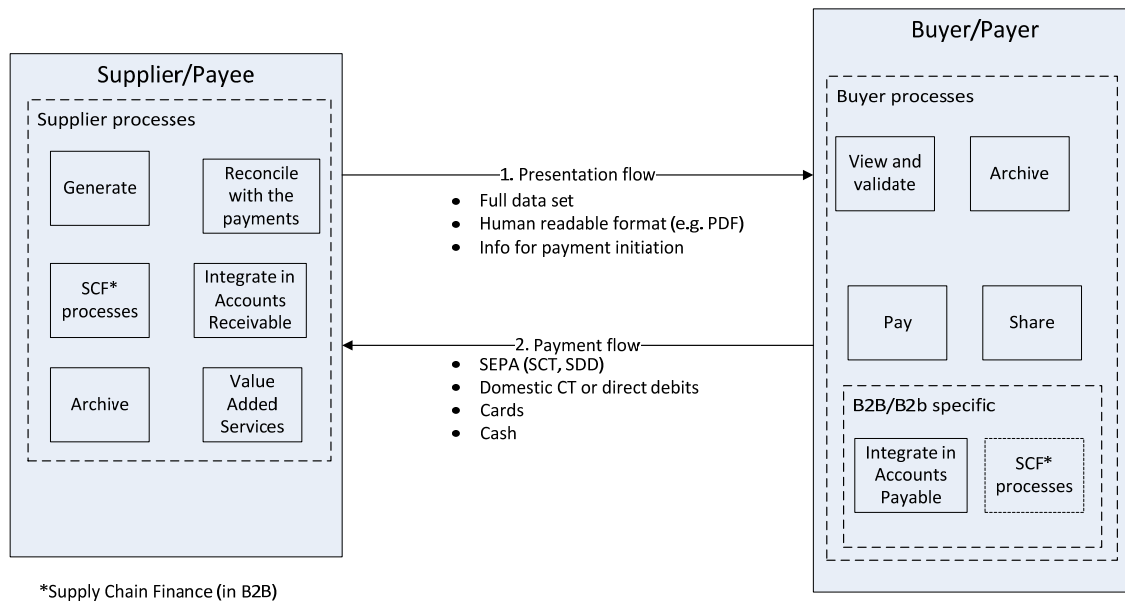
Models

Depending on the entities which organise the presentation and payment flows within the interconnection of platforms making up the processing chain, we can distinguish 4 models:

1. Direct Connect to Supplier: in this model, the presentation is implemented on the supplier side. To access their invoices, buyers are connected to a supplier operated platform (e.g. a web portal) and the payment is initiated from the buyer in a secure zone. Depending on the payment instrument chosen, the payer is redirected either to its own e-banking environment or to the supplier's acquirer for card payments. This model is very common but has the disadvantage that the buyer must connect to several supplier platforms to view and pay invoices.
2. Direct Connect to Buyer: in this model the invoice presentation is implemented on the buyer side. Suppliers of an individual buyer that are registered for operating EIPP processes send the invoices to a platform nominated/used by the buyer, or by email. The buyer makes payments with the help of systems generally close or integrated into their internal business support systems (ERP for businesses, e-banking, etc.). Often, this model is used in e-procurement processes by large billers and/or public administrations for SMEs, but is less common in the consumer market owing to the complexity involved on the payer side.
3. 3 Corner network model: in this model the supplier and the buyers are using a common platform of a third-party provider (PSP or e-invoicing service provider) where the outbound e-invoice flow from the supplier and incoming flow towards the buyer converge on a single platform. The presentation and payment process based on various use cases are orchestrated over the same platform based on various payment instruments. This is a very common type of EIPP solution.
4. 4 Corner network model: this is similar to the previous model, but in this case the supplier and the buyer are using their own third party provider. A routing

mechanism allows the presentation flow to reach multiple buyers regardless of their service provider. Typically, this model is implemented by providers, which organise some form of formal or informal routing scheme for invoice delivery and then use the normal payment system for payment clearing. This model is common in markets where a group of typically larger PSPs have created a mature market development.

The diagram below graphically represents these models:

Supplier/Buyer direct model	Network model
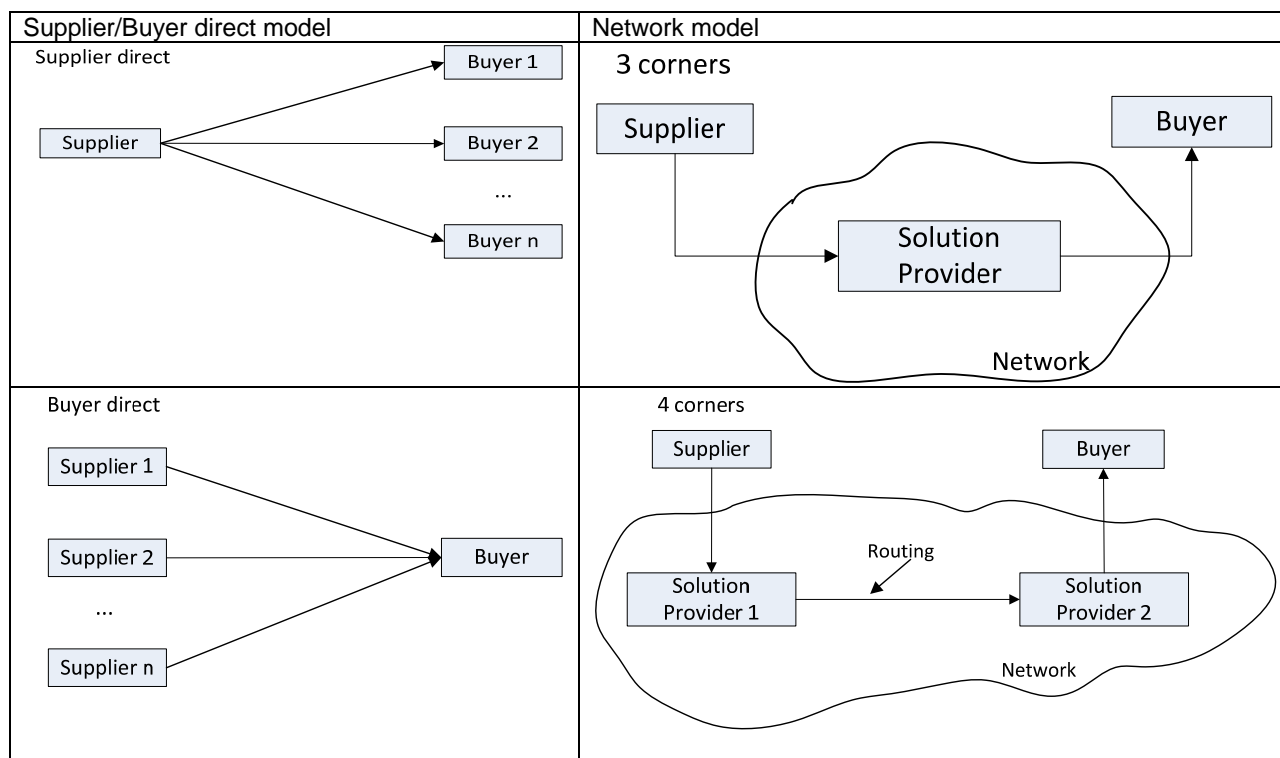
Benefits

The existing best practices and the value-added possibilities of closer integration between e-invoices and payment instruments, demonstrate that e-invoice presentment and payment solutions may enable:

- Corporates and large billers are better able to accelerate the collection of receivables in the form of available funds. The payer only needs to check a pre-filled payment order created in its EIPP service and either authorise a new payment or manage existing payment options very easily in a few clicks. E-invoicing standards (including the new European core e-invoice standard discussed below) typically include the relevant payment data for SCTs, SDDs as well as card payments, and these coupled with business process

choreography make the message flows between the payee and PSPs highly efficient.[2]

- SMEs and micro enterprises are better able to manage the payment options for incoming e-invoices and then archive the e-invoices as source documents for accounting. Moreover, if the EIPP solution supports the sending of e-invoices by smaller billers such as SMEs and microenterprises, they are better able to collect funds (see above), reconcile incoming payments, and solve the late payments issue.

- For all actors, there are savings and convenience in terms of reducing fraud and error, creating ease to access records of invoices issued, received and paid, and easier statement reconciliation. In short this provides a convenient 'one-stop' shop, at least when using the Models 3 and 4 above.

Businesses can choose

Corporates and large billers may use their internal accounting and ERP systems to generate the e-invoice messages that can then be sent directly or via a third-party PSP or e-invoice service provider to the payer's EIPP solution. Clearly the internal implementation of e-invoicing is not currently cost effective for most SMEs and micro enterprises, as is also the case for consumers. SMEs and micro enterprises can, however, benefit from the advantages of making use of third party services providers (e.g. PSPs or an e-invoicing solution providers) that help them to manage outgoing and incoming invoices efficiently in one place. In this way, they are akin to consumers.

Consumers can choose

Consumers are able to better manage and accurately pay incoming invoices, retain control over their payment options and - if needed or suitable – archive paid invoices. Moreover, to provide flexibility towards consumers, EIPP solutions can enable sharing of e-invoices within a family unit or peer group to allow payment by another person or simply information sharing. EIPP creates the potential to develop services that can make the invoicing and payment process much simpler for all types of consumer. e.g. EIPP can enable a visually impaired consumer to 'listen' to the invoice or read in Braille and then manage the payment. It should be noted, however, that as a general rule, certain groups of consumers are likely to want to retain the traditional ways of receiving paper bills and making payments, and so for some time these may need to remain in place, as part of the evolution.

3.2.   State of play – uptake of e-invoicing and EIPP services in Europe

In the latest report published by Billentis, the estimated E-invoices volume in 2016 in Europe would be about **3 billion in B2C** and **5 billion in B2B and B2G**, out of an estimated total number of invoices and bills of about 36 billion (ref. [7.2]).

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[2] For instance, in the case where the payee is using an SDD for collecting funds, EIPP enables the payee to send the SDD collection order together with the invoice data, which not only generates the payment but also ensures that the payer has received the invoice. Likewise, the receipt of invoice data and a request to pay supports the generation of an accurate and timely SCT.

It is interesting to notice the growth rate as reported by EESPA (ref. [7.3]) based on the volumes measured in 2016 regarding the evolution of number of E-invoices processed by EESPA members between 2014 and 2015:

Segment	Increase (2014-2015)
B2B and B2G	+ 23.44%
B2C	+ 33.13%

But there are important disparities between European countries in terms of market penetration rate both in relation to B2b/B2G* and in B2C*.
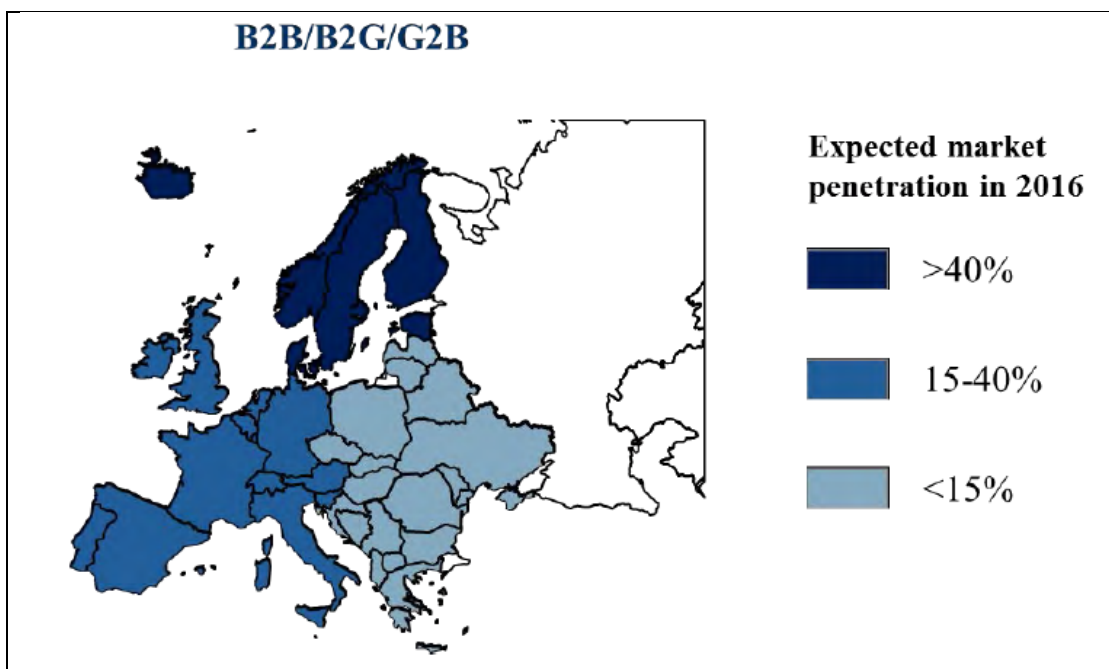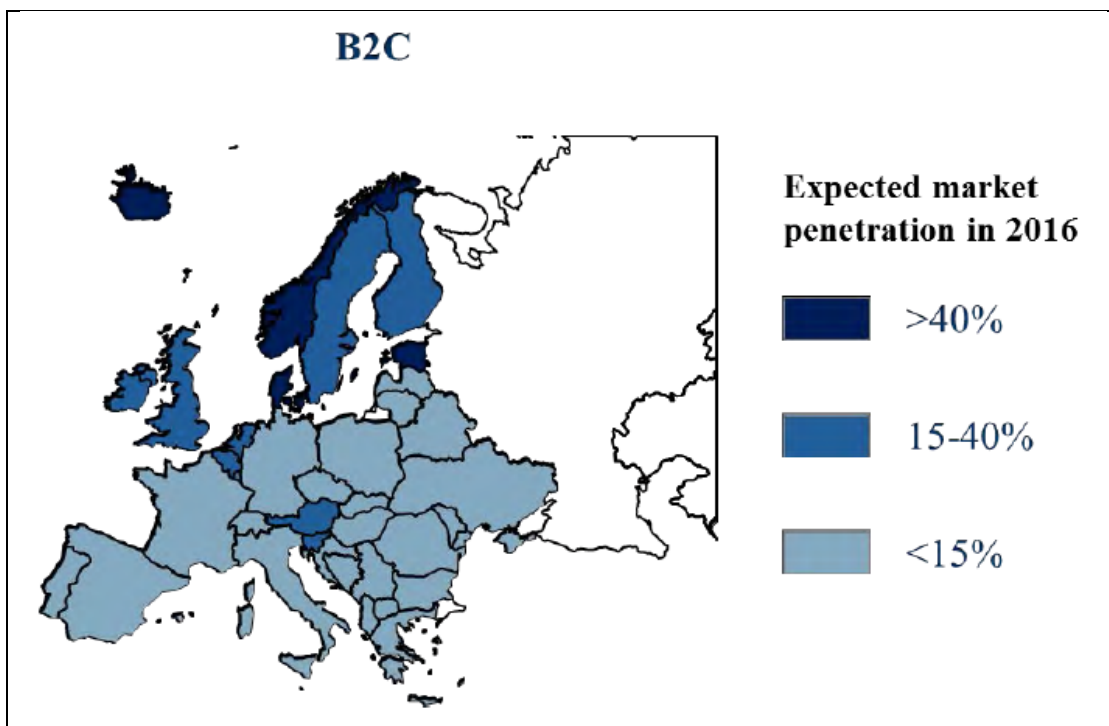
*B2C: Business To Consumer, B2B: Business to Business, B2G: Business To Government, G2B: Government To Business

To create a concrete overview of EIPP solutions currently operating in Europe, the Working Group conducted a survey targeting the organisations represented in ERPB. The survey aimed to collect data regarding the current coverage as well as information about the main characteristics of the solutions. The results of the survey are not exhaustive – more solutions exist than the number of responses received – but the members of the Working Group believe that it gives a broadly accurate view on the state of play of e-invoicing solutions. The respondents to the survey were service providers or PSPs that have implemented solutions. A question regarding the current coverage of the solution revealed a wide dispersion of the relative degree of maturity in the implementation of EIPP by country, especially since transaction volumes also widely vary.

Countries	Number of EIPP solutions*
Sweden, Finland, Norway, Spain, Switzerland, United Kingdom	> 8
Austria, Belgium, Germany, Denmark, France, Italy, Netherlands, Portugal, Latvia, Lithuania, Estonia	7 or 8
Poland, Slovakia, Czech republic, Hungary, Ireland, Iceland, Luxembourg	5 or6
Greece, Romania, Slovenia, Bulgaria, Croatia, Cyprus, Malta	< 5

* As obtained from the survey. The value may not represent the exact number of solutions operating in the country. Some of the solutions were counted as operating in multiple countries, as per their responses which were for example "all EU countries", regardless of the volumes they are processing.

Another view of the responses regarding coverage reveals a clear pattern of domestic centricity. This generally follows the retail banking and supplier industry structures by country. Not surprisingly interoperability outside a number of mature markets is limited.

Half of the solutions analysed are implemented in only one country and three-quarter cover either only 1 country or a group of regional countries (e.g. Nordics). Even if the solutions have the capacity to operate in many sectors and target multiple business segments, in practice they remain geographically very limited.
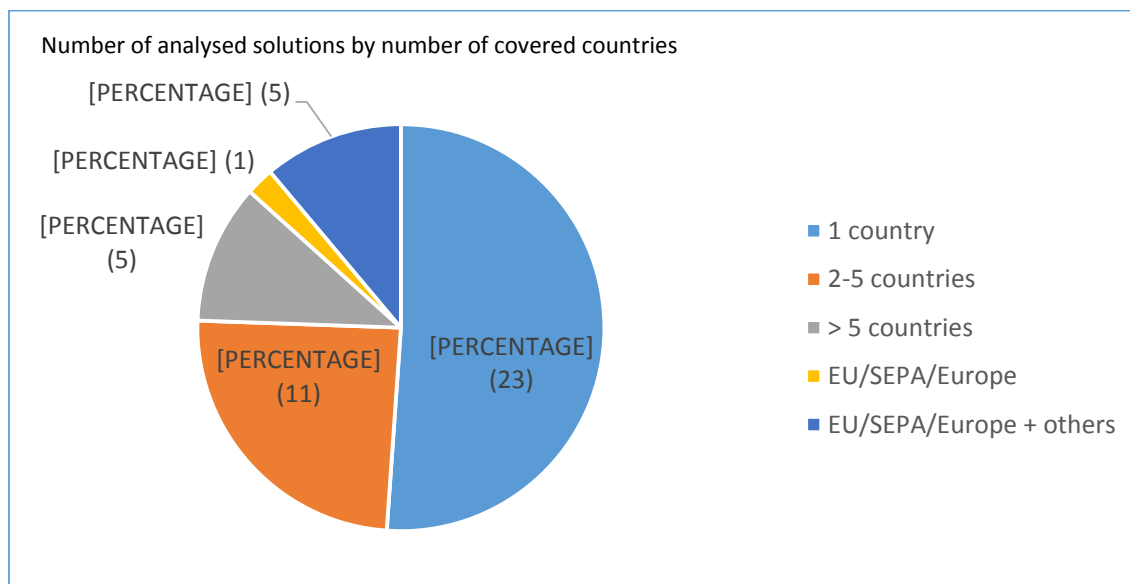
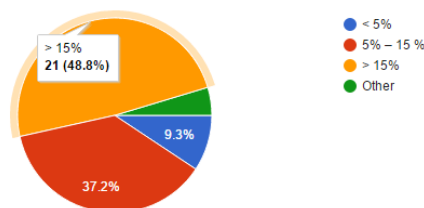Nevertheless, many providers have expressed a strong willingness to expand: 80% of the respondents are decided to expand their coverage. As already measured by EESPA (ref. [7.3]) the market is rapidly evolving, even if the volumes processed are currently relatively low:
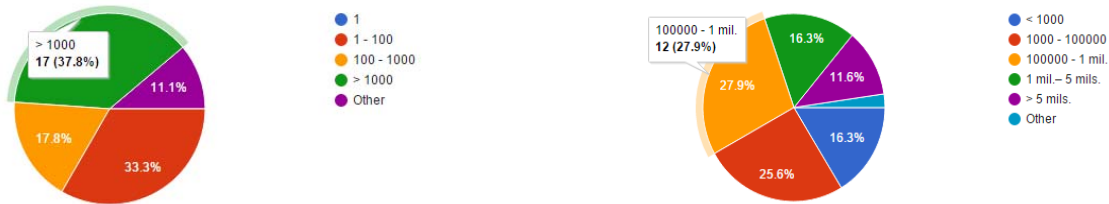
Annual volumes (number of e-invoices)
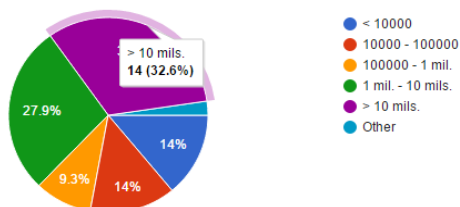
Estimated growth per year

Number of suppliers already onboarded

Number of payers

> 1000
17 (37.8%)

11.1%
17.8%
33.3%

- 1
- 1 - 100
- 100 - 1000
- > 1000
- Other

100000 - 1 mil.
12 (27.9%)

16.3%
11.6%
27.9%
16.3%
25.6%

- < 1000
- 1000 - 100000
- 100000 - 1 mil.
- 1 mil.– 5 mils.
- > 5 mils.
- Other

The Survey shows that half of the solutions expect more than 15% p.a. growth and for more than 80% the expectation is above 5% p.a. in the coming years.

Main characteristics of current solutions[3]

- Currently, the majority of market solutions are offered by PSPs (through their online banking environments), or through internal solutions, or through integrating third party e-invoicing solutions. Often a PSP will use the services of a third-party provider to deploy/operate solutions at the technical level whilst retaining the customer relationship and its marketing brand together with the underlying payment business. There are also numerous e-invoice service providers (not integrated with PSPs) offering services on a direct basis.

- EIPP solutions are used by corporates/large billers as well as SMEs and microenterprises to send e-invoices in various sectors such as utilities, telecommunications, retail, insurance, healthcare. Nevertheless, most of the solutions are not limited by sector as consumers expect to be able to pay both regular invoices and invoices for one-off transactions.

- The preferred payment means are SEPA SCT and SDD or the equivalent credit transfer and direct debit instruments in non-Euro countries. Card payments have a relatively low penetration which contrasts with payment solutions for on-line e-commerce transactions, where card payments are more common. The pattern of payments in EIPP mainly results from its explicit integration into e-banking environments in order to add value to the on-line channel The enhanced reachability within SEPA based on the use of IBANs could also explain this pattern coupled with the lower effort in setting-up the acceptance of SEPA payment means compared to payments by card.

- Many solutions are using accepted structured invoices based on technical syntax formats in electronic invoice exchanges. There is no clearly dominating standard, all 4 proposed in the survey (ISO 20022, EDIFACT, UBL, UN/CEFACT Cross Industry Invoice) are well supported. Nevertheless, various domestic standards are used in certain markets (e.g. Finvoice in Finland, Facturae in Spain, ebInterface in Austria) and some solutions are using vendor specific formats like SAP IDoc. PDF is also common either as the solo invoice or as a human readable complement to the structured e-invoice

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[3] The full analyse of the survey responses related to the current landscape can be found in the Annex 8.3

- Whilst common syntaxes and technical interoperability could simplify the exchanges at the operational or technical level, in terms of governance we can notice that many solutions are based on bilateral agreements or informal schemes or on a one-provider model. This aspect has been mentioned as an issue by respondents representing both the supply-side and demand-side.

Possible evolution of the landscape

Through an analysis the Survey's findings and an estimation of the influence of market trends, customer expectations and regulation, the Working Group considers that the future evolution of the solutions landscape could be influenced by the following factors:

- Improving the coverage of the countries where the current penetration of EIPP solutions is low will be probably a natural business goal of the solutions providers, but this will be strongly dependent on the future financial and digital inclusion.
- Currently solutions are mainly bank and large biller centric. The interests of consumers needs to be better recognized and in the context of the high adoption of the digital technologies by the young generation, it is expected that solutions will need to evolve to address this segment. These "new consumers" will require a better value proposition and user experience than is the case including the convenience of availability on any type of device including smartphones and tablets. Such consumers may demand the ability to meet other payment needs including for on-line e-commerce and even residual paper invoices through such services.
- The B2C and B2B/B2b segments have different requirements. Solution providers will increasingly need to take into account these differences and reconcile them with their understandable preference for common systems and interfaces.
- The large scale adoption of the SEPA Direct Debit method as well as the historic use of Direct Debits in various countries for recurrent payments may represent an alternative for EIPP and slow down the adoption of e-invoicing based on 'Straight through Processing' EIPP solutions'. This aspect needs further investigation because EIPP and DD do not necessarily need to be seen as in conflict with each other. However, in some markets, e.g. Finland, EIPP has been successful in displacing the direct debit. From a certain point of view the end-users may consider the direct debit sufficient, but they then may need to make some sacrifice in terms of the visibility of e-invoices which may remain only in biller portals or received in email form. With EIPP, users receive a secure flow of automated invoices and can closely control payment flows. Clearly the value proposition of EIPP will need to be better articulated.
- The upcoming take up of the new SEPA Instant Credit Transfer (SCT Inst) payment scheme could make the straight through processing (STP) even faster. Business processes where the near real-time execution of the payment is relevant could be optimised and a convergence with e-commerce processes could be possible. The emergence of P2P payments could also influence EIPP in some use cases.

- An invoice is more and more often also a support for other types of communication between the supplier and the buyer. Marketing campaigns, cross-sell actions, personalised messages can find their place into an e-invoice document when it is presented in a human-readable format. Therefore, solutions will likely propose a variety of value added services on top of their core features to render the process attractive to billers, which wish to retain and develop customer intimacy.
- A recent report published by EESPA (ref. [7.3]) shows the important growth (+67% in B2C) in the last year of the volumes of invoices delivered to other service providers destined for their customers. This trend probably anticipates the central role of interoperability and a possible more significant role for the 4-corner model in the coming years.
- New regulations (e.g. PSD2 EU directive) will undoubtedly influence the future landscape by allowing new operators to be associated in payment flows in EIPP. E-invoicing providers and non-bank PSPs have a major opportunity to take advantage of Access to Account and payment initiation services to develop full EIPP services, but will require the development of a 'level playing field' to aid such a development.

3.3. Critical success factors

The Working Group carefully analysed the information submitted by the demand and supply-sides in response to the Survey questions, and was consequently able to identify the critical success factors that successful EIPP solutions typically need to display. These are:

3.3.1. Compelling value proposition for all actors in the EIPP chain

There are clear benefits of using EIPP for overall cost reduction, faster processing cycles, transparency and improved cash management (ref. [7.4]), and these benefits are expected to outweigh the costs of implementation for the various actors:

- Businesses on the payee and payer sides (B2b) benefiting from EIPP services and a positive return on investment, together with benefits for consumers
- ERP providers successfully adapting their commercial strategy to the opportunities of e-invoicing and adding e-invoicing modules to their software packages.
- PSPs adapting their platforms, and their payments back-end systems and their e-banking environments, to support EIPP solutions to generate revenue and defend/grow their payment franchise.
- E-invoicing solutions providers to build solid, secure, interoperable and easy to use solutions generating a positive return on investment.

3.3.2. Customer centricity

The Survey responses reveal the perception that current solutions could do more to offer customer convenience, and the providers of such solutions need to pay more attention to the needs of their customers- in short to embrace customer centricity.

Combined with the avoidance of the lock-in effect (burdensome provider changes), customer-centric solutions help to improve the quality of the relationship between the user and the provider and create further business opportunities.

Customer expectations from EIPP solutions are:

- Ease of use of core features such as visualisation and payment initiation
- Extended and value added features such as archiving and document sharing
- In line with the technology trends including provision over multi-channel and mobile devices
- Convenient on-boarding to dramatically improve the number of payees registered in EIPP services and the number of payers becoming regular users.
- The potential use of EIPP services for on-line e-commerce purchases and for claims for payment from public administrations (e.g. taxes, fines, public services etc.).
- Neutrality for the payment instruments used and adopting an inclusive approach. Habits in using current payment instruments should be respected.

3.3.3. Achieving critical mass and network effects

The figures on volumes processed and geographic coverage show that, with notable exceptions in countries with the highest E-invoicing penetration, critical mass in Europe is not yet achieved in the B2C and B2b segments. This can be explained by the low number of consumers using EIPP solutions, or the low number of e-invoices processed. Clearly small billers produce a low number of e-invoices, but even large billers may process a low number of e-invoices if their customer base is not using EIPP services.

Success factors for the achievement of critical mass are:

- A strategy targeting high volumes from the best placed user segments with digital familiarity and financial sophistication.
- More traction from public administrations in the role of payee and legislator.
- As volume builds, business opportunities will expand and competition will become more intense. In such an environment, reachability and interoperability between billers and buyers is key success factor. This is first important in national markets, in which most EIPP traffic is based today, but will extend over time to the whole EU Single Market.
- This is related to the need for a network model for transporting EIPP data at a national and cross-border level. This network model should be a set of underlying technical means and standards rather than a unique or dedicated infrastructure

3.3.4. Security and trust

To preserve the trust in the trading relationship between the payee and the payer, solution providers should ensure the service is secure throughout the presentation and payment flows.

The elevated level of security of EIPP solutions should offer the guarantee that they respond better than manual and paper based systems to the traditional security threats. In the same time, as any other digitization initiatives, EIPP may introduce new threats such as exposure to the alteration of data, identity theft, etc. Solutions should respond to these threats by implementing robust security measures.

The main directions the factors related to security and trust need to take are:

- Preserve confidentiality of data for consumers within the service provider environment
- Satisfy data protection requirements and implement measures to respect customer privacy
- Guarantee of a 'clean' network through avoiding fraudulent invoicing and billers (fake billers, fraudulent modification of payment recipient details, use of fraudulent payments, etc.)
- Leverage "Know Your Customer" processes established by PSPs and billers.

3.3.5. Other success factors

Besides the above mentioned critical success factors, other more contextual success factors were identified:

- An addressable market with maturity levels in the use of financial services and digital technology.
- A mature and growing adoption of the e-invoicing habit across society.
- A solutions industry with the governance cooperation to establish interoperability and reachability.

All these factors are present in many EIPP solutions in operation today especially in those markets where EIPP is a mature service. Nevertheless, as the next section will show the factors are not sufficiently present or pervasive to guarantee success, It is clear to the Working Group that causes of the past failure or under-achievement of EIPP initiatives can often be ascribed to the absence of these critical success factors.

4. Barriers to the uptake and development of integrated EIPP services

Associations representing the demand-side revealed in their answers to the Survey a set of barriers inhibiting consumers and businesses from starting to use e-invoicing solutions. In general, the opinions of the associations have confirmed the previous analysis of the ERPB Secretariat expressed in the Note of November 2015 (ref. [7.4]).

Solution providers were also asked in their respective Survey to point out the perceptions they and their customers have on the topic of issues and barriers to adoption. The full analysis of these perceptions can be found in the Annex 8.4.

Working Group members also shared the feed-back from their organisations with regard to the issues and barriers standing in the way of EIPP development.

Based on the survey results and from this direct inputs from the organisations represented in the Working Group, the following main issues and barriers can be highlighted:

4.1. Cost and complexity of current solutions

About 80% of the respondents from the supply-side (solution providers) felt that their customers from the SME and microenterprise segments consider current solutions to be too expensive or too complex.

For businesses acting as supplier or buyers the components of the platforms or operations that are evaluated as too costly or too complex can be different. However, the implementation mode (SaaS[4] mode or internally hosted) was not detailed by respondents. For SMEs and microenterprises the business case to support the use of current solutions are often not felt to be sustainable.

Related to this, solution providers perceive a lack of demand which was confirmed by the demand-side organisations as well. But in this case the root cause seems to be the lack of analysis of the consequences and risks of still using paper invoices and an under-appreciation of the benefits of EIPP.

4.2. Reachability not easy to achieve and diverging business rules

The lack of EU-wide network model for connectivity or of more interoperable standards supporting the reachability between payees and payers is perceived by the solution providers as a relatively important issue hindering the integration of the solutions on a European scale.

Diverging business rules are also seen as a hindrance as are administrative barriers, such arises in the case of countries where the paper invoice is mandatory in specific circumstances.
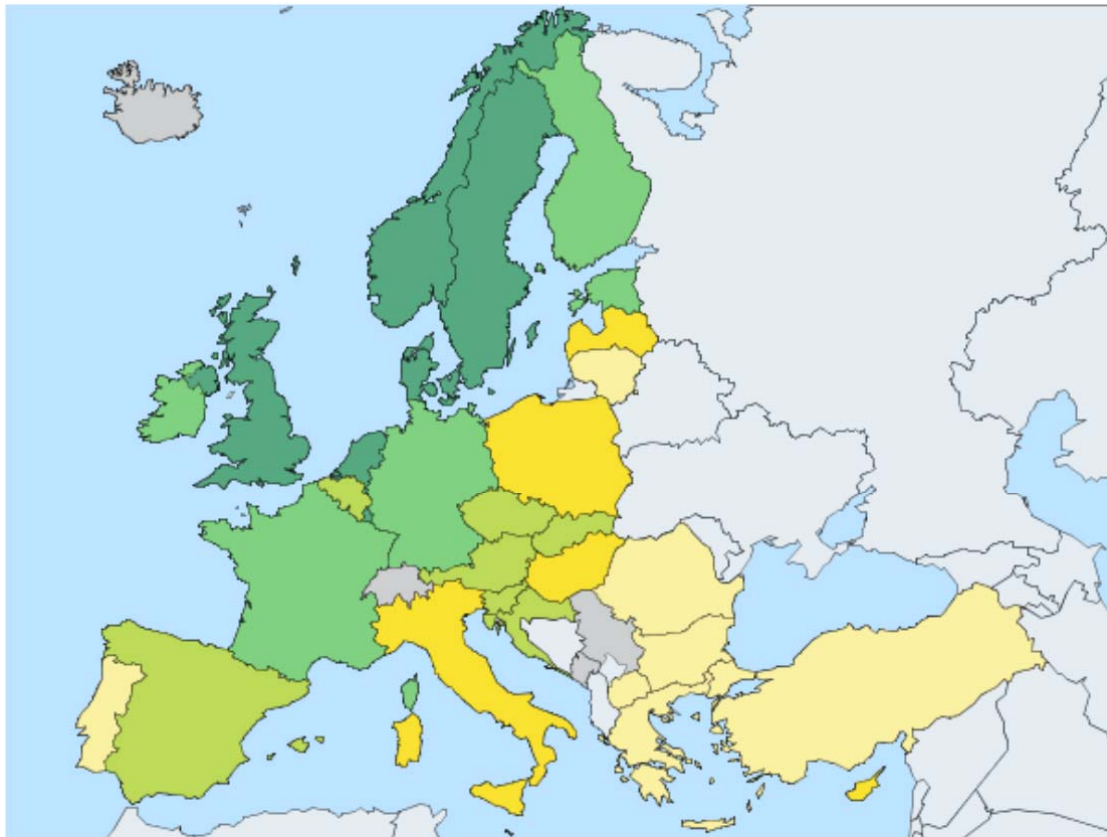
4.3. Financial and digital inclusion

The penetration of EIPP solutions is strongly dependent on underlying accessibility of banking services, telecommunication and general digital technologies. There are important differences between countries and between categories of population with regard to the access to these services.

Some statistics show the reality of these disparities (sources Eurostat, European Commission):

- Digital inclusion: level of access to Internet (% of households):

---

[4] Software as a Service

Legend

- 59.0 – 70.0
- 70.0 – 76.0
- 76.0 – 82.0
- 82.0 – 90.0
- 90.0 – 97.0
- Not available

- Digital inclusion: use of Internet banking (% of individuals):

Legend

2.0 – 15.0	15.0 – 34.0	34.0 – 51.0
51.0 – 65.0	65.0 – 91.0	Not available
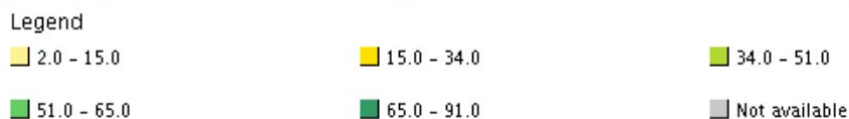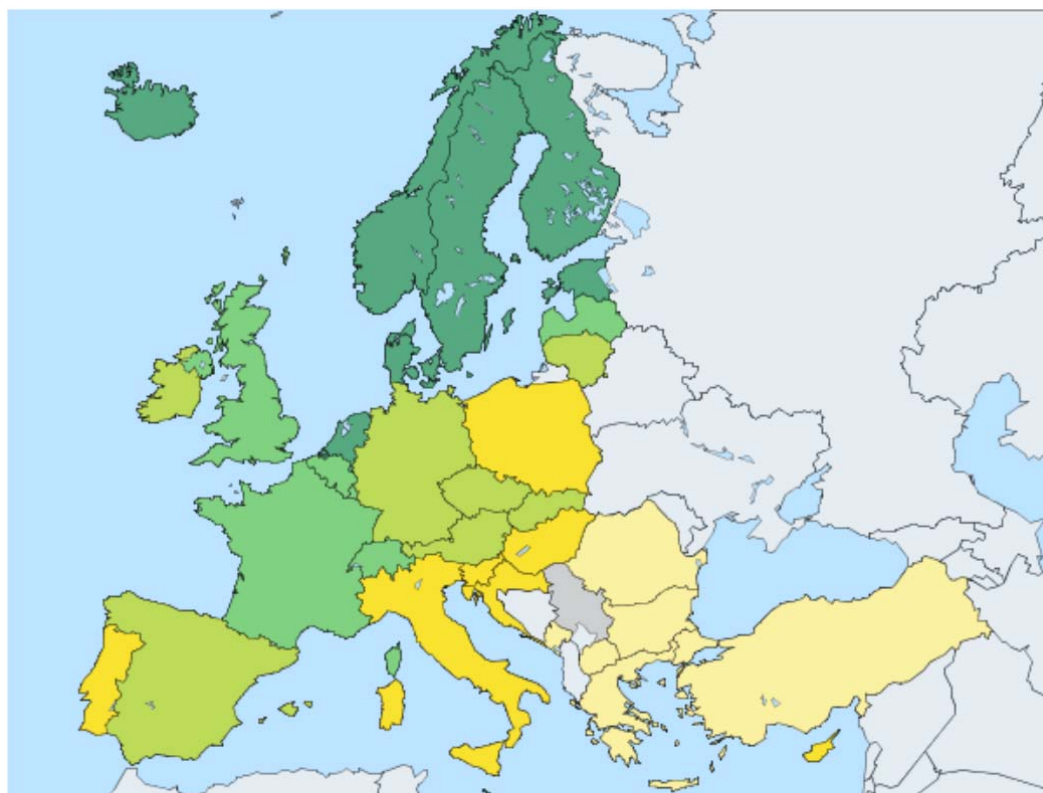
- Financial inclusion: consumers without a payment account*:
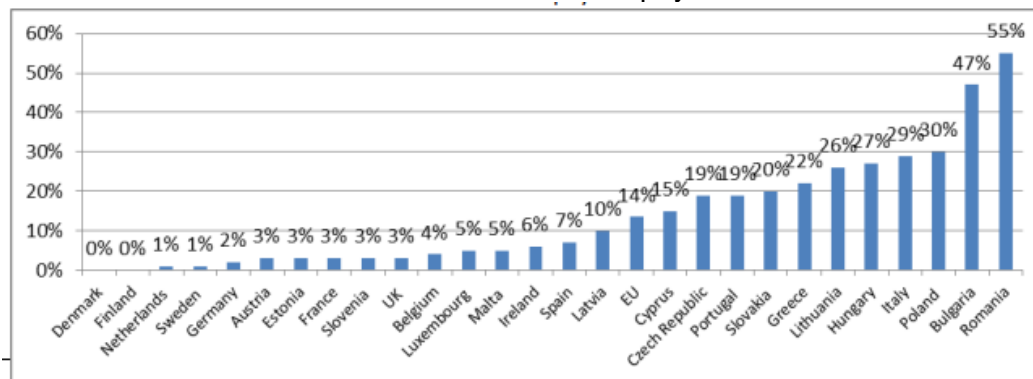
Source: Measuring Financial Inclusion, The Global Findex Database, World Bank, April 2012, p.51

* The data are from 2012. The positive impact of the Payments Account Directive aiming removes any barrier to opening a bank account is not taken into account.

4.4. Other barriers

The survey shows other barriers pointed out by the respondents. Not among the most important but combined, they may explain the existing reluctance to the adoption of EIPP services:

- "Lock-in" effect. The users, both businesses (on the supplier side in B2B/B2C and buyer side in B2B/B2b) and consumers may find it difficult to move from one provider to another without losing their data and without high organisational effort. However, this effect is expected to be mitigated in the coming years by the right to data portability as defined by the EU General Data Protection Regulation.
- The power of current habits and strong inertia when facing changes. Often semi-digital solutions, like sending scanned paper invoices by email and using SDDs for collecting funds (payees' perspective) / automated payment (payers' perspective), are considered sufficient for the current needs.
- Some feed-back from the demand-side point out there are still concerns regarding data privacy.
- Related to the previous point, lack of knowledge of e-invoicing and its advantages has been reported as an issue by solution providers.

5. Options on how to tackle the identified barriers to support take-up and integration of EIPP services

As set out in the previous chapter, a number of important issues and barriers are preventing or slowing down the adoption and large scale development of EIPP solutions. It is critical to encourage the success factors detailed in the chapter 3.3 above and overcome these barriers if the benefits of EIPP are to be realised.

Based on the results of the Survey undertaken by the Working Group and the feedback from its members, the Working Group concluded that there are two alternative strategies that could be followed:

- Take no action and let the market evolve, based on market forces and driven by supply and demand.
- Consider a number of options for action through inclusive cooperation, which would address market barriers and facilitate the take-up and integration of EIPP solutions in Europe.

The Working Group recognises that substantial progress has already been made in certain regions and market niches, but this it is likely to be insufficient on its own to drive market development. There remain uncertainties as to the direction in which EIPP solutions could evolve on a broad-scale basis. Market forces alone may not be able to overcome some of the identified barriers, both in relation to take-up generally and certainly in relation to the emergence of a Pan-European interconnected landscape.

Therefore, the Working Group considers that there could be scope for cooperative work by market stakeholders on EIPP. The Working Group identified a number of options for further action, which could form a basis for discussion and decisions on the next steps needed to overcome some of the issues and barriers highlighted in this report.

It is the view of the Working Group that there is an inherent attractiveness in EIPP for billers and consumers alike, but there are substantial network issues that need to be

addressed by the relevant market stakeholders to support take-up and integration of EIPP solutions and services at the pan-European level.

The following conclusions and options for next steps are therefore set out for consideration by ERPB:

5.1. Need for a well-articulated value proposition

The customer value proposition for the user on both sides of the market requires further development so as to provide tangible benefits, full needs satisfaction, customer relevance, ease of use, multi-channel availability and for the biller no loss of client intimacy.

The payee and the payer need to have a clear view on the business benefits that they can anticipate if they adopt an e-invoicing solution integrated with retail payments. The payee expects a positive impact on its whole supply-chain including savings relative to paper invoices, acceleration of cash flow, fraud and error reduction, and optimised reconciliation between invoices and payments in accounts receivable systems. Further value may be obtained through the use of dynamic discounting and other supply chain finance techniques. EIPP solutions need to give billers wide reachability of their customers and full visibility with them if they are not to steer them towards promotion of their own customer portals and payment solutions.

On the payer side, the advantages of ease of use could be better reflected and promoted, especially the 'whole' picture and reducing the need to always go to biller web-sites. The requirements of B2C and B2B/B2b segments are different, therefore the value proposition should be adapted to each segment. In the case of SMEs or microenterprises acting as payers, the return on investment is of key concern as volumes are often too low to justify the move toward EIPP solutions without a stronger value proposition. For payers, consideration also needs to be focused on other means of payments such as direct debits and cards.

Payment service providers, e-invoicing service providers and ERP providers also need a compelling business case to justify their investment and ongoing operational costs.

The Working Group estimates that the realisation of a solid business case and value proposition could materially improve the business perspectives of all actors involved and remove a significant barrier to adoption. This would clearly respond to points arising in the Survey results regarding cost and the complexity concerns with current solutions as well as the lack of sufficient current demand, as detailed in the chapter 4.1. This area is a critical success factor identified by the Working Group as captured in chapter 3.3.1 above.

5.2. Improving customer centricity and the trust equation

Current solutions are perceived as too biller-centric or bank-centric. For achieving success solutions should better respond to consumers (payer) expectations. Besides

the issue of value proposition for the consumer as discussed above, solutions need to be better articulated in terms of the user experience and their quality features, in terms of:

- Convenience
- Ease of use
- On-boarding
- Access through mobile technology
- Minimal proneness to error
- High but usable security
- Customer data confidentiality

Based on these features the level of acceptance and trust will encourage a readiness to adopt and more intensively use EIPP solutions.

A promising idea being pursued by some market operators is to include within such solutions additional features such as the integration of on-line e-commerce processes for purchases and ticketing; currently these are often housed in separate payment portals. A further extension could be to allow payers to identify other payment obligations that they currently have, for example through the upload of the PDF or scanned paper invoices, and then paying them through the EIPP solution. The user would then combine 'traditional' EIPP with other payment needs and use a single interface as a "One-Stop-Shop".

Many suppliers/billers are using their paper invoices as vehicles for information, marketing and commercial proposals. EIPP solutions should appropriately integrate these types of additional features.

As financial and digital inclusion are critical pre-conditions for the use of EIPP solid actions in this direction are required to overcome resistance and spread digital habits and more advanced financial services. EIPP is a clearly sophisticated solution and will thrive best among communities with well-established use of payment accounts and on-line banking/ e-commerce. Actions such as realisation of the benefits of PSD2 are also important.

Trust in solutions is key to EIPP take up. This extends to more than just 'security' but also the creation of a bundle of positive perceptions that 'my interests are well protected and my data is secure'. In short there needs to be a set of best practices aiming to establish a high level of trust between all the entities involved in the digital chain created through EIPP. Such practices should however not be too complex to avoid putting off users and their providers.

This trust equation starts with the technical and organisational security related measures taken by the payee to protect invoice data, extends through the security of transmission channels, and ends with the security and trust criteria that payer environments should fulfil. The PSPs, by leveraging their knowledge base and record of implementation, their customer relationships, and their "Know Your Customer" processes, have a vital role to play in achieving these requirements. Collective action can support these processes by developing industry accepted best

practices. This dimension of the business also requires strong communication to create a high level of customer trust.

The Working Group considers improvement of the customer centricity based on features/ functionality, wider awareness of financial and digital services and high level of trust and security are vital to the future success of EIPP. Promoting 'customer centricity' would help to overcome the issues and barriers revealed by the Survey and summarised in the chapter 4 above, including critical success factors no 2 ("Customer centricity") and 4 ("Security and trust") identified by the Working Group.

5.3. Facilitating adoption through better targeting of defined customer segments

Mass adoption of E-invoicing could be achieved by the priority targeting of the two key categories of potential users of EIPP solutions.

- On the payee side, the big billers, typically larger enterprises, are key segments especially those with mass billing activities and a motivation to improve acceleration of receivables and an improved customer experience. Public administrations could also play an important role as important payees for transactions similar to invoicing, such as claims for tax, penalties, public services etc.

- On the payer side the young generation is a key segment being highly comfortable with new technologies and should be targeted, although other demographic categories such as 'silver surfers', digital adopters and business owners etc. are also interesting potential EIPP users.

More effort on communication could be foreseen targeting these user groups and aiming to explain the benefits and advantages of the EIPP services. Efforts are needed to present the generic benefits of EIPP in appropriate business and consumer forums and industry associations.

The Working Group supports the need for a more targeted set of initiatives towards larger billers on the payee side and high potential end-users on the payer side. Adopting this strategy of targeting 'First movers' could address the perception of low demand, expressed in the Chapters 4.1 and 4.4 above as well as critical success factor 3 ("Achieving the critical mass and network effect").

5.4. Improved standards for interoperability

The Working Group has identified the need for a limited number of well thought out standardization initiatives covering: e.g. a semantic lexicon, a set of key standards and the integration of means of payment, including PSD2 interfaces.

A common set of business rules and a semantic lexicon for EIPP could be created and promoted as an enabler to allow conversations to take place using common terms and definitions.

Other standards activities should focus on a number of common key areas. The selection process for standards activities should emphasise business priorities and avoid a proliferation of standards initiatives A promising list would include:

- request to pay and payment proposal messages
- Payee and payer on-boarding
- Addressing and authentication
- Reachability
- Interfaces for access to account supporting EIPP
- Reconciliation
- Archiving and document sharing

There is no need to duplicate work on e-invoice standards already ongoing. Nor is it essential to privilege one of the existing standards in order to mandate a unique technical syntax for the exchange of e-invoices. Likely work by the CEN Technical Committee 434 (CEN/TC 434) on a version of the core invoice standard for the B2C/B2b market is to be welcomed.

STP especially in B2C and B2b segments cannot be enabled without the optimisation of payment initiation. In this respect an option could be to create a common semantic and syntactical standard for a message encapsulating the information needed for initiating a payment – a 'request to pay' message referred to above. A SEPA-wide definition for the 'request to pay' using for example a subset of ISO 20022 standards could be considered.

The Working Group supports the need to establish a common set of minimum requirements at business rules/terms' and technical standards' level that would improve interoperability and pan-European reach when implemented. This option would address the issues revealed by the survey regarding the lack of common standards and of an EU-wide network, detailed in the chapter 4.2 above, and address the critical success factor the Working Group and expressed in the section 3.3.3 above (point on Reachability).

6. Conclusion

The Working Group recognises that the components for pan-European EIPP solutions have been already built and are integrated into solutions to date on an ad hoc basis. This has been highlighted in the description of the current landscape.

The next generation of EIPP solutions ideally need to be created through careful design and the use of well accepted standards, targeting the objective to overcome the current obstacles in their take-up and pan-European integration.

The Working Group believes that the options proposed above would be the most efficiently applied in supporting the delivery of further EIPP solutions at country, community and Pan-European level, if they were linked together in the aim to develop and implement cooperation among actors. This will be essential to address network issues, to create network effects and promote best practices and common standards.

The cooperation should be inclusive for all existing and future actors and create a level playing field. It needs to balance national Member State activity, where most consumers and micro-businesses are active for the vast majority of their invoice payments, with an emerging Pan-European overlay.

7. References

1.	ERPB: Mandate of the working group on E-invoicing solutions related to retail payments
2.	Bruno Koch - Billentis: E-invoicing / E-billing Digitisation & Automation - 27 May 2016
3.	EESPA: Report on E-invoicing - July 2016
4.	ERPB: E-invoicing solutions related to retail payments - the way forward in SEPA
5.	ECB: Payment statistics - full report - 26 September 2016

8. Annexes

8.1. Glossary of terms

Term	Definition	Remark/background*
E-invoice/bill solutions related to retail payments	E-invoicing solutions related to retail payments are generally defined as <u>E-invoice or Bill Presentment and Payment solutions (EIPP/EBPP)</u>. These solutions combine e-invoicing services and payment services. They are facilitated directly/indirectly by payment service providers and/or e-invoicing service providers, enabling: • **The Payer** to flexibly receive and manage e-invoices/bills and to <u>pay them with existing payment instruments</u> (i.e. credit transfers, direct debits, card payments) or even e-money transactions, <u>without the need to manually copy paste or type in data for initiating the payment</u>; and in some cases • **The Payee** to digitalise processing of its invoices/bills and to <u>send/route them to the payers</u>.	This is in the scope and focus of work by the ERPB WG on e-invoicing solutions related to retail payments. In short, the EIPP/EBPP solutions primarily cover packaged e-invoice/bill payment services offered to the payers. In some cases where the payee is incapable of integrating e-invoicing into its internal systems, the solution may also cover e-invoicing/billing services for compiling and sending the electronic invoice/bill envelopes.
Supplier/Payee/Sender/Issuer/ Creditor	In the e-invoicing/e-billing presentment and payment context it is the originator of the e-invoice or the e-bill. It is also the provider of the goods and services and the beneficiary of the funds transferred in the payment flow.	In the questionnaire that will be distributed to the Solution Providers these terms may be interchanged, although the term Supplier is the most used.
Consumer/Payer/Receiver/Debtor/ Buyer	In the e-invoicing/e-billing presentment and payment context it is the recipient of the e-invoice or the e-bill. It is also the party receiving the goods and services and the originator of the funds transferred in the payment flow.	In the questionnaire that will be distributed to the Solution Providers these terms may be interchanged
PSP	Payment Service Provider	
B2C **B2B/B2b** **B2G**	Business To Consumer Business To Business Business To Government In the current context, these terms represent the 2 parties involved in the e-invoice/e-bill presentment and payment as a process in the trading exchange.	B2B and B2b are here differentiated with respect to the size of the beneficiary of the goods and services part. In both cases they are companies. In a B2B (B to "uppercase B") relationship the beneficiary is a large company. In B2b (B to "lowercase B") relationship the beneficiary is an SME or a microenterprise.
Electronic invoice (e-invoice)	An invoice that has been issued, transmitted and received in a structured electronic format which allows for its automatic and electronic processing. (Directive 2014/55/EU)	E-invoices must be machine readable and enable fully digital / automatic processing, without any need for manual intervention for inserting or amending data – i.e. copy-pasting or typing in data. This term is used in the business-to-business (B2B) and business-to-government (B2G) context.
Electronic bill (e-bill)	A term of convenience and common usage used to describe an e-invoice presented in EIPP/EBPP solutions. Technically, from the businesses' perspective, the definition of an e-invoice applies (see above).	This term is used if an e-invoice is sent to a consumer (i.e. business-to-consumer, B2C). The payer must be able to see/read the bill, but there mustn't be a need for manually copy pasting or typing in data for initiating the payment.
E-bill visual presentation	A representation of an e-bill in a human readable format (e.g. PDF)	It is also often the sole version of the invoice presented to payers. It is also possible, although not optimal that the visual

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		representation is the sole version of the invoice created in the issuer's system. Another variation is a visual presentation in which a structured electronic format is embedded (see below "E-invoice layers")
Request To Pay	A subset of the e-invoice information extracted from an e-invoice or its visual representation	This forms a message to the payer in an EIPP/EBPP solution giving the minimum information for payment initiation with a link to the underlying invoice. It usually doesn't contain details about taxes and lines describing the invoice items.
European Standard on e-invoicing	It establishes a semantic data model of the core elements of an electronic invoice. (Directive 2014/55/EU)	The standard should set out and describe the core elements which an electronic invoice must always contain, thus facilitating the sending and receipt of electronic invoices between systems based on different technical standards (syntaxes). This will be developed by the European Committee of Standardisation (CEN).
Semantic data model	A structured and logically interrelated set of terms and their meanings that specify the core elements of an electronic invoice. (Directive 2014/55/EU)	This will be defined by CEN. The semantic model focuses on public procurement invoicing by public and private sector organizations. It may be used for invoicing between private sector enterprises and it also enables harmonisation of the basic elements for e-billing in the B2C domain.
Core elements of an electronic invoice	A set of essential information components which an electronic invoice must contain in order to enable cross-border interoperability, including the necessary information to ensure legal compliance. (Directive 2014/55/EU)	This will be defined by CEN. Including also fiscal compliance.
Syntax / syntax bindings	Syntax is the machine readable language or dialect used to represent the data elements contained in an electronic invoice. Syntax bindings are guidelines on how a semantic data model for an electronic invoice could be represented in the various syntaxes. (Directive 2014/55/EU)	The syntax bindings relevant for the European Standard will be defined by CEN. Syntaxes widely used: - UN/CEFACT Cross Industry Invoice - UBL - ISO 20022 Financial Invoice - EDIFACT
E-invoice layers	Groups of functions and representations of the information contained in an e-invoice used by actors having different levels of understanding (machines or persons)	4 layers may be defined : - Full format (includes all elements needed for electronic processing, printing and reading in human readable format observing a standard syntax and semantic) - PDF (binary representation in a PDF file allowing the information reading, printing, display, storing and sending) - Data only (formats allowing electronic processing, storing and sending, but not represented in human readable format or printed) - PDF+XML (enhanced PDF format allowing both electronic treatment by extracting the data from the PDF document and presentation as a common PDF for reading and printing use. The data are embedded in the PDF file and are mostly structured in XML)
E-invoicing models	In the current context, the categorisation of e-invoicing solutions based on the number of intermediary platforms involved in the presentation	• **Supplier Direct**. The Supplier creates, stores and manages the entire lifecycle of the e-invoices.

	and payment processes.	The Payer must access the Supplier platforms in order to get access to its invoices. There is no intermediary in the presentation flow. Typically the e-invoicing solutions embedded in the Supplier web portals belong to this category. • **Buyer (Receiver) Direct**. The Suppliers post the invoices into platforms on Buyer side. There is no intermediary in the presentation flow. • **Network model: 3 corners**. Between the Supplier and the Buyer a 3rd platform exists, E-invoicing service provider. Both the Supplier and the Buyer have access to this platform. • **Network model: 4 corners**. Each participant in the flows (Supplier and Buyer) have their own E-invoicing provider. The e-invoicing flows are routed between the 2 platforms.
SCF	Supply Chain Finance	Use of financing and risk mitigation practices and techniques to optimise the management of the working capital and liquidity invested in Supply chain processes and transactions.

8.2. Surveys methodology

As required in the mandate received from the ERPB, the Working Group agreed to make a survey to gather and analyse the information related to E-invoicing from the Demand and Supply sides of the market. Therefore the following actions were undertaken:

- As of the beginning of the Working Group activities, the members decided to launch the survey under 2 forms: 1 addressing the Supply-side and 1 addressing the Demand-side.
- The form and content of the 2 surveys were iteratively developed in March and April 2016 and the agreement on the final content of the survey addressing the Supply-side was given after the 2nd meeting (28 April).
- The survey circulation procedure as well as the "umbrella" organisations that distributed the survey were decided in the 1st week of May 2016
- The package addressing the Supply-side was distributed to the members of the Working Group on 11 May. This package contained the following items: cover letter introducing the survey and explaining the process, a glossary of terms commonly used in the E-invoicing domain, the Survey in MS Word format and the address where the survey was available online. The use of the online version of the questionnaire and the tool used for the set up were approved by the Working Group.
- The survey addressing the Supply-side was progressively distributed among the members of the organisations represented in the Working Group. This activity has been led by the Working Group members using the internal procedures and contacts of their respective organisations. The final respondents, as indicated in the cover letter, were expected to send the responses either by email either using the online version directly to the Secretariat of the Working Group.
- The initial period allowed for sending responses was until 20 June. In the Working Group meeting of 26 June it was decided to extend this period until 1 August.
- The package addressing the Demand-side was distributed to the members of the Working Group on 27 May. This package contained the following items: letter introducing the survey, explaining the process and containing the specific questions for Demand-side in MS Word format and the address where the survey was available online.
- Like for the Supply-side, the Working Group members representing the Demand-side distributed this package toward their respective organisations as from 31 May.

- The initial period allowed for sending responses by the Demand-side was until 24 June. In the Working Group meeting of 26 June it was decided to extend this period until 1 August.

Structure of the surveys:

The survey addressing the Supply side contained 2 sections:
   A. Description of the Solution
   B. Issues, barriers and opportunities from the perspective of the Solution provider

The section A. contained a set of 44 questions aiming to gather information about the Solution provider and the characteristics of the solution, grouped in the following subsections:
- Submitter identification
- Solution identification
- Solution coverage
- Solution operational status
- Solution description: Supplier side, Payer side and General and technical aspects
- Enrolment
- Reachability and interoperability
- Business model

The respondents were asked to give their feed-back either by choosing predefined choices ("multiple choice questions), either by entering their own response in free-text fields, depending on the question content.

The section B. contained 3 subsections:
- Issues and barriers influencing the general take-up and implementation of EIPP/EBPP solutions
- Issues and barriers influencing EU integration of EIPP/EBPP solutions
- Other issues and barriers

The answers to the questions of these sections were expected to be given either by assigning rankings to predefined identified issues and barriers or by entering free answers.

The Secretariat collected 47 answers from the Supply-side and 8 answers from the Demand side. 1 of the answers from the Demand-side grouped feedback from 5 entities. Thus 13 distinct answers were collected from the Demand side.
Regarding the Supply-side, it has to be highlighted that the survey targeted not only platform vendors or integrators but also institutions like banks that implement solutions built internally or provided by external vendors. Therefore in some cases multiple inputs were received describing the same solution in section A of the questionnaire. Nevertheless section B contained separate responses as they came from different visions on what are the relevant issues and barriers for the respondent.

2 responses from the Supply-side actually didn't describe any solution but chose to fill in only the section B.

To summarise, with regard to the Supply-side, 36 distinct E-invoicing solutions have been described by the 47 respondents.

8.3.   Details on the current landscape

The Working Group addressed the following organisations in order to collect information about the E-invoicing solutions from the perspective of the Solution providers (Supply-side):

- EPC: European Payments Council
- EACB: European Association of Co-operative Banks
- ESBG: European Savings and Retail Banking Group
- EBF: European Banking Federation
- EPIF: European Payment Institutions Federation
- EMA: Electronic Money Association
- EESPA: European E-Invoicing Service Providers

- Some EACT (European Association of Corporate Treasurers) members

Out of the total number of responses received from the Supply-side (47), 2 responded only to the section B (Issues and Barriers). Therefore 45 responses described E-invoicing solutions. As some of the respondents provided information about solutions provided by other respondents, 36 distinct E-invoicing solutions were described.

Statistical figures about the solutions and their coverage:

Solution provider category (45 responses):
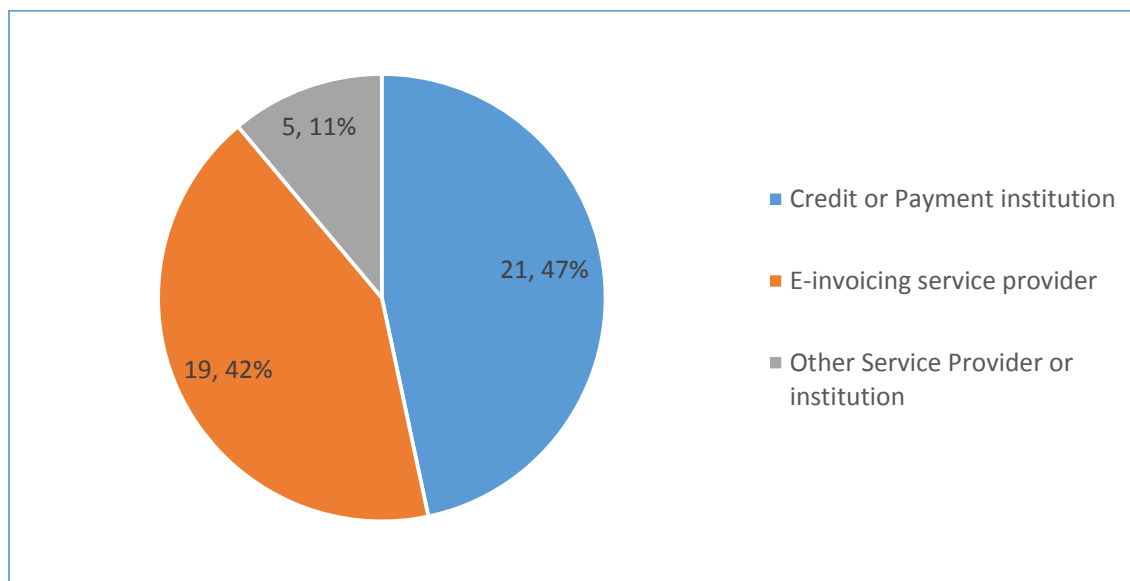
Business segmentation (45 responses):
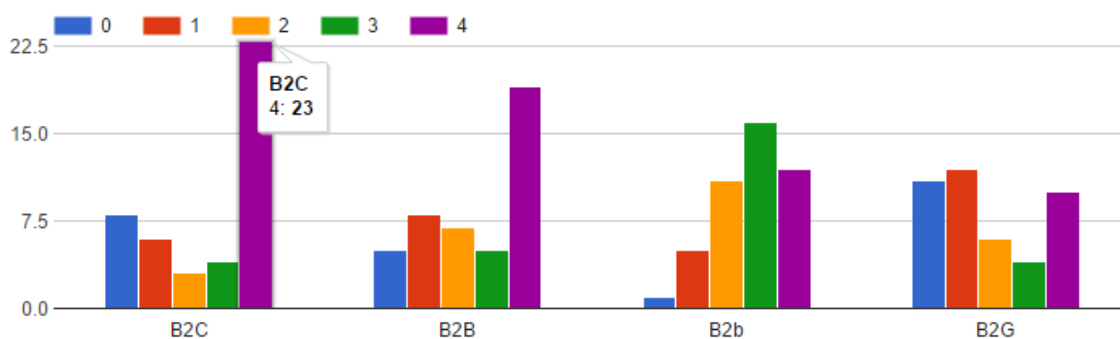
In the graph above, the colours marked from 0 to 4 are the rankings given to the segments and the vertical axis the number of responses. Example: 23 respondents have given the ranking 4 to the B2C segment.

Regardless of the rankings the following figures may be noticed:
- 21 solutions cover all segments
- 5 solutions cover only B2C or B2b segments
- 9 solutions cover other only not-B2C segments (B2B/b or B2G)
- 12 solutions don't cover B2G segment
- Only 1 solution reported covering only 1 sector (B2C)

These figures shows as expected that the solution are present in both B2B and B2C/B2b. This is an effect of the double type of actors in the E-invoicing chain: the Supplier and the Consumer. Besides of this we can notice that a significant part of the solutions don't cover the B2G segment meaning the public e-procurement is not a driver for these providers. The high rankings (4 or 3) given to B2C by 27 and to B2b by 28 respondents reflect the general orientation toward the consumers and to SMEs or Microenterprises of an important number of providers.

Commercial sectors (45 responses):
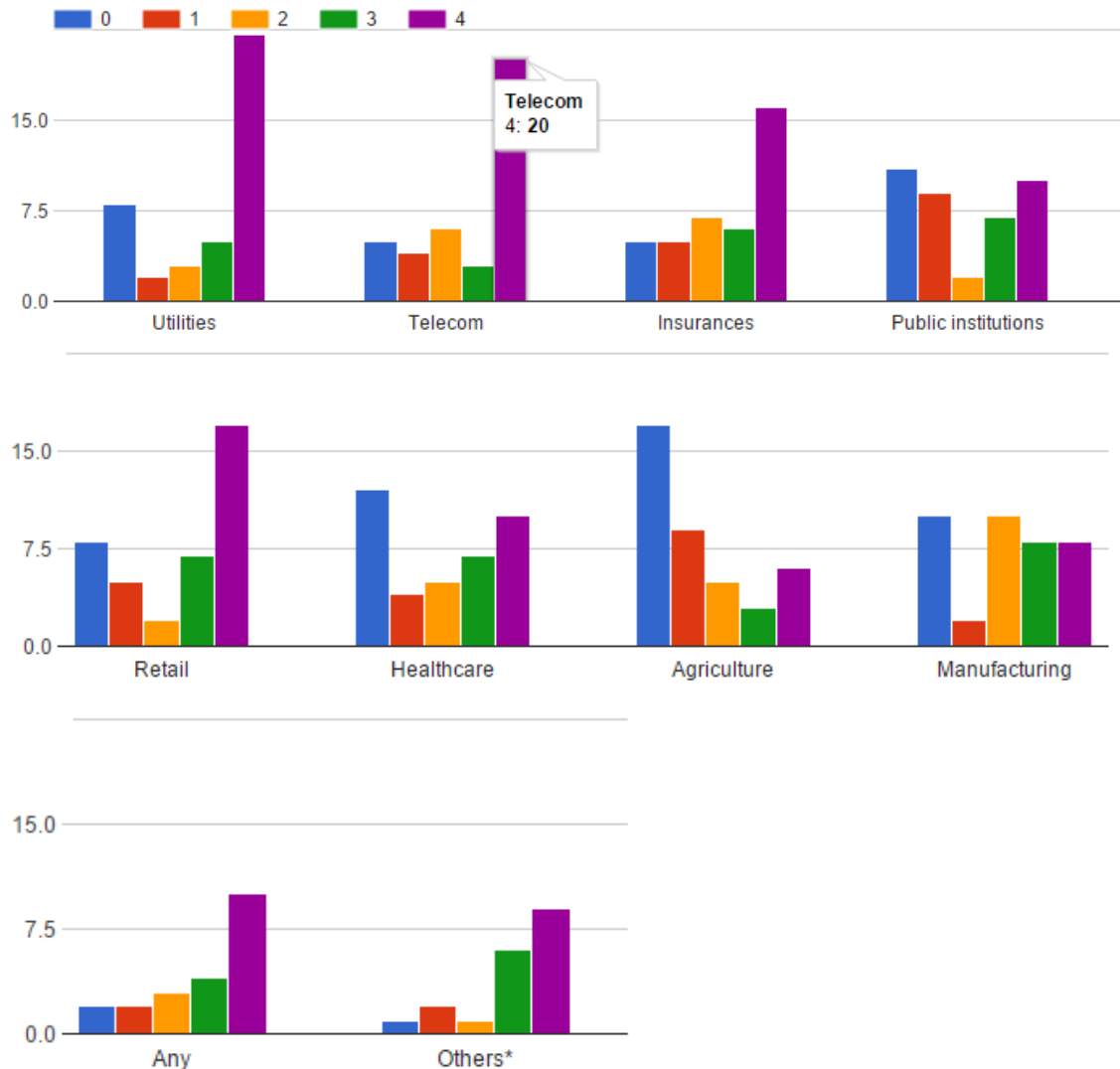
In the graph above, the colours marked from 0 to 4 are the rankings given to the sectors and the vertical axis the number of responses. Example: 20 respondents have given the ranking 4 to the Telecom sector.

Regardless of the rankings the following figures may be noticed:

- 41 solutions operate in all sectors proposed as answer. Out of them, 23 are not linked to any particular sector
- 16 solutions operate also in at least another sector (services, car leasing, tourism, etc.)

This spread of the solutions usage demonstrate there is a trend of E-invoicing to become present in many sectors and there is no visible preference for a particular sector, even if some of them have particular requirements in the content and presentation of invoices (e.g. telecommunications, healthcare)

Type of Suppliers (44 responses):
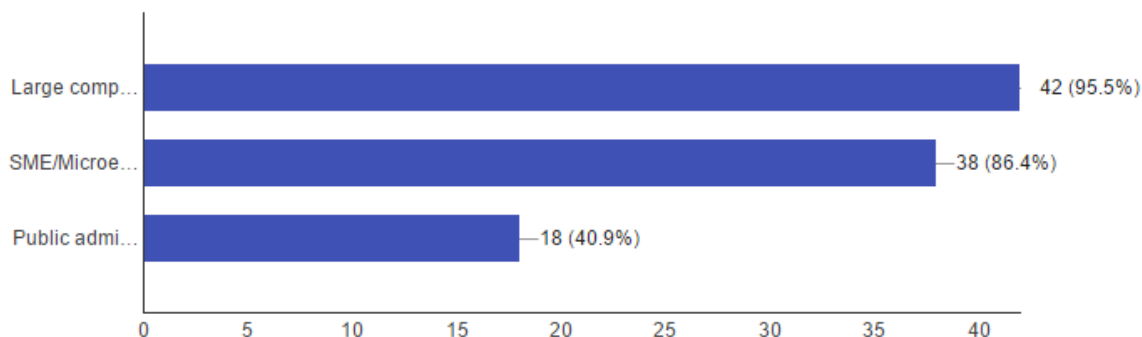
Remarks:
- 15 solutions can be implemented to all type of Suppliers
- 21 others to enterprises (not public administrations)
- 5 can be implemented to large entities (Large companies and public administrations)
- 2 reported to be dedicated to SME/Microenterprises

Type of Payers (45 responses):
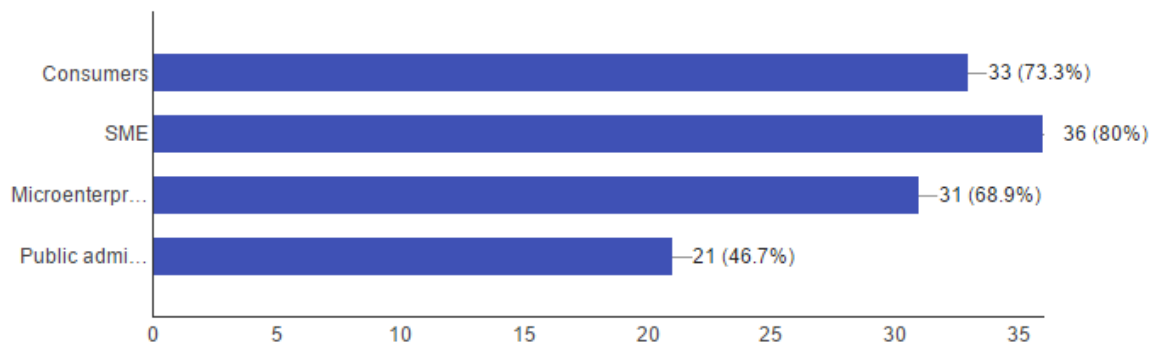
It can be noticed that the Solutions are generally ready to be used by consumers as well by small businesses. Almost half of the solutions can be used in public e-procurement.

- 5 solutions can be used by all type of Payers (including Public administrations, for public procurement)
- 31 solutions can be used by Consumers, SME or Microenterprises
- 3 solutions are exclusively dedicated to individual Consumers

Willingness to expand the solution in other countries (44 responses):

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9, 20%

35, 80%

- Yes
- No
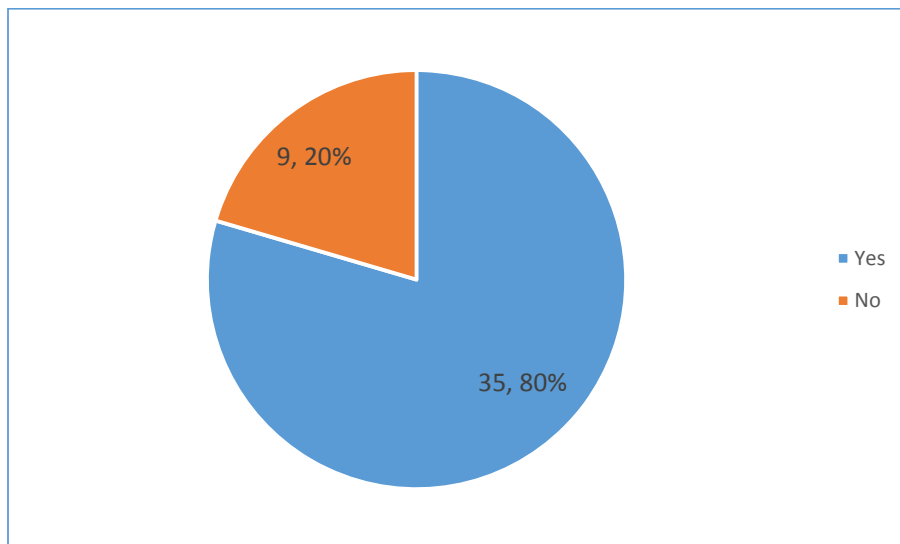
Current coverage (45 responses):

1, 2%   5, 11%

5, 11%

23, 51%

11, 25%

- 1 country
- 2-5 countries
- > 5 countries
- EU/SEPA/Europe
- EU/SEPA/Europe + others
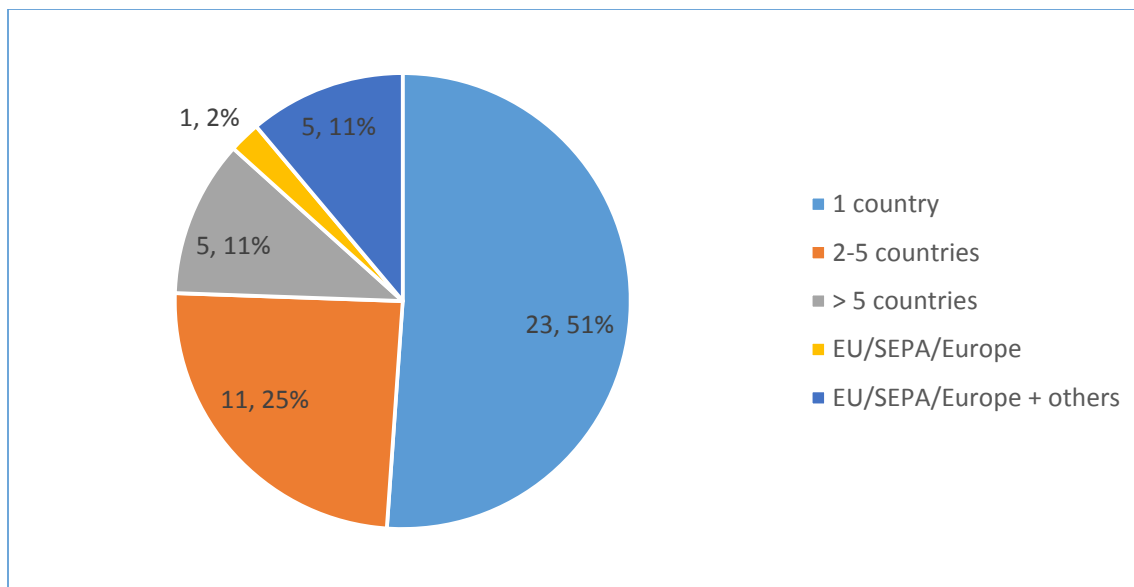
Figures regarding the volumes processed by the solutions already implemented (43 responses) and launched.

Annual volumes
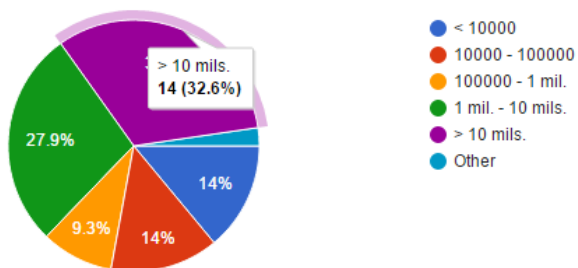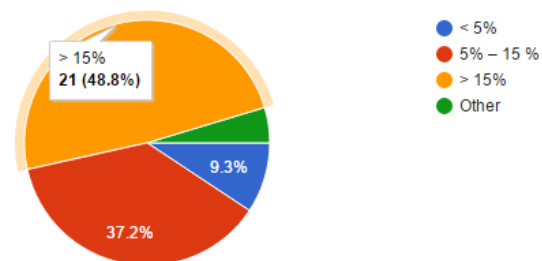
> 10 mils.
14 (32.6%)

27.9%

9.3%   14%

14%

- < 10000
- 10000 - 100000
- 100000 - 1 mil.
- 1 mil. - 10 mils.
- > 10 mils.
- Other

Estimated growth per year

> 15%
21 (48.8%)

9.3%

37.2%

- < 5%
- 5% – 15 %
- > 15%
- Other

Number of suppliers already onboarded
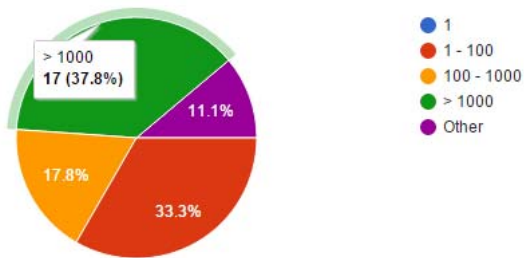
Number of payers
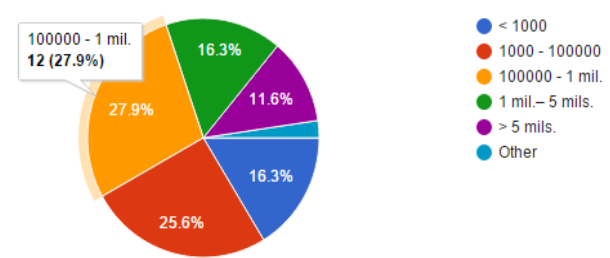
General description of the solutions

1. Characteristics related to the payment

a. Accepted payment instruments (38 responses):
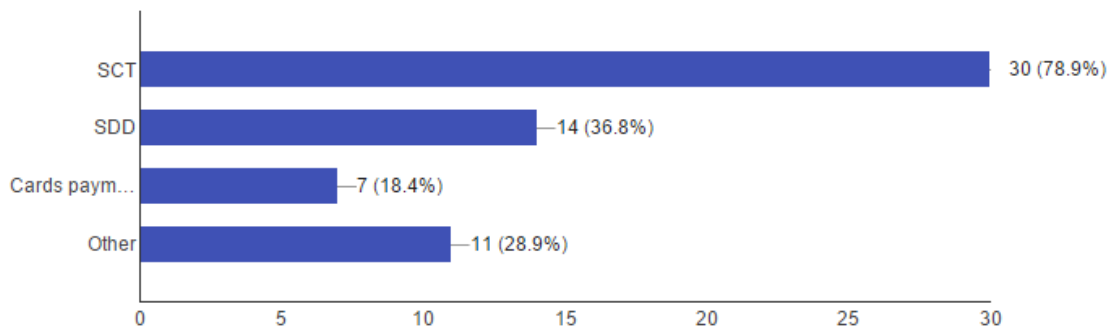
As expected the most used instruments are SEPA instruments, SCT and SDD. As many solutions are integrated (or closely linked) to the e-banking environments, the use of SCT and SDD is expected. The SCT is widely used, given its general acceptance and its simplicity. It is more used than SDD as it doesn't require prior agreements between Payer and Payee like the mandate. It is noticeable the limited presence of the payments by cards (debit or credit) in the landscape of E-invoicing. Other interesting facts about the payment instruments:

- All 14 solutions accepting SDDs accept also SCT
- Some domestic instruments (especially domestic non-euro direct debits schemes) are still used (6 cases)
- Some responses reflected the approach assuming that the payment is not part of the E-invoicing flow thus considering all means mutually accepted between Payee and Payer.
- Cards payment are in general alternative means besides SCT or SDD. Only 2 solutions accept only cards payments.

b. Type of payments (39 responses):
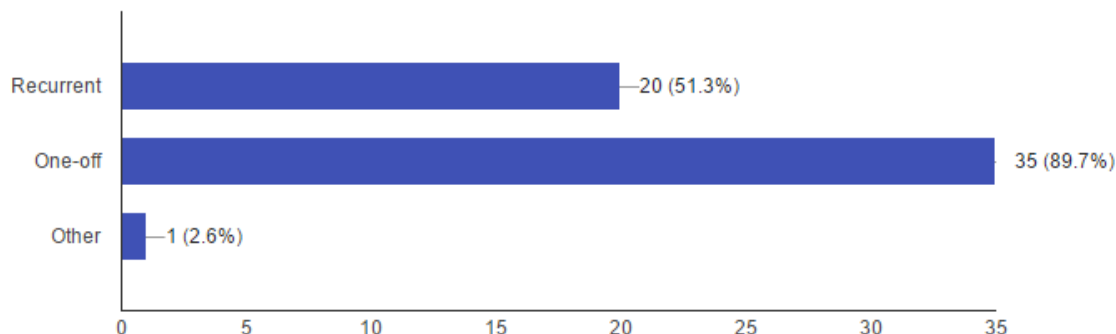
Most of the 20 solutions accepting recurring payments accept also One-Off payments. Only 3 accept only recurrent payments and are more specialized in B2C segment.

     c.   E-invoices vs. Requests to Pay (41 responses)

As explained in the glossary, a Request To Pay is a subset of information allowing the payment initiation, but it is not itself an E-invoice. It can propose a link to the underlying invoice. A solution may propose to the Payers this type of message in order to ease the payment initiation and to highlight the main data of the invoice. From 41 solutions, 20 propose the Requests To Pay.

     d.   Payment related information that can be modified by the Payer (41 responses)
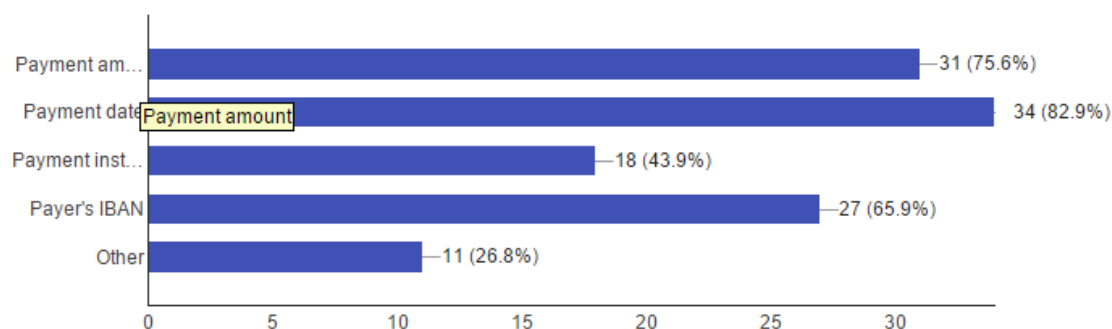
These figures show the flexibility of the solutions in terms of separation of the payment data of the invoice and the action of payment effectively executed by the Payer. Payment amount, date, the IBAN of the Payer (if it is necessary in the payment) or the payment instrument can in general be modified by the Payers.

  2. Characteristics related to the standardisation and interoperability

     •   Data formats supported (44 responses)
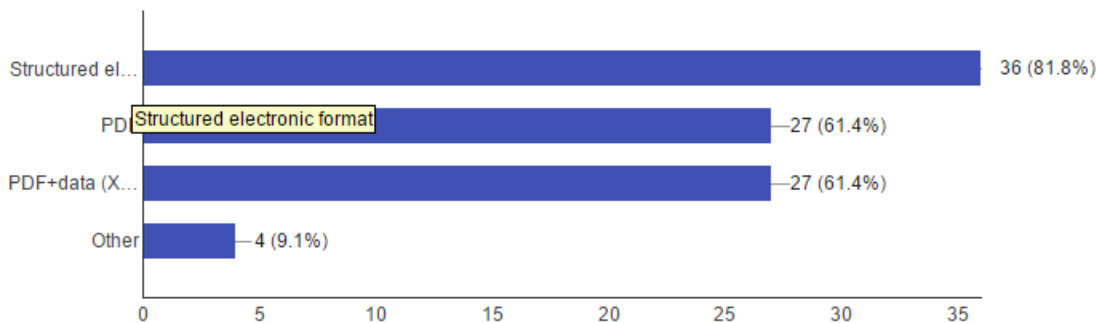
 As described in the glossary, there are different form to electronically represent the invoices. "Structured electronic format" and "PDF+data (in XML)" are actually the formats allowing complete electronically processing. Comments on these figures:

- Among the solutions which support Structured electronic formats or PDF+Data(XML), i.e. which allow to electronically process the files representing the invoices, 25 operate significantly in B2C context (ranked 3 or 4)
- 2 solutions reported supporting only simple PDF format, thus cannot be consider as E-invoicing solutions in the sense as defined in the glossary and widely accepted. These 2 solutions operate mostly in B2C context.
- 15 solutions support PDF+data, simple PDF and electronic format. They operate in all segments (B2C/B2B/B2b/B2G) in various degrees

- Syntaxes (42 responses)
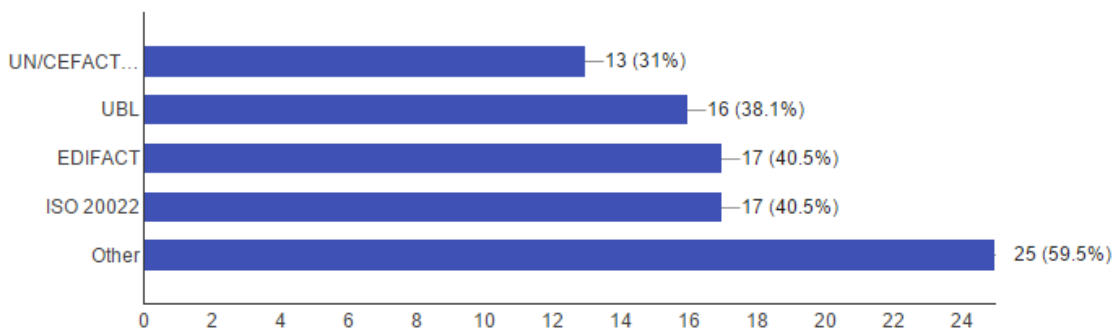
Other interesting figures resulted from the analyse: from the 25 solutions working with other formats than the four major proposed, 11 are using exclusively a proprietary format. The other 14 are using at least 1 of the 4 standards proposed beside their own format.
16 solutions can use at least 2 format from the 4 major proposed.

- E-invoicing model (42 responses).
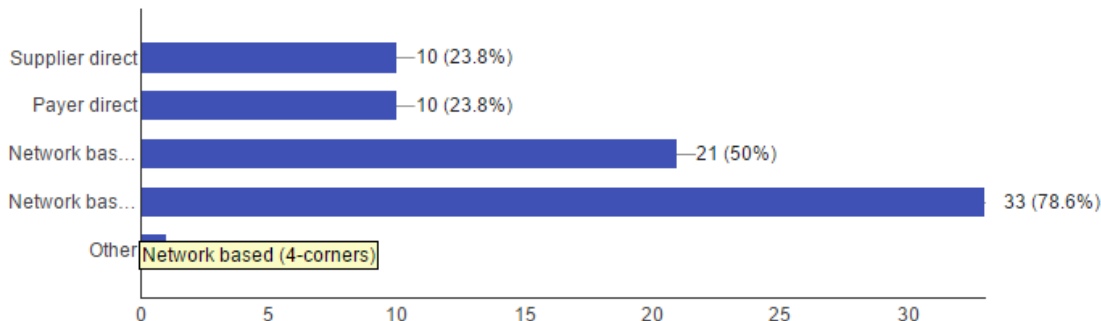
The models are described in the glossary. It is important to note than 40 solutions are designed to fit into at least one of the "Network models" (3 corners or 4 corners).

The figures in the graph above show how many solutions are based on each model, but many solutions can be considered as following multiple models. For example a network based solution when the Supplier and the Buyer E-invoicing flows enter into or go out from the same platform can be seen as a 3-corner solution. When these flows are routed to other platforms, the solution can be seen as 4-corner solution. There is no solution reporting to use only the Payer direct model. This means the solutions analysed are giving more importance to the networking or to the Supplier-based model. Nevertheless Payer-direct model is also supported by 10 solutions but always besides at least another model.

- Interoperability (43 responses).

Interoperability is a broader topic, exceeding the purpose of this analysis. To accurately evaluate the degree of interoperability, multiple angles should have been taken into account: legal, operational, technical, etc. In the current analysis the respondents have been asked if their solutions are able to communicate with other E-invoicing services in order to evaluate their readiness to send or receive E-invoicing flows from a technical perspective and the coverage of this interoperability in the same country where the E-invoicing service is operating, or cross-border.
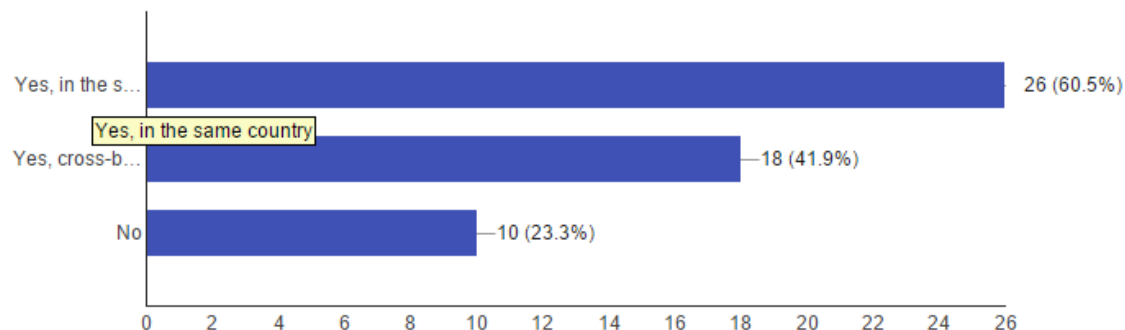
A majority of the solutions are technically interoperable, but however an important percentage reported non-interoperability (23%).

- Payer identity (43 responses)
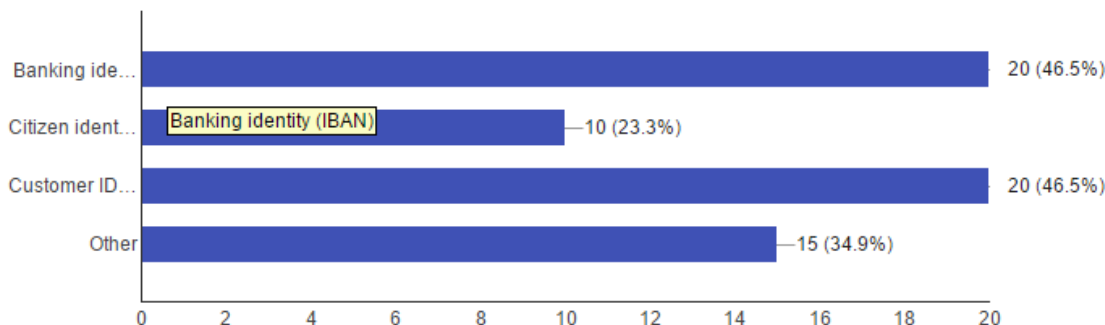
These results show the 2 types of Payer identity are predominant: based on bank account number (IBAN) and CustomerID, a generic term meaning any model where the Payer is identified by the Supplier, in its own internal platforms. "Citizen Identity", like eIDs (Electronic Identity Cards issued by the governments) or VAT Id are also used in some markets. That offers an independence of the Payer, especially in B2C, from its bank and from its Suppliers in terms of identification and access to E-invoicing platforms.

- Governance scheme (41 responses)
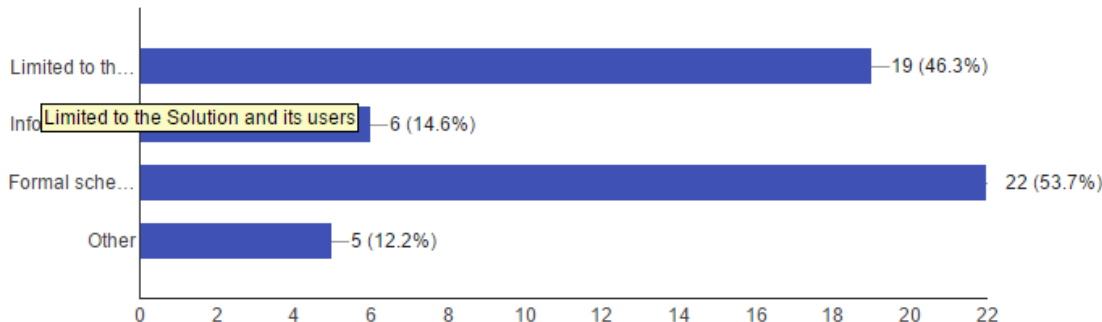
This question aimed to find out if the Solutions, in their execution of E-invoicing processes, follow a scheme i.e. is a set of rules, practices, implementation guidelines and/or standards.

- Multiple formats of invoices on Supplier side (44 responses)
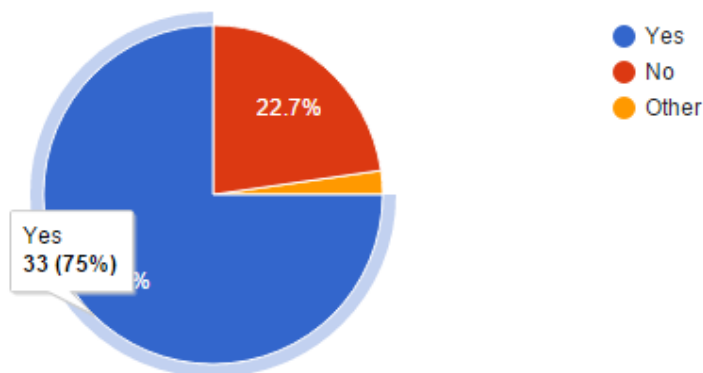
Support for multiple format on the Suppliers side means the capacity of the solution to process and send invoices in other existing formats. This would allow the solution to become a "Single Point of Entry" for all, including legacy, invoicing processes.

3. **Other characteristics**

- Digital signature (43 responses) :31 solutions propose digital signature for E-invoices (72% of the respondents)
- Support for e-commerce (43 responses): 22 solutions provide support for E-commerce processes, for example if the Solution supports the generation of the E-invoice after online payment or the generation of purchase receipts.
- Payer access to the E-invoices (43 responses):
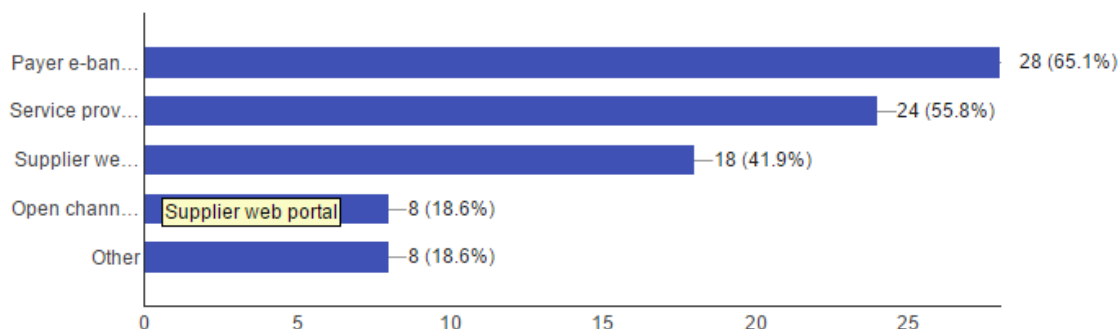
In this question the providers were asked to specify the platform where the Payer can retrieve the documents representing the E-invoices received from the Suppliers. "Open channels" in this context means for example email or storage in third party cloud platforms (e.g. Dropbox, Google Drive). A low number of solutions allow the use of this type of channel, many of them use the Payer e-banking environment (preferred channel) or the Service provider's own platform. The supplier web portal (often in case of "Supplier-direct" model) is also used.

- Human readable format of the E-invoices (44 responses):
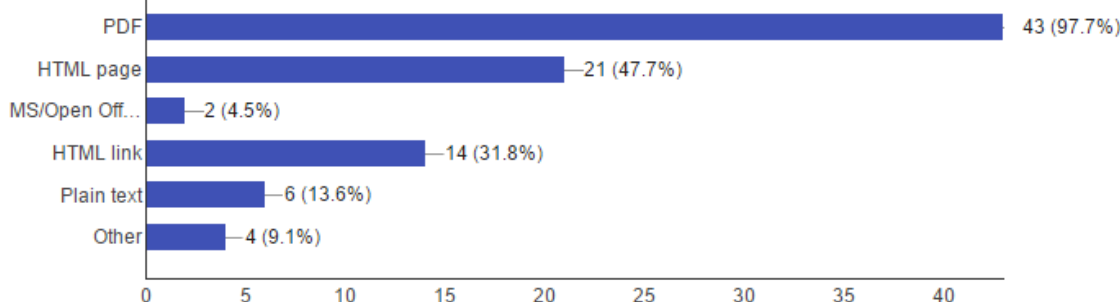
As expected, PDF is largely used (98% of the solutions) but also the presentation in HTML bringing the advantage of the universal access, from any device.

- Compliancy with EU or national VAT regulations (44 responses): 42 are compliant but from the remaining two others, 1 is still in Pilot mode (not yet launched) and 1 provides only Requests To Pay, addressing the B2C market, thus the VAT rules may not apply.
- Intention to make the solution compliant with the European directive 2014/55/EU on e-invoicing in e-procurement (43 answers): 35 responses were affirmative meaning a majority of the solutions target or will target in the future the public E-procurement (B2G segment).
- Business model (43 responses). This question aimed to find out which party is charged for the ownership and use of the E-invoicing service. In 42 cases, the Supplier is charged, in 23 the Buyer. But 22 out of 23 when the Payer pays, actually the Supplier pays too, thus the solution having a shared pricing model. Only 1 solution – which is not yet launched - reported to charge the Payer only.

## 8.4. Details on the perception of the Supply-side on the issues and barriers

Analysis of the 1st set of answers (related to the predefined questions)

The answers were expressed under the form of a ranking starting from 0 (this is not an issue) to 4 (the most important issue) expressing the weight of the proposed issue or barrier.

Issues and barriers influencing the general take-up and implementation of EIPP/EBPP solutions

1. Businesses and consumers have limited knowledge about the advantages and added value, thus not actively demanding change.
(44 responses)
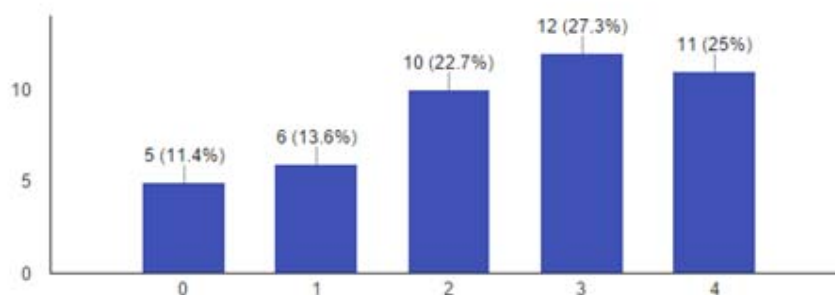
We can notice that more than 50% of the respondents estimate this issue as important or very important. When looking to the category of the providers, both PSPs (Credit/Payment institutions) and E-invoicing Solutions Providers (or other providers) see this issue as important.

2. SMEs and micro enterprises perceive EIPP/EBPP as complex and expensive to implement
(45 responses)
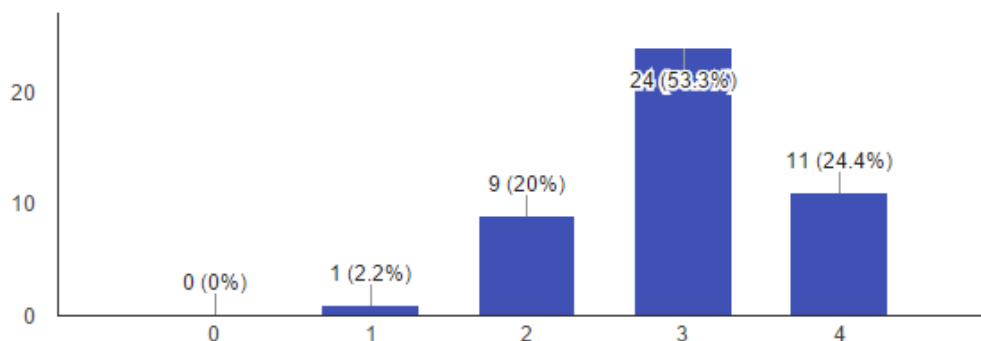
An even more visible trend toward high rankings (about 80%) can be seen with regard to the opinion of the providers about how the SMEs and micro-enterprises perceive the cost and complexity of the solutions.

3. Consumers as well as SMEs and micro enterprises may have reservations towards electronic services for receiving and paying e-invoices/bills, in particular accessibility, security and simplicity.

(45 responses)
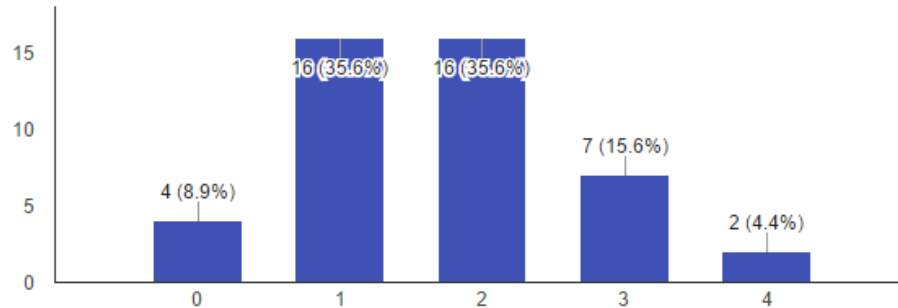
There is a relatively medium and low importance given to the issues related to the reservations that the users may have when using E-invoicing solutions. That points out the readiness of the potential users in accepting these solutions. Of course this is the opinion of the Solutions providers about the behaviours of their customers.

4. Where such solutions have been developed, the payers (and the payees) might experience a lock-in effect because of diverging basic features/principles and therefore complexity in switching.

(45 responses)
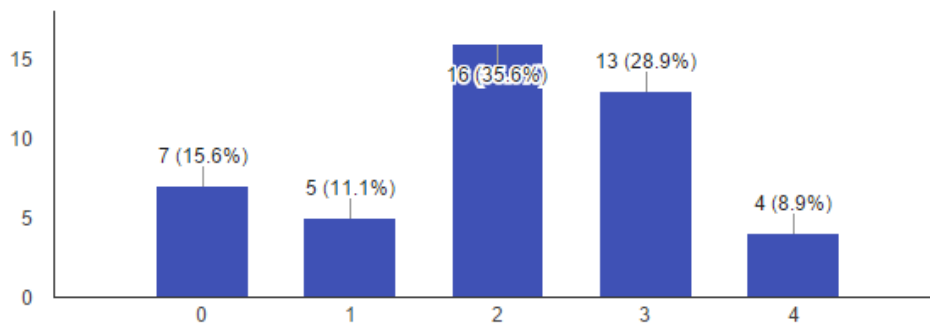
29 respondents ranked with 2 or 3 this issue meaning the lock-in effect after the implementation of an E-invoicing solution may be an issue but it isn't the most important. It is likely that the switching between E-invoicing solutions is not fundamentally more complicated than switching other business support applications (ERP, Accountancy) or for a consumer switching for example from an E-banking environment to another.

It's interesting to notice that this ranking was given almost equally by Payment or Credit institutions and E-invoicing solutions providers (or other providers proposing also E-invoicing).

Influencing EU integration of EIPP/EBPP solutions

5. No EU-wide interconnected network to reach all payers (44 responses)
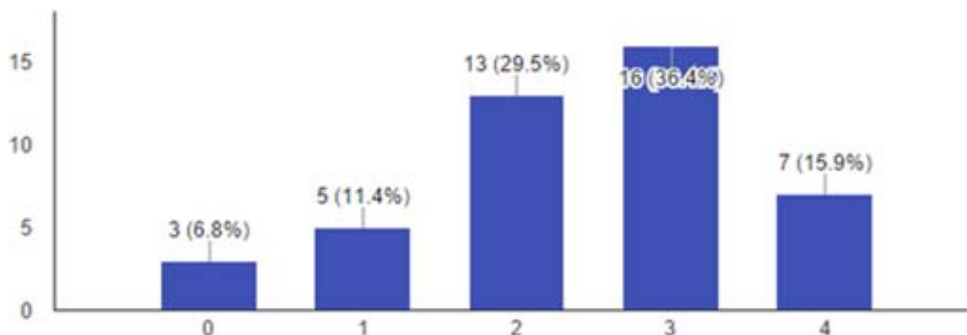
The lack of EU-wide network supporting the reachability between Suppliers and consumers is perceived by the solution providers as a relatively important issue hindering the integration of the solutions on a European scale.

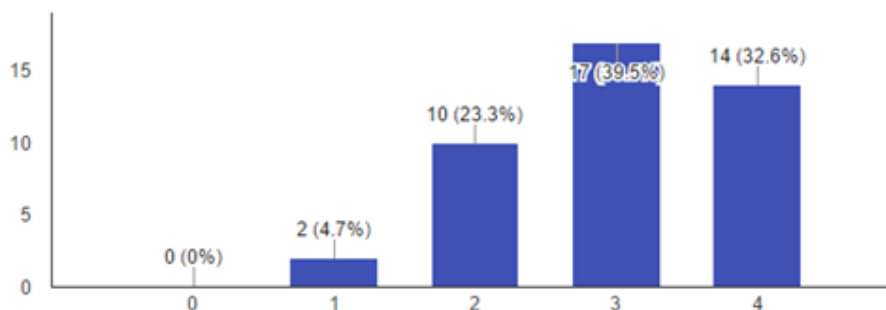## 6. Diverging standards and non-interoperable technical formats for e-invoicing/billing
(44 responses)
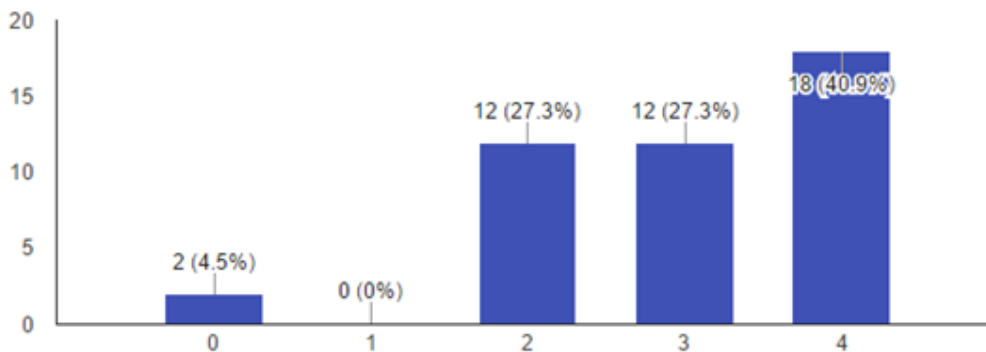
More important than the lack of a European network is the co-existence of multiple and non-interoperable standards.

7. Diverging business rules and practices on top of the standards. (43 responses)

Beyond the divergent standards, it has been highlighted by high rankings that the diverging business rules and practices are also very important barriers in the European expansion of the solutions. More than 70% of the respondents consider them as important or very important.

Other issues and barriers expressed by the solutions providers:

Besides the above-mentioned points the survey invited the respondents to express other issues they have faced. The most relevant specific ones are:

- Market foreclosure instead of open access, dominant actors operating domestic solutions
- Risk of over-regulation, targeting all markets whilst not one single specification suits every market
- Willingness to address cross-border before intra-border maturity
- Lack of solutions for Digital identity, as enabler for reachability

8.5. Composition of the Working Group

CO-CHAIRS	
Mr Massimo Battistella	EACT
Mr Jussi Snellman	EPC
MEMBERS	
Ms Sarah Hysén	ESBG
Ms Ana Climente Alarcon	EPC
Mr Georg Thoma	Ecommerce Europe
Mr Pascal Spittler	EuroCommerce
Mr Michael Salmony/Mr Pablo Lahoz	EACB
Ms Pirjo Ilola	EBF
Mr Farid Aliyev/Mr Jean Allix	BEUC
Ms Anne-Sophie Parent	AGE
Mr Stefan Engel-Flechsig	EACT
Mr Michael Taggart/Mr Liam Morris	Public Administrations
Mr Gregorio Rubio	NCB (Banco de Espana)
Mr David Ballaschk	NCB (Bundesbank)
Mr Michiel van Doeveren	NCB (Nederlansche Bank)
Mr Rainer Olt	ECB
Ms Irena Rivière Osipov	Observer (EC)
Mr Charles Bryant/Mr Marcus Laube	Relevant External Party (EESPA)
SECRETARIAT	
Mr Valentin Vlad	EPC
Mr Etienne Goosse	EPC