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D05.01 eInvoicing Benefits Analysis

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Table of Contents

Introduction	5
1 Context & Background	6
2 Methodology	7
3 Key Findings.....	10
3.1 Cost and Operational Savings	10
3.2 Reduction of Administrative Burden.....	13
3.3 Facilitation of Cross-border eInvoicing.....	14
3.4 Reduced time to payments	16
3.5 Contribution to Process Automation (in the context of eProcurement)	17
4 Conclusions	19
5 Recommendations	21
6 Annex	22
6.1 Survey	22

Table of Figures

Figure 1 Map of EU Member States responding to the survey on the benefits of eInvoicing	9
Figure 2 EU Member States' Respondent Groups	10
Figure 3 Average Processing cost of individual eInvoices and paper-based invoices	12
Figure 4 Countries reporting on cross-border eInvoicing.....	14
Figure 5 Country Responses concerning the effects of eInvoicing on eProcurement lifecycle	17

Glossary and Key definitions

Terms	Definition
Electronic Invoice	According to the Directive 2014/55/EU, an electronic invoice means "an invoice that has been issued, transmitted and received in a structured electronic format, which allows for its automatic and electronic processing".
Contracting Authorities	According to the Directive 2014/24/EU ¹ , 'contracting authorities' means the State, regional or local authorities, bodies governed by public law or associations formed by one or more such authorities or one or more such bodies governed by public law.
European standard	'European Standard' refers to the standard adopted by a European standardisation organisation, according to point (b) of Article 2(1) of Regulation (EU) No 1025/2012 ² .
PEPPOL	The Pan-European Public Procurement On-Line (PEPPOL) is a network for the exchange of electronic business documents for eCommerce and eProcurement, primarily between public sector organisations and their suppliers. Created in 2008 as a European Commission project with participants from 11 countries, it aims to facilitate the development of eCommerce in Europe.
Economic operator	According to Article 2 (10) of 2014/24/EU 'Economic Operator' means any natural or legal person or public entity or group of such persons and/or entities, including any temporary association of undertakings, which offers the execution of work, the supply of products or the provision of services on the market.
Sub-central contracting authorities	According to Article 2 (3) of 2014/24/EU 'Sub-central contracting authorities' means all contracting authorities which are not central government authorities.
Public eProcurement	'eProcurement' refers to the use of electronic communications and transaction processing by government institutions and other public sector organisations when buying supplies and services or tendering public works.

¹ Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC Text with EEA relevance, accessible at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014L0024>

² Regulation (EU) No 1025/2012 of The European Parliament and of The Council of 25 October 2012, accessible at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32012R1025>

Introduction

CEF Digital is the digital strand of the Connecting Europe Facility (CEF), which aims to promote the use of digital ‘building blocks’³, established to help the European Union become more digitally connected. The electronic invoicing (eInvoicing) building block has been supported by CEF Digital for more than four years to facilitate the implementation of the Directive 2014/55/EU on electronic invoicing in public procurement (eInvoicing Directive)⁴. The present study has been commissioned to analyse the benefits arising from the usage of eInvoicing according to the eInvoicing Directive, with the purpose to explain these benefits to current and future CEF eInvoicing stakeholders.

Key areas that stand to benefit from the implementation of eInvoicing according to the Directive are the following:

- Cost savings in the processing of invoices;
- Reduction of the administrative burden brought by the processing of invoices;
- Facilitation of cross-border trade;
- Reduced time to payment for individual invoices; and
- Contribution to eInvoicing processing automation.

The purpose of this study is therefore to provide an analysis of whether the expected benefits in these areas were achieved through the implementation of eInvoicing. To present how the eInvoicing positively affects public administrations, the study is organised as follows:

- I. **Context & Background:** definition and explanation of eInvoicing processes and presentation of a history and description of the development of the EU’s eInvoicing policy.
- II. **Methodology:** presentation of research questions and explanation of the research methods used to address them.
- III. **Key Findings:** description of key findings produced and how they address the presented research questions.
- IV. **Conclusions:** presentation of the final research results and conclusive remarks on whether the implementation of eInvoicing ensured its intended objectives.
- V. **Recommendations:** policy recommendations aimed at ensuring that eInvoicing continues to provide enduring benefits to public administrations.

³ CEF improves daily lives of European citizens via investments in digital building blocks, cross-border digital infrastructures and broadband networks. It facilitates the cross-border interaction between public administrations, businesses or citizens. It promotes economic growth and supports the completion and functioning of the internal market, enhancing the competitiveness of the European economy. CEF supported projects help create and maintain a European ecosystem of interoperable and interconnected digital services, and thus help sustain the Digital Single Market. More information on CEF available at: <https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL>

⁴ Directive 2014/55/EU of the European Parliament and of the Council of 16 April 2014 on electronic invoicing in public procurement Text with EEA relevance.

1 Context & Background

A Directive is a legislative act that sets out a goal that all EU countries must achieve. Member States must then devise through which means to reach these goals⁵ and implement the requirements of the Directive. Consequently, Member States must implement the requirements of Directive 2014/55/EU according to their public administration set-up.

An electronic invoice (eInvoice) is an invoice that has been issued, transmitted and received in a structured data format, which allows for its automatic and electronic processing, as defined by the eInvoicing Directive.

eInvoicing is currently used in Member States by both private and public entities. The actual problematic comes from the heterogeneity of eInvoicing processing. In fact, Member States have their own policy framework, platform and approach to process and monitor eInvoices. The prevalence of multiple standards in Member States has led to increased complexity in terms of domestic and cross-border interoperability for eInvoicing. The European standard on eInvoicing⁶, developed by the European Committee for Standardization⁷, defines a standard structure and syntax for eInvoices and the various options for transmitting the invoice. In order to monitor the take-up of the standard, the Member States representatives must submit their report and achievements in the Country Factsheet, on a yearly basis.

According to the "Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Reaping the benefits of electronic invoicing for Europe"⁸, the main benefits of eInvoicing are the reduced costs compared to those incurred by paper invoices. Reduced costs can also be accounted through the potential of process automation and a reduced administrative burden for both buyers and suppliers.

The following documents describe in-depth the expected / "ex-ante" benefits resulting from the implementation of the eInvoicing Directive:

- The Guidance Paper for EU Public Administrations on eInvoicing⁹, which explains the efficiencies and cost-cutting measures benefitting public administrations;
- The Commission Staff Working Document: "Impact Assessment Accompanying the document: Proposal for a Directive of the European Parliament and of the Council on electronic invoicing in public procurement" (COM(2013) 449 final)¹⁰, which identifies the main benefits as time-gains, cuts in operating costs, environmental impacts, as well as improved transparency, security, and greater auditability of data.

⁵ The definition of EU Directive is available at: https://europa.eu/european-union/eu-law/legal-acts_en

⁶ Following the Directive 2014/55/EU on electronic invoicing in public procurement Art 3.(1), the European Commission called for the definition of a common European standard on eInvoicing both at semantic and syntax level. Particularly, the development of such standard was allocated to CEN/TC 434. In June 2017, CEN published the semantic data model and the list of syntaxes for the European standard on eInvoicing. In October 2017, the European Commission published the reference to the standard in the Official Journal.

⁷ The European Committee for Standardization (CEN) is a public standards organisation whose aims to protect the welfare of European citizens and the environment by providing an efficient infrastructure for the development, maintenance and distribution of standards and specifications.

⁸ COM(2010) 712 final, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on Reaping the benefits of electronic invoicing for Europe, 2.12.2010.

⁹ Guidance Paper for EU public administrations, Document endorsed by the EMSFEI forum at its 10th meeting of 21 March 2016.

¹⁰ COM(2013) 449 final, Commission Staff Working Document Impact Assessment Accompanying the Document: Proposal for a Directive of the European Parliament and of the Council on electronic invoicing in public procurement, 26.6.2013.

2 Methodology

The research methods used to compile the Benefits Analysis of eInvoicing are diverse. Firstly, they include a primary data collection through a targeted online survey. A second component of the research methodology was the performance of desk research to uncover additional examples of eInvoicing benefits witnessed in Europe to complement the survey's responses.

Through this methodology, the study team was able to provide a view of the various aspects linked to the benefits of eInvoicing: **a) Cost savings in the processing of invoices; b) Reduction of the administrative burden; c) Facilitation of cross-border trade; d) Reduced time to payment for invoices and c) Contribution to eInvoicing processing automation.**

The methodology can be divided into six phases, described below:

- **Phase 1:** Inception;
- **Phase 2:** Identification of Stakeholders;
- **Phase 3:** Desk Research and Survey Design;
- **Phase 4:** Data Collection;
- **Phase 5:** Data Analysis and Reporting.

Phase 1: Inception

The inception phase provides a comprehensive view of the different types of benefits that this study seeks to verify. These benefits can be drawn from key eInvoicing related documents and contribute to the development of this study's research questions.

Phase 1a: Desk research on benefits of eInvoicing through identified secondary sources

The main objectives of the initial desk research were to understand broadly the context and extent of the benefits of eInvoicing mentioned in official documents.

In order to determine those benefits, the study team performed desk research on the following legal documents addressing the implementation of eInvoicing in the EU:

- Directive 2014/55/EU on electronic invoicing in public procurement;
- Guidance Paper for EU Public Administrations on eInvoicing¹¹;
- Previous European Union communications on eInvoicing:
 - a. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: "Reaping the benefits of electronic invoicing for Europe" (COM(2010) 712 final);
 - b. Commission Staff Working Document: "Impact Assessment Accompanying the document: Proposal for a Directive of the European Parliament and of the Council on electronic invoicing in public procurement" (COM(2013) 449 final);

¹¹ The adoption of e-invoicing in public procurement, EMSFEI sub-group delivery, approved on 21 March 2016.

- Written reports from other bodies having carried-out similar exercises¹² (i.e. PEPPOL and eSENS).

Phase 1b: Identifying the research questions

Based on the review of relevant documents, the following research questions have been formulated:

- Research Question 1:** To which extent does the implementation of the eInvoicing Directive contribute to public sector **operational savings**?
- Research Question 2:** To which extent does implementation of the eInvoicing Directive guarantee a reduction of the overall **administrative burden** for public authorities?
- Research Question 3:** To which extent does the implementation of e-Invoicing contribute to the development of **cross-border trades**?
- Research Question 4:** To which extent does the introduction of eInvoicing contribute to the reduction in the **time-to-payment** of eInvoices compared to paper-based models?
- Research Question 5:** To which extent does the implementation of the eInvoicing Directive contribute to the **automation of eInvoicing processes**?

Phase 2: Identification of Stakeholders

The European Multi-Stakeholder Forum on eInvoicing (EMSFEI)¹³ oversees both the policy and technical implementation mandates for Business-to-Government (B2G) eInvoicing in the European Member States. The EMSFEI representatives for EU Member States were the key stakeholders identified by this study, as they are well-placed to provide an overview of eInvoicing's benefits in their countries.

Phase 3: Desk Research and Survey Design

Following the in-depth analysis of documents listed under Phase 1a, the study team developed a survey with the objective to collect data to answer the aforementioned research questions (listed under Phase 1b).

Phase 4: Data Collection

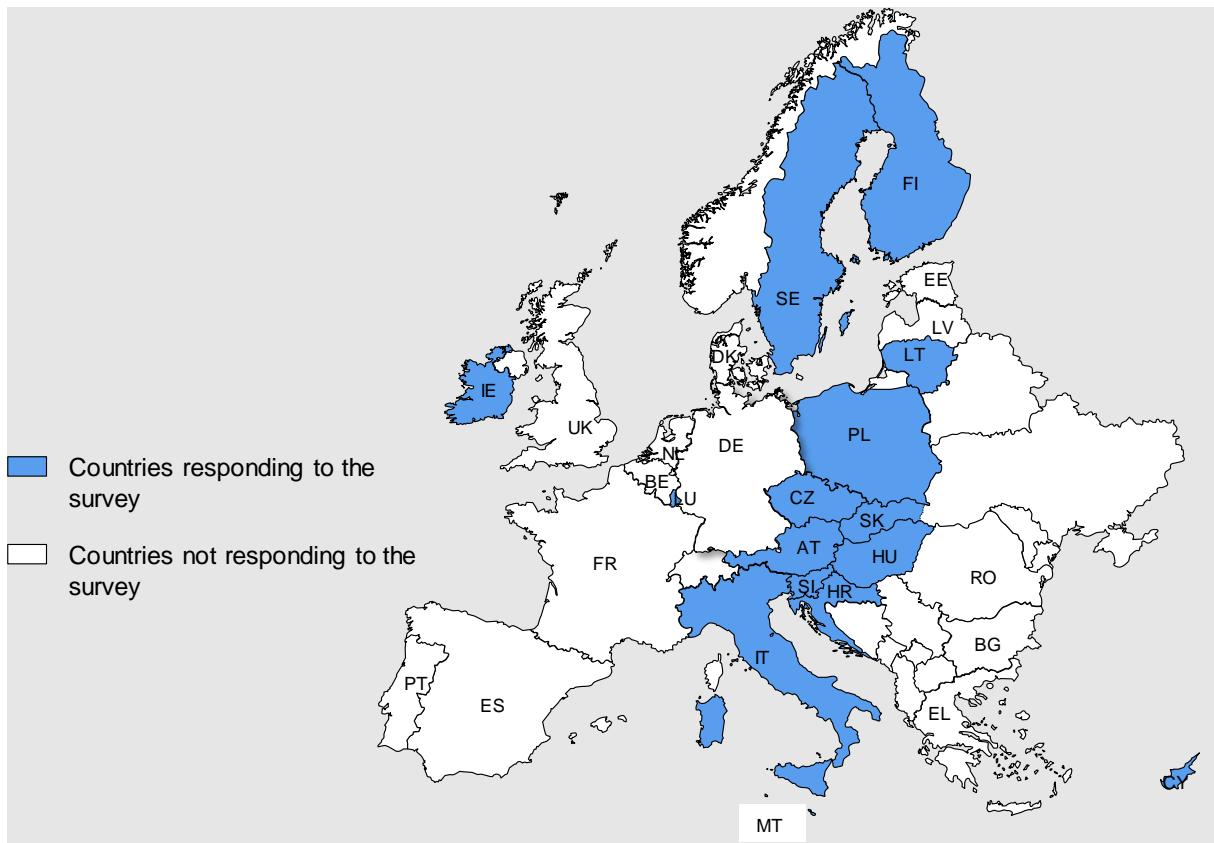
The study team communicated the approach, objectives, timeline and envisaged outcomes of the study to the entire cohort of EMSFEI country representatives individually via email and made the survey questionnaire available online through EU Survey¹⁴. The data collection for this study lasted from 8 February 2019 until 23 February.

The survey received a total of 19 responses from 15 different Member States. The discrepancy between the number of countries that responded, and the number of responses was due to the fact that sometimes more than one country representative provided answers for their country. As shown in Figure 1 below, the Member States that responded were: **Austria, Croatia, Cyprus, Czech Republic, Finland, Hungary, Ireland, Italy, Lithuania, Luxembourg, Malta, Poland, Slovakia, Slovenia** and **Sweden**.

¹² Other Best practices documents accessible at: <https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/eInvoicing+best+practices>

¹³ The European Multi-Stakeholder Forum on Electronic Invoicing (EMSFEI) brings together stakeholders from national e-invoicing forums and other private users. Its objective is to help pave the way for the adoption of e-invoicing at national and EU-level. The Forum creates an opportunity to exchange experiences and best practice across borders.

¹⁴ EUSurvey is an online survey management system, created by the European Commission for creating and publishing forms available to the public, accessible here: <https://ec.europa.eu/eusurvey>

Figure 1 Map of EU Member States responding to the survey on the benefits of eInvoicing

Source: Data collected via online survey completed by EMSFEI representatives of 15 EEA Member States (Poland, Croatia, Ireland, Slovenia, Finland, Malta, Sweden, Slovakia, Hungary, Cyprus, Lithuania, Italy, Austria, Czech Republic, Luxembourg), Wavestone 2019.

Phase 5: Data Analysis and reporting

The team performed an analysis of the data collected to verify the recorded benefits of eInvoicing. Additional desk research was performed to confirm the data trends evinced from the survey results.

Once a solid view on eInvoicing's benefits in Europe was developed, the team proceeded to draft this report expounding on the benefits of eInvoicing identified.

3 Key Findings

The data collected revealed a mixed picture as regards the implementation of eInvoicing at the national level. Whereas some countries have transposed the Directive and started assessing both its benefits and costs, others have experienced delays in their transposition and/or have not been able to provide relevant data.

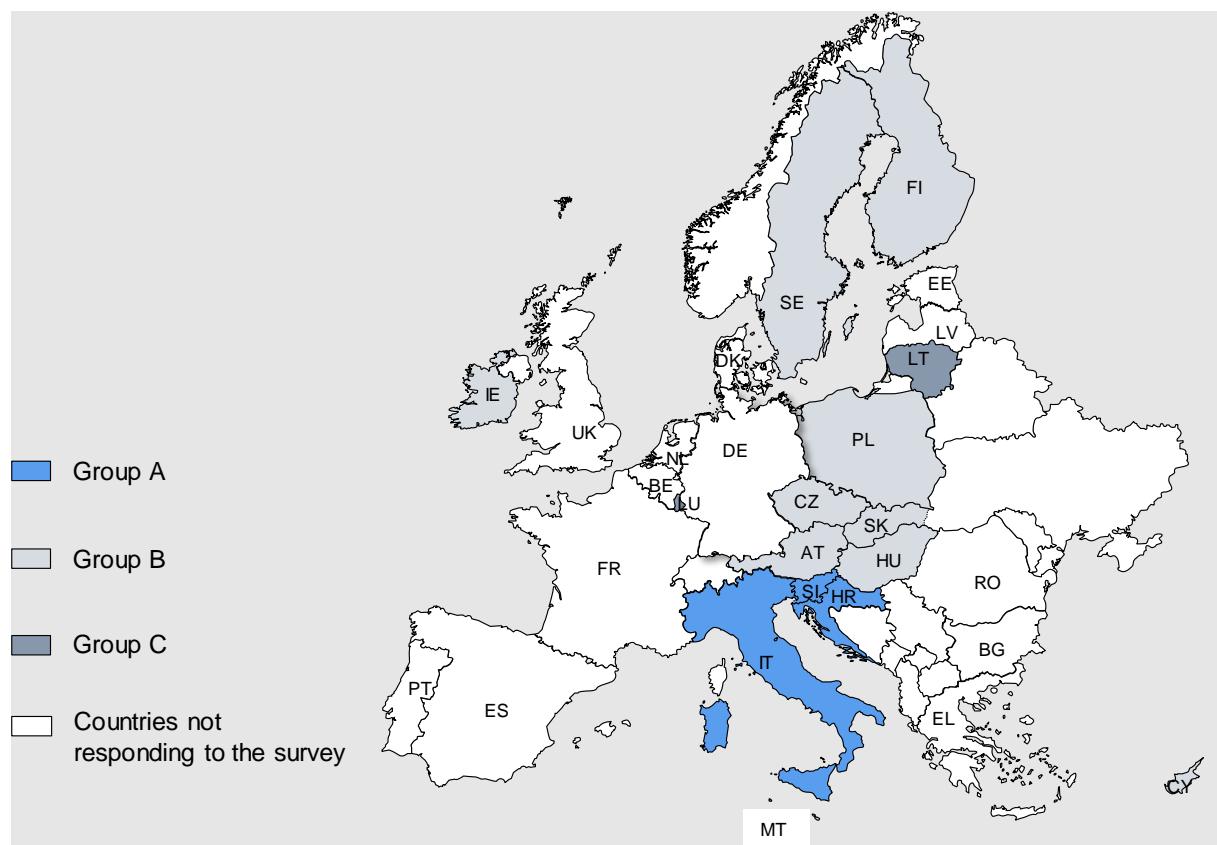
3.1 Cost and Operational Savings

In this section, the study assessed the aggregated and unit cost reduction in processing costs through the introduction of eInvoicing. By **aggregate cost reduction**, the study provides the savings per annum generated by the introduction of eInvoicing. By **unit processing cost reduction**, the study intends the reduction in costs per individual eInvoice.

Aggregate Processing Cost Reduction

The study revealed three respondent groups. The first (group A) includes countries that have already reported positive operational savings. The second group (group B) represent the countries that have not yet fully implemented eInvoicing and Member States which were not able to provide data on operational savings. The third group (group C) comprises countries where expenses resulting from the implementation of eInvoicing were higher than savings.

Figure 2 EU Member States' Respondent Groups



Source: Data collected via online survey completed by EMSFEI representatives of 15 EU Member States (Poland, Croatia, Ireland, Slovenia, Finland, Malta, Sweden, Slovakia, Hungary, Cyprus, Lithuania, Italy, Austria, Czech Republic, Luxembourg), Wavestone 2019.

Group A includes three countries that have provided figures on operational savings. These Member States are Croatia, Italy and Slovenia. Whereas Slovenia and Italy are expected to reduce their costs by EUR 7.2 million and EUR 1.1 billion respectively, the Croatian authorities have assessed that eInvoicing led to reduced operational costs by approximately EUR 350 million.

Group B includes 8 countries, being Austria, Czech Republic, Finland, Hungary, Ireland, Poland, Slovakia, and Sweden, that have not yet fully implemented eInvoicing and Member States which were not able to provide data on operational savings. However, the responses in group B highlighted widespread trust in the positive impacts of eInvoicing. For instance, a calculation provided by the Polish authorities suggested the possibility of a network effect¹⁵ whereby fixed costs would be diluted as the number of eInvoicing users grows; if 10% of contractors use the government platform for eProcurement, annual savings amount to approximately EUR 7.2 million. In case the percentage of users reaches 20%, expected savings amount to approximately EUR 22 million.

Group C is composed of two countries, Lithuania and Luxembourg. These countries have so far experienced higher implementation costs rather than savings. Lithuanian authorities reported that the integration of new eInvoicing solutions for sending/uploading/entering data initially generated additional costs and duplicated efforts for companies compared to traditional paper-based process. However, Lithuania's representative predicts important savings in the long-term as shown in Figure 3. As for Luxembourg, its representative stated that the costs of implementing eInvoicing now remain higher than the benefits.

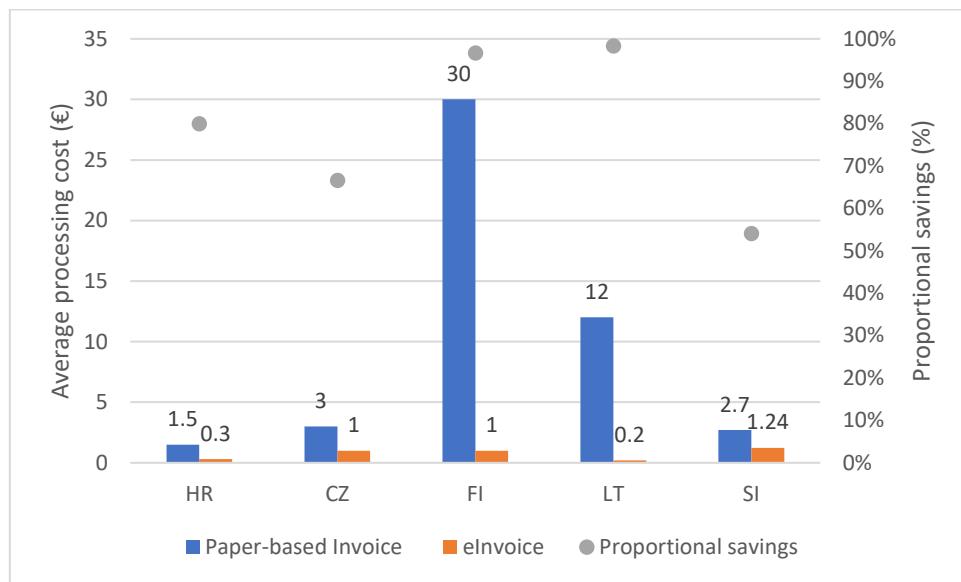
For now, only a limited number of Member States have been able to quantify the aggregate operational savings resulting from the implementation of the eInvoicing Directive.

Unit Processing Cost Reduction

The cost of handling a paper-based invoice differs significantly in Member States. It has been possible to calculate the average reduction of the processing costs through **Question 3** “What is the approximate cost of processing a paper-based invoice in your country?”. The average unit processing cost reduction was deduced by calculating the difference between the unit paper-based processing costs and the eInvoicing processing costs per unit, provided by the Member States' responding to the question.

As Figure 3 shows, five Member States (from each “respondent groups” mentioned in the previous section) provided data on the unit cost reduction of invoices; **Croatia, Czech Republic, Finland, Lithuania** and **Slovenia**. In Figure 3, the left axis shows the average cost of individual eInvoices and paper invoices per country. The right axis illustrates the proportion of savings per invoice generated from the introduction of electronic invoices.

¹⁵ Rohlfs, J. 1974. “Theory of Interdependent Demand for a Communications Service”, Bell Journal of Economics and Management Science, 5 (1), 16-37.

Figure 3 Average Processing cost of individual eInvoices and paper-based invoices

Source: Data collected via online survey completed by EMSFEI representatives of 15 EU Member States (Poland, Croatia, Ireland, Slovenia; Finland, Malta, Sweden; Slovakia, Hungary, Cyprus, Lithuania, Italy, Austria, Czech Republic, Luxembourg), Wavestone 2019.

Notes: Graphical representation includes only the Member States which provided data on the unit cost reduction of invoices; Croatia, Czech Republic, Finland, Lithuania and Slovenia.

The data collected from these five countries shows that the introduction of eInvoices has contributed to operational savings of more than 50% in each case. Moreover, the automation of the eInvoicing process can lead to savings of 97% as shown Finland's experience. At the most extreme end, Lithuanian authorities estimate that the implementation of eInvoicing would lead to a reduction in the unit processing cost of up to 99%.

Given that Lithuania, as part of Group C in terms of Aggregate Processing Cost Reduction, reported that it has not currently enjoyed any material benefit from the implementation of eInvoicing, it can be speculated that although implementation costs are high, the introduction of eInvoicing can lead to savings in the long run.

3.2 Reduction of Administrative Burden

In the survey, few countries mentioned the benefits of implementing eInvoicing on the overall administrative burden. Only according to the Polish representative, eInvoicing did lead to a reduction in the risk of losing documents by facilitating the continuous and immediate availability of electronic documents.

Additional desk research performed revealed complementary ways in which eInvoicing contributes to the reduction in the administrative burden of Member States.

Croatia established a central public platform (e-Račun)¹⁶ that works as a national eInvoicing exchange hub to which all economic operators must connect. This platform guarantees the instant connection among contracting authorities with their respective suppliers. As a result, e-Račun reduces the administrative burden by standardising the exchange protocol, which provides a unique record for all participants. It includes information on the suppliers from one intermediary to another and tracks and analyses invoice exchanges.

The Austrian Federal Government mandated the use of the Federal Service Portal¹⁷, the central eInvoicing processing platform for the reception of eInvoices for the federal government. This process reduces the administrative burden on public administrations; once received by public administrations, eInvoices are processed through automated and integrated systems linked to the workflow and core systems of the public administrations at all organisational levels.

The integration of eInvoicing processes, in which the processing of submitted eInvoices is automated, can therefore leverage the reduced delivery and communication times of eInvoicing information to facilitate administrative processes.

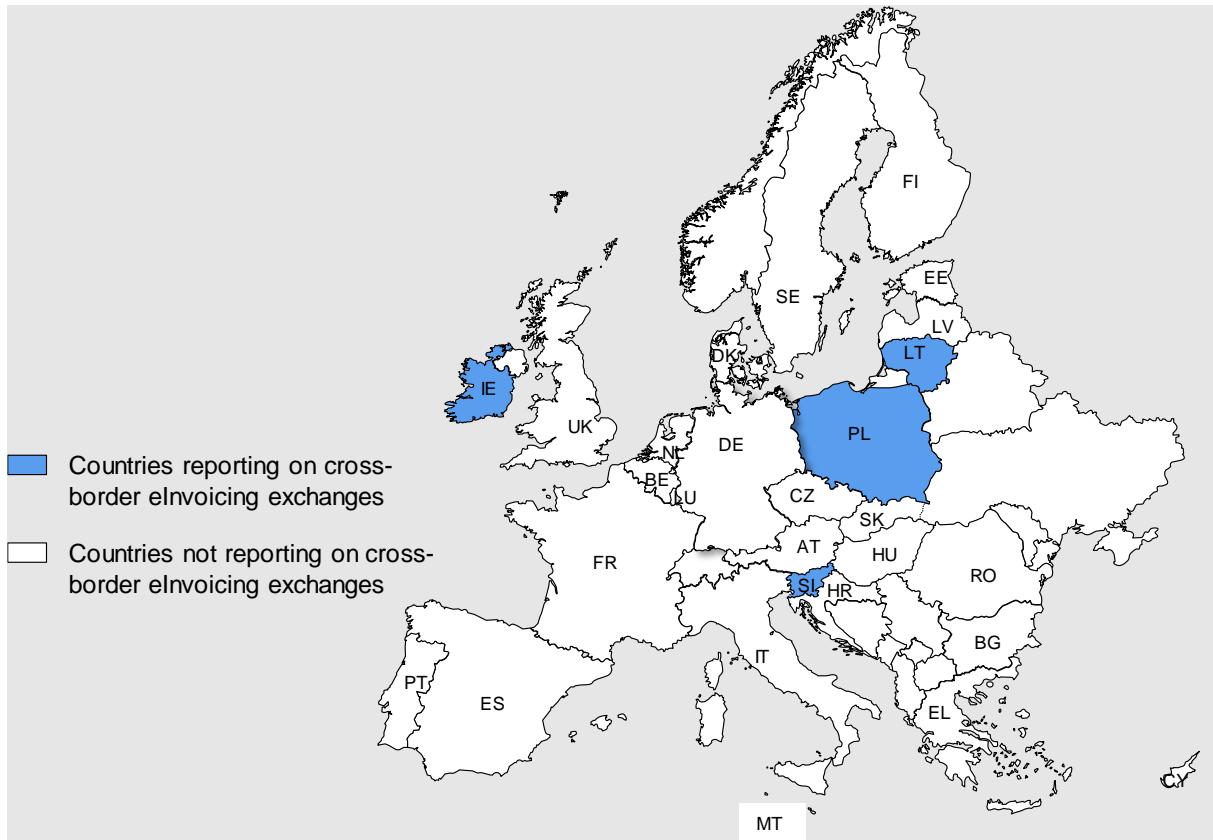
¹⁶ e-Račun, Croatia's centralised eInvoicing platform, accessible at: <https://www.fina.hr/e-racun-za-poslovne-subjekte>

¹⁷ e-Rechnung, Austria's Federal Service Portal, accessible at: <https://www.erechnung.gv.at/erb>

3.3 Facilitation of Cross-border eInvoicing

As shown in Figure 4, only Slovenia, Ireland, Lithuania and Poland provided information on the cross-border exchanges of eInvoices in the survey. Consequently, additional desk research was performed to assess how Member States are equipping themselves to process cross-border eInvoices.

Figure 4 Countries reporting on cross-border eInvoicing



Source: Data collected via online survey completed by EMSFEI representatives of 15 EU Member States (Poland, Croatia, Ireland, Slovenia; Finland, Malta, Sweden; Slovakia, Hungary, Cyprus, Lithuania, Italy, Austria, Czech Republic, Luxembourg), Wavestone 2019.

Irish authorities reported that the implementation of eInvoicing has helped the development of relationships with their Member States' counterparts, which will be crucial in smoothing and facilitating future commercial links and cross-border eInvoicing. According to Lithuanian and Polish authorities, international eInvoices cannot yet be processed for technical reasons. Slovenia reported that eInvoicing will lead to a shorter cross-border eProcurement lifecycle and that it currently receives on average 5 000 eInvoices per annum from other European Economic Area (EEA) countries.

However, desk research revealed that Member States are currently preparing themselves for an uptake in cross-border eInvoices. One example for this statement would be Italy. In fact, according to an article from the Italian Time¹⁸ published in November 2019, the Italian national law states that cross-border transactions are temporary exempted from the need to be in an eInvoice format. However, the processing of cross-border

D05.01 eInvoicing Benefits Analysis

eInvoices is still communicated to the Central Agency through the "esterometro"¹⁸, its digital instrument monitoring international financial flows. In Slovenia, the 'Rose Action'¹⁹ aimed at introducing electronic invoicing, has established an AS4 access point that enables cross-border communication. In France, the Chorus Pro platform is already equipped²⁰ to facilitate the exchange and processing of cross-border eInvoices.

To conclude, whereas cross-border eInvoicing is still in its infancy stage and current cross-border exchanges are low, an increasing number of European countries are equipping themselves with the infrastructure. The aim is for the countries to be ready to process the increasing volumes of eInvoices as eInvoicing becomes more widespread.

¹⁸ Italian Times (article in Italian) accessible at: https://www.theitaliantimes.it/economia/esterometro-cos-e-come-funziona-obbligo-scadenza-fatture-estero-quando_200619/

¹⁹ Rose Action website, accessible at: <http://www.roseslovenia.eu/about-rose.html>

²⁰ Meeting notes from EMSFEI meeting on 23-24 May 2019.

3.4 Reduced time to payments

One of the foreseen advantages of eInvoicing is the reduction in time spent in processing eInvoices and their payment contrary to paper-based invoices. However, the survey findings did not capture these benefits comprehensively, so additional desk research was performed to complement the study findings.

Expressed in percentages

The survey revealed that the Slovakian authorities estimated that the implementation of eInvoicing will result in a time reduction for processing invoices by 10%. Further desk research revealed that France's centralised eInvoicing platform has reduced the processing times of invoices by 55%²¹.

Expressed in days

A similar finding was observed in the Belgian Region of Flanders, where it was reported that the reduction in processing times for invoices has been of 10 days on average since the introduction of eInvoicing²².

In light of these findings, it is possible to infer that noticeable benefits in processing time reduction can be drawn from the introduction of eInvoicing. If not yet very visible given the early stages of eInvoicing implementation in the EU, one can expect that more data will become available in the coming years as the use of eInvoicing increases together with the amount of available data.

²¹ Meeting notes from EMSFEI meeting on 23-24 May 2019, (from 36 days in 2017 to 16 days in 2018)

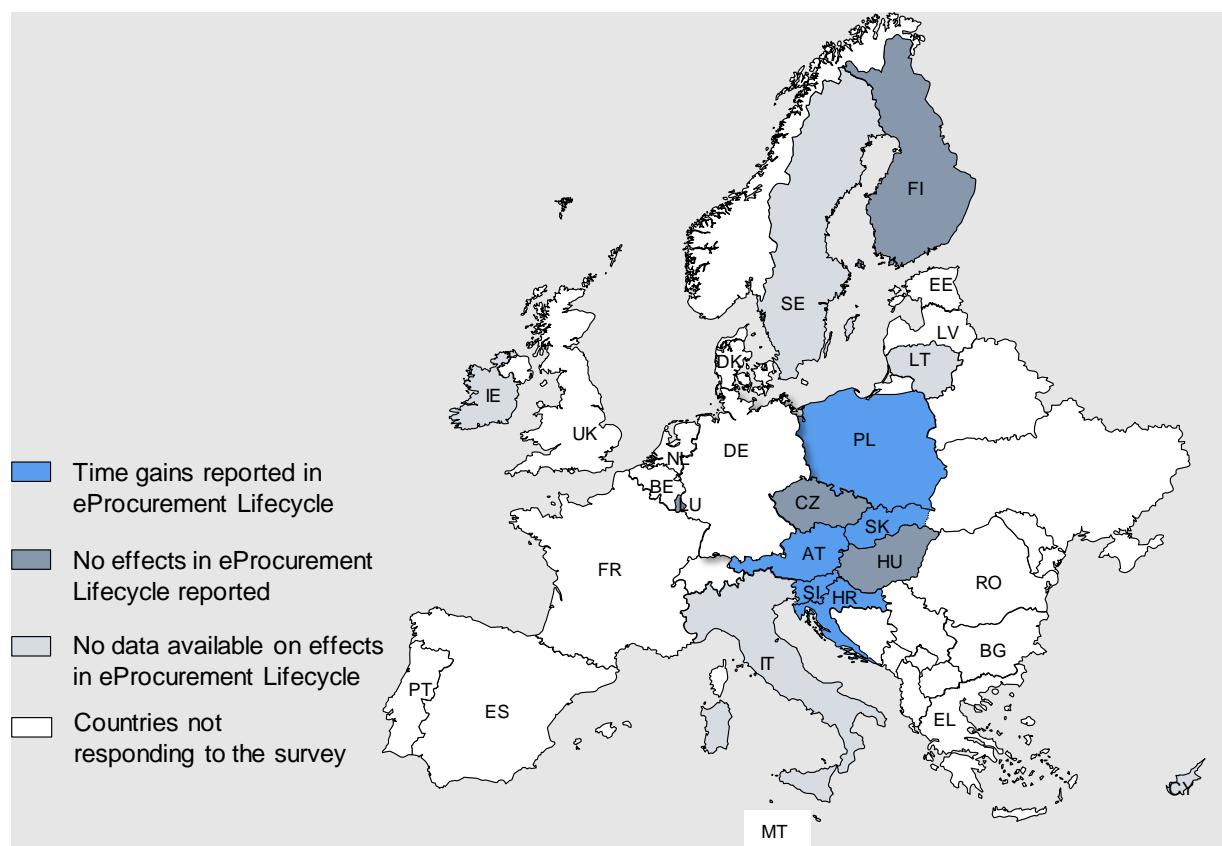
²² CEF Digital Success Story, accessible at:
<https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/2019/05/07/Government+of+Flanders+introduces+early+payment+with+e-invoicing>

3.5 Contribution to Process Automation (in the context of eProcurement)

One of the benefits of eInvoicing is the automation of eInvoice treatment in the context of the eProcurement optimization. Through the survey, the majority Member States representatives declared that the implementation of the Directive has significantly shortened the eProcurement lifecycle. [As an illustration](#), the Polish authorities pointed out that the post-award phase of public procurement processes, which previously required several weeks to be completed, can be reduced to only some hours.

As shown in figure 5, several Member States such as Austria, Croatia, [Poland, Slovakia, and](#) Slovenia agreed that the use of eInvoicing allows for a shortened lifetime of public procurement processes. Countries such as the Czech Republic, Finland, Hungary and Luxembourg, however, reported no effect on the duration of such processes due to the introduction of eInvoicing.

Figure 5 Country Responses concerning the effects of eInvoicing on eProcurement lifecycle



Source: Data collected via online survey completed by EMSFEI representatives of 15 EU Member States (Poland, Croatia, Ireland, Slovenia, Finland, Malta, Sweden, Slovakia, Hungary, Cyprus, Lithuania, Italy, Austria, Czech Republic, Luxembourg), Wavestone 2019.

Whereas Finland pointed out that eProcurement was already handled efficiently at the national level and eInvoicing did not have an impact, the Czech Republic highlighted that the overall lifetime of public procurement processes depends on other legal acts that are not related to the use of eInvoicing. The Czech authorities clarified that, public sector and private entities have implemented different organisational systems to process eInvoices. Therefore, their eProcurement lifecycle still relies upon the specific processing timings of the different economic operators involved and eInvoicing has not led to time reductions.

D05.01 eInvoicing Benefits Analysis

To conclude, some benefits are reported on the shortening of general procurement lifecycle through eInvoicing. However, the lack of data and the impact of other processes within the procurement lifecycle bring the challenge and bias the reduction of the procurement chain.

4 Conclusions

Based on the analysis of the EMSFEI Member State representatives' responses and the additional secondary data, it was possible to provide a picture of how eInvoicing proceeds to improve key areas related to invoicing and procurement development. However, survey responses were not unanimous and there was a lack of data homogeneity to provide conclusive findings. Below are the main conclusions that were elaborated by the study:

- **Conclusion 1:** the transition from paper-based to electronic invoices may lead to significant **operational savings**. These savings mainly resulted from the reduced cost of processing electronic invoices compared to the paper-based ones and can be identified at the unit and aggregate levels. Furthermore, estimates from some Member States on the extreme end, showed that in some cases operational costs could drop by more than 95% through the full implementation of eInvoicing²³. Even in cases where the costs initially outweigh the benefits, eInvoicing is still expected to lead to greater savings in the long run.
- **Conclusion 2:** concerning the reduction of the overall **administrative burden**, the use of central public platforms aims to connect the economic operators that are mandated to process eInvoicing. This facilitates shorter processing times for eInvoices while providing secure storage for documents and faster communication. However, the survey was only able to collect information from one Member State²⁴ on this.
- **Conclusion 3:** whereas the implementation of the eInvoicing Directive purpose is to facilitate the **cross-border exchange of eInvoices**, few Member States reported on the transnational exchange of eInvoices in the survey. Indeed, cross-border exchanges of eInvoices are still at an early stage as some countries have not fully implemented eInvoicing. It would therefore be interesting to understand how the new European standard will impact the cross-border flow of eInvoices in the coming years.
- **Conclusion 4:** some countries have reported that the implementation of the eInvoicing Directive has significantly shortened the **lifecycle of eProcurement**. This can be attributed to a reduced time to payment due to the electronic treatment of eInvoices. As payment is a step of the eProcurement process, any intervention leading to faster payments such as eInvoicing, leads to a shortening of the eProcurement lifecycle.
- **Conclusion 5:** the data collected reveals that the implementation of eInvoicing processes may contribute to reducing the **procurement lifecycle through automation**. However, only five Member States predicted shortened lifecycles. This can be explained by the fact that the integration of automated eInvoicing in the overall procurement processes is still in its infancy and therefore automated eInvoicing systems have yet an impact on the automation of eProcurement lifecycles. More attention needs to be given to this area in the coming years as eInvoicing becomes more established.

²³ Wavestone 2019 Benefits Analysis, Section 3 - Key Findings, chapter 3.1 "Cost and Operational Savings".

²⁴ Poland

D05.01 eInvoicing Benefits Analysis

To conclude, the survey did not provide comprehensive data to fully analyse the impact of eInvoicing in all study areas. However, enough information was gathered to determine that eInvoicing reduces average operational costs per individual invoice and at aggregate levels. In addition, some countries indicated that eInvoicing has the potential to fasten their time to payment and therefore their eProcurement lifecycle. As regards the reduction of the administrative burden, facilitation of cross-border trade and reduced time to payment, the survey and complimentary information could only provide limited evidence on the effects of eInvoicing. This could be because there is currently limited evidence on these and as eInvoicing becomes increasingly widespread, more information will become available.

5 Recommendations

After having presented the initial findings of the analysis on the benefits of eInvoicing, it is possible to elaborate some key takeaway recommendations to help Member States extract the benefits of eInvoicing to their fullest:

- **Recommendation 1:** perceiving the eInvoicing Directive as a relevant opportunity for Member States to explore ways in which operational costs savings can be maximised by benefiting from new technologies, including artificial intelligence.
- **Recommendation 2:** collecting more information and data to explore techniques to ensure the greatest reduction of the administrative burden for public administrations or other economic operators through eInvoicing. This should be done with respect to the specific characteristics of the Member State's public procurement setup, whether it is a centralised model or a decentralised model.
- **Recommendation 3:** complete the implementation of the eInvoicing directive and use the European Standard to enable the promotion of cross-border trade. To identify how eInvoicing could promote cross-border trade, a greater attention should be focused on collecting information on the number of cross-border eInvoices.
- **Recommendation 4:** promote reduced time to payments as a benefit of eInvoicing in order to encourage the uptake of eInvoicing on the supply-side, mainly by stating how businesses stand to benefit from the reduced time to payment by contracting authorities.
- **Recommendation 5:** create an enabling environment whereby, contracting authorities, service providers and suppliers can discuss new technologies to adopt to fasten transactions and ensure the full automation of the eInvoicing processes.

On a general note, as the implementation of eInvoicing processes and the adoption of the European Standard are still in their initial stage, some of the beneficial effects of eInvoicing might not yet be observable in Member States. It would therefore be important to pursue further research on eInvoicing's benefits once Member States dispose of more data on the eInvoicing processes in their countries.

6 Annex

6.1 Survey

Q1. How much, in operational savings, is your country already saving per annum from the implementation of eInvoicing?

Q2. How much, in operational savings, does your country expect to save per annum following the implementation of the EN (2019 onwards)?

Q3. What is the approximate cost of processing a paper-based invoice in your country?

Q4. What is the approximate cost of processing an electronic invoice in your country?

Q5. How does the implementation of the eInvoicing Directive facilitate end-to-end eProcurement in your country's public sector?

Q6. Describe how your country's eProcurement strategy has changed/will change in light of the eInvoicing Directive?

Q7. Explain how eProcurement governance & processes have changed/will change in your county in light of the eInvoicing Directive?

Q8. Describe how the transposition of the eInvoicing Directive affected/will affect the legal framework of eProcurement and other domains in your country?

Q9. What technical changes were necessary in your country's eProcurement system to implement the eInvoicing Directive?

Q10. Has the implementation of the eInvoicing Directive shortened the eProcurement lifecycle in your country?

Q11. Has the implementation of the eInvoicing Directive resulted in the reallocation of staff? If so, what percentage of eProcurement/ Procurement staff does this represent?

Q12. Has the implementation of the eInvoicing Directive led to any other changes in eProcurement that you would like to mention?

Q13. How has/will the implementation of the eInvoicing Directive generated/generate other beneficial effects?

Q14. Is eInvoicing in your country linked with any other processes? Revenue authorities: Please provide links and any relevant information

Q14. Is eInvoicing in your country linked with any other processes? Base Registers: Please provide links and any relevant information

Q14. Is eInvoicing in your country linked with any other processes? Others: Please provide links and any relevant information

Q15. What is the total value (in EUR or national currency) of B2G eInvoicing that national public administrations process in your country?

D05.01 eInvoicing Benefits Analysis

Q16. If you do not have an overview of the value of B2G eInvoicing that national public administrations process in your country, please provide the value (in EUR or national currency) of the B2G eInvoicing that you know national public administrations process in your country (e.g. sector specific B2G eInvoicing/ specific B2G eInvoicing processed by a certain or certain public entities)?

Q17. What is the value (in EUR or national currency) of e-Invoices that your national public administrations process from other EEA countries?

Q18. If you do not have an overview of the value of e-Invoices that your national public administrations process from other EEA countries, please provide the value (in EUR or national currency) of the B2G eInvoicing that you know any of your country's national public administrations process from other EEA countries (e.g. sector specific B2G eInvoicing/ specific B2G eInvoicing processed by a certain or certain public entities)?