

OECD FORUM ON TAX ADMINISTRATION

Tax Administration 3.0 and Electronic Invoicing

Initial Findings



OECD Forum on Tax Administration

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Preface



I am pleased to present this report on *Tax Administration 3.0 and Electronic Invoicing: Initial Findings* which sets out some of the core elements of electronic invoicing in current implementations by tax administrations, and draws out some considerations for those exploring possible implementation or reform of such systems.

This report forms part of the initial work on the Tax Administration 3.0 project and is a summary of the discussions between officials from Canada, Chile, China (People's Republic of), Hungary and Spain who participated in the Advisory and Drafting Group (ADG) for this project which was established following the publication of *Tax*

Administration 3.0: The Digital Transformation of Tax Administration.

These wide ranging exploratory discussions covered domestic case studies and implementation experiences, and were supported by an e-invoicing project survey that was circulated to tax administrations in 2021 alongside a wider survey on the technology tools and digitalisation solutions implemented by tax administrations. The responses from 71 tax administrations have been used to inform the different parts of this report, providing a snapshot of some of the different solutions regarding the adoption of electronic invoice and the periodic or real-time transmission of data and/or invoices to tax authorities.

While the electronic invoicing landscape is a complex and fragmented one, one of the strengths of this report is the practical examples it contains regarding the steps taken by a number of tax administrations in their work on electronic invoicing. I hope that administrations will find this to be useful in their domestic considerations. Learning from others in this way is especially valuable enabling us to build more effective strategies that avoid common pitfalls and, where appropriate, build on tried and tested approaches. I hope this report is just the start of that sharing process, as the experience of tax administrations grows in this field and as dialogue with business increases.

In addition, drawing from the examples and experiences of ADG members, the report also sets out a number of considerations that tax administrations may wish to reflect upon. One of these considerations that I would highlight concerns the question of whether other options might also be explored regarding VAT compliance and reporting in the longer term. In particular, and in the light of the Tax Administration 3.0 vision, whether taxation processes might be built into taxpayers natural systems, subject to appropriate assurance mechanisms, with only the tax payable reported rather than all of the underlying invoices. This may be an area where more discussions among tax administrations and with business might be fruitful, particularly given the highly fragmented picture that currently exists.

Finally, I would like to thank all of the tax administrations which formed the Advisory and Drafting Group – Canada, Chile, China (People's Republic of), Hungary and Spain – for their high quality inputs and for giving so generously of their time and knowledge, as well as all the tax administrations which completed the survey underpinning this report.

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Foreword

This report has been produced by the Organisation for Economic Cooperation and Development (OECD)'s Centre for Tax Policy and Administration (CTPA) under the auspices of the Forum on Tax Administration of the Committee on Fiscal Affairs.

This report aims to explore core elements of current implementations by tax administrations of electronic invoicing systems and to draw out some considerations for those exploring possible implementation or reform of such systems. It is part of the wider work programme to develop the ideas highlighted in the OECD's Tax Administration 3.0 report and is a summary of the discussions between officials from Canada, Chile, China (People's Republic of), Hungary and Spain who participated in the Advisory and Drafting Group for this project established following the publication of Tax Administration 3.0.

This report was approved by the Committee on Fiscal Affairs on 13 September 2022 and prepared for publication by the OECD Secretariat.

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Abbreviations and acronyms

ADCS	Audit Data Collection Standard
ADG	Advisory and Drafting Group
AEAT	Spanish Tax Agency
B2B	Business-to-Business
B2C	Business-to-Consumer
B2G	Business-to-Government
CEF	Connecting Europe Facility
CFA	Committee on Fiscal Affairs
CIAT	Centro Interamericano de Administraciones Tributarias (Inter-American Center of Tax Administrations)
CII	Cross-Industry Invoice
COI	Community of Interest
CRA	Canada Revenue Agency
CTC	Continuous Transaction Controls
DRR	Digital Reporting Requirement
EDI	Electronic Data Interchange
FTA	Forum on Tax Administration
HTML	HyperText Markup Language
ICT	Information and Communication Technology
IDB	Inter-American Development Bank
ISI	Immediate Supply of Information
JPG	Joint Photographic Experts Group format
NTCA	(Hungarian) National Tax and Customs Administration
PDF	Portable Document Format
PTC	Periodic Transaction Control
OCR	Online Cash Registers
OECD	Organisation for Economic Co-operation and Development
SDI	Sistema di Interscambio

SII	Servicio de Impuestos Internos (Chilean Tax Authority)
SME	Small and Medium-sized Enterprise
TA	Tax Administration
TIFF	Tag Image File Format
VAT	Value Added Tax

Executive Summary

As part of the further work exploring possible stepping-stones to future tax administration, a small Advisory and Drafting Group (ADG) of Forum on Tax Administration (FTA) members was set up to look at the growing use of Value Added Tax (VAT)-related continuous transaction reporting systems relying on electronic invoices produced by business, as well as how they fitted with the concepts outlined in the OECD's *Tax Administration 3.0: The Digital Transformation of Tax Administration* ("Tax Administration 3.0") report (OECD, 2020^[1]). (In this report, the different forms of continuous data reporting systems are all termed electronic invoicing.)

Initially, one of main aims of this project was to look at the possibilities for where and how the existing standards might be brought together to an attempt at global standardisation might help deal with some of the interoperability issues arising from the wide variety of different implementations of electronic invoicing in different jurisdictions, in particular those affecting businesses operating across borders. The underlying goal was that this might assist with embedding VAT processes into taxpayers' natural systems, including as they evolve over time.

The conclusion was soon reached by the ADG that global standardisation interoperability could not realistically be achieved in the near-term. This is because different implementation options have been chosen based on domestic considerations, the existence of a proliferation of standards, as well as the extent of the current fragmentation of electronic invoicing systems and associated implementation costs that have been incurred. The impacts of this uncoordinated the development of different versions of electronic invoicing holds lessons for the importance, where possible, of international collaboration on the development of systems which apply across borders to minimise the emergence of significant and persistent burdens which can impact both business and tax administrations and which can potentially become unsustainable in the light of changing business models. As a result the ADG instead focused on exploring aspects of the wide variety of tax administration interests and approaches in regards to e-invoicing for the purpose of knowledge sharing. This was informed by:

- Domestic case studies; tax administrations from Canada, Chile, Finland, Hungary, Italy, and Spain provided qualitative inputs. Results have been integrated into chapter descriptions and specific elaborated examples are presented in Annex A.
- An e-invoicing project survey that was circulated to tax administrations in 2021 alongside a wider survey on the technology tools and digitalisation solutions implemented by tax administrations. The responses from 71 tax administrations have been used to inform the different parts of this report.

As well as presenting observations about aspects of the choices to adopt electronic invoicing solutions and implementation issues, the ADG drew up a set of considerations that tax administrations may wish to take into account when exploring the introduction or reform of electronic invoicing, in order to help mitigate some of the issues arising from different implementation choices. These considerations also raise an open question as to whether current applications of electronic invoicing can evolve easily along with evolving taxpayers' natural systems as technology and business models change over time or whether they will create increasing burdens and inefficiencies over time. This may be an area where further discussions with stakeholders could be useful to examine and propose possible longer term models of how VAT compliance

can be more aligned with taxpayers' natural systems, leading to more seamless and well-assured outcomes.

As a result of the change in focus, this report therefore:

- Characterises the different forms of electronic invoicing (Chapter 1).
- Looks at the main reasons why tax administrations introduce electronic invoicing (Chapter 2).
- Introduces some examples of implementation solutions and issues (Chapter 3 and country case studies in Annex A).
- Presents a set of considerations that tax administrations may want to take into account in exploring the possible introduction or reform of electronic invoicing (Chapter 4).
- Finally, Annex B provides a brief update on initial work undertaken on the latest state of play with the implementation of the OECD Standard Audit File – Tax which is being used by some administrations as part of periodic transaction reporting for VAT.

Caveat

Tax administrations operate in varied environments, and the way in which they each administer their taxation system differs with respect to policy and legislative environments as well as administrative practices and cultures. A standard approach to tax administration may be neither practical nor desirable in a particular instance. Therefore, this report and the observations it makes need to be interpreted with this in mind. Care should be taken when considering a tax administration's distinct practices to fully appreciate the complex factors that have shaped a particular approach. Similarly, regard needs to be had to the distinct challenges and priorities each administration is managing.

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- OECD (2020), *Tax Administration 3.0: The Digital Transformation of Tax Administration*, OECD, Paris, <https://www.oecd.org/tax/forum-on-tax-administration/publications-and-products/tax-administration-3-0-the-digital-transformation-of-tax-administration.htm> (accessed on 2 August 2022). [1]

1 Introduction

The OECD's Tax Administration 3.0 report (OECD, 2020^[1]) set out a vision of future tax administration based on taxation processes increasingly moving into taxpayers' natural systems. These are the systems that they use in their daily lives to transact, operate their business and communicate. Building taxation processes into systems offers opportunities to significantly increase compliance and reduce burdens, including over the longer term as business systems and models evolve.

Achieving this goal is a long term project which, given the scale of tax administrations and the wider tax ecosystem, will of necessity proceed in stages. As part of the further work exploring possible stages on this journey, OECD Forum on Tax Administration (FTA) members decided to look further at the current use of electronic invoicing. This is because:

- It appears to offer opportunities for tax administrations to engage directly with the processes used by businesses for their own business purposes, i.e. their natural systems; and
- It is an area which is becoming increasingly digitalised, allowing for greater automated connections between taxpayers' and tax administration systems.

The project therefore had as its twin goals to:

- consider opportunities for closer multilateral collaboration and improved interoperability to help resolve some of the cross border issues currently faced by businesses and tax administrations; and
- leverage the rich source of experience from tax administrations which have already adopted electronic invoicing systems to help provide information and insights to others thinking of embarking on this journey.

It soon became apparent, however, during the early work on this project, that the first aim outlined above was not realistic in the near term given the degree of fragmentation already existing. Each implementation has been undertaken based on the different domestic contexts – legal, business, compliance culture, budgetary considerations and so on. There is no obvious “right” solution, although the resulting proliferation of electronic invoicing systems has led to the wrong global outcome as regards the costs to cross-border business and international compliance management.

However, it is also apparent that, against this background, there may be value in taking a step back conceptually and undertaking further collaborative work, including with business, to look at the possible longer-term options for moving Value Added Tax (VAT) processes into taxpayers' natural systems. Having more clarity on longer-term goals may help to influence current decisions as well as future reforms.

The project has therefore at this stage focused on the second goal of knowledge sharing, by comparing aspects of different implementations and also be seeking to draw out some considerations that administrations may wish to take into account when exploring possible electronic invoicing options.

The electronic invoicing landscape is, though, a complex one with different approaches having been taken in different countries and sometimes different terminology used. It is therefore useful to start with setting out the characteristics of both electronic invoices and by electronic invoicing as used in this report.

Electronic invoices

An invoice in general can be defined as a statement of goods sent or services provided, including the sums due, which is used in business as a record of sale.

As well as being important legal documents between the supplier and the customer, invoices are also important fiscal documents recording information relevant for tax purposes, in particular for VAT. They will typically contain VAT-related data, such as supplier and customer identification, descriptions of goods and services, VAT rates and total VAT due.

Given the specific role of invoices in legal and fiscal processes, the various parties involved, which includes tax administrations, deploy mechanisms assuring the integrity, authenticity and availability of the document for audit purposes. Paper invoices by nature can support these quality characteristics, e.g. via their physical uniqueness, signatures and water marks and through record keeping requirements.

An **electronic invoice** (e-invoice), is well described by the Inter-American Development Bank (IDB) and the Inter-American Center of Tax Administrations (CIAT), as:

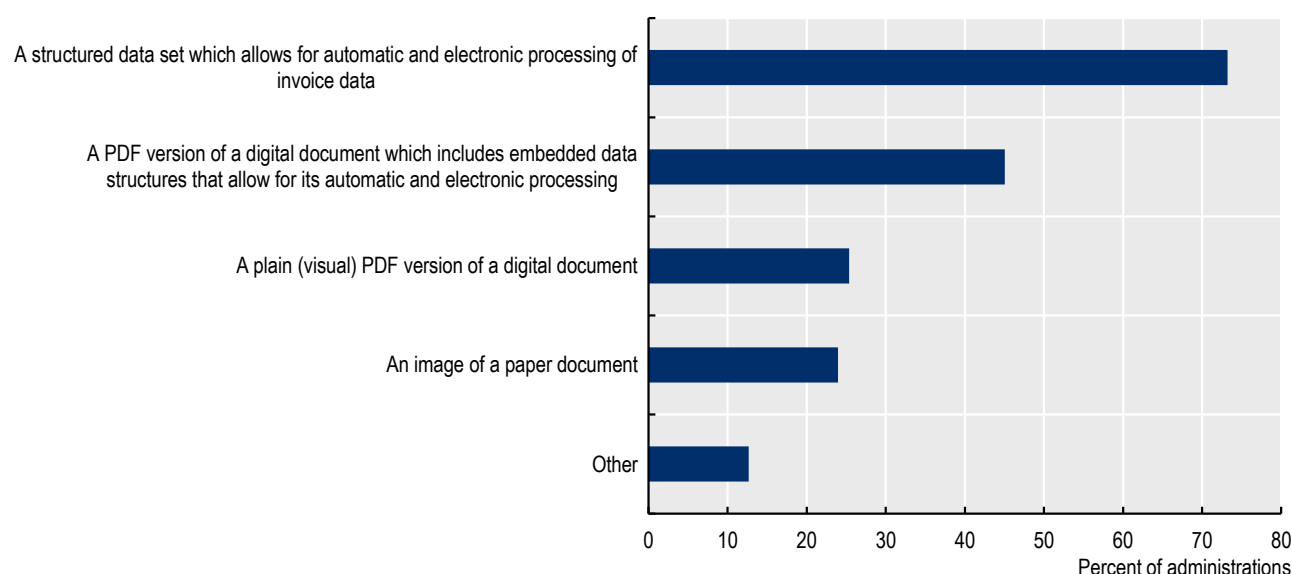
“an invoice that exists in electronic form and that, in all situations and for all actors, has the same purposes as a paper invoice, for issuers, recipients, and interested third parties. Put another way, it is a document that records an entity’s commercial transactions in electronic form, fulfilling the principles of authenticity, integrity, and legibility in all applicable situations and for all the actors in the process, in the commercial, civil, financial, logistical and, undoubtedly, tax spheres”. (CIAT and IDB, 2018^[2]).

Embedding the use of electronic invoices or the use of electronic invoice data directly into taxpayer compliance processes requires a legal framework, including a legal definition of what can be considered an e-invoice. This report does not seek to present one unique definition of what an e-invoice is, since legal definitions vary between countries. However, looking across tax administrations globally, e-invoices can generally be of two types, either:

- **Unstructured** invoice data. This can be issued in PDF or Word formats, images of invoices such as JPG or TIFF, unstructured HTML invoices on a web page or in an email, OCR-scanned paper invoices, and paper invoices sent, like images, via fax machines; or
- **Structured** invoice data which can be easily extracted electronically from the invoice for electronic processing, including automated processing.¹

As Figure 1.1 illustrates, many tax administrations responding to the project survey indicated that images of paper documents, like PDFs, are considered to be an e-invoice. The majority of the options chosen in the survey, though, relate to the use of a structured data set allowing for automated digital data processing.

Figure 1.1. Documents considered to be an e-invoice



Note: This figure summarises the responses to the question “What does your tax administration consider to be an e-invoice?”; administrations could choose multiple answer options.

Source: Project survey.

The two types of electronic invoice can coexist in electronic invoicing systems with different requirements applying, for example, to different sizes of business. Paper invoices often continue to form part of the broader VAT-compliance environment. (See Box 1.1 on the range of invoice formats in Hungary.)

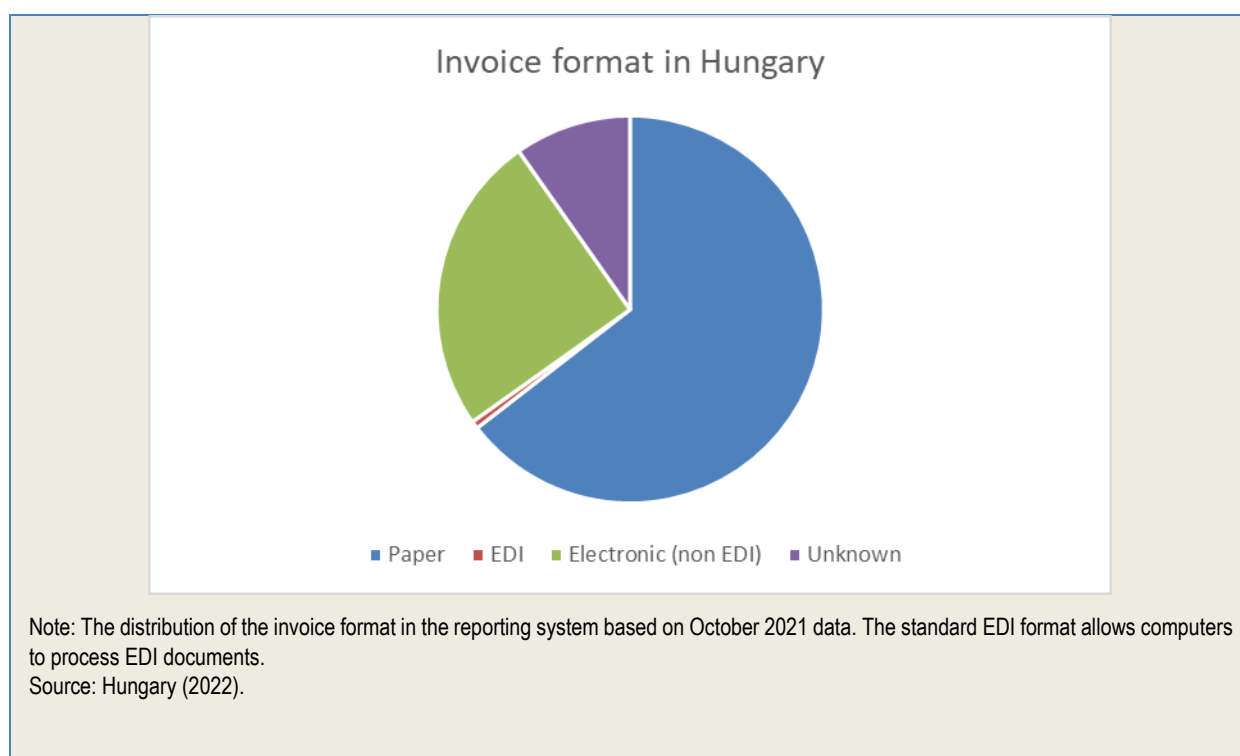
Box 1.1. Invoice formats in Hungary

The most important invoicing methods in Hungary are the followings:

Electronic Data Interchange (EDI) invoices: the EDI system is used by 1 960 taxpayers based on the tax administration data and represent 0.3% of taxpayers. Although roughly 400 000 invoices are generated from these systems per month, the share of these invoices is only 0.64%.

Non-EDI based electronic invoices: nearly 110 000 taxpayers use such an electronic invoice and more than 16 million invoices are issued each month. In this electronic invoicing method, the PDF invoice image is very typical, and is electronically signed by the invoice issuer.

Paper-based invoices: the use of the manual invoice books is typically used in micro-enterprises, or SMEs, which issue very few invoices or use them precisely because of the specialty of the business model. The number of taxpayers which use the manual invoice book has dropped dramatically in recent years. The vast majority of paper-based invoices are prepared by invoicing programs. 42 million invoices are generated by nearly 674 000 taxpayers monthly.



Characteristics of electronic invoicing

From a business perspective electronic invoicing can be characterised as the exchange of an electronic invoice that records a transaction between a supplier and a customer, which ideally forms part of its natural systems for carrying out its business (although in some implementations, electronic invoicing may be something added on to existing commercial systems). Resonating with the characterisation of an e-invoice presented in the CIAT definition, in this case the legal, contractual, status of the electronic invoice is the key consideration from a business perspective.

From a tax administration perspective, while the status of the document is of course highly important for reasons of reliability and authenticity, the other important focus is on its use in compliance management and service delivery. In this case, the characterisation of electronic invoicing as digitally reporting e-invoice data focusses on the embedding of digital data processing opportunities in VAT reporting regimes.

As set out above, in electronic invoicing systems transactional data is submitted electronically just before, during or shortly after the actual exchange of such data to record a transaction between a supplier and customer. Tax administrations receive this transactional data in the form of:

- a structured electronic invoice directly from a business from which data can be extracted automatically within the tax administration;
- a defined data set already extracted from the invoices by the business, but not the invoices themselves; or
- a combination of the above.

In essence, the basic question distinguishing the alternatives is whether defined data is being sent or the invoice itself.

The four case studies contained in Annex A cover both alternatives. In the Hungarian and Spanish case the taxable entity should submit specific data shortly after carrying out a transaction and while they can

send e-invoices to the tax administration, they are not mandated to do so. The Chilean and Italian case studies illustrate the situation in which the taxpayer is mandated to use a structured, pre-defined, e-invoice which is shared with the tax administration. (All Latin-American digital reporting implementations are of this type.)

To help avoid confusion, the classification of digital reporting requirements in the 2022 EU report on VAT in the Digital Age (European Commission, 2022^[3]) is set out in Box 1.2. This classification covers both the periodic sending of data electronically – periodic transaction reporting – and those involving continuous transaction reporting. The EU report distinguishes between two types of continuous transaction reporting (which it terms real-time reporting and e-invoicing). As said above, in this report both these types of continuous transaction reporting are termed electronic invoicing.

Box 1.2. EU categorisation of Digital Reporting Requirements

The EU categorises direct reporting requirements (DRRs) based on the reporting frequency as well as the modality of compliance and the data required. All systems existing in the EU can be classified into one of four groups whose distinctive features can be summarised as follows:

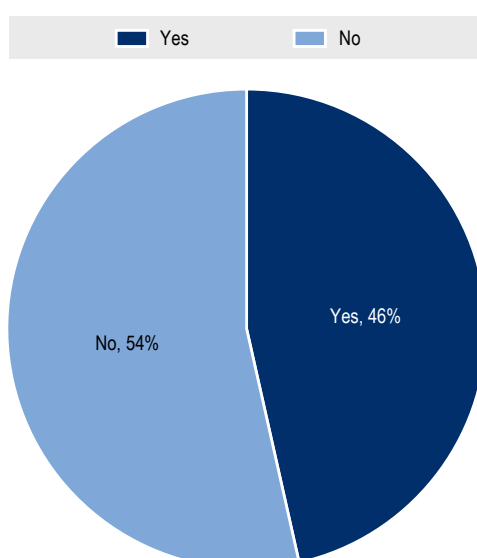
- **VAT listing** is the obligation imposed on taxpayers to submit VAT transactional data according to a national format. Transactional data usually consist of a list of transactions (hence the term ‘listing’) with information on their values and counterparts, as well as other VAT relevant data among those which are to be included in the invoice. The data are submitted on a periodic basis (typically monthly or quarterly), often jointly with the VAT return. Other data – accounting, other taxes – are not required.
- **SAF-T reporting** is a specific form of DRRs based on the OECD’s standard. The standard was developed for tax audit purposes and can encompass information on direct and indirect taxes as well as accounting data; it can be tailored to single countries via national specifications. A number of Member States adapted and then mandated a SAF-T standard as the format through which tax and audit information, including on VAT transactions, is to be submitted to tax authorities on a periodic basis.
- **Real-time reporting** is the obligation on taxpayers to transmit transactional data shortly after issuance of the invoice. The data required can be extracted from the invoice, but the invoice itself does not need be transmitted to the tax authority. The taxpayers must comply with the requirement within a short time-limit (the same day, or within a few days).
- **e-Invoicing** is a compliance system requiring taxpayers to issue a structured e-invoice for VAT purposes. ‘Structured’ means that the e-invoice must conform to a machine-readable standard, so that it can be automatically processed. The e-invoice as a whole, or a set of data therefrom, must then be transmitted to the tax authority, prior to its issuance, as it takes place, or shortly thereafter. The taxpayer may be able to send the e-invoice directly to its customers while sharing it with the tax authority (no-clearance e-invoicing). Alternatively, the taxpayer may be required to go through the tax authority first, either to obtain a preliminary authorisation, or by using a central IT platform, which, in turn, delivers the e-invoice to the customer (clearance e-invoicing).

Source: European Commission (2022), VAT in the digital age: final report. Volume 1, Digital reporting requirements, <https://doi.org/10.2778/541384>.

In closing, it is important to emphasise that many tax administrations choose not to collect e-invoice data on a systematic basis (see Figure 1.2).

Figure 1.2. Collection of e-invoice data on a systematic basis

Percent of administrations that collect (Yes) or do not collect (No) e-invoice data on a systematic basis

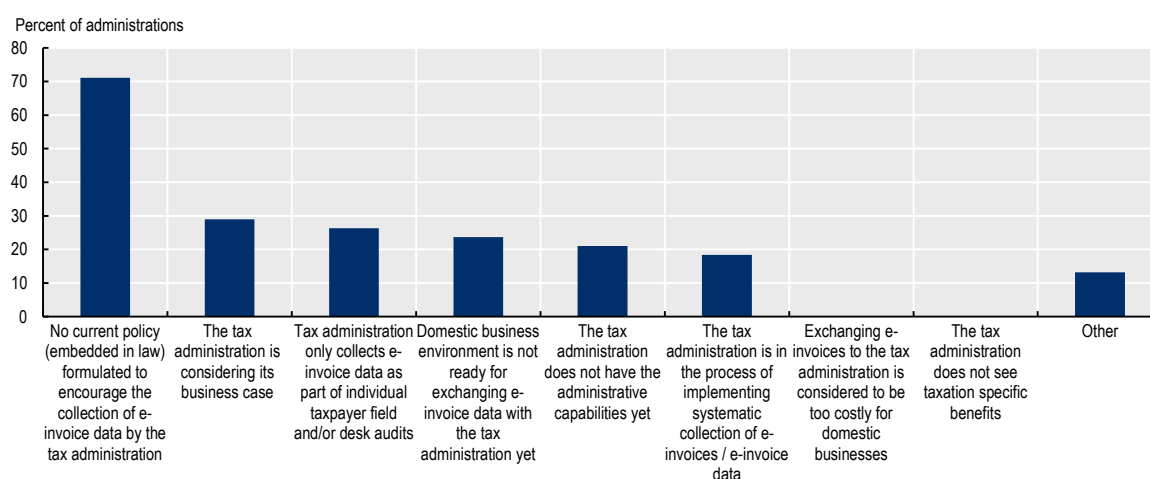


Note: This figure summarises the responses to the question “Does your tax administration collect e-invoices / e-invoice data on a systematic basis?”

Source: Project survey.

The tax administrations that do not collect electronic invoice data on a systematic basis, report a wide variety of reasons, as shown in Figure 1.3. The lack of e-invoicing policy is the main reason (70%). 30% of the respondents do, though, indicate they are considering an e-invoice data collection business case.

Figure 1.3. Reasons why administrations do not collect e-invoices on a systematic basis



Note: This figure summarises the responses to the question “Please indicate why your administration does not collect e-invoices on a systematic basis”; administrations could choose multiple answer options.

Source: Project survey.

Box 1.3. Canada: Sales Tax E-invoicing Feasibility Study

The Compliance Programs Branch of the Canada Revenue Agency (CRA) has launched a multi-year initiative to examine the feasibility of adopting e-invoicing standards and technology that integrates with the Canadian tax system.

The focus of the CRA's E-invoicing Initiative is to evaluate how e-invoicing can benefit businesses through efficiencies, as well as to improve sales tax compliance, deter participation in the underground economy, and improve the taxpayer experience. It aims to advance thinking as to how the CRA can shift the focus of its compliance approach from relying on taxpayer completed tax returns and post-filing strategies to include the use of real-time/near-real-time data from business transactions via modern technologies.

Source: Canada (2021).

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Notes

¹ To note that the European Union (in Directive 2014/55/EU) defines an electronic invoice as "an invoice that has been issued, transmitted and received in a structured electronic format which allows for its automatic and electronic processing" (EU, 2014^[5]). So within the EU unstructured data in electronic form is not considered an electronic invoice.

2 Why tax administrations introduce electronic invoicing

Tax administrations have different reasons to introduce electronic invoicing based on their different domestic circumstances. These arguments vary, based on domestic differences with respect to, among other things, legal frameworks, the context and compliance levels.

In general, three interrelated perspectives can be formulated as e-invoicing starting points. These are explored further below:

- Supporting the implementation of a sustainable e-business ecosystem.
- Digitalising the domestic regulatory invoicing framework.
- Enhancing overall compliance risk management effectiveness.
- Taxpayer service innovations

Supporting the implementation of a sustainable e-business ecosystem

From a business perspective the exchange of e-invoices can enable the decrease of invoice payment times and thereby optimising cash flow processes and indicators. However, business must be able and willing to migrate their paper systems into digital e-business applications. Perceptions and readiness influence the diffusion of e-invoicing in the business domain. For example, research conducted by a Canadian organisation on the various challenges that are preventing Canadian businesses from fully adopting e-invoicing, identified challenges such as: customer preference, convenience and traceability of paper trails, perceived security, and reluctance to change current processes. (Yun, 2021^[4])

Governments have been stimulating the adoption of e-business ecosystems, consisting of a suite of e-tender, e-procurement, e-invoicing and e-payment solutions. In some cases governmental organisations have served as 'launching pad' for the introduction of e-invoicing. Based on large amounts of Business-to-Government (B2G) e-invoices exchanged, these initiatives aimed for a domestic take-off of Business-to-Business (B2B) e-invoicing. As part of these governmental initiatives, tax administrations as large governmental customers of goods and services, started enabling and stimulating e-invoicing.

According to the EU e-Invoicing Directive (EU, 2014^[5]), EU Member States have to require public administrations to accept structured e-invoices compliant with the European standard. EU Member States may impose an obligation on taxable persons to use structured e-invoices for B2G transactions. This requirement was instrumental in fostering the use of structured e-invoices in several EU Member States.

The introduction of the digital exchange of invoice data with tax administrations might be a trigger for business to adopt (B2B) e-invoicing solutions. One might expect that investments in tax-related IT solutions and staff education make business more ready for the implementation of e-business applications.

A comparative study of the use of electronic invoicing in Spain indicates that the total volume of electronic invoices issued in Spain in 2020 (B2B, B2G and B2C) increased by 17% compared to 2019. This increase

is even greater if only the volume of invoices issued in commercial transactions between companies (B2B) is taken into account, with a total of 203 million invoices issued, an increase of 18% compared to 2019.

In Chile, for example, one of the first countries to implement e-invoicing, the growing volume of paper documents, hindering the Chilean tax administration (SII) control and management tasks, as well as high management costs, such as storage, face-to-face procedures, among others, were major drivers behind the introduction in 2003.

These costs mainly affected large companies, who promoted together with the SII the development of electronic invoicing. Electronic invoicing since its conception has been considered one of the emblematic projects of the Chilean Digital Agenda, and as such represents one of the most significant and strategic initiatives of the modernisation in Chile.

In addition, the e-invoicing project directly reflects the strategic pillars that underpin the management of the SII: Contribute to the Economic Development of the Country, Facilitate Tax Compliance and Strengthen Supervisory Control.

Box 2.1. Supporting the implementation of sustainable e-business ecosystems

Denmark

As of 1 February 2005, all public institutions in Denmark were required only to accept invoices from suppliers in electronic format, which can be read directly by the public sector's accounting systems.

Thus, all public-sector entities were required to convert all systems and administrative processes from physical to digital handling of invoices, credit notes and other transactions. This reform affected approximately 15 million invoices a year and applied to the entire public sector from government ministries to nursery schools. It was expected to save the public some EUR 120 million annually, in addition to savings in internal administrative processes.

The initiative for electronic invoicing in Denmark came from the Danish Ministry of Finance. In cooperation with Local Government Denmark and Danish Regions, they developed the ideas, and parliament passed the necessary legislation behind eInvoicing in Denmark. Concerned by the implementation were all 270 municipalities and about 440 000 private companies. The introduction of B2G eInvoicing supported the Danish national strategy for eGovernment which aimed to create a more effective and coherent public sector. The Agency of Governmental Management, under the Ministry of Finance handled the implementation and ongoing administration of eInvoicing

Spain

Since 2015, in accordance with Law 25/2013 on the promotion of electronic invoicing and creation of the accounting record of invoices in the Public Sector, the invoices that are sent to the Public Administrations are electronic and conform to the structured format of electronic invoice *Facturae* version 3.2.x with electronic signature XadES.

The general delivery point for electronic invoices of the General State Administration is "Facturas Electrónicas" (FACE). Companies must submit their electronic invoices via FACE, as of 15 January 2015. The General State Administration offers its suppliers this single point of presentation of invoices with all the advantages that this entails - a single window for presentation and consultation, unified format, unified coding of units, etc. Furthermore, FACE can be used by other public administrations as their own general point of entry for electronic invoices, which affects the benefits for the administrations' providers.

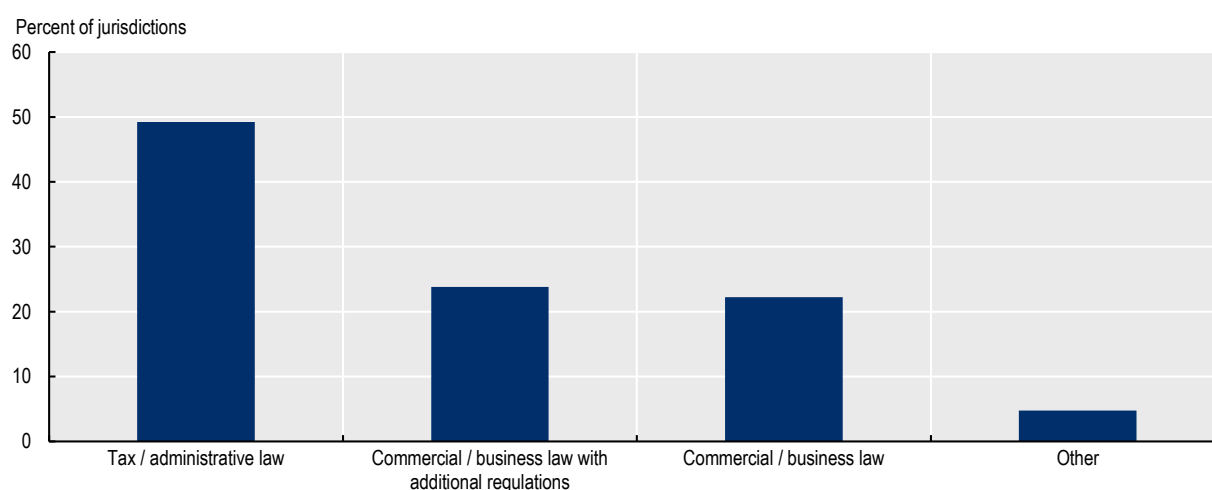
The central point offers a web portal (<http://face.gob.es/>) to present the electronic invoice and allows suppliers if they wish to connect their invoicing systems with FACe automatically. The system is integrated with the invoice generation tool provided by the Administration and with other private sector systems, which allows a comfortable and simple sending of B2G electronic invoices.

Sources: Denmark (2022) and Spain (2022).

Implementing domestic regulatory frameworks

In many jurisdictions, invoices and e-invoices are not only legal documents supporting *business* transactions, but especially taxation related documents. In those cases e-invoicing is being regulated by specific tax and administrative law related frameworks, which may involve regulations on top of commercial and business law requirements. Only in 22% of cases is electronic invoicing regulated solely by commercial or business law requirements.

Figure 2.1. Regulation of exchange of e-invoices



Note: This figure summarises the responses to the question “In your jurisdiction, the exchange of e-invoices is primarily regulated by”.
Source: Project survey.

An important element of most domestic (regional) legal frameworks regards the integrity and authenticity of the e-invoice. “[E-invoices] are signed and authenticated so as to allow the originator to be determined and thereby prevent the issuer from rejecting the document. They also include mechanisms that, for all practical purposes, guarantee that the document is whole and that it has not been altered since it was signed. Generally, this is done by digitally signing an electronic document supported by a PKI8 platform that is backed by the national certification authority or the [tax administration] itself. Use of the cryptographic capacities related to the use of digital certificates, moreover, allows the content of the documents to be enciphered during its online transmission to the [tax administration]” (CIAT and IDB, 2018^[2]).

For example, the issuance of tax documents in Chile was linked from the beginning to the physical stamping of the invoice to legalise the paper documents that supported taxpayers’ economic activities, which consisted of the application of a stamp on each document and their respective copies. By introducing

e-invoicing, this stamp was then replaced by the electronic authorisation of the documents, by downloading a code called "Código de Autorización de Folios (CAF)", which is administered by the SII.

Enhancing overall compliance risk management effectiveness

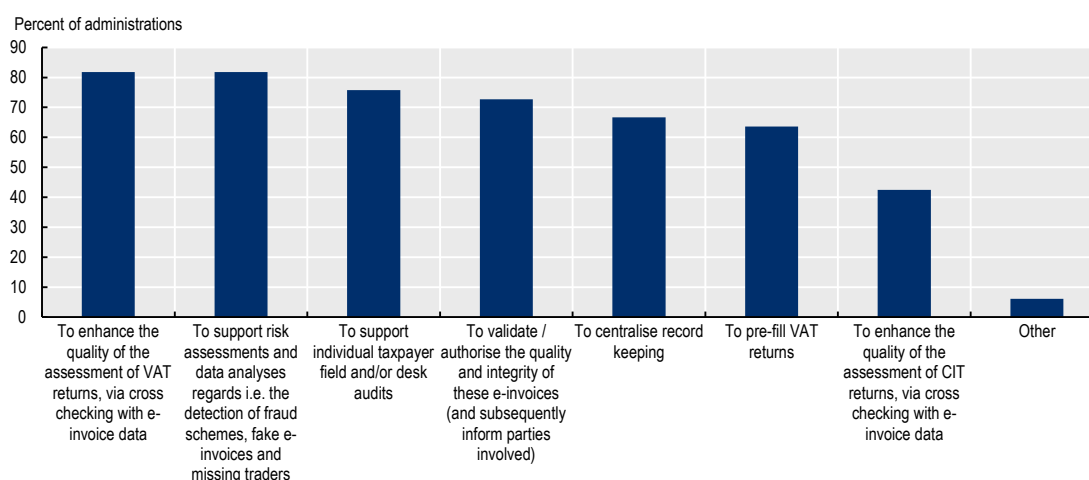
A major driver behind digitally collecting invoice data by tax administrations is enhancing overall compliance risk management effectiveness. In most cases these initiatives aim for a decrease of VAT gaps. VAT represents a significant share of total taxes in most, if not all, countries that have implemented it. It represents 20% of total taxes on average worldwide, typically second or third after Personal Income Tax and Social Security Contributions in developed economies. In developing economies it is typically the main revenue source, representing between 30-50% of total taxes.

The EU estimated the potential VAT revenue losses attributed to the non-introduction of digital data reporting requirements by 15 Member States cumulatively between EUR 22 and 27 billion per year.¹ In addition, the EU assessed the impact of digital reporting requirements (both periodic and continuous transaction controls) being about 3% increase of VAT revenues (2014-19, 19.3 billion EUR). (European Commission, 2022^[3])

Figure 2.2 presents a wide variety of compliance management related purposes for tax administrations to collect e-invoice data. Compliance levels might be increased via, among others:

- incentives to businesses to invest in the quality of business (reporting) systems (upstream compliance);
- deterrent effect on voluntary compliance;
- more effective and timely detection of fraudulent traders;
- enhancing the quality of audit selection and the audit execution itself.

Figure 2.2. Purposes of collecting e-invoice data



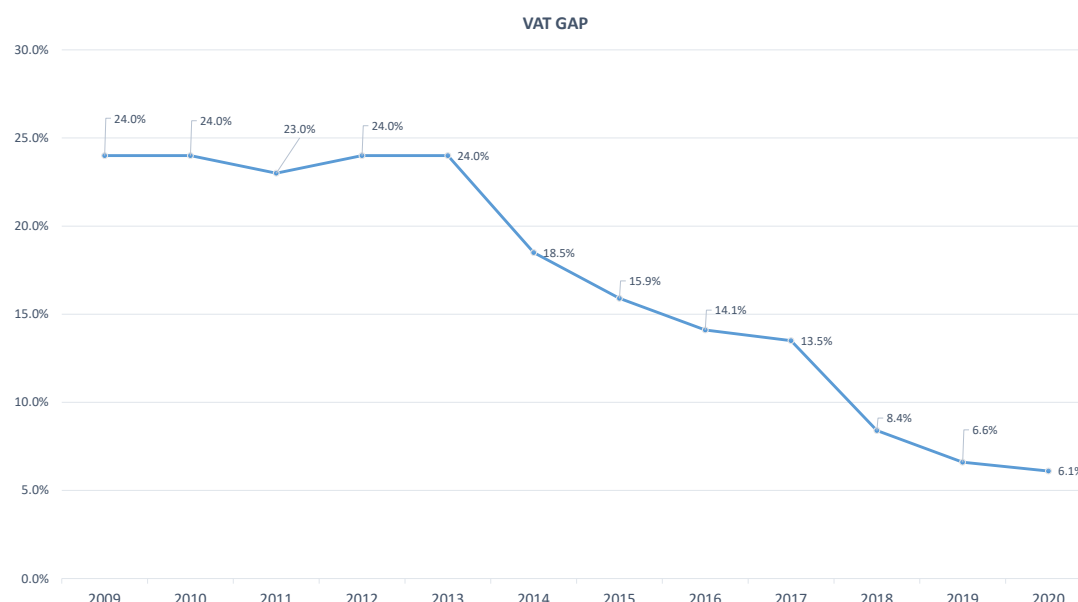
Note: This figure summarises the responses to the question "For which purposes does your tax administration collect e-invoice data? "; administrations could choose multiple answer options.

Source: Project survey.

On 1 July 2018 the Hungarian National Tax and Customs Administration (NTCA) introduced a new, free to use, online reporting system, the Online Invoicing System. The objective of the introduction of online data reporting and of the establishment of the data management system is to discourage tax fraud. This is

now complemented by the Online Invoicing System. With this development a large amount of invoiced turnover has become visible and traceable for the NTCA, consequently the risk management can be more effective, and the VAT revenues have significantly increased.

Figure 2.3. Development of VAT gap in Hungary



Note: Data reporting via Online Cash Registers was implemented in 2013. The invoice data reporting obligations started in 2018.
Source: Hungary (2022).

Box 2.2. Tax Gap impacts in Italy

Data about the impact of e-invoicing on tax compliance are very encouraging. However, the spread of the pandemic in 2020 and the consequent measures on economic activities probably affect the reliability of data as from March 2020 onwards. During 2019, the e-invoicing system has detected VAT frauds for a total amount of EUR 1.1 billion, while VAT payments (internal exchanges) have increased by 3.6% (EUR +3.626 billion) between 2018 and 2019.

Based on the latest official report by the Italian Commission on the Tax Gap, the VAT gap in Italy decreased from EUR 36.3 billion in 2017 to EUR 27.0 billion in 2019, amounting to a 25% drop.

Source: Italy (2022).

The Chilean tax administration (SII) uses e-invoice data to monitor the deduction of input-VAT by VAT-registered businesses in Chile ("input tax credit). Before introducing electronic invoicing in Chile, a business was required to acknowledge the receipt of a correct invoice before it could claim the input tax credit of the VAT that was charged on that invoice. SII however found that the tax audit process of this paper-based system was inefficient and did not provide adequate visibility of compliance levels and compliance risks.

- Legal changes introduced in 2014 obliged taxpayers to inform the SII, through an online platform provided by the administration itself, of the acceptance or claim of invoices received, for which they have a period of 8 calendar days. This allows the SII to exercise greater control over the

acknowledgments of receipts granted and thereby monitor the deduction of input VAT by VAT registered taxpayers in Chile.

- The creation of the SII's Purchasing and Sales Registry, which consists of a system that the SII made available to taxpayers, and which replaces the Purchase and Sales Books. It is composed of the Purchase Registry and the Sales Registry. Using this system as a basis, the SII makes a proposal for a monthly tax return to taxpayers, who can use it to pay their taxes, or modify returns if necessary, facilitating tax oversight and compliance.
- Currently, information received through the electronic invoicing system is used both to detect non-compliance and to prefill VAT returns.

Box 2.3. Using digital invoice data in Spain: Compliance risk management

Before introducing the Immediate Supply of Information (SII) electronic invoice management system in 2017, the Tax Agency could not access the taxpayer's VAT records without a prior individual request.

One of the main advantages of the SII system is that the percentages of invoices received (in number of invoices and in amount) declared by a taxpayer that are verifiable and match with an invoice issued declared by its counterpart in the operation, can be considered for risk analysis. *If these percentages differ substantially from the average of other similar taxpayers*, this difference in behaviour may be indicative of the risk of non-compliance, especially in cases where most verifiable invoices cannot be verified.

Other important risk information is *the contrast of the invoices declared* by the taxpayer and by their counterparts in the SII *with the taxpayer's VAT return*. Taxpayers provide in the SII not only the rates and amounts, but also other essential information on the VAT treatment of their operations, such as exemptions from invoices issued, deductibility of invoices received and special regimes.

Source: Spain (2022).

In Hungary, reporting invoice data has meant a significant increase in data for the tax administration, requiring the use of new tools and new solutions. The NTCA's main goal is to link the invoicing data to more data sources, creating a more realistic picture of each taxpayer and the relationships among taxpayers. In addition, e-invoice data is used:

- To improve the effectiveness of audit activities, providing a more effective detection of tax evasion and tax fraud and faster response times.
- To improve tax debt management, because for companies with tax debts, distressing a claim is much more efficient when the executor can monitor invoice issuing, and potential cash flows.
- To support crime investigations. In the case of tax fraud, analysing invoice data can provide significant support for detection work.

Box 2.4. Examples of use of e-invoice data in Italy

Pre-filling. Precompiled VAT registers will be available online and searchable within the portal “Invoices and fees”, and it will be possible to validate or modify the data of operations carried out. There are some advantages for the users:

- Exemption from record keeping (records will be stored by the Revenue Agency);
- Prefilled periodic liquidation of VAT;
- Prefilled annual VAT declaration.

B2G Credit certification. E-invoicing plays an important role in the management of credit certification in B2G, through the platform of Commercial Credits - PCC system – set up by RGS (General Accounting of the State – Minister of Economy and Finance). Every day the ES sends the e-invoices delivered to Public Administrations to the PCC System.

B2G Public procurement. In order to ensure the effective traceability of payments by public administrations, electronic invoices to Government must include, if present, the tender identification code (CIG), except in cases of exclusion from the traceability obligation and the Unique Project Code (CUP) in the case of investment project invoices. Italian law provides that in the absence of these codes represented on the e-invoice, when provided, the invoice itself cannot be paid.

Anti-fraud. Since 2022, routine exporters intending to purchase or import without the application of VAT on transaction, must transmit the declaration of intent to the Revenue Agency electronically. In order to carry out anti-fraud control, the ES will check if statements of intent on the e-invoices are valid and, if not, the e-invoice cannot be issued.

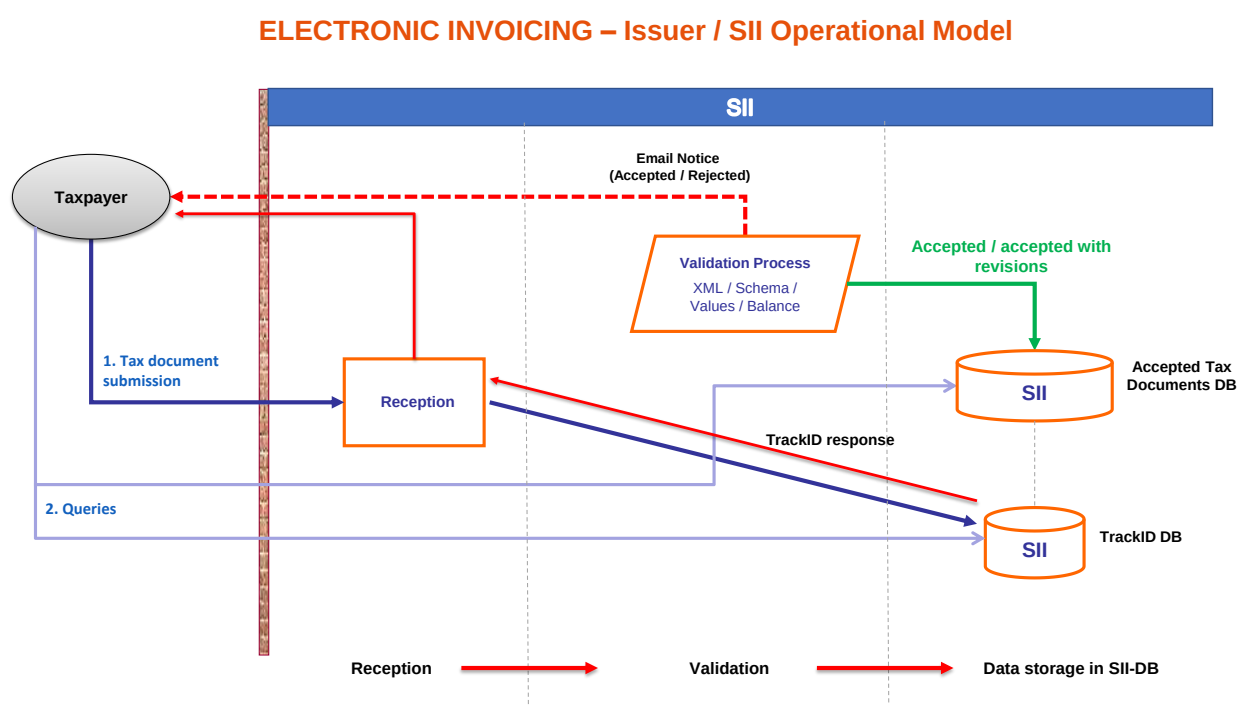
Data sharing. The electronic invoicing has both anti-evasion and anti-fraud function, and it has the purpose of simplifying the tax collection system. Tax administration stores fiscal data from e-invoices for risk analysis and its institutional purposes. The data acquired with electronic invoicing are also used - in statistical form - by other public bodies (e.g. the Italian National Statistical Institute and Central Bank) for economic and financial analysis and, for example, have been used by the Government to define the economic measures used during the COVID-19 emergency period to support VAT operators in compliance with the temporary framework plans issued by the EU commission.

Source: Italy (2022).

Data quality, privacy and security

High quality invoice data is critical for effective tax administration data processing. In some cases, tax administrations make sure that invalid or incomplete data sets first pass front office services and their integrated quality control mechanisms. In Chile, for example, electronic invoices are collected via services available to taxpayers so that they can upload the XML that must comply with the required technical standards, see Figure 2.4.

Figure 2.4. eInvoice data acceptance processes in Chile



Note: In case the e-invoice is rejected, the document is not considered valid, so the taxpayer must generate a new electronic document. It should be noted that on the SII website there is a query that allows to list all the electronic tax documents that have been correctly received by each taxpayer.

Source: Chile (2022).

The use of an electronic signature is an important quality and privacy instrument. In many cases the use of qualified electronic signatures is mandatory. In Italy, for example, its use is obligatory for B2G invoicing, while it is not so for B2B and B2C transactions. An electronic signature is used to assure:

- *Authenticity*, ensuring the identity of the person or legal entity signing.
- *Integrity*, ensuring e-invoices have not been modified after signing.
- *Non-repudiation*, ensuring that the person that signed cannot repudiate an e-invoice signed by using a qualified electronic signature.

To ensure the security and privacy of data in the exchange of electronic invoices, in Chile, documents have a digital signature and taxpayers can only consult their documents issued or received on the SII website.

The Hungarian Online Invoicing System provides real-time feedback on all invoice reporting messages. The feedback draws the attention of the taxpayer to possible misrepresentation, but also to any deficiencies in the content of the invoice (see also Annex A).

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Notes

¹ These digital reporting requirements include VAT listing, the use of SAF-T, real-time reporting and e-invoicing. See also Box 1.2.

3 Implementation solutions and issues

Tax administration e-invoicing implementation strategies vary depending on their specific domestic contexts. In most case these strategies focus on the adoption of e-invoicing by businesses and the implementation of secure and standardised data reporting infrastructures and applications. Both aspects influence compliance levels and administrative burdens.

This chapter looks at:

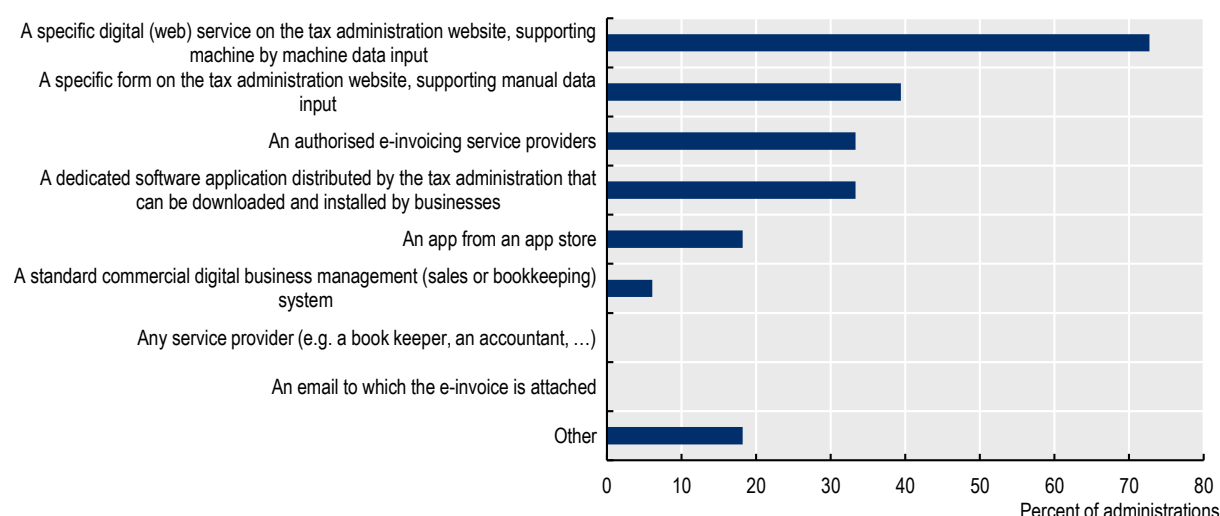
- Data reporting solutions
- Regulatory frameworks
- Administrative burdens
- Factors for successful implementation
- Taxpayer service innovation

Data reporting solutions

Tax administrations have implemented a variety of ICT applications supporting e-invoicing. The majority of the instruments used are web services supporting machine-by-machine data transfer (73%) and web-forms on the tax administration website (39%) (or a combination). These applications mirror the way tax administrations generally receive tax returns.

In addition to direct tax administration specific solutions, taxpayers as well as tax administrations can make use of authorised e-invoicing service providers (33%), see Figure 3.1.

Figure 3.1. How e-invoice data is sent to the tax administration



Note: This figure summarises the responses to the question “How can e-invoice data be sent to the tax administration?”; administrations could choose multiple answer options.

Source: Project survey.

Box 3.1. Tax administration electronic invoicing services: Country examples

Chile

In the initial voluntary introduction of electronic invoicing in Chile taxpayers had to opt for one of the solutions offered in the market or develop their own system, which brought with it high costs and created barriers to the use of the system.

Considering this, in 2005 the MiPyme Electronic Invoicing Portal (Free Electronic Invoicing System of the SII) was launched, with the aim of providing small taxpayers with a basic and free system, which would allow them to operate as electronic billers.

Hungary

On 1st July 2018 the Hungarian National Tax and Customs Administration (NTCA) introduced a new, free to use, online reporting system, the Online Invoicing System (<https://onlineszamla.nav.gov.hu>). The web portal supports the Data Disclosure Obligation of taxpayers sending invoices. If an invoice is issued from a manual invoice book, the taxpayer will still have to comply with the reporting obligation. In this case, the taxpayer must enter the details of the invoice in the tax administration interface within 4 days. The legislative change in 2021 has not only changed the invoicing obligation but has also broken new ground in the field of electronic invoicing. It is now possible, if both parties choose, to issue their electronic invoices in XML format via the tax authority system.

Italy

In order to support taxpayers, particularly the smaller ones, the Italian Revenue Agency provides a complete set of online services, covering all aspects of the e-invoicing process, including electronic archiving (for 15 years). All these services are free of charge and include for example an Android and iOS application, called “FatturAE”, and a stand-alone software package for personal computers for preparing and sending an electronic invoice, the possibility to consult the data stored in the SDI. Italy also used a “mobile first” approach, that has been particularly appreciated.

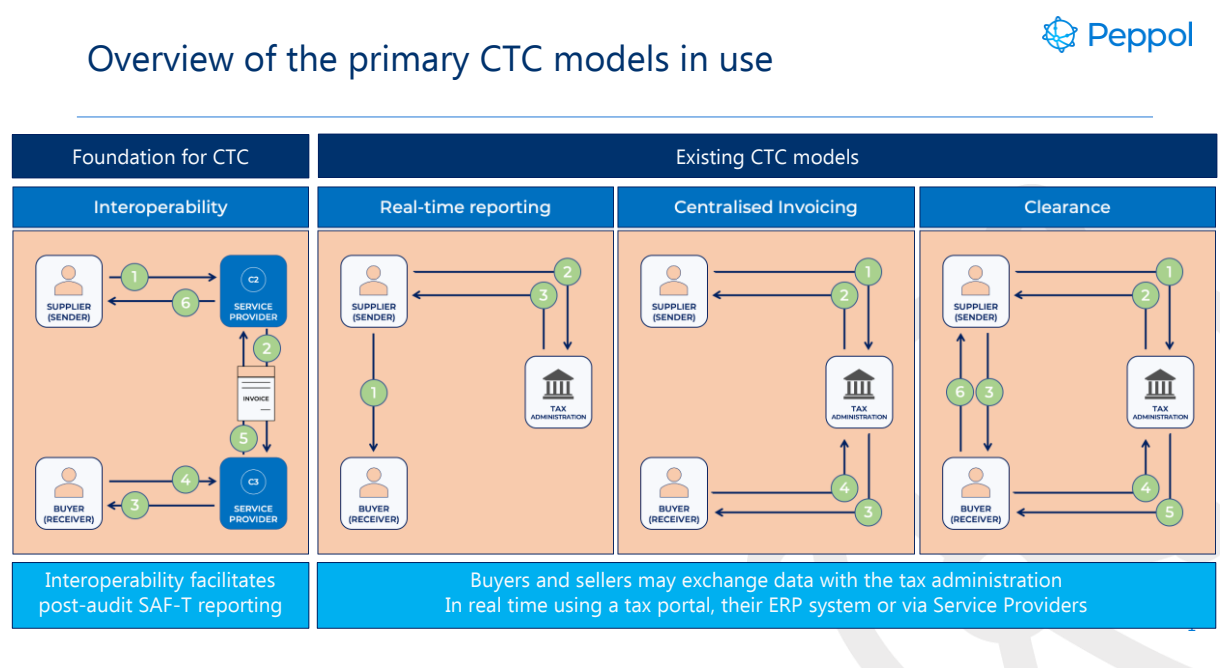
Sources: Chile (2022), Hungary (2022) and Italy (2022).

There are several architectural models that can describe the way businesses, tax administrations and intermediary service providers collaborate, see Figure 3.2. These (Continuous Transaction Control) models also reflect both the formal and informal roles tax administrations can play in the domestic e-invoicing landscape. A more comprehensive overview of different domestic solutions can be found in the reports *Electronic Invoicing in Latin America: English Summary of the Spanish Document* (CIAT and IDB, 2018^[2]), *Peppol Continuous Transaction Controls: Reference Document* (OpenPeppol, 2021^[6]) and *VAT in the digital age: final report. Volume 1, Digital reporting requirements* (European Commission, 2022^[3]).

Two key elements which lead to architectural differences are:

- *Whether the e-invoices are cleared or not cleared.* In a clearance model, the supplier is required to either obtain an authorisation from the tax authority as a pre-condition to send the invoice, or send the draft e-invoice to the tax authority, which in turns delivers the e-invoice to the customer. In a no-clearance e-invoicing system, the supplier is able send the e-invoice directly to its customer without having to request any approval from the tax authority.
- *The use of a central IT platform.* A distinctive feature of the different architectural models for e-Invoicing is the centralised recipient of electronic documents, which could be the tax administration itself or private businesses authorised by the tax administration to act on its behalf (CIAT and IDB, 2018^[2]).

Figure 3.2. Examples of different invoice data exchange CTC models



Note: OpenPeppol is a non-profit international association under Belgian law. The purpose of OpenPeppol is to enable European businesses to easily deal electronically with any European public sector customers in their procurement processes, see <https://peppol.eu>. The approach recommended by OpenPeppol for the Peppol CTC model is a decentralised preclearance/ real-time reporting model with regulated exchange. Source: Presentation by OpenPeppol to the FTA in 2020.

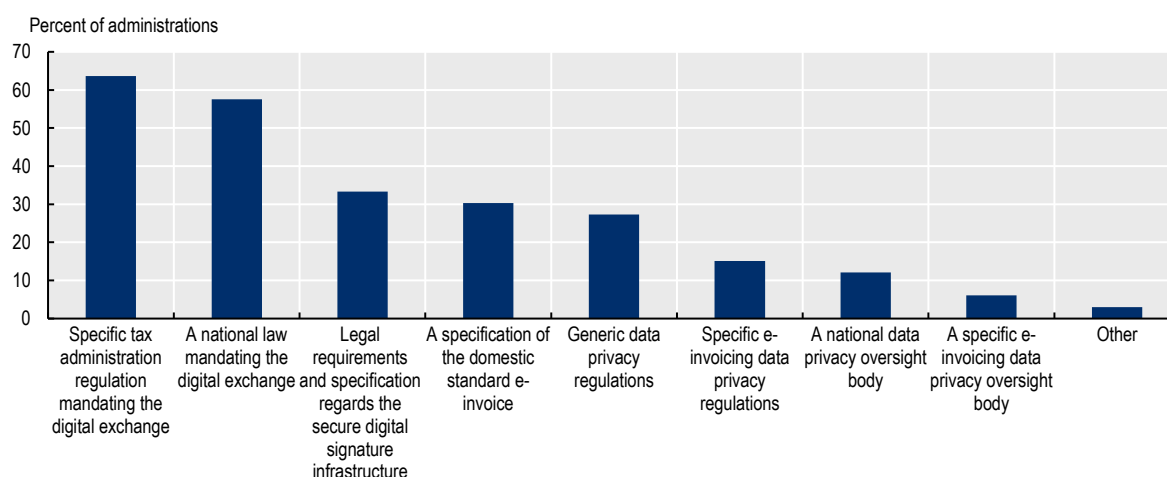
Intermediary service providers can also play an important role in electronic invoicing. Among others things, they can: act on behalf of suppliers and/or customers; oversee data exchange infrastructures; deliver secure signing and identification services; and assist in translating and mapping different standards and types of invoices. In Finland, for example, banks operate an e-invoicing infrastructure called Finvoice.

Finvoice invoices can be sent in B2B, B2C and B2G interchanges. As Finvoice is based on a banking infrastructure there is a direct possibility to add e-payment functionality.

Regulatory frameworks

The implementation of electronic invoicing is guided by laws and regulations. These regulatory frameworks address, among other things, the data exchange, the e-invoice standard, the integrity of data content, the authenticity of the origin, data privacy and digital security issues. Tax administrations report a variety of elements of the domestic legal and regulatory framework that govern the exchange of e-invoice data with the tax administrations, see Figure 3.3. The most important elements refer to the regulation and mandating of electronic invoicing, both via tax administration specific regulations and national law. A third important set of elements relate to data privacy related aspects.

Figure 3.3. Elements of the domestic legal and regulatory framework that govern the exchange of e-invoice data with the tax administrations



Note: This figure summarises the responses to the question "Please indicate which of the elements of the domestic legal and regulatory framework govern the exchange of e-invoice data with your tax administration (adoption, data, standard)"; administrations could choose multiple answer options.

Source: Project survey.

Conversely, in the Hungarian legal setting there are very few legal requirements specifically related to electronic invoicing. Electronic invoicing requires the consent of the customer, including that the electronic invoice may only be kept in electronic form. However, this was not always the case. Until 2018 there was a very strict archiving regulation in place that gave businesses a choice between Electronic Data Interchange and an electronic signature system. Although the current regulatory environment is very open and flexible, some companies which have already invested in meeting the earlier requirements are not moving away from these possibilities in general. This reflects that the introduction of an invoicing system is a long-term decision for businesses, so the impact of a legislative change on electronic invoicing can only be assessed in the long term.

Mandating the adoption of electronic invoicing

In a number of cases, adoption of electronic invoicing is mandatory, at least for businesses over a certain size. From a business perspective electronic invoicing often adds administrative burdens when first introduced, which can be significant. Once introduced, though, it may be possible to realise significant efficiency gains. The adoption and diffusion of e-invoicing is often a balancing act, ensuring that careful consideration is taken of both costs and benefits. The introduction of electronic invoicing often starts with targeted groups of businesses which is broadened over time to the wider business community. In some cases specific thresholds may be introduced to deliberately exclude very small businesses, or phase in implementation over a long period, where there may be particular cost/benefit concerns.

Box 3.2. Mandating e-invoicing in the EU

There is no explicit option available for EU Member States to introduce mandatory e-invoicing requirements as a means to ensure the correct collection of VAT and to prevent VAT fraud. As a consequence, if a Member State wishes to introduce mandatory e-invoicing requirements, it must do so by requesting a derogation from the Directive under Article 395, which is subject to the unanimous agreement of the Council based on a proposal from the Commission.

The framework is different for B2G transactions. According to the e-invoicing Directive, Member States must require public administrations to accept structured e-invoices compliant with the European standard. Though not explicitly provided by the Directive, the Member States may voluntarily impose a domestic obligation to use structured e-invoices for B2G transactions.

Source: European Commission (2022), VAT in the digital age: final report. Volume 1, Digital reporting requirements, <https://doi.org/10.2778/541384>.

Box 3.3. Mandating strategies: Country examples

Chile

Both the e-invoice and the e-receipt have existed since 2003, however adoption rates remained low (in 2012 there were only 56 380 authorised e-invoicing companies, compared with 1 273 584 in 2021). In this context, it was decided to oblige taxpayers to register as electronic billers, through Law 20,727 promulgated on 31 January 2014. In the case of electronic invoicing, the mandating process began in 2014 and ended in 2018, in 4 different stages. In these stages, companies were segmented by size (level of sales) and their urban or rural location. In this 4-years period the VAT gap has declined with 2%.

- Stage 1 (November 2014): Large companies.
- Stage 2 (August 2016): Medium-sized companies.
- Stage 3 (February 2017): Small rural enterprises and urban microenterprises
- Stage 4 (February 2018): Rural microenterprises.

Hungary

The invoice reporting obligation, based on the so-called Online Invoicing System, is introduced in Hungary in 2018. The Online Invoicing System is essentially an invoice data standard that companies have had to adapt to.

- From the start in 2018 the obligation applied to B2B invoices, with a certain threshold.
- From 1 July 2020 the threshold was abolished.
- From 1 January 2021 data from all invoices (e.g. issued to individuals, export activity, etc.) have to be reported in a digital manner.

Italy

The Italian Government has used a phased approach to implement e-invoicing:

- As from 1 January 2014, it becomes mandatory in public procurement for central administrations and in 2015 for local administrations.
- As from 1 January 2017, e-invoices in the B2B and B2C context was optional, as an alternative to the obligation of transmitting invoices' data on a quarterly basis.
- As from 1 July 2018 it became mandatory for the oil and gas sector.
- As from 1 January 2019, it became mandatory for everyone (with almost all transactions between resident entities).

Spain

The Spanish Tax Agency (AEAT) implemented in July 2017 the Immediate Supply of Information (ISI). ISI is mandatory for certain VAT taxpayers, including companies registered in the monthly return register. Other taxpayers can use it on a voluntary basis. In order to register the invoices on the VAT Books, taxpayers must send the invoicing details to the tax authority, within 4 working days (since 2018).

Source: Chile (2022), Hungary (2022), Italy (2022) and Spain (2022).

Standards

In addition to the adoption and diffusion of electronic invoicing, rules and regulations also govern the content of e-invoices. Typically e-invoice related standards aim to facilitate domestic (and in some cases international) interoperability in regards to, for example:

- *business processes*, by defining which types of business documents should be exchanged in which order and to ensure productive and meaningful cooperation between stakeholders,
- the *content of the e-invoice*, ensuring tax laws are being met and that the systems used by suppliers and customers are using the same data elements,
- *technical message specifications* on which data exchange software systems are based.

The problem with e-invoice standards is that there are so many. Among the well-known standards are the UN/CEFACT cross-industry invoice (CII), the OASIS UBL (ISO/IEC 19845) International Standard, and the European standard on e-invoicing (EN 16931) which was developed and published by the European Committee for Standardisation (CEN).

In many cases, standards, when adopted, are adapted to domestic circumstances, to take account, for example, of existing domestic legislative requirements or interoperability requirements from existing legacy systems. This scattered landscape of standards, and variations of standards, can introduce significant implementation and ongoing compliance costs which can have major impacts on businesses operating across borders.

Box 3.4. E-invoice standards in Latin America

“The reasons why countries choose their own formats rather than predetermined standards are doubtless various and not necessarily the same from one country to another. Probably, though, priority was given to having control over the format; the use of a common language and terminology; the uses and customs of identifying addresses and units of measure; and the arrangement of taxes and rates.”

Source: CIAT and IDB (2018), *Electronic Invoicing in Latin America: English Summary of the Spanish Document*, https://www.ciat.org/Biblioteca/Estudios/2018_FE/2018_Electronic_invoice_summary_BID_CIAT.pdf (accessed 2 August 2022).

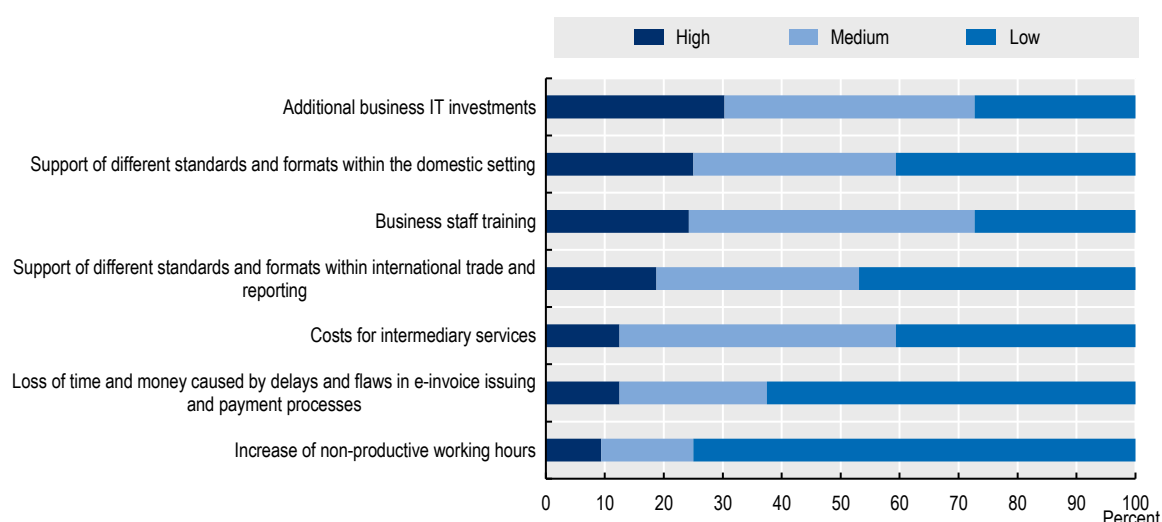
Administrative burdens

In most cases, the introduction of the digital exchange of invoice data causes additional administrative burdens to businesses (although well implemented e-invoicing processes eventually lead to efficiency benefits), related to topics such as:

- Investments in the upgrade of ICT and business systems to comply with new rules, regulations and standards.
- Hiring new staff as well as familiarising and training of employees.
- Time dedicated to the proper implementation and deployment of data exchange related (management, quality and operational) processes and systems.
- Costs related to hiring external expertise and service providers.

Tax administrations judge that *additional IT investments* and *business staff training* contribute with a high and medium impact to the increase of administrative burdens for businesses (see Figure 3.4). Other important factors scored are the *support of different standards and formats* (both in a domestic and international context) and the *cost of intermediary services*.

Figure 3.4. E-invoicing factors that contribute to the increase of administrative burdens for businesses



Note: This figure summarises the responses to the question “From a tax administration perspective, please indicate to what extent each of the following e-invoicing related factors contributes to the increase of administrative burdens for businesses”.

Source: Project survey.

Cross-border interoperability

Tax administrations implementing the digital collection of invoice data in general start by focussing on *domestic* taxpayers and transactions. However, during decision making, design and implementation, there are major benefits to also consider *cross-border interoperability* perspectives, such as:

- *Using international, open, standards.* Adopting open, global standards, unlocks knowledge and experiences from a large network of users and service providers. Re-using international e-invoice standards enables a seamless exchange of invoice data without additional definition and translation issues. On a more technical level, the use of global standards supports plug-and-play connectivity and easy access to international, secure, data exchange infrastructures.
- *Reducing administrative burdens for businesses.* Businesses operating in an international context are being confronted with a variety of domestic and nation-specific implementations of global (e-invoicing) standards. Additional compliance measures and data matching solutions are prone to errors and are burdensome. Implementing global standards helps prevent the introduction of additional administrative burdens for businesses.
- *Aligning with regional cooperation amongst jurisdictions.* In situations where jurisdictions join up in creating common markets, tax administrations should seek to support and adopt standards already available among partners. Enabling cross-border interoperability thus fosters international, regional trade.
- *Joining up with Customs authorities.* Resonating with the former perspective, seamless data exchange relationships between customs and tax administrations (both in a domestic and international context) would help fight tax evasion and fraud. Moreover, at the global level it would help control avoidance by making available relevant information on the prices of goods and services, from freight to insurance, capital income, and from royalties to interest. Several of the Latin American countries already have e-invoicing working at the export level, and thus exchange agreements could be the next objective (CIAT and IDB, 2018^[2]).

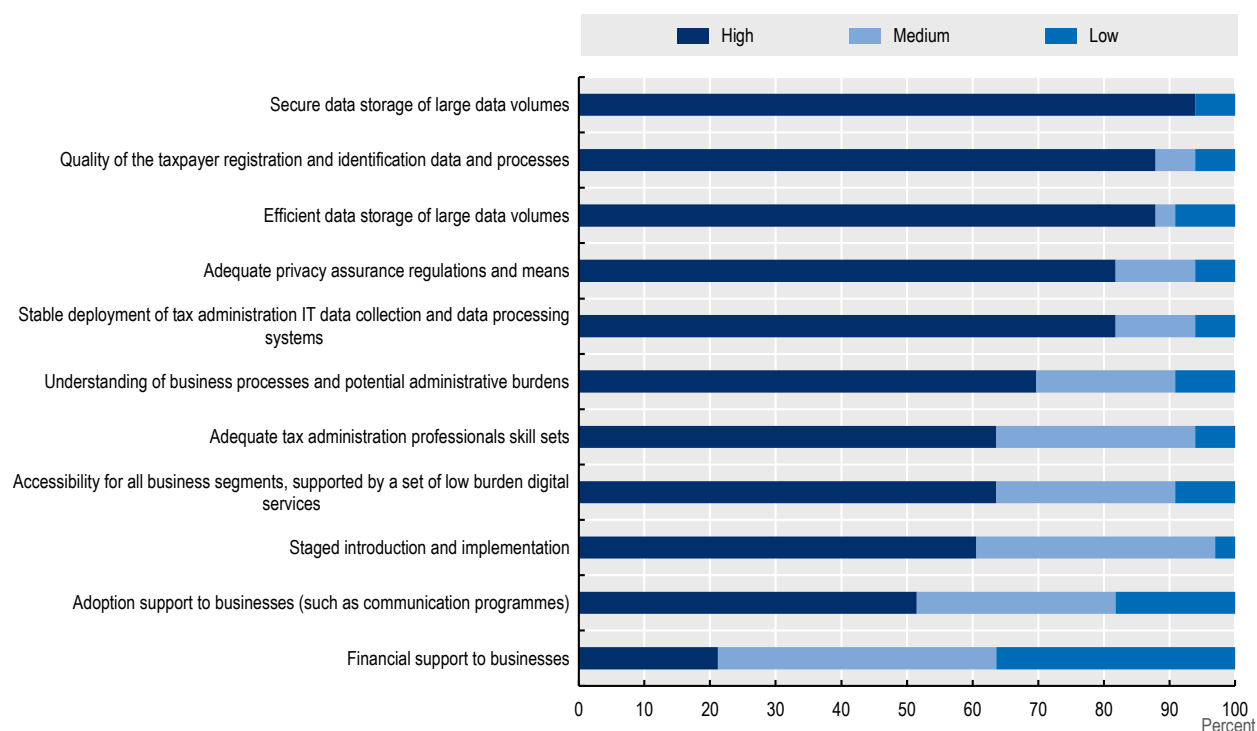
Factors for successful implementation

The implementation of secure and effective electronic invoicing is a complex public-private collaborative effort and will vary from country to country depending on the domestic background, including the business and tax administration starting points. The main subjects addressed in domestic implementation programs are:

- *Communication and consultation* with external stakeholders, in particular with respect to costs and benefits, technical requirements and implementation scheduling.
- *Legislation* regarding, among other things, the adoption strategy, standards and data security and privacy.
- *Design of data exchange architectures*, including the semantical and technical specification of standards, the role of software and data reporting service providers and tax administration services.
- *Tax administration capabilities* in terms of compliance risk management, data security and IT-infrastructure deployment.

From a tax administration perspective, data storage and data quality related elements are amongst the most important factors enabling a successful implementation of e-invoicing, see Figure 3.5. Other important factors relate to tax administration capabilities and a clear understanding the business needs.

Figure 3.5. Elements for a successful implementation of e-invoicing



Note: This figure summarises the responses to the question “From your tax administration perspective, please indicate how important each of the following elements is to a successful implementation of e-invoicing”.

Source: Project survey.

Box 3.5. Investment costs for setting up digitally reporting invoice data

In Spain, the tax agency entrusted the IT Directorate with providing in-house solutions rather than using commercial off-the-shelf software and services, which allowed to keep investments costs down. Nonetheless, the annual value of IT investments recorded a major increase in connection with the introduction of the SII, from EUR 8.5 million in 2016 to EUR 22.3 million and EUR 11.2 million in 2017 and 2018, respectively. While these incremental amounts cannot be entirely attributed to the introduction of the SII, the setup of this new system accounted for a major share.

In the case of Hungary, where IT development was outsourced and several components have been set-up or enhanced, including, among others, a new online invoicing system, a mobile application for economic operators to issue invoices and the development of both the risk analysis system and the data warehouse of the tax administration, the size of initial investments has been much larger, i.e. about EUR 70 million.

Investment costs to set up the e-invoicing platform in Italy were rather moderate, also thanks to the fact that part of these costs had been already borne when introducing the centralised system for B2G e-invoicing, i.e. the Sistema di Interscambio (SdI). According to the information provided by the tax authority, between 2016 and 2018, the average investment to extend the existing platform to B2B transactions amounted to about EUR 2 million per year, for a total value of the adaptation costs of EUR 6 million.

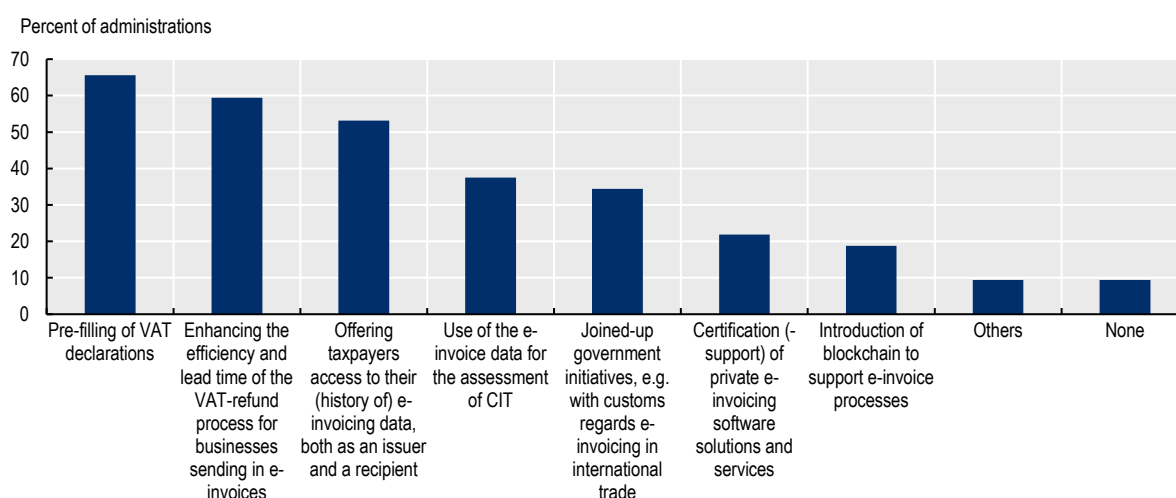
Source: Excerpt from European Commission (2022), VAT in the digital age: final report. Volume 1, Digital reporting requirements, <https://doi.org/10.2778/541384>.

Detailed implementation topics and lessons learned are presented in the case studies in Annex A.

Taxpayer service innovation

The digital availability of high quality invoice data enables tax administrations to innovate their service offerings to taxpayers. Tax administrations indicate that the majority of future e-invoicing developments relate to VAT processes, i.e. the pre-filling of VAT declarations (66%) and reducing VAT refund lead times (59%). Sharing of data with taxpayers and other governmental organisation is scored as another way to innovate service delivery. (See Figure 3.6.)

Figure 3.6. Future e-invoicing developments the tax administration is considering or introducing



Note: This figure summarises the responses to the question “Which future e-invoicing developments is your tax administration considering or introducing?”; administrations could choose multiple answer options.

Source: Project survey.

The most forward-looking development from the Hungarian NTCA is the development of a mobile application. All system functions, including invoicing, will be available in the form of a mobile application (in Android and in iOS). This makes the system easily accessible anywhere, in any environment.

In addition, a 2022 addition to the Online Invoice System, will be the offering of a draft VAT return. Pre-filled VAT tax returns are not an obligation for taxpayers, but rather a service. Using the online cash register (see, (OECD, 2019^[7])) and invoice data available, the tax authority prepares a draft tax return, which can be reviewed by businesses and their accountants, thus aiming to relieve businesses of administrative burdens.

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4 Considerations around electronic invoicing

This report presents some experiences from tax administration worldwide with implementing the digital collection and usage of invoice data. These examples present a variety of domestic circumstances, opportunities and challenges. Based on the analysis of the quantitative and qualitative data available, this chapter presents a set of considerations that tax administrations may wish to take into account when exploring the possible introduction or reform of electronic invoicing systems.

What is the primary purpose for the possible introduction of an electronic invoicing system for the tax administration?

There may, of course, be a number of purposes, but gaining clarity on relative priorities is important as it may impact choices as to whether electronic invoicing is the best solution, and if so whether other forms of digital exchange of invoice data would be preferable. For example, purposes can include:

- **Compliance:** To many tax administrations and Treasury departments electronic invoicing can be a potential tool assisting in closing VAT gaps. Preventing unintended errors, enhancing risk management capabilities and early detection of fraud schemes might well be positive impacts of the introduction of e-invoicing type of solutions.
- **Supporting a wider government agenda:** The introduction of electronic invoicing may form of an overarching whole-of-government initiative. These initiatives may be founded in sustainability related arguments like reducing the amount of paper used, or in the introduction of transparency related initiatives like e-tendering and e-procurement. Another wider government perspective may be the digital usage and production of economic data. As was found by some countries during the pandemic, digital invoice data offer a very rich source of economic data. Near real-time availability offers even greater possibilities for quicker and more in-depth analysis of economic developments and forecasts.
- **Reducing compliance burdens:** while there can be large implementation costs, electronic invoicing can over time reduce business costs and stimulate the wider digitalisation of taxation related processes.

Understanding the costs and benefits that can arise from the adoption of electronic invoicing solutions from both primary and secondary benefits is critical to ensuring that sound choices are made. This will require in-depth analysis and wide consultation.

Regulatory frameworks

There is a need to determine what legislative amendments and policy changes would be needed for the effective implementation of e-invoicing. This includes policies ensuring the authenticity and integrity in the e-invoicing process, as well as the storage and archiving of e-invoices, and requirements for supporting

documents for audit purposes. In addition, additional legislative instruments might be needed to support a mandatory implementation approach. It will be important to assess the current domestic regulatory framework, and whether a new framework would need to be implemented or whether it would be possible to extend or adapt existing law and regulations. Part of the considerations here will be around the nature of the framework – will it be facilitative or mandatory or a mix.

Business landscape characteristics

Invoices are documents that are being produced by businesses and that have specific functions within business processes. A proper understanding of the overall business landscape, and how invoices are being used, will help analyse potential diffusion and adoption rates of electronic invoice solutions, both for B2B and B2G. The size of the informal sector, the distribution of different economic sectors and the amount of MNEs and SMEs indicate where and how the introduction of e-invoicing might be most successful. Business sector ICT maturity and readiness is a key consideration. Assuring high data quality at the business source is one of the key success factors of e-invoicing implementations. In situations with high rates of e-commerce adoption and usage, sharing digital invoice data with governmental organisations will obviously be much easier compared with low or scattered ICT systems usage. (Even where digitalisation is not widespread, it will be important to look at the extent to which paper processes are already formalised and capable of being converted into digital formats.)

Tax administration capabilities and readiness

Receiving and processing large numbers of electronic invoices can challenge tax administration capabilities. The availability of growing amounts of data challenges taxpayer service processes, data security and privacy applications (which will depend heavily on domestic data culture and laws) as well as the effectiveness of risk management approaches. These challenges relate to ICT-systems, processes and staffing skills and availability. In some jurisdictions stakeholder collaboration between federal government departments, as well as provincial and territorial government bodies is an important factor to consider. It will be important to have a good understanding of the extent, timing and resourcing of changes that will be needed within the tax administration.

Alignment with Online Cash Register solutions

Invoice business documents closely relate to other sales and payment related documents like cash receipts. Countries around the world have introduced online cash registers (OCR) to help reduce tax gaps. In many cases these OCR-initiatives are related to the introduction of (B2B and/or B2C) e-invoicing strategies. Administrations may wish to consider whether the introduction of OCR should be considered within a broader business case assessment. Where OCR solutions have already been implemented, administrations will wish to consider to what extent e-invoicing solutions (technically, semantically) should interrelate with existing infrastructures and standards.

Opportunities for cross-border interoperability

Different implementations of electronic invoicing solutions have created interoperability problems, in particular for businesses operating across borders and for international trade. This lack of interoperability also hampers tax administrations in improving their compliance risk management by gaining easier access to data held by other tax administrations. Several global standardisation and interoperability initiatives are

trying to harmonise approaches, and create more seamless solutions. In considering electronic invoicing solutions, tax administrations might want to look closely at this international perspective, consulting closely with affected businesses. This will not only help prevent the introduction of unnecessary additional administrative burdens to businesses, but might also facilitate the implementation of joined-up solutions with other agencies, such as customs departments.

Future proofing

An important consideration that administrations may wish to take into account at an early stage is the longer term vision for tax administration. This is important for helping to avoid the introduction of systems which might not be capable of easily evolving with changing business models and technology over time. Such systems may become difficult to operate and may constrain business choices and opportunities over the longer term, including in cross-border contexts. For example, the Tax Administration 3.0 vision of future tax administration is based on the building-in of taxation processes into taxpayers' natural systems where, in general, the data remains within those systems. While system assurance then becomes paramount, it may not require the transfer of invoice data for either processing within the tax administration or for risk assessment purposes. That is not to say that electronic invoicing solutions are incompatible with the Tax Administration 3.0 vision, using as they do invoices which are used by businesses for their own purposes, but it will be important to consider the impacts of particular systems as regards their possible impacts on compliance burdens over time. This is a possible area for further consideration within the Tax Administration 3.0 projects.

Annex A. Country Case Studies

Chile

Introduction of e-invoicing

The electronic invoicing model began in 2003 starting from the development of this model with companies representing the market and then generating a voluntary adhesion space of more than 10 years. Then, from the year 2014, the progressive obligation began to end the year 2018.

Initially, being voluntary, taxpayers had to opt for one of the solutions offered in the market or develop their own system, which brought with it high costs, becoming a great barrier to entry.

Considering this, in 2005 the MiPyme Electronic Invoicing Portal (Free Electronic Invoicing System of the SII) was launched, with the aim of providing small taxpayers with a basic and free system, which would allow them to operate as electronic billers.

Along with the development of the Portal, work was done to confront some myths associated with the greater control of the SII that generated resistance from some taxpayers, especially the smallest, to join the new model. For example, one of the reasons that prevented the registration of taxpayers was the belief that electronic invoicing was only useful for companies that invoiced large amounts, in addition to being perceived as a complex and expensive process.

For this reason, since its inception the SII has focused on the education of taxpayers, conducting free talks, having manuals and explanatory videos online on its website, implementing a telephone contact centre operating 24 hours a day, seven days a week, among other measures.

e-Invoicing architecture and services

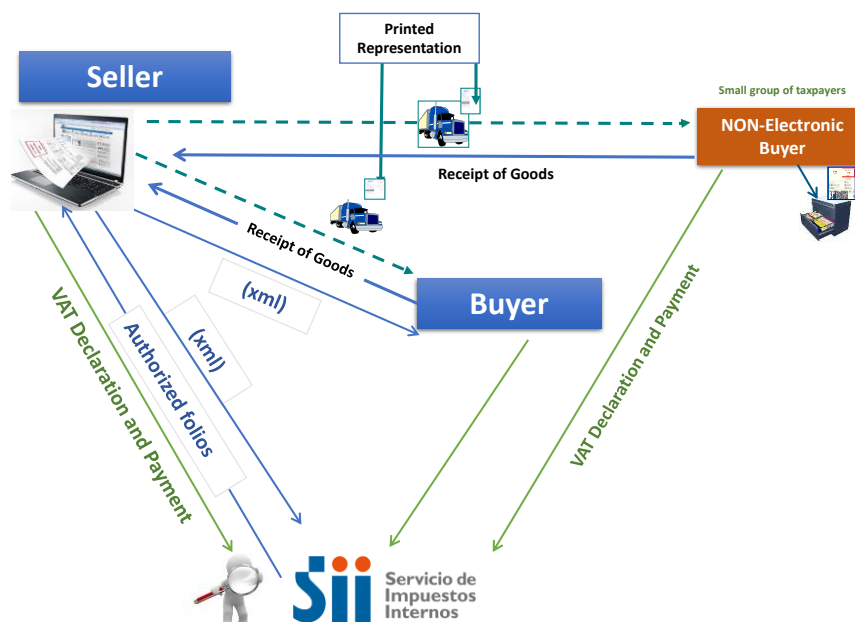
Since 2005 SII provides a free system for electronic invoicing to enhance and facilitate the issuance of electronic tax documents

It is worth mentioning that each taxpayer must opt for the free solution of the SII or for one available in the market or their own developed system, being able to change from one to another when it deems appropriate. It is important to note that, unlike the Free Electronic Invoicing System of the SII, where the taxpayer must only register, in the event that he opts for his own or market solution he is obliged to undergo a certification process, where he must develop some simulations that demonstrate that the taxpayer will be able to comply with the obligations that electronic invoicing requires. In case of satisfactory completion of this stage, the taxpayer will be authorised to issue electronic tax documents.

Independent of the electronic invoicing model adopted, the SII centralises all the shipments of information of the electronic tax documents issued by all taxpayers, and validates from the moment they are received and accepted by the system provided by the SII. In case the shipment is rejected, the document is not considered valid, so the taxpayer must generate a new electronic document. It should be noted that on the SII website there is a query that allows to list all the electronic tax documents that have been correctly received by each taxpayer.

Figure A.1. The Chilean e-Invoicing Architecture

ELECTRONIC INVOICE MODEL AND VAT CONTROL



Source: Chile (2022).

Another key element of electronic Invoicing is the digital certificate. This certificate operates as an electronic signature, validating the issuance of electronic tax documents. Therefore, it is an essential element for every taxpayer who operates as an electronic biller. Taxpayers must acquire a digital certificate in the Market from one of the authorised companies. It is important to note that the digital certificate is delivered and built for the user person who issues the electronic invoice and not to the company who receives the invoice, this allows businesses to sign and identify the author of the tax document, granting security to electronic documents that do not have their equivalents in paper format.

Hungary

Introduction of e-invoice data reporting

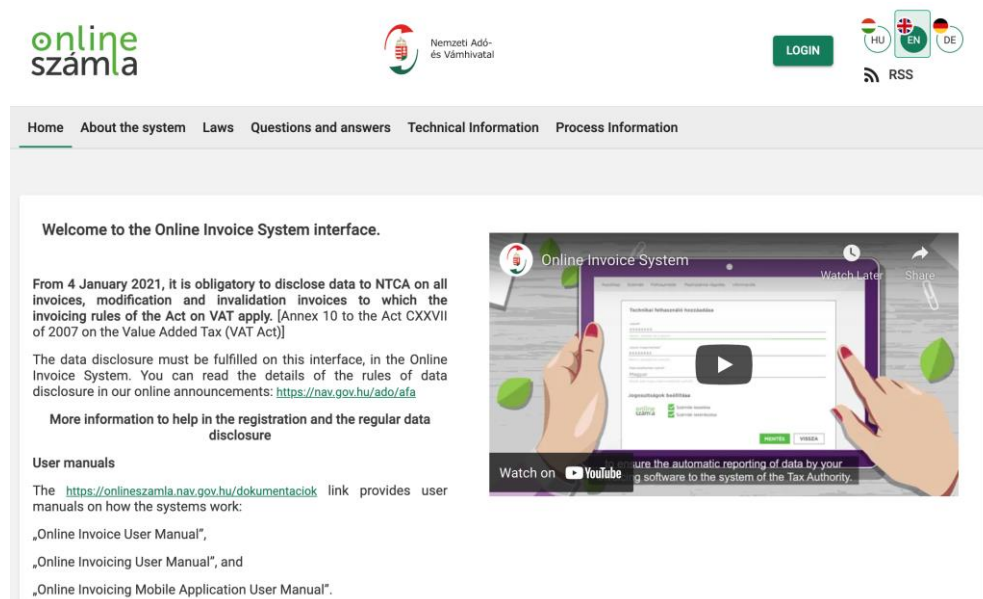
On 1 July 2018 the Hungarian National Tax and Customs Administration (NTCA) introduced a new, free to use, online reporting system, the Online Invoicing System. This portal supports the Data Disclosure Obligation of taxpayers sending invoices. The objective of the introduction of online data reporting and of the establishment of the data management system was to discourage tax fraud. This is now complemented by the Online Invoicing System. With this development a large amount of invoiced turnover has become visible and traceable for the NTCA, consequently the risk management can be more effective, and the VAT revenues have been significantly increased.

Following the introduction of the system the taxpayer is subject to data disclosure obligations in respect of the invoices it issues concerning the transactions between Hungarian taxpayers (B2B) containing input value added tax of at least 100 000 HUF.

The reporting obligation is primarily an expectation of the way invoicing software functions. Consequently, the Online Invoicing System does not allow manual intervention on invoices issued by the software. If the invoice is issued from a manual invoice book, the taxpayer will still have to comply with the reporting obligation. In this case, the taxpayer must enter the details of the invoice in the tax administration interface within 4 days.

Figure A.2. The Online Invoice Platform

Data Disclosure Obligation



Source: Hungary (2022).

From 1 July 2020 the threshold will be abolished, and from 1 January 2021 all invoices (e.g. issued to individuals, export activity) will be subject to reporting. It means that from 2021 the NTCA will have real time information on all B2B and B2C invoices, where the invoice is issued by a Hungarian taxpayer. This will greatly impact to the SME sector, because from 1 July 2020 all B2B, from 1 January 2021 all invoices have to be reported.

e-Invoicing architecture and services

The Hungarian tax administration does not have a license or approval authority for either the electronic invoice or the invoicing programs. The tax administration does not and cannot carry out prior approval by the introduction of a new invoicing system. The audit activities of the tax administration cover only the invoicing solutions already introduced and used by taxpayers.

The tax administration supports taxpayers in their compliance with information activities. The tax administration published a recommendation for developers of invoicing programs that demonstrates the operation of an invoicing program that complies with the law. Its use is not obligatory, implementation could be different from the recommendation.

The tax administration also demonstrates ways to develop appropriate invoicing and electronic invoicing solutions through the Online Invoice system. After our experience, developers of invoicing programs constantly monitor the operation and solutions of the tax administration system.

The tax administration is trying to encourage electronic invoicing for taxpayers, emphasising the possibility of free choice. There is no \ mandatory solution or set of solutions to follow, individual businesses are free to decide which invoicing model and solution they want to use.

One of the principles of the invoice reporting project was to share information and ensure transparency. The NTCA has set up a separate website for invoice reporting where it has published all the information needed for development and reporting. The website address is: <https://onlineszamla.nav.gov.hu>. All the information on the website is available in Hungarian and in English, and the most important information is also available in German.

The tax administration provides all Hungarian taxpayers with an invoicing program free of charge. This program is available through the Online Invoicing System. Its main purpose is to provide an alternative for those SMEs who do not have an adequate program. The tax administration's invoicing program also offers valuable services. For example, electronic invoice support is an essential part of the software, and the tax administration also ensures that the electronic invoices are kept, according to the rules.

The Online Invoicing System data reporting interface is accessible to any invoicing program capable of sending HTTP messages and creating schema-conformant XML, as specified in the present specification. Beyond the invoice data, the invoicing software must also submit authentication data for the technical user of taxpayer for each data reporting session. The required implementation can be freely determined by the invoicing software, but the data reporting process must take place automatically, without any human intervention within the system.

The system provides real-time feedback (result XML) on all invoice reporting messages. The feedback draws the attention of the taxpayer to possible misrepresentation, but also to any deficiencies in the content of the invoice.

Examples of the benefits of The Online Invoicing System are:

- real-time data on the issued invoices arrives at the NTCA,
- issued invoices can be queried by recipients of invoices and issuers of invoices as well,
- a large amount of the invoice data is rapidly available for the purpose of effective risk analysis and audit, which is assisting the detection of tax frauds,
- with the automation of the data report, the administrative burdens are reducing for users of billing/invoicing software,
- the new system substitutes the consolidated data report of issuers of invoices.

Lessons learned

Before the introduction of the Online Invoicing System, the Hungarian tax administration tried to prepare software developers, large companies and accountants for the new legal obligation. To achieve this aim, the NTCA held several developer forums where invoice software developers could directly ask their questions. The most important lesson of these forums was that we were able to support the preparation by answering tax questions rather than IT ones. Most of the questions we received were related to the proper interpretation of VAT law.

As the data reporting system was further developed, this forum was moved to the Internet space and the NTCA used a code hosting platform's forum to comment on new developments and gather experience. This has been so successful that the NTCA has also redirected its developer response to that platform.

On the accounting side, we found that many smaller accountants have decided to take over the administrative burden of reporting from their client. At the same time, we have received confirmation from several accountants that, together with data provision, they have strengthened digital solutions for their clients. However, preparations for many taxpayers were unsuccessful. That is why the Ministry of Finance has decided to postpone the implementation of the system on the taxpayer side until 1 August 2018. Large companies for which this deadline was not sufficient could notify the tax office. Only a few such notifications were received by the tax administration, and the significant majority of taxpayers were prepared for the new legal obligation.

On the software developer side, we have seen that auto-compliance contracts have typically been modified. The reason for this was that the reporting obligation meant much greater IT development than the typical legislative changes. Many times the data reporting system was sold together with other services. At the same time, there were developers in the market who developed only reporting tools exclusively for invoicing software

Impact on taxpayers

Invoice reporting has clearly contributed to the digitalisation of taxpayers. The Online Invoicing System is essentially an invoice data standard that companies have had to adapt to. The adaptation is not a date, but a process. Through reported data quality, the NTCA can closely monitor this process.

For most taxpayers, the reporting obligation initially meant an IT development obligation. According to initial feedback, most companies only wanted to comply with legal requirements, without thinking about what other changes this would mean for them. In many cases, the development involved the rethinking and rationalisation of invoicing processes.

After about a year, several companies realised that the obligation to provide data was also an opportunity in the digitalisation process. Currently, the NTCA is meeting with several taxpayers to discuss their ideas, which include increasing the efficiency of business processes and digitising previous manual activities.

In many cases, after an initial difficult implementation, a significant group of companies, tax consultants, accountants and IT developers expect additional services and support from the tax administration. This is also because the NTCA was very supportive from the beginning and was able to solve (or showed solutions to) many issues and problems quickly and efficiently. Based on the feedback from the taxpayers, the introduction of the online invoice system and its communication, as well as the related tax administration activities, clearly strengthened confidence in the NTCA.

If a taxpayer keeps manually issuing invoices complying with this obligation will entail significant administrative costs. The tax administration expects that the increase in administrative costs will therefore direct taxpayers towards invoicing software.

Italy

Introduction of e-invoicing

In order to ensure the successful design and development of an infrastructure for the e-invoice process, it is necessary to involve different actors with different skills. In this respect, a key role was played by the Italian Forum on Electronic Invoicing, coordinated by representatives of the Revenue Agency and of the Department of Finance. The interaction with public and private stakeholders participating in the forum was instrumental to define the rules and technical standards needed to implement e-invoicing.

The implementation of e-invoicing was favoured by a close collaboration with all public and private stakeholders who were constantly consulted in the design phase. The role of tax intermediaries is particularly important, as they have supported the Administration in identifying and understanding the peculiarities of different types of economic operators. The Forum on electronic invoicing, established since 2011, has played a key role in these respects.

The Revenue Agency and the Italian Government conducted the information campaign through mass and specialised media (internet, specialised magazines, television broadcasts and commercials), particularly in the last months before the general introduction of electronic invoicing.

Figures like IT Project & Product Management, IT Service Management, IT Solutions Architecture, IT Operations Management, System Engineering/Sysadmin, Network Engineering, System Architecture and Database Administration are very important for design and development phases. Once the IT infrastructure has been defined, tax technical skills are required to ensure that its functioning is in line with the stated objectives. In addition, being the SDI a strategic and critical national infrastructure, IT security management becomes vital in order to limit vulnerability to intrusion, attack or violations.

The Italian Revenue Agency organised specific training courses for staff involved in taxpayer assistance. A network of 60 contact persons has been created to improve and share knowledge, facilitate the exchange of expertise, and provide the taxpayer with accurate information.

Finally, a constant interaction with the Data Protection Authority is needed, also in relation to the technical rules, to ensure full compliance with the GDPR (Regulation 679/2016 EU) and the respect of taxpayers' rights. With reference to our experience, we consider it is important that this IT infrastructure is not located in the cloud and is not outsourced to service providers.

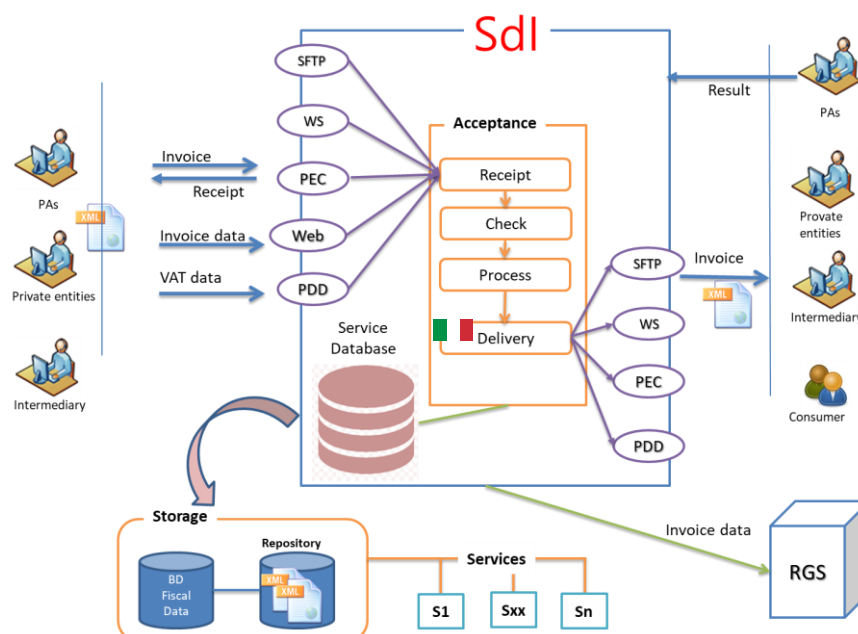
e-Invoicing architecture and services

As mentioned, the e-invoicing system relies on the SDI, the national infrastructure set up by the Ministry of Economy and Finance via its IT in-house company and managed by the Revenue Agency.

Once an e-invoice is transmitted to the SDI, it performs some formal controls according to defined technical specifications (to ensure the invoice is formally correct), extracts and stores relevant tax data, and forwards it to the customer. Unless the taxpayer has chosen to utilise the Revenue Agency storage facility, the Revenue Agency, in compliance with the GDPR, stores only the tax data necessary for its institutional purposes.

The SDI can reject an e-invoice for errors that make it non-VAT law compliant and that can be easily detected (i.e. format compilation errors, VAT number, invoice coherence such as between single invoice lines amount and total amount). This preventive check, impossible on paper invoices, improves dramatically the quality of the data. It is limited to strictly necessary controls and blatant mistakes mentioned above. In other words, at the moment, there are no preventive checks and possible rejections based on risk assessment criteria.

Figure A.3. The Italian e-invoicing architecture



Note: "Sistema di Intercambio (SDI)" is the name of the (Data) Exchange System
 Source: Italy (2022).

The SDI receives invoices in the form of files with the characteristics of XML Italian format or EN 16931 compliant (UBL and CII format); performs checks on the received files; and forwards invoices to the addressee Administrations or to private assignees/principals (B2B and B2C).

While a delivery receipt is sent by the SDI to the supplier to certify that the e-invoice has been delivered to the customer, different error codes are used to inform the supplier about the negative outcome of the transmission process, depending on the reason for the rejection.

The transmission of e-invoice file via the SDI can be made via the following channels:

- a certified email system (the so called "PEC Service");
- a HTTPS protocol (and application cooperation system available as a "web service");
- a SFTP protocol (a data transmission system using remote terminals).
- a web service (called "Invoices and payments").

With reference to 1), transmitting taxpayers intending to use certified email must avail themselves of an intermediary with which they have a relationship specifically for the provision of the certified email service. Said intermediary must be included in the specific public list managed by the Agency for Digital Italy (Italian Government Agency).

With reference to 2) and 3), these transmission channels require the digital signature of a specific service agreement, which defines the rules for communication between the transmitting subject and the SDI. Following the signing of the service agreement, the SDI proceeds with the "qualification" of the calling system with a series of interoperability tests to verify the accuracy of the correspondence. If the tests are positive, it issues an electronic certificate to accredit the relevant taxpayer. With reference to 4), the digital ID is necessary to access the relevant Revenue Agency Portal.

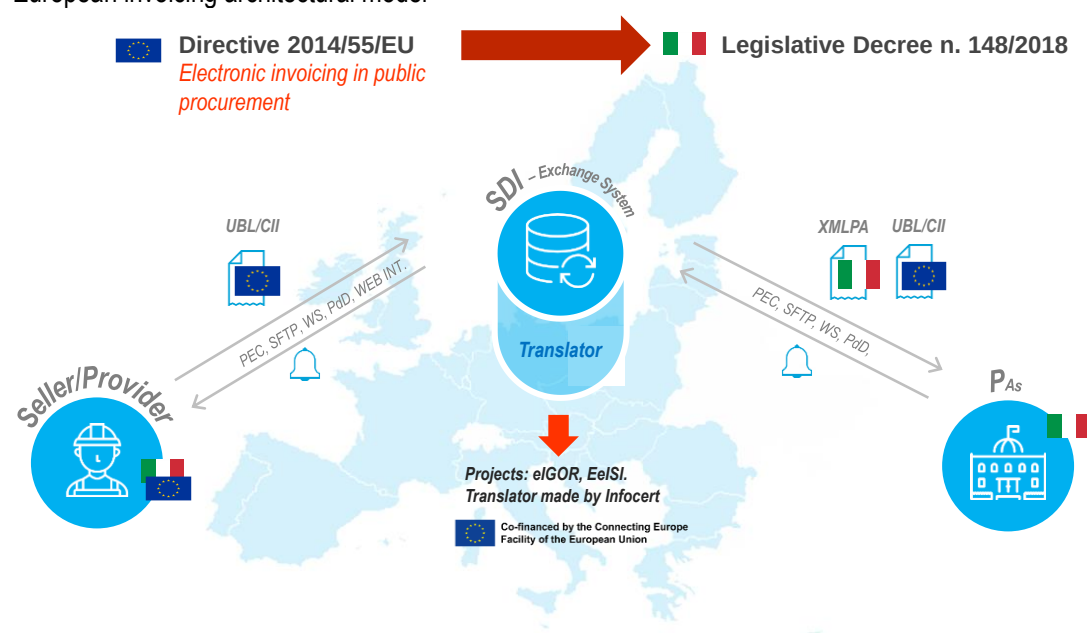
From an IT perspective, the SDI can manage national standard files (XMLPA), as well as EN 16931 compliant e-invoices (UBL and CII format), in line with European Directive 55/2014.

Interoperability

Since 2019, the accreditation process to the SDI has been extended to EU operators that use digital signature released by the European Certification Authority in order to digitally sign the service agreement. As the obligation of e-Invoicing in the public sector (2014) and private sector (2019) required the operators to invest in order to support the digitalised process and the Italian XML format, preserving the investment in Italian XML format was a primary goal when implementing Directive 2014/55/EU, so as to achieve a complete interoperability between the Italian format and UBL. Another reason is that Italy was the first country in Europe where the electronic invoicing is mandatory for B2G, B2B and B2C transactions (with over 6 billion of files managed since January 2019) and economic and resource investments have been made in order to start the “Electronic invoicing” in Italy.

Figure A.4. Creating interoperability

European invoicing architectural model



Source: Italy (2022).

In order to implement the European Directive 55/2014, since 18 April 2019 Public Administrations are able to receive and manage EN 16931 compliant e-invoices (UBL and CII format). A translator has been created in the CEF (Connecting Europe Facility) for managing the UBL/CII format and it is now integrated within the SDI. Thus, every e-invoice in UBL/CII format is translated in XML national format and sent to the Public Administration. The Public Administration receives the invoice in Italian XML format, with the original electronic invoice attached, and the report of the translation. However, with the first release of the “translator”, certain data points typical of the “Italian Tax System” (like split payment, stamp duty, withholding tax) were not supported by the core e-invoice system. The consequence was that the European invoice was not used, despite the fact that it was supported. It is understandable that the obligation of e-Invoicing in the public sector (2014) and private sector (2019) required the operators to make an investment to support the digitalised process and the FatturaPA format and this is the reason why the operators prefer to use the Italian XML format instead of the EU format. In order to close the above-mentioned gap, a working group was established, within the e-Business Commission of UNINFO (the Italian Standardisation Authority) and currently complete interoperability between the Italian format and UBL is assured.

Simplifications

Thanks to the digitisation of tax certifications, a number of simplifications have been introduced, such as:

- Elimination of the obligation to number purchase invoices: the obligation to progressively number the entries of purchase invoices in the relevant register has been eliminated.
- Extension of the deadline for issuing the invoice: instead of 24 hours on the day of the transaction, the e-invoice may be issued within twelve days of the transaction being carried out, without affecting the chargeability of the tax and the consequent liquidation.
- Extension of the deadline for the registration of invoices issued: the deadline by which issued invoices must be registered to the 15th day of the month following the date in which the operation was carried out has been postponed, replacing the deadline previously set on the fifteenth day following that of issue of the invoice.
- Automated stamp duty clearance: the Revenue Agency provides the data of the virtual stamp duty of the e-invoices to the transferor, the lender, or the delegated intermediary in order to allow them to perform changes if needed. A communication is sent in case of delayed, omitted or insufficient payment of the tax.
- Abolition of so-called Spesometro: the obligation to send the data of the invoices issued and received ("spesometro") was abolished.
- Abolition of the so-called Esterometro: the so-called "Esterometro" consisted in the obligation of online reporting of data relating to the sale of goods and the provision of services of cross-border transactions. From 1 January 2022, the data relating to the operations for the sale of goods and the provision of services carried out, received to and from subjects not established in the territory of the State are transmitted electronically using the SDI.
- Reduction of the time limits for the assessment: From 1 January 2020, the tax assessment terms are reduced by 2 years for all VAT operators who only issue and receive invoices, receiving and making payments in traced mode above the value of 500 euros (forfeiture period referred to in art.57, first paragraph, of Presidential Decree 633/1972 and deadline pursuant to art.43, first paragraph, of Presidential Decree 600/1973).
- Refusal of invoices by the Public Administration (PA) only if suitably justified: in electronic invoicing to PA, unlike electronic invoicing to private individuals, the transferee/client (the PA) could refuse the invoice issued by the supplier/provider. In order to eliminate unjustified refusals, the Decree of the Ministry of Economy and Finance of 6 November 2020 stated that public administrations must justify the reason for the refusal by reporting one of the five specific reasons indicated in the Decree. On the one hand, this will allow to have a clear picture of the main reasons for refusal and, on the other hand, to eliminate potential delaying techniques.

In sum, in order to introduce an efficient and effective e-invoicing system, it is advisable to adopt a phased approach, extending the system via subsequent steps. It is essential to involve stakeholders from the early stages to better understand the various strengths and weaknesses of the system. In practice, allowing them to actively participate in defining the rules and the steps to take is worth the effort. The ability of the system to defend from cyber-attacks is crucial as a factor in the protection of citizens' privacy and economic and financial stability. IT risks must therefore be assessed at every stage of the process, identifying suitable actions to mitigate them.

Spain

Introduction of e-invoice data reporting

The Immediate Supply of Information (ISI) project was conceived as a project with two purposes: obtaining timely and high-quality information for risk management and fraud prevention and detection, and secondly introducing an efficient VAT management system reducing administrative burdens.

The project began in 2014, in view of the state of the art in tax matters in countries such as Brazil, Mexico and Portugal, which shared their experiences with the Spanish Tax Agency (AEAT). The AEAT opted for an innovation on these systems, discarding the issuance of "tickets" with a fingerprint and with prior passage by the Tax Administration, replacing it with a subsequent, but immediate, shipment. This is what is now internationally known as VAT on-line. In addition, the ISI differs from other systems for sending invoices in the assistance services (immediate verification of invoices, consultation of the imputations / books of third parties and the elimination of various formal obligations).

In 2016 a new regulation was approved for the modernisation, improvement and promotion of the use of electronic means in the management of Value Added Tax, the Royal Decree 596/2016, of 2 December, Order HFP/417/2017, of 12 May,

The AEAT implemented in July 2017 ISI,¹ which is the electronic invoice management system for the Tax Administration. According to international standards, we can classify the ISI system as an invoice e-reporting system, in near real-time. The ISI is, fundamentally, a process between machine and machine and synchronous.

ISI is mandatory for certain VAT taxpayers whose turnover is above certain thresholds (as well as Companies registered in the monthly return register - REDEME and VAT groups). Other taxpayers can use it on a voluntary basis. In order to register the invoices on the VAT Books, taxpayers must send the invoicing details to the tax authority, within 4 working days (since 2018).

In Spain, the number of VAT taxpayers exceeds 3.5 million, of which 65 274 are included in the Immediate Supply of information - ISI, approximately 1.7% of the total and represent 80% in terms of turnover.

From the beginning of the project, the AEAT collaborated (once the regulatory viability had been verified) with different groups of interlocutors from the financial-fiscal and technological sector:

- Forum of the AEAT of Large Companies.
- AEAT Forum of Tax Advisors and Professionals.
- Manufacturers of technological solutions for commercial-fiscal activity (manufacturers of ERPs, solutions for SMEs, companies with their own solutions).
- Taxpayers impacted by the new system. The AEAT organised nearly 100 meetings, round tables and conferences throughout the country. These sessions were attended by about 15 000 – 20 000 participants.

During the development of the project, several provisional versions of all the technical documentation were published and a website was also set up for testing, so that software companies could test their systems, while the AEAT tested its own. As a result, the day before the entry into force of the ISI System, the AEAT had already received, processed and responded to more than 500 million invoicing records (as shown in the graph below). The system became active on 1 July 2017, as planned, and without any notable incidence.

¹ https://sede.agenciatributaria.gob.es/Sede/en_gb/iva/suministro-inmediato-informacion.html.

e-Invoicing architecture and services

The so called ISI is a Book keeping system, a quasi-Real-time Reporting System which doesn't imply that the invoices are electronic, neither that the invoices themselves are sent to the Tax Agency. In this system the taxpayers must send "certain data" shortly after carrying out a transaction. The data can be extracted from the invoice, but the invoice itself need not to be transmitted to the tax authority.

The ISI system is actually a change of the former VAT management system. The former VAT registration book keeping system is carried out by the AEAT Electronic Headquarters, by supplying the invoicing records. (The invoice is not sent, but the invoice registration information plus tax information). The supply is carried out immediately, which allows to bring the moment of registration of the invoices closer to that of the effective realisation of the economic operation.

The regulatory basis of the system is to establish that the current obligation to keep VAT registration books is carried out through the Electronic Office of the Tax Agency, by electronically sending the registration detail of the invoices issued and received that must be recorded in the aforementioned books.

This ISI is not really constituted as a "new obligation", but it is a transformation of the current obligation to keep the VAT record books, requiring that it be fulfilled electronically by continuously sending the details of each operation. The second essential element on which the system pivots is to bring the moment of annotation in the books of the invoices, to the moment of effective realisation of the economic operation that underlies them. To this end, a maximum period of submission of the details of invoice records is established, which is generally set at 4 working days from the time of the "issuance" or "accounting" of the invoice, excluding Saturdays, Sundays and national holidays from the calculation.

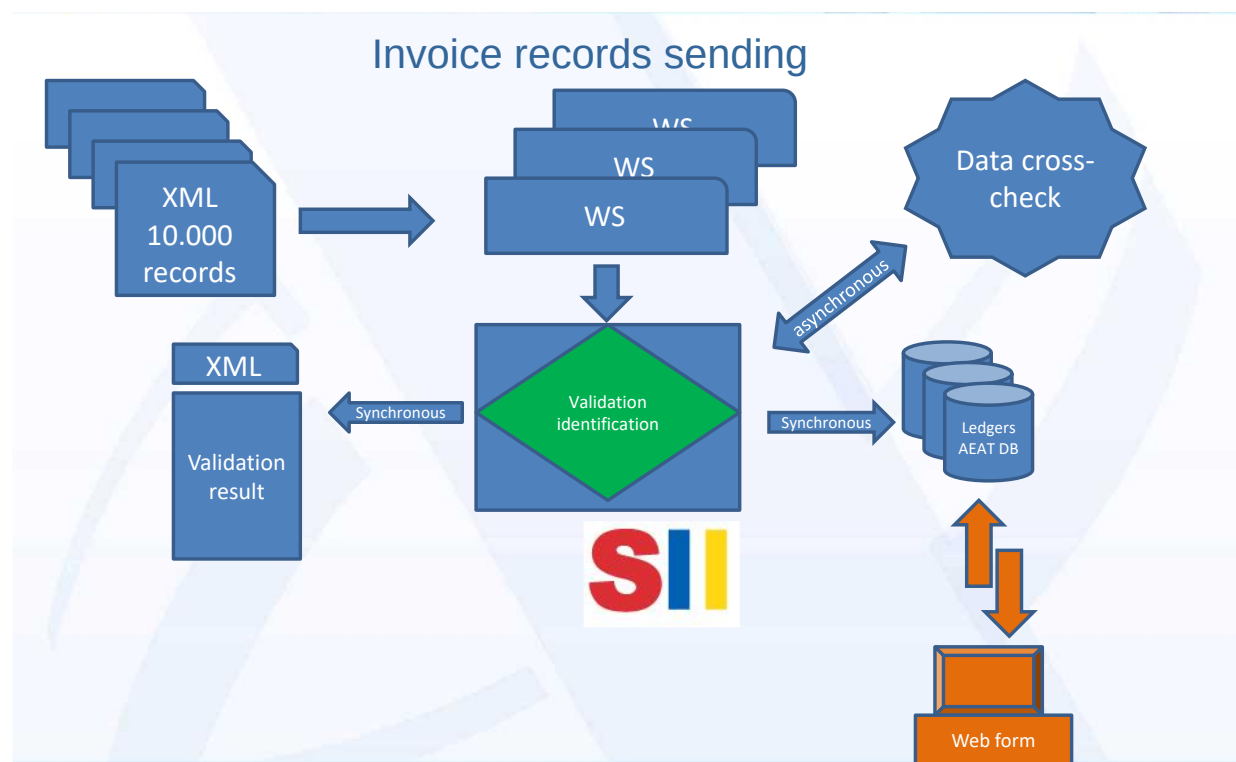
The taxable persons to whom the ISI system applies are set up in two groups:

- Taxpayers who must apply the ISI compulsorily: all those who have a monthly VAT settlement period (large company, special regime of the group of entities, registered in the monthly return register
- Taxpayers who voluntarily choose to apply the ISI by submitting the corresponding census return.

The information that must be sent consists of the essential content of the invoices issued or received, including the tax aspects related to the operations that are documented in them, but without including the lines of detail.

The ISI systems supports fundamentally a machine-to-machine and synchronous process. The companies included within the group formed by large companies, VAT Groups and registered in the monthly refund regime, must send the State Tax Administration Agency information on their invoicing. The sending will be carried out electronically, specifically through Web Services based on the exchange of XML messages. The structure of these messages will consist of a common header with information about the owner of each record book and then a block with the invoice data will be included. All mentioned messages are returned synchronously.

Figure A.5. Sending invoice data digitally to the Spanish tax agency



Source: Spain (2022).

For each type of log book, bulk registration, cancellation and modification operations can be carried out. Regarding the books of invoices received and issued, collections/payments may be added. The inclusion of collections/payments must send XML message separate from that of the supply of invoices issued and received. The cancellation of collections / payments will be made by sending the collections / payments that are intended to be cancelled with a negative amount, that is, there is no specific shipment for low collections / payments.

In essence, the XML message sent by companies is a container of invoices, with their associated data, identified with a unique key. It is possible to make modifications and cancellations in the invoice data sent. The maximum number of invoices per shipment is 10 000.

The data sent to the ISI are: Invoice number (and serial number if applicable), issuance date, transaction date, taxable amount, tax rate, type of invoice, description of the transaction, settlement period and special regimes.

Once the XML message has been sent, the AEAT will automatically proceed to carry out a validation process, both at the level of XML format and business rules. If the message does not pass any of the validations at the XML format level, the system returns an error message, specifying the origin of that error.

If the message passes the validations at the XML format level, the business validations will be carried out, returning a response message with the result of the validation and its acceptance or not by the AEAT.

Regarding the semantic rules (in addition to those collected in the case of B2G in the FAcE system, see Box 3.3), the Tax Administration offers its own rules used in the ISI System, which are directly encoded in

the XML schemas themselves, or in the back office of the AEAT. All these rules and validations are available on the ISI website.²

Three types of validations have been defined for sending invoices to the ISI:

- *Structural validations* making sure that the label structure complies with the scheme regarding the establishment of mandatory labels. Failure to comply with these validations will lead to the complete rejection of the request.
- *Syntactic validations* evaluating the format, length, obligatory nature of the content and whether the values match a series of pre-established values. Failures in this type of validation will be considered as "Ineligible" errors.
- *Business validations* associated with field validations whose content or mandatory nature depends on the value associated with another field. Most of the possible errors defined have been set as "admissible", i.e. they will be recorded in the system, but will have to be corrected later.

² https://sede.agenciatributaria.gob.es/Sede/en_gb/iva/suministro-inmediato-informacion.html.

Annex B. OECD SAF-T

While this report does not cover the use of the OECD Standard Audit File – Tax (SAF-T) in electronic invoicing in any detail, a small group of interested countries has been looking at SAF-T alongside the work on this report. This Annex gives a short update.

OECD SAF-T

In May 2005, the OECD Committee on Fiscal Affairs (CFA) published the first version of SAF-T (1.0). SAF-T version 1.0 was based on entries found in the General Ledger Chart of Accounts, combined with master file data for customers and suppliers and details of invoices, orders, payments, and adjustments. SAF-T describes a set of protocols for data exchange between accounting software and national tax authorities or auditors. In 2008, SAF-T was adopted by Portugal and has since been adopted by other European countries such as Luxembourg, Austria, Poland, Norway and Lithuania.

In April 2010, a revised version (2.0) was published, which extended SAF-T to include information on inventories and fixed assets as well as revised to accommodate suggestions from OECD member countries and others. Additionally, the Schema was changed to XML format. Originally developed for tax audit purposes, countries like Lithuania, Poland and Portugal tailored SAF-T via national specifications and mandated its use within the context of digital reporting of VAT and invoice related data³. Typical SAF-T messages in this context contain, among others, the taxable amount of the transaction, the VAT rate, the invoice number as well as data about the trading counterpart.

Within this context, the EU characterises SAF-T as a Periodic Transaction Control (PTC) instrument. Within PTCs, the EU further distinguishes between VAT listing and SAF-T requirements. The former requires the periodic transmission of transactional data according to a nationally-defined format, while the latter relies on the national implementation of the OECD specification (European Commission, 2022^[3]).

The domestic adaptations of SAF-T challenge the global, interoperable character of the original 2.0 version and result in administrative burdens to businesses operating in global markets.

An informal working group on SAF-T was established in 2020 to consider issues with the different implementations of SAF-T and to consider possible options. The Working Group, which included Canada, Hungary, the Netherlands, Norway, Poland, Portugal, Russia and Slovakia, explored challenges as regards its adoption, focussing on:

- the state of play regarding SAF-T,
- problems arising from domestic adaptations,
- relations with other standards.

Based on their engagements with tax administrations and business representatives this working group identified several challenges:

- the number of countries that have adopted modified versions of SAF-T,

³ Austria, Denmark and Norway e.g. implemented SAF-T for audit purposes only.

- administrative burdens for businesses caused by this variety of SAF-T implementations,
- the potential misconception that SAF-T is a specification to report invoices to the tax authorities, rather than a file for audit purposes;,
- whether and how the 2010 version might be aligned with other standards available or being developed.
- Whether and, if so how, work on SAF-T might be taken forward is currently being discussed.

References

European Commission (2022), *VAT in the digital age: final report. Volume 1, Digital reporting requirements*, Publications Office of the European Union, Luxembourg, [3]
<https://doi.org/10.2778/541384>.

Tax Administration 3.0 and Electronic Invoicing

Initial Findings

The 2020 report *Tax Administration 3.0: The Digital Transformation of Tax Administration* identified electronic invoicing as one of the projects for further exploration. This report, *Tax Administration 3.0 and Electronic Invoicing: Initial Findings*, examines the current state of play on electronic invoicing based on a global survey. It also draws out some considerations that administrations exploring possible implementation or reform of such systems may wish to take into account. This report contains a number of case studies and examples from countries which have implemented electronic invoicing. This report was developed by officials from Canada, Chile, China (People's Republic of), Hungary, Spain, and supported by the Secretariat of the OECD's Forum on Tax Administration.