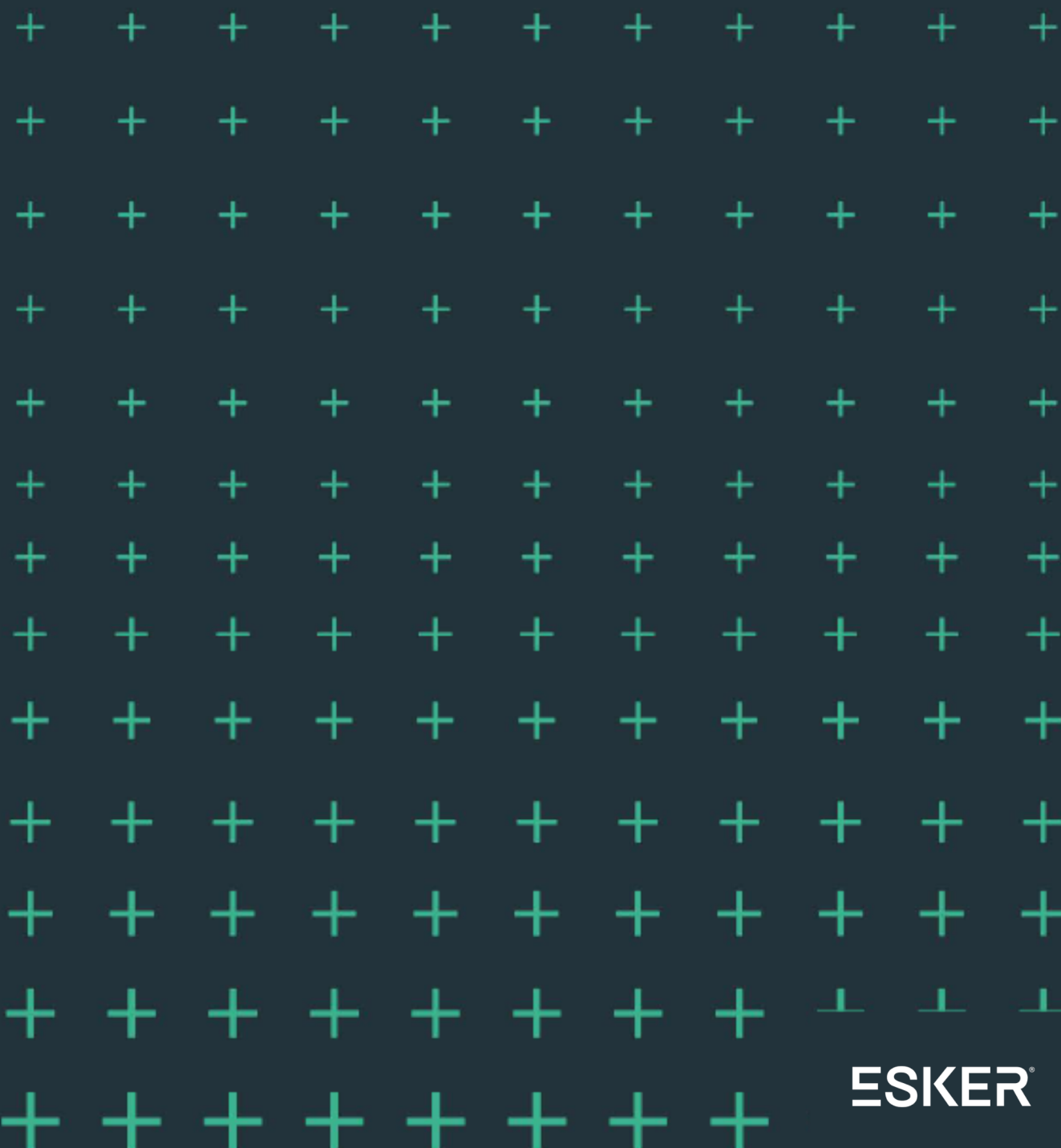


Riding the Tornado: A Guide to Mastering Multinational E-invoicing and Compliance

June 2026



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0. Executive Summary

'Riding the Tornado: A Guide to Mastering Multinational E-invoicing and Compliance' provides a comprehensive analysis of the rapidly evolving global landscape of electronic invoicing, tax compliance, and digital trade. Building on more than two decades of billentis market research, this edition examines how regulatory mandates, technological innovation, interoperability initiatives, and Artificial Intelligence are transforming business transactions worldwide.

The report argues that the original e-invoicing "tornado" has evolved into a broader transformation towards Integrated Digital Trade, where invoicing, tax reporting, procurement, payments, and financial processes increasingly converge. Against this backdrop, companies are facing unprecedented regulatory complexity, while at the same time being presented with significant opportunities for automation, efficiency gains, and business transformation.

Key findings include:

- + **Market Expansion and Digitalisation:** The global volume of invoices and invoice-like documents continues to grow, while electronic invoices and receipts are expanding at a significantly faster pace. Governments worldwide are accelerating the transition from paper-based and unstructured documents towards structured, machine-readable business data. By 2030, electronic invoicing is expected to become the dominant method for exchanging business transactions across most major economies.
- + **Regulatory Acceleration:** Tax authorities continue to be the primary driver of market adoption. Continuous Transaction Control (CTC) models, digital reporting requirements, and mandatory B2B e-invoicing frameworks are rapidly expanding across Europe, Asia-Pacific, the Middle East, Africa, and Latin America. Initiatives such as ViDA in Europe and numerous national mandate programmes are creating a business environment in which compliance increasingly requires real-time or near-real-time exchange of structured transaction data.
- + **From E-invoicing to Integrated Digital Trade:** Electronic invoicing is evolving beyond compliance and document exchange. Structured business data increasingly serves as the foundation for integrated digital ecosystems connecting suppliers, buyers, financial institutions, logistics providers, and tax authorities. The convergence of tax reporting, procurement, finance, payments, and supply chain processes is giving rise to a new market segment: Integrated Digital Trade (IDT).
- + **Artificial Intelligence and Business Transformation:** Artificial Intelligence is emerging as a key enabler of the next phase of digitalisation. AI technologies are increasingly being applied across the invoice lifecycle, from document processing and data extraction to compliance monitoring, process automation, and predictive analytics. Combined with structured electronic business data, AI has the potential to significantly improve operational efficiency, decision-making, and scalability.
- + **Strategic Implications for Companies:** The growing complexity of global compliance requirements is forcing organisations to move beyond fragmented country-by-country approaches. Successful companies increasingly adopt centralised governance, harmonised processes, scalable technology architectures, and cross-functional operating models that integrate finance, tax, procurement, legal, and IT functions.

The report concludes that electronic invoicing is no longer merely a compliance initiative. It is becoming the digital backbone of modern business transactions and a key building block of Integrated Digital Trade. Organisations that proactively embrace this transformation will be better positioned to achieve compliance, operational excellence, and competitive advantage in an increasingly connected and data-driven global economy.

1. Introduction

1.1 The purpose of the Report



For more than two decades, billentis has been recognised as one of the leading independent sources of market intelligence in the fields of electronic invoicing, tax compliance, and digital business transformation. The annual billentis reports have documented the evolution of the market from the early stages of electronic invoicing adoption to today's increasingly interconnected digital trade environment.

Since acquiring billentis in 2023, Marcus Laube has continued this tradition while expanding the scope of analysis beyond electronic invoicing towards the broader convergence of compliance, finance, procurement, and digital trade.

The pace of change in the market has accelerated significantly in recent years. Governments worldwide are introducing mandatory e-invoicing, digital reporting, and Continuous Transaction Control (CTC) frameworks at an unprecedented rate. At the same time, technological innovation, Artificial Intelligence, interoperability initiatives, and digital trade programmes are transforming the way businesses exchange information and conduct transactions.

This creates an increasingly dynamic environment for both businesses and solution providers. Regulatory requirements are evolving continuously, implementation timelines frequently change, and new mandates are announced on a regular basis. As a result, maintaining an accurate and up-to-date understanding of market developments, adoption levels, and future requirements has become substantially more challenging than in previous years.

The objective of this report is therefore not only to provide a snapshot of the current state of electronic invoicing and tax compliance, but also to help organisations understand the broader forces shaping the future of digital business. It seeks to provide decision-makers with a structured overview of market developments, regulatory trends, adoption forecasts, and strategic considerations required to navigate the transition toward Integrated Digital Trade.

While compliance remains a major driver of market adoption, the scope of digital transformation increasingly extends beyond invoicing. Structured business data is becoming the foundation for end-to-end digital processes connecting suppliers, buyers, financial institutions, logistics providers, and public authorities. Consequently, organisations must increasingly view electronic invoicing not as an isolated compliance project but as part of a broader business transformation journey.

This report is intended to support companies and industry stakeholders in understanding this evolving landscape and identifying opportunities to transform regulatory change into operational and strategic advantage.

1.2 Methodology

The electronic invoicing and tax compliance market continues to evolve rapidly. New mandates, reporting requirements, and regulatory initiatives are introduced every year, while adoption rates and implementation approaches vary significantly across countries and industries. As a result, obtaining complete, current, and directly comparable market data remains challenging.

To address these limitations, this report combines extensive market research, documented evidence, expert interviews, historical billentis research, industry surveys, official statistics, and analytical modelling techniques to develop a consistent and transparent view of global invoice volumes and electronic invoicing adoption.

The authors draw upon:

- + Official statistics published by tax authorities and government agencies
- + National e-invoicing and digital reporting platforms
- + Industry associations and market initiatives
- + Corporate disclosures and ESG reports
- + Solution provider data and aggregated market information
- + Country-specific surveys and academic research
- + Historical Billentis datasets developed over more than two decades
- + Direct observations from consulting projects and market participants worldwide

The new model supported by Artificial Intelligence estimates national invoice volumes by combining documented market evidence with a structured, country-level estimation framework. Verified invoice counts from tax authorities, official reporting systems, surveys, industry sources, and legacy billentis research serve as anchor points, classified by source type, scope, segment, year, and confidence.

The estimation runs as a three-stage chain. Stage 1 resolves the total invoice volume (paper and electronic) per country-year by walking a prioritised ladder of evidence: documented totals first, then back-derivation from verified electronic volumes combined with peer-grounded shares, then forward-projection of earlier anchors via nominal-GDP growth, and only as a last resort a cross-country regression of invoices per capita against shadow-economy share (or GDP per capita where no shadow-economy data exists). Stage 2 splits the total into electronic and paper, using verified shares where available and otherwise mandate-tier peer means or literature priors, informed by mandate and tax-reporting evidence. Stage 3 splits the electronic volume into B2B and B2C, again preferring verified ratios over peer means or regional priors.

The result is a harmonised country-year dataset covering total, electronic, paper, B2B, B2C, and tax-reporting-related volumes. Every figure carries provenance, so reported values can be traced back to documented evidence, legacy research, survey input, peer inference, or model-based estimation.

Because invoice markets differ across countries and official statistics are unevenly available, the model is best read as a structured estimation framework rather than a source of exact point measurements — designed for consistent, comparable, and transparent cross-country sizing while preserving the distinction between observed evidence and inferred estimates.

1.3 Partners and Contributors

This year's edition of the report has been further strengthened through contributions and support from a number of leading organisations and industry partners. Their expertise, research, and market insights have helped broaden the scope of the analysis and enhance the quality of the content presented.

For the first time, the report incorporates contributions from external research and industry partners. In particular, the School of Management of the **Politecnico di Milano** contributed valuable insights to the chapters covering Artificial Intelligence and E-invoicing: Business Impact and Transformation. As one of Europe's leading academic institutions in the field of digital business and innovation, its research provides important perspectives on the future role of automation, data-driven processes, and AI-enabled transformation within the invoicing and compliance landscape.

The report is further supported by the two leading global industry associations in the field of digital business document exchange and interoperability: **OpenPeppol** and the **Global Exchange Network Association (GENA)**. Both organisations play an important role in fostering international interoperability, developing best practices, promoting standards, and supporting the ongoing evolution of electronic invoicing, tax compliance, and digital trade ecosystems worldwide.

In addition, **E-Invoicing Exchange Summit** and **The Invoicing Hub** support the dissemination of this report as media partners. Through their extensive networks of corporate practitioners, public sector stakeholders, service providers, and industry experts, they contribute to the global reach and visibility of the report and facilitate knowledge sharing across the wider digital trade community. Finally, **Dots & Dashes** is responsible for the creation of the billentis website and the new AI-based methodology used for (e-)invoice volume observation and estimation.

The authors would like to express their sincere appreciation to all contributors, partners, sponsors, and industry experts who have supported the preparation of this report. Their collaboration reflects the increasingly interconnected nature of the electronic invoicing, tax compliance, and digital trade ecosystem and contributes to the objective of providing independent, comprehensive, and globally relevant market intelligence.

Contribution partner:



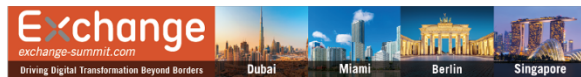
Technology (Website/AI):



Partner associations:



Media partner:

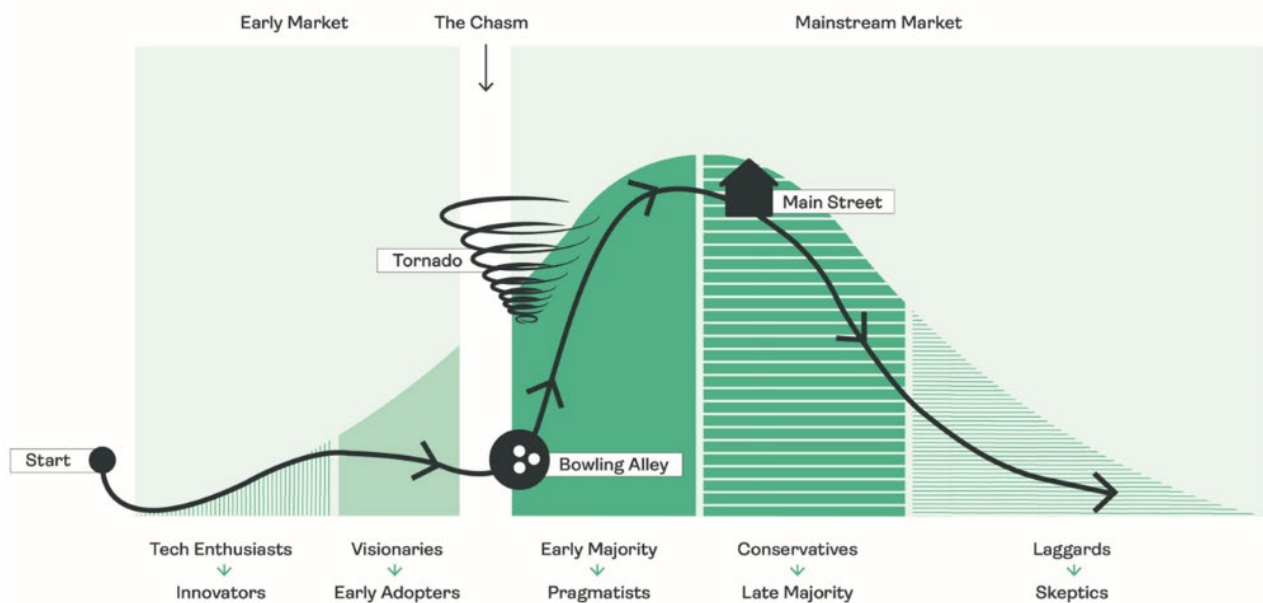


2. Integrated Digital Trade Tornado: Forces Shaping the New Business Environment

2.1 Brief Recap of the “Tornado”

Over the past decade, invoicing and tax reporting have undergone a fundamental transformation. What was once a gradual shift toward digitization has evolved into a rapid, multi-dimensional transformation – referred to as the “tornado” by the billentis report 2024 - driven by regulatory mandates, technological innovation, and global standardization efforts.

This shift, akin to a silent revolution, remains largely unobserved at present but is poised to fundamentally alter the economic landscape. Consequently, the theme of the former report has been inspired by Geoffrey Moore's seminal works, 'Inside the Tornado' and 'Crossing the Chasm', reflecting the anticipated profound and rapid changes in the business environment.



In 2026, the market landscape continues to be shaped by numerous upcoming B2B mandates, the electronic invoicing sector is transitioning into a phase of widespread market adoption, referred to as the '**Tornado**' phase.

At the center of this transformation is the increasing intervention of governments. Tax authorities worldwide are moving from periodic, retrospective reporting models toward **real-time or near-real-time data collection**, often referred to as Continuous Transaction Controls (CTC). These models require companies to submit transaction data directly to authorities at or before the moment of exchange, fundamentally changing how invoicing processes are designed and executed.

This regulatory acceleration is not limited to a few early adopters. What began in Latin America has now expanded across Europe, Asia, and beyond. Major economies are introducing or planning mandatory e-invoicing and e-reporting frameworks, creating a landscape in which **compliance is no longer optional, local, or static - but continuous, global, and evolving.**

At the same time, organisations are digitizing their finance and supply chain processes. Technologies such as cloud platforms, APIs, AI-driven data processing, and interoperable networks are transforming how invoices are created, exchanged, validated, and archived. Companies are no longer satisfied with simple PDF-based invoices. Instead, there is a clear shift toward **structured, machine-readable data formats** that enable automation across accounts payable (AP), accounts receivable (AR), and broader financial processes. This transition supports greater efficiency, reduced manual effort, and improved data accuracy - but also requires significant changes to systems and processes.

The convergence of regulatory pressure and digital transformation is driving the emergence of **integrated digital trade ecosystems**. In these environments, invoicing is no longer a standalone document exchange but part of a broader flow of structured business data connecting suppliers, buyers, financial institutions, and tax authorities.

For companies, this “tornado” creates both risk and opportunity. On one hand, non-compliance can lead to penalties, operational disruption, and reputational damage. On the other hand, organizations that proactively adapt can leverage these changes to **streamline processes, improve transparency, and unlock new efficiencies across their financial value chain**.

Understanding the forces behind this transformation is essential. The following sections will clarify key terms, outline the evolution from traditional invoicing to digital trade, and help companies assess their current position within this rapidly changing environment.

2.2 E-invoicing and Beyond – Terms and Definitions

The term ‘e-invoice’ is used within the Business-to-Business (B2B) and Business-to-Government (B2G/G2B) contexts, specifically referring to the electronic transmission of invoices between suppliers and purchasers, without addressing data exchanges with tax authorities for reporting and control objectives.

In the **Western hemisphere**, e-invoicing signifies the digital transmission of invoices directly between suppliers and purchasers across various sectors, including businesses (B2B), public administrations (B2G), and consumers (B2C). In the United States, a distinction exists between ‘e-invoice’ for B2B transactions and ‘e-bill’ for consumer transactions.

European Union (EU) legislation provides a comprehensive definition for the B2B context, involving the electronic issuance and receipt of Value Added Tax (VAT) compliant invoices. It mandates the archival of e-invoices in their original digital format, even if a printed version is produced subsequently. This definition is widely accepted and includes digital invoices, primarily in PDF format. For B2G transactions, only structured formats qualify as e-invoices under EU directives. The definition for B2B transactions may evolve with the implementation of the ‘VAT in the Digital Age’ (ViDA) project.

In **Latin America**, the term ‘e-factura’ or ‘e-boleta’ refers to the digital transmission of sales invoice data to tax authorities.

In **Asia**, practices vary, with Singapore and some countries aligning with the Western definition, while others use the term for reporting sales data (e-tickets, e-receipts) to tax authorities. In countries like India, Indonesia, and China, e-invoicing is used for VAT invoice registration.

The future of e-invoicing is moving towards standardized structured data use across B2B and B2G mandates, aiming to standardize invoice exchange methods.

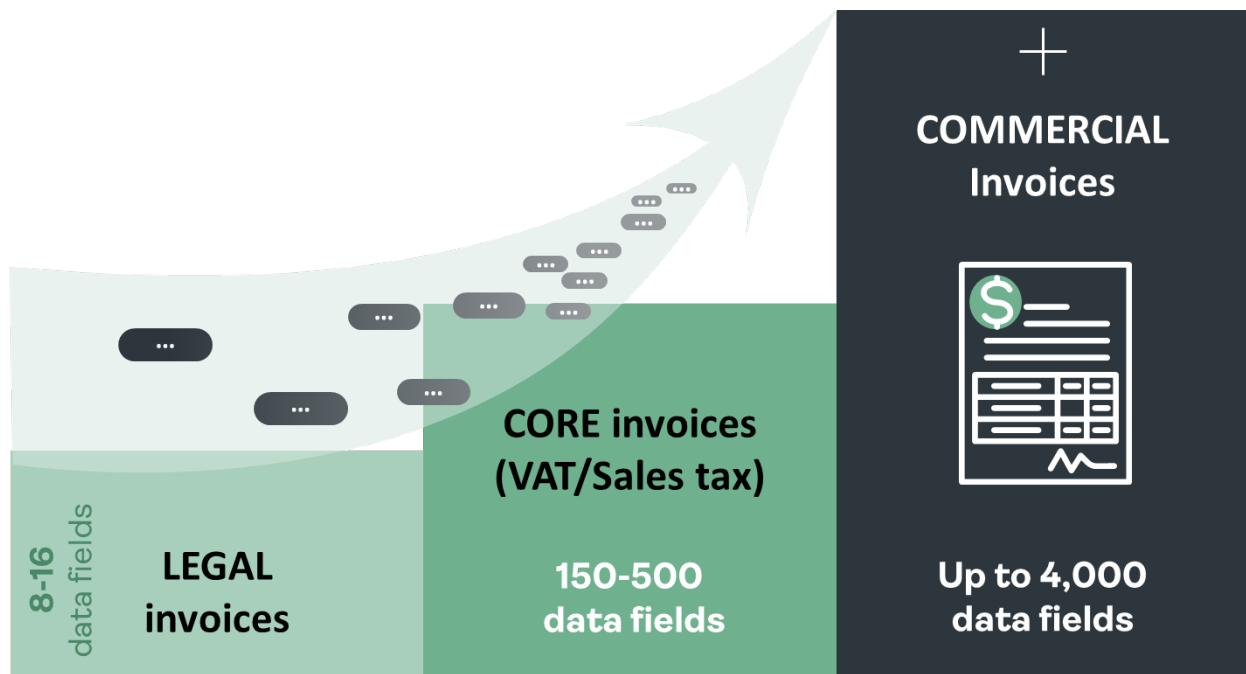
The term ‘e-billing’ refers to the electronic generation of bills for consumers (B2C) and government-to-consumer (G2C) transactions. Numerous stakeholders employ the terms ‘e-invoicing’ and ‘e-billing’ interchangeably, without distinguishing between them based on the recipient segment. Instead, they utilize one of these terms universally for all electronic invoice transactions.

billentis defines ‘invoice’/‘bill’ and ‘e-invoice’/‘e-bill’ for global statistical and predictive analysis. Legal definitions may vary, but excluded from the e-invoice category are:

- + Financial documents that do not reflect a commercial transaction, accompanied by a ‘request for payment’, such as bank statements and waybills.

- + Invoices that are entirely digital but do not meet tax compliance requirements due to deficiencies in integrity, authenticity, and readability.
- + 'Electronic invoices', supplemented by legally significant paper-based summary invoices as components of the Electronic Data Interchange (EDI) ecosystem, are scanned, printed, or archived by recipients. In instances where only the paper version is maintained as the 'new' de facto original and assumes the role of the primary document.
- + Asymmetric e-invoicing, where buyers retain the right to request a printed version of the invoice, which shall then be recognized as the legally valid original invoice.
- + Bulk of paper invoices, despite the concurrent electronic transmission of invoice data to tax authorities or trading partners.

There are three recognized types of e-invoices: legal invoices, core (VAT-/Sales tax (ST)) invoices, and commercial invoices. Legal invoices meet tax compliance requirements with mandatory fields and authentication, preserved as the original valid invoice. Core invoices comply with tax and trade requirements, supporting automated processing. Commercial invoices, designed for specific industries, accommodate extensive data fields to enable process automation.



Legal invoices: Electronic invoices, which mandatorily include 8 to 16 essential fields along with the authentication of both the issuer and recipient, are exchanged between two entities acting as supplier and buyer. These digital, tax-compliant invoices serve as the legitimate original invoices. The exchange occurs directly between the entities, through service providers, or via platforms offered by tax authorities. These electronic invoices are meticulously preserved as they constitute the sole original invoices recognized by tax authorities and auditors for compliance purposes.

Core invoices: Compliant with the standards for VAT, Sales tax and trade invoicing, including the European Norm for EU-wide B2G electronic invoicing. This entails a comprehensive format featuring 150 to 500 fields to facilitate automated processing. Such invoices are commonly generated by accounting/ERP systems and serve as the foundation for electronic tax reporting, e-invoicing, and the automation of business processes.

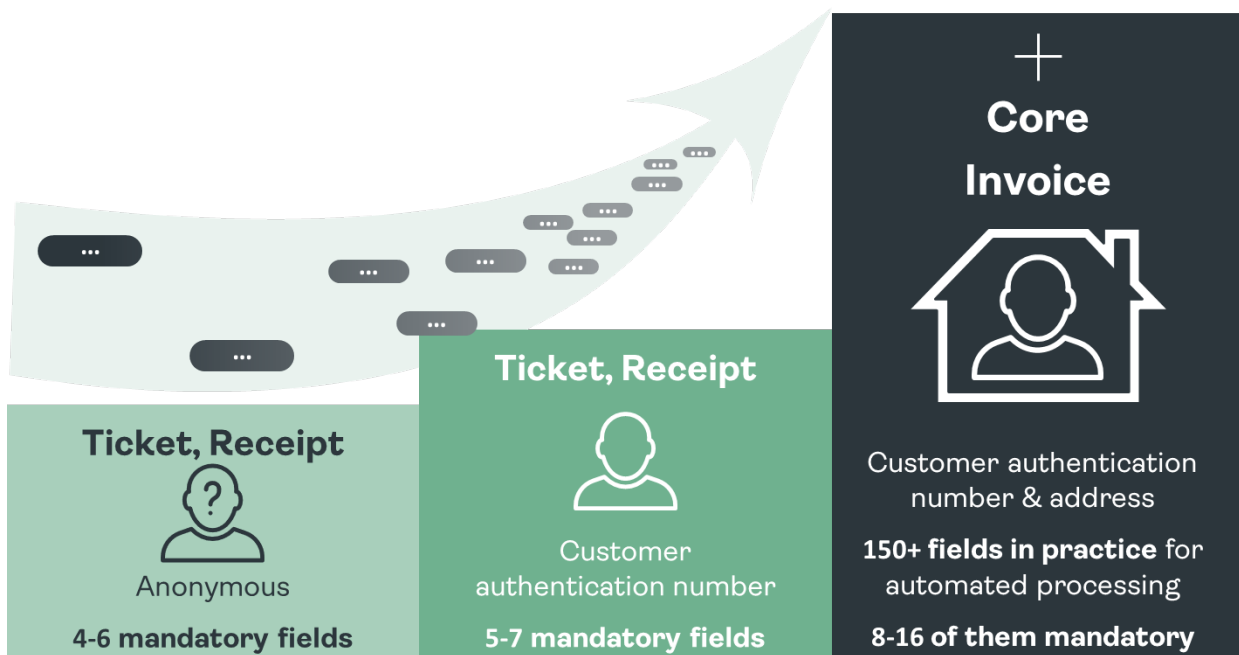
Commercial invoices: The Universal Business Language (UBL) standard encompasses approximately 4,000 distinct data fields exclusively for invoicing purposes, leading to the development of UBL subsets tailored to particular user groups, such as NES, OpenPeppol, and

UBL-TR. Industries such as healthcare and transport logistics heavily rely on these specialized commercial invoices to achieve full automation of their processes.

2.3 From Tickets to Core Invoices

In today's global market, customers across the majority of nations can seamlessly acquire products or services at the point of sale (POS) without undergoing extensive formalities. Upon completing a transaction, customers receive a receipt, which notably omits the inclusion of the customer's name. The transfer of electronic data to customers presents challenges, rendering automated processing complex or unfeasible.

For transactions surpassing several hundred euros in value, regulatory requirements in many jurisdictions necessitate customer authentication, incorporating their details into the payment confirmation. Consequently, the receipt is enhanced with the customer's primary information, elevating it to the status of a standard invoice.



Reflecting on developments a decade prior, it is observed that customers in certain forward-thinking countries, such as Chile, were incentivized through financial means (e.g., a more favourable VAT rate) to voluntarily disclose their identity at the POS.

The authors anticipate a trend towards stricter regulations on anonymous POS transactions as a strategy to combat tax evasion. This could manifest through legislative amendments lowering the threshold for anonymous purchases. Additionally, advancements in mobile technology, facilitating easy merchant and customer authentication via QR codes or applications embedding identity information, are likely to be a contributing factor. Indications are that a significant portion of invoices, in a broader legal context, will transition to core invoices. This shift is poised to enhance the electronic exchange and automated processing of these invoices.

Receipts and tickets, previously issued anonymously, are increasingly likely to incorporate customer authentication data at the POS or during transactions using mobile devices. This will enable electronic transmission to customers, integration into accounts payable (AP) systems, and facilitate their automatic processing.

It is crucial to clearly differentiate between invoices and receipts (which include payslips and tickets), as both categories play instrumental roles in recording transactions for goods and services. Invoices and receipts generally share similar details, such as the transaction value, applicable sales tax, and discounts.

Examples of 'invoice-like documents and messages' include:

- + Invoice data sent to tax authorities for validation or audit purposes, covering electronic reporting and VAT/Sales tax filings.
- + Digital counterparts to conventional fiscal printers that produce payment receipts, including electronic receipts generated at points of sale (e.g., retail stores, dining establishments, ticket counters) and submitted to tax authorities for validation or audits, especially in regions like Taiwan and certain Latin American countries.

The projection that electronic Point of Sale (POS) systems and mobile invoicing will become increasingly prevalent is supported by several factors. These technologies enhance convenience for consumers and play a critical role for businesses in managing transactions at the POS (including business meals, office supplies, and fuel for company vehicles) and enabling purchases via mobile apps (e.g., for train and flight tickets, parking fees). Moreover, tax authorities are progressively requiring customer authentication for even minor transactions, integrating such data into payment confirmations. This shift is crucial for businesses to accurately reclaim taxes or allocate these expenditures within their accounting systems. The move from traditionally anonymous transactions to digital invoices facilitates their seamless integration and processing within customer systems. This is why in the future it will be less and less possible to differentiate between classic e-invoices and personalized e-receipts in a global context.

2.4 E-invoicing versus E-reporting

Although invoice-relevant data can be exchanged using the same technical platforms, and following the same schemes and models, it is useful to distinguish between e-invoicing and e-reporting to tax authorities. Mainly in African and Asian publications, e-reporting from cash registers and virtual printers to tax authorities is often translated into English using the term 'e-invoicing'. However, we use the term differently in this document.

E-invoicing: Both the supplier and the buyer have finally an electronic invoice that represents for tax purposes the invoice original. These invoices include the full content. In practice, it may be one document, or several documents, one of which contains all the core information relevant for tax purposes, with separate extensions that are more relevant to suppliers and buyers.

In several jurisdictions, tax authorities mandate that suppliers utilize specific invoice numbers (termed 'folio') they issue. Subsequent to generating these invoices, suppliers in certain regions are obligated to submit comprehensive invoice details to the tax authorities and, either directly or indirectly, to the purchasers. In some cases, tax authorities demand this information prior to the dispatch of goods. The tax authority or certified service providers then scrutinize the data, providing suppliers with electronic validation codes as confirmation.

E-reporting to tax authorities: E-reporting includes reports of business transactions, extracts of invoices, declarations of any other fiscal data, and tax records. It is devised to speed up processing of tax statements and returns. In one application example, only the supplier has finally an electronic invoice, but sends the original invoice in paper form to the buyer. In another scenario, the parties exchange just an extract of the invoice electronically (which is suitable for reporting and tax audit purposes).

Certain countries mandate the submission of invoice summaries in any format or specifically as the Standard Audit File for Tax (SAF-T). In addition to invoicing details, suppliers are obliged to disclose additional data of fiscal significance.

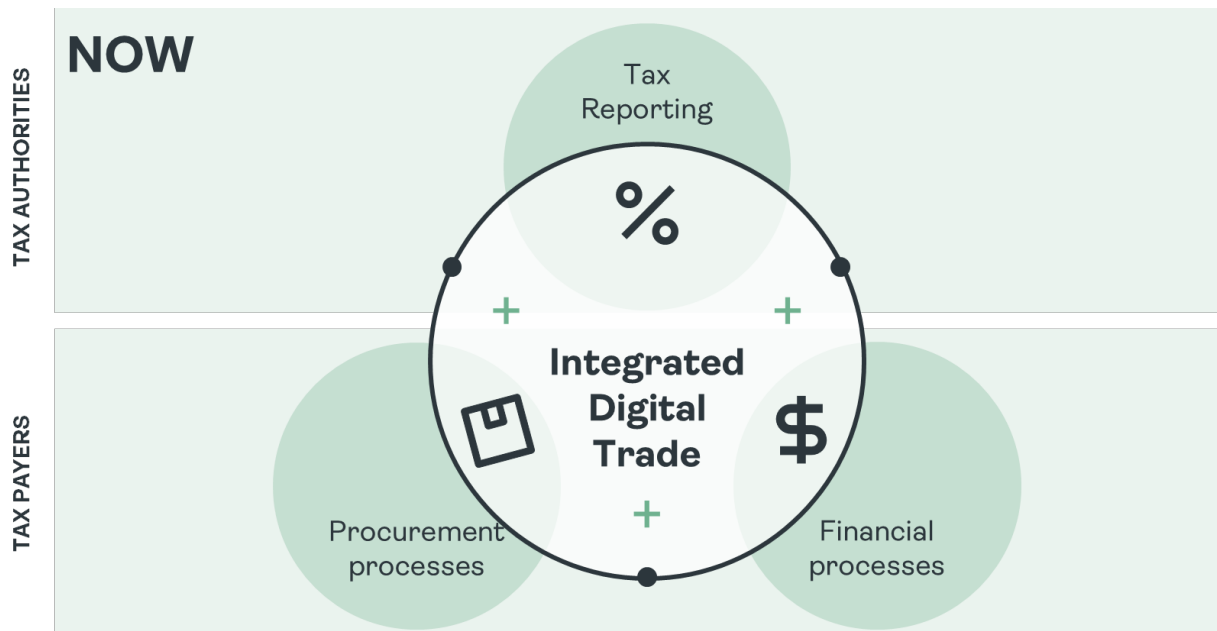
2.5 From E-invoicing to Integrated Digital Trade

In nations with Value-Added Tax (VAT) frameworks, invoices are paramount among all business communications. Valid invoices are essential for the reclaiming of VAT and the consideration of purchasing costs in financial accounting. Consequently, the emergence and sustained relevance of terms such as 'e-invoicing' and 'e-billing' were natural developments, further solidified by legal definitions. Historically, many solution providers specialized exclusively in e-invoicing functionality, yet the demand has grown for support across a broader spectrum of messages within both the financial and physical supply chains. Notably, messages pertaining to electronic tax reporting are often directly associated or, ideally, synonymous with these business communications. In the context of digitalization, e-invoicing constitutes merely a segment of a comprehensive landscape, necessitating an integrated approach to leverage its full potential.

The automation of procurement processes, financial processes and tax reporting has historically progressed with a degree of independence. At its least effective, this segmentation results in isolated processes and data silos. However, the private sector has made strides in automating the financial and physical supply chains, evidenced by the exchange of up to 160 different types of electronic business messages between suppliers and buyers.



Notably, tax authorities in Asia, Latin America, and increasingly in Europe, mandate the submission of electronic data mirroring the business communications transacted between suppliers and buyers.



The convergence of these three domains is progressively evident. Despite their individual evolutions, processes and communications between trading parties and tax authorities often proceed in parallel. A harmonized approach to digitalization is achievable only through collaborative efforts among suppliers, buyers, and tax authorities to design and implement a unified model, paving the way for Integrated Digital Trade.

This shift signifies the emergence of a new market segment, termed Integrated Digital Trade, transcending previous definitions such as Financial Supply Chain, EDI, Order-to-Cash, Procure-to-Pay, and Business Automation. This segment represents a holistic approach to digitally facilitated trade, underscoring the evolving landscape of tax compliance and administration.

2.6 Assessment of Company Status Within the Tornado

As the digital trade “tornado” accelerates, companies are no longer operating in a future-looking transition—they are already inside a rapidly evolving reality. The key question is no longer if change will be required, but how prepared the organization is to respond—and how quickly it can adapt.

Assessing the current company status within this context is a critical first step toward defining a sustainable strategy. This assessment must go beyond a purely technical view and instead consider regulatory readiness, process maturity, technology capabilities, and organizational alignment.

Regulatory Readiness and Process Maturity

One of the primary areas of assessment concerns the organisation’s ability to manage continuously evolving regulatory obligations and maintain efficient operational processes.

Many companies initially approached e-invoicing requirements on a country-by-country basis, implementing local solutions in response to individual mandates. While this approach may have been sufficient during the early stages of adoption, the increasing number of mandatory e-invoicing and e-reporting frameworks has significantly increased operational complexity.

At the same time, invoicing and reporting processes in many organisations have evolved through local adaptations over time, often resulting in fragmented workflows, inconsistent data structures, and varying operational procedures across business units or jurisdictions. Such fragmentation may increase operational costs, reduce process transparency, and complicate compliance with real-time or near-real-time reporting obligations.

As a result, organisations are increasingly moving toward more centralised governance and standardisation models. More mature organisations typically demonstrate:

- + Standardised end-to-end invoicing processes
- + Reduced manual intervention
- + Clearly defined governance structures
- + Harmonised data and reporting workflows

The level of readiness can therefore be assessed based on the degree to which compliance and operational processes are scalable, integrated, and consistently managed across the organisation.

Technology Landscape and Data Visibility

The existing technology architecture and the visibility of transactional data are critical factors in determining organisational readiness.

Many organisations continue to rely on legacy ERP systems or locally implemented point solutions that were not originally designed to support structured electronic invoicing, interoperability requirements, or direct integration with tax authority platforms. In addition, many companies still operate with limited transparency across systems, business units, or jurisdictions.

Assessment criteria commonly include the capability to support structured invoice formats, real-time or near-real-time data exchange, integration between ERP systems and compliance solutions, and scalability for multi-country operations.

Increasingly, organisations are adopting cloud-based and API-driven architectures to improve adaptability and reduce the complexity associated with repeated local implementations. At the same time, the transition toward structured electronic invoicing transforms invoicing processes from document-centric workflows into data-driven processes.

Organisations with higher levels of maturity typically demonstrate:

- + Central visibility into invoicing and reporting data
- + Consistent master and transactional data management
- + Real-time monitoring capabilities
- + Enhanced reporting and analytics functions

Improved visibility and data quality support both compliance objectives and broader operational goals, including financial transparency, process optimisation, and risk management.

Organizational Alignment and Strategic Planning

The implementation of e-invoicing and integrated digital trade initiatives typically involves multiple organisational functions, including finance, tax, procurement, legal, compliance, and information technology. As a result, organisational alignment and governance structures play an important role in determining implementation effectiveness.

Organisations with more mature operating models frequently establish cross-functional governance structures, defined responsibilities, and central programme management supported

by executive sponsorship. In contrast, isolated or department-specific implementations may lead to duplicated efforts, inconsistent processes, and increased operational complexity.

The assessment of organisational readiness should therefore serve as a basis for defining future priorities and implementation strategies. Depending on their level of maturity, organisations may focus on regulatory stabilisation, operational standardisation, or the broader integration of invoicing into digital trade and automation initiatives.

The outcome of this assessment may influence strategic decisions in areas such as:

- + Centralisation versus decentralisation of compliance activities
- + Selection of technology and service provider models
- + Prioritisation of jurisdictions and implementation phases
- + Integration of invoicing, tax, procurement, and payment processes

As regulatory and technological developments continue to evolve, organisations are increasingly required to adopt scalable and adaptable operating models. In this context, a structured assessment of current capabilities provides an important foundation for future compliance, operational efficiency, and participation in integrated digital trade ecosystems.

In a landscape defined by continuous change, **standing still is not a neutral position—it is a growing risk**. Companies that take a structured, honest view of their current status are best positioned to move from reactive compliance to proactive, value-driven digital transformation.

3. Market Landscape

3.1 Tax Driven Continuous Transaction Control Models (CTC)

3.1.1 Tax Gap as Main Accelerator for Digital Reporting Requirements

Early days of e-invoicing have been pre-dominantly influenced by the private sector seeking to achieve commercial benefits from business automation. Nowadays this has turned into a government driven market development. The main driver for governments to impose new legal and tax related requirements is what is called the VAT/Sales Tax Gap.

The Value Added Tax (VAT) or Sales tax (ST) gap, representing the difference between the expected tax revenue and the amount actually collected, has long been a concern for governments worldwide. As countries grapple with the challenge of combating tax evasion and improving revenue collection, the digitalization of fiscal documents emerges as a potent solution. This way the tax gap serves as a primary catalyst for accelerating the digitalization of fiscal documents.

The digitalization of fiscal documents involves the transition from paper-based records to electronic systems, making use of technology to streamline processes and improve accuracy. In the context of VAT/ST, this means implementing digital platforms for invoicing, reporting, and tax compliance. The inherent benefits of digitalization include real-time data access, reduced administrative burdens, and enhanced traceability, making it a powerful tool in the fight against the VAT/ST gap. This development led to the adoption of Digital Reporting Requirements (DRR).

In countries employing VAT systems, an invoice serves as a crucial document for substantiating tax compliance. Due to historical practices, many of these nations still adhere to Periodic Transaction Controls (post-audit controls), involving tax audits conducted up to several years after transactions occur. This approach presents several drawbacks for both taxpayers and tax authorities, contributing significantly to tax evasion. Consequently, it is deemed outdated. Thus, a swift transition towards real-time or near-time Continuous Transaction Controls (CTC) models is underway. Under this framework, organizations are mandated to report invoices to tax authorities or, at the least, furnish key invoice details electronically. Initially adopted by Latin American, Asian, and select European countries grappling with substantial tax collection challenges, the CTC model is poised to gain global traction, already impacting numerous international businesses. While it may become the prevailing standard, uniform implementation across all nations is unlikely.

Causes of the VAT/ST Gap and possible digital solutions to bridge the gap

The VAT/ST gap is a crucial metric that reflects the effectiveness of a tax system in capturing the revenue it is entitled to. This gap arises from various factors, including tax evasion, fraud, administrative errors, and inadequate enforcement. Traditional methods of tracking and collecting tax have proven insufficient, leading governments to seek innovative solutions to bridge the gap and enhance fiscal transparency.

To gain insights into current and prospective digital reporting requirements, it is valuable to scrutinize areas where a tax gap may arise. The subsequent table also delineates digital solutions that possess the potential to substantially mitigate the gap.

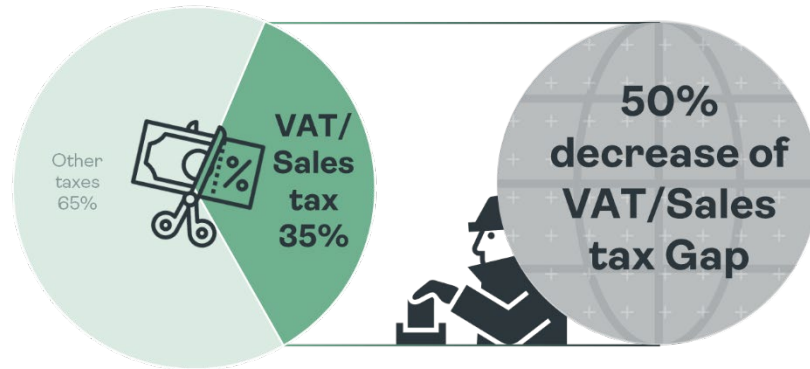
Cause	Digital solution
+ Cash payments without receipts and tax declaration	+ Require non-cash payments above a certain amount and/or withdraw bank-notes from circulation if they exceed a certain amount.

Cause	Digital solution
	<ul style="list-style-type: none"> + Require certified cash registers that are linked to the tax authorities to submit real-time reporting. + Encourage or require customers to demand receipts / invoices. + Electronic POS and mobile invoicing via CTC models.
<ul style="list-style-type: none"> + Carousel fraud and invoicing between phantom partners, or involved parties winding up before tax audit 	<ul style="list-style-type: none"> + Require e-invoicing. + Require real-time lookup routines to make sure that all trading parties are registered in the national business directory. + Apply CTC models.
<ul style="list-style-type: none"> + Invoicing using wrong amounts 	<ul style="list-style-type: none"> + Require e-invoicing via CTC models. + Artificial intelligence to detect wrong amounts.
<ul style="list-style-type: none"> + Goods are not supplied after an invoice has been issued 	<ul style="list-style-type: none"> + For physical supplies: Digital link between the virtual and physical world; transport documents shall be valid only with evidence that transported goods have been declared with the tax authorities. Digital inventory reporting between businesses and tax authorities.
<ul style="list-style-type: none"> + Undeclared supplies and barter transactions 	<ul style="list-style-type: none"> + Artificial intelligence; match between invoices, labour costs and inventory
<ul style="list-style-type: none"> + Smuggling and domestic fraud with physical supplies 	<ul style="list-style-type: none"> + E-customs; digital trade facilitation; digital link between the virtual and physical world.
<ul style="list-style-type: none"> + Fictive employees and wrong labour costs 	<ul style="list-style-type: none"> + Require electronic salary statements, which are exchanged using CTC models.

The impact of the VAT/ST Gap

To understand the development of e-invoicing in general, and the influence of the governments in particular, it may be helpful to understand the impact of the VAT/ST gap. Obviously, the economic impact of the VAT/ST Gap can vary significantly depending on the region, the size of the informal economy, the effectiveness of tax administration, and other factors.

The impact becomes very apparent looking at two key figures: The percentage of VAT/ST compared with the overall tax revenue and the actual gap that appears globally.



On a global scale, Value Added Tax (VAT) and Sales tax collectively account for approximately 34% of a country's overall tax revenue, making them the most significant taxes in nearly every nation.

The latest available data reveals a tax gap ranging from 20% to 30% of public revenue, which can be reduced by 50% by introducing tax compliance schemes. For example, the evolution of the VAT gap in **Italy** indicates potential enhancements stemming from the implementation of Digital Reporting Requirements. Italy, as the inaugural European Union member state to adopt such prerequisites, has realized an annual increase in revenue amounting to approximately €6 billion. **Greece** has already operated the myDATA digital tax reporting platform since 2020, including VAT and income tax return pre-filing functionalities, as well as optional e-invoicing before the mandatory rollout. According to the EU 'Mind the Gap' reports [1], Greece reduced its VAT Gap from 29% in 2017 to around 9% in 2024, demonstrating the significant impact of digital tax transformation.

Similar positive outcomes have been observed in Latin American nations:

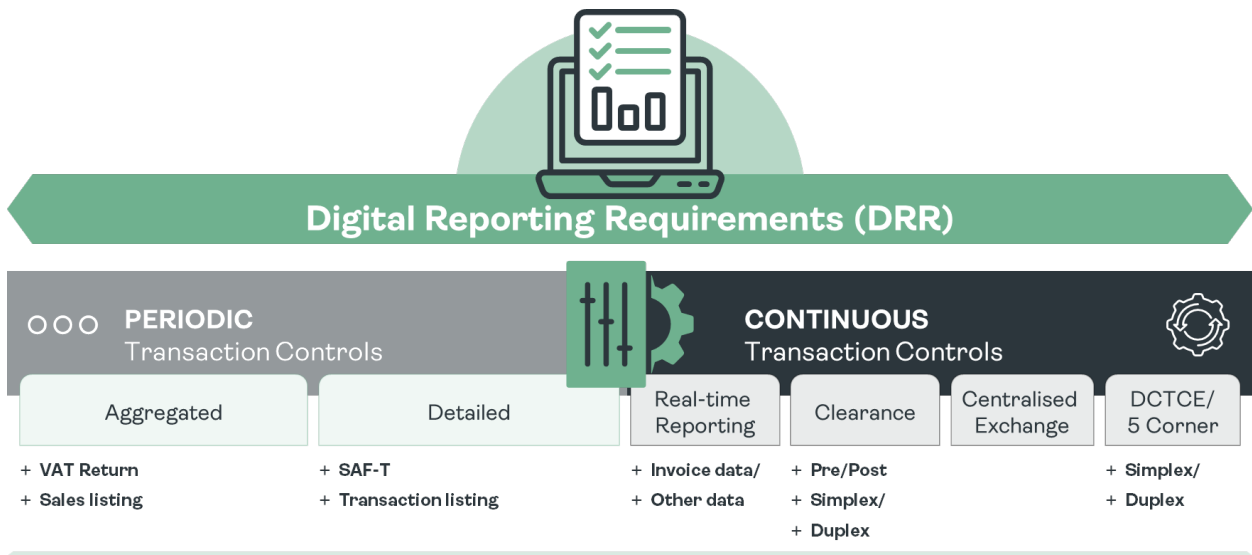
- + **Brazil** experienced a noteworthy \$58 billion (USD) surge in tax revenue by addressing gaps in invoicing and reporting.
- + **Chile** and **Mexico** successfully reduced their VAT gap by up to 50% [2].
- + **Colombia** achieved a 50% reduction in tax evasion through the application of similar models.

Drawing upon the insights garnered from **Austria's** case, billentis conducted a comprehensive analysis to compare the advantages of implementing a Decentralized Continuous Transaction Controls (DCTCE/five-corner) model versus natural market evolution. This investigation underscored that the economic gains for a nation adopting this model could be 5 to 11 times greater than the incremental VAT/ST revenue, attributable to efficiencies gained through business process automation among trading entities.

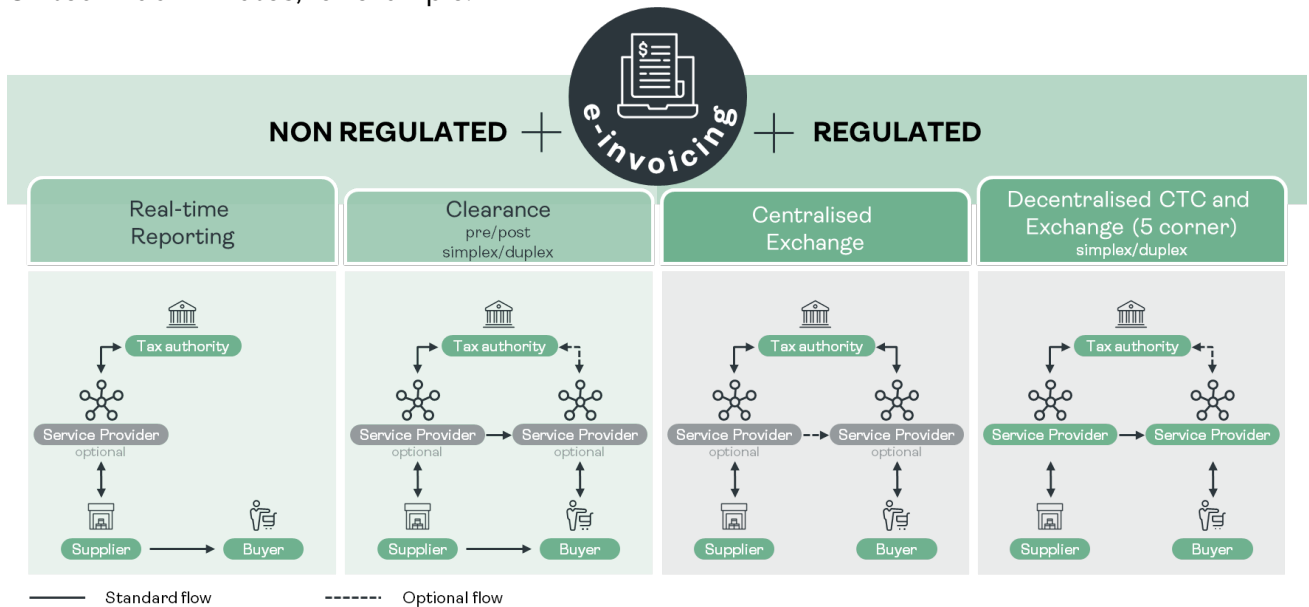
Countries embarking on this journey now have the distinct advantage of leveraging the valuable insights and experiences from trailblazing nations. This enables them to strategize from a comprehensive, top-down approach, engage in early collaboration with the private sector, and afford adequate preparation time for the private sector to effectively implement the model.

3.1.2 From Periodic to Continuous Transaction Controls

Over the last few years and decades, the process of how taxpayers have to submit their data to the tax authorities has changed massively. The way in which VAT and other indirect taxes are transmitted is now also referred to as Digital Reporting Requirement (DRR). In turn, the trend has clearly developed from Periodic Transaction Controls (PCT), such as the SAF-T standard or traditional VAT Return, in the direction of Continuous Transaction Controls (CTC). The main advantage for the tax authorities here is the faster availability of data and thus additional opportunities to rule out any VAT/Sales tax fraud as effectively as possible.



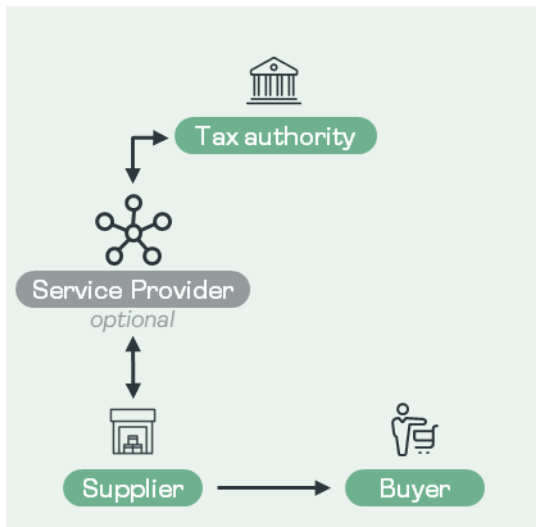
Starting from 2005 different models in different shapes and forms have developed and still exist within the marketplace [3]: Real-time Reporting, Clearance and Centralised Exchange. Based on initial experience, however, a model has now been developed that not only considers the benefits for the public sector but also allows companies to equally benefit from optimized business processes. This latest generation model is known as the Decentralized CTC and Exchange model (5 corner) and is the basis for the planned introduction in France and the United Arab Emirates, for example.



3.1.3 Real-time Reporting Model

Under this model, taxpayers are required to promptly report invoices to the tax administration or its designated government agency. This reporting occurs shortly after the issuance and exchange of invoices between trading parties.

Real-time Reporting



The framework of this model encompasses several key features aimed at streamlining the reporting process. Firstly, there is the establishment of a central processing platform by the tax administration. Secondly, the model mandates the utilization of accredited software solutions for access and processing on the platform. Thirdly, taxpayers are expected to submit either the entire invoice or a subset of invoice data within a specified timeframe of 24-72 hours post-invoice issuance, with flexible frequency intervals. Lastly, the system allows flexibility in the submitted dataset, enabling it to be generated fully from data within the invoice or requiring additional data not present in the invoice.

Beyond adherence to fiscal rules, the model recognizes the diverse landscape of invoicing practices. While invoicing is often not extensively regulated, economic operators may employ formatted electronic invoices or, more commonly, opt for humanly

readable representations such as PDFs or traditional paper. The encouragement of e-invoicing is underscored by its potential for enhancing economic efficiency.

The adoption of this model poses unique challenges for taxpayers. It necessitates the implementation of distinct solutions and processes. Real-time reporting requires a separate system from that used for invoicing and/or e-invoicing. Additionally, the inclusion of data beyond the typical invoice content, such as financial accounting data, elevates both the initial investment cost and ongoing maintenance expenses.

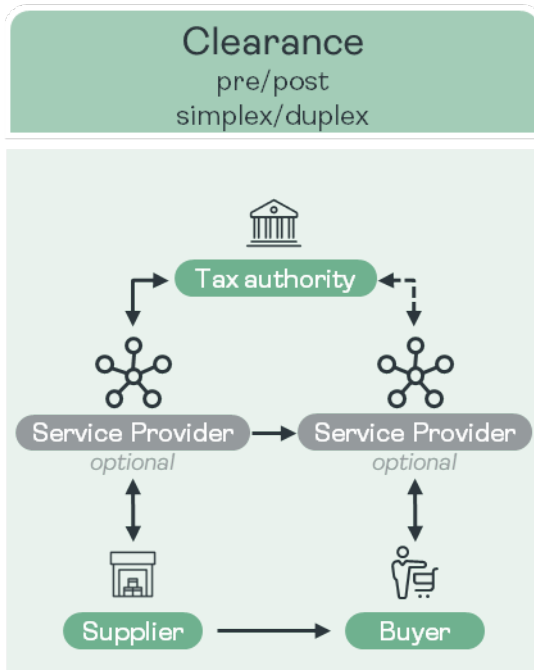
While the model presents a significant stride toward modernizing tax reporting processes, stakeholders must carefully navigate the challenges associated with its implementation. Balancing the benefits of enhanced transparency and efficiency against the investment costs will be crucial for widespread acceptance and success.

Countries exemplifying this model include Hungary and South Korea.

3.1.4 Clearance Model

This framework streamlines the process of managing invoices, which includes checking for tax compliance and getting approvals before the invoice is sent to the purchaser. The framework is implemented in various configurations:

- + **Pre-Clearance and Post-Clearance:** Predominantly, invoices are submitted to the platform prior to being sent to the recipient, a procedure known as pre-clearance. Alternatively, some models involve submission post-approval by tax authorities, referred to as post-clearance.
- + **Simplex and duplex:** The simplex model involves solely the issuer of the invoice reporting to the platform. In contrast, the duplex model necessitates both the issuer and the recipient uploading the invoice to the platform.



The process can be conducted through a single, centralized platform or by connecting with various authorized service providers. Invoices and related documents are exchanged directly among businesses or individuals, with or without the aid of service providers. It's notable that these activities aren't governed by government regulations. A central feature of this arrangement is the creation of a main data storage and a platform by the tax authority. This authority requires taxpayers to use a specific, structured format for their invoices when reporting to the platform. Under this arrangement, the issuer of the invoice must first send it to the designated platform, which houses the main data storage, to get approval. This step verifies the tax compliance of the document. After approval, the issuer can send the approved invoice to the recipient. In a two-way version of this model (duplex), the recipient verifies the invoice on the same platform before payment. It's important to

understand that these steps might change if the approval process is handled by authorized external providers.

There are various challenges and concerns for taxpayers in this system. First, the format required for approval doesn't set a standard for all invoices but is specifically designed for the Revenue Authority's requirements. Furthermore, there isn't an automatic way for businesses, like buyers and sellers, to work together smoothly, often leading to the use of different methods for exchanging documents.

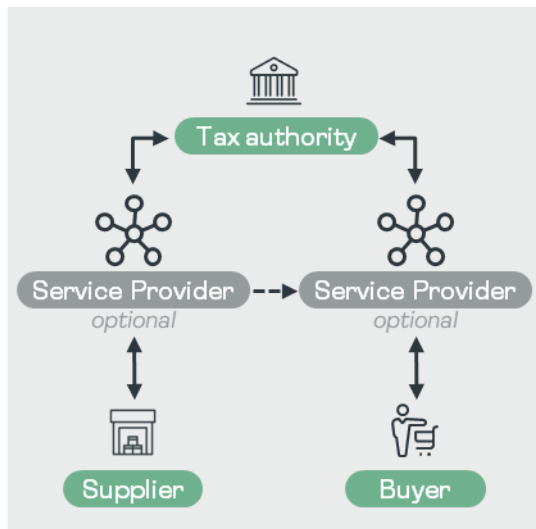
Additionally, this model doesn't inherently improve the automation of managing accounts receivable and payable. To gain benefits beyond tax-related ones, it needs to be part of broader digital initiatives, including adopting electronic invoicing. From a business perspective, this process places significant operational burdens, particularly on the party issuing the invoice. As a result, this model is increasingly being replaced by more centralized or decentralized trading systems.

Countries exemplifying this model include Chile and Mexico.

3.1.5 Centralised Exchange Model

The Centralized Exchange model in e-invoicing designates a framework where a pivotal platform or exchange facilitates the transfer of electronic invoices between buyers and sellers, concurrently incorporating tax reporting features. This model is applicable for both Business-to-Government (B2G) and Business-to-Business (B2B) transactions.

Centralised Exchange



Within this paradigm, a central entity or platform operates as an intermediary among diverse business entities. Its primary responsibilities encompass the reception, processing, and transmission of invoice data, often requiring a uniform invoice format.

Vendors transmit their digital invoices to the central exchange platform through various methodologies, including direct upload, API integration, email, or third-party service providers. Upon receipt, the central exchange conducts a series of examinations, ensuring the invoice's format validity, tax regulation compliance, and adherence to specific business rules. Subsequent to these validations, the invoice is then relayed to the designated buyer, who may retrieve it via the platform through different channels or through service providers.

However, this model presents certain challenges.

The reliance on a singular platform may lead to risks associated with system downtimes or potential monopolistic dominance. Businesses must also modify their systems for integration with the central exchange, including aligning with a data format that primarily serves the needs of tax authorities. This necessitates the risk of creating separate workflows between sellers and buyers to facilitate business automation and circumvent the constraints imposed by the invoice format. Furthermore, the model disrupts the trade cycle automation, as invoice processing occurs through the central platform, whereas other documents like orders or dispatch advices are managed directly between trading parties or their service providers.

Countries exemplifying this model include Italy, Serbia, and Turkey.

3.1.6 Decentralised CTC and Exchange Model (5 corner)

Recently, a new model has emerged that satisfies both the fiscal demands of tax authorities and the requirements for business automation: the Decentralised CTC and Exchange model. This model distinguishes itself by having data validation and exchange conducted by certified service providers, unlike other models. For certification, these providers must comply with a minimum set of technical and financial standards.

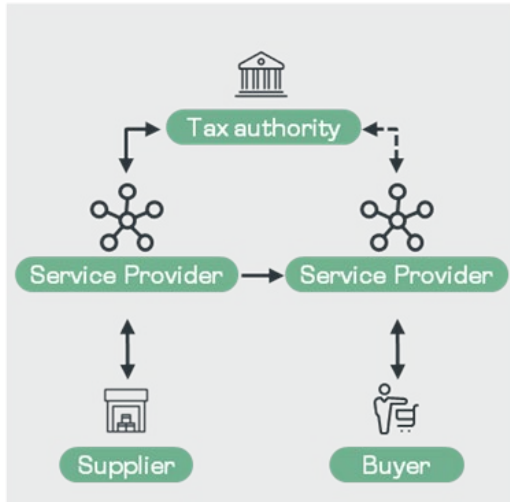
The primary document flow is managed between service providers using an established interoperability standard. A selected portion of the invoice, or possibly other business documents, is extracted and reported to the central tax authority platform using a specific standard. This data subset is transmitted immediately after the issuance of the business document, facilitating an uninterrupted trade cycle. Only certified service providers (referred to as corner two and three) have access to the tax authority platform, which serves as corner five.

Both sellers and buyers interact with their chosen service provider through a single, individual interface. This approach enables businesses to capitalize on their existing investments in e-invoicing and trade cycle automation technologies.

Additionally, the model is available in both simplex and duplex versions. In the simplex version, only sellers are required to report to the platform, whereas in the duplex version, buyers also need to report the received business documents.

The primary advantages of the five-corner model include:

Decentralised CTC and Exchange (5 corner) simplex/duplex



+ **Modular Deployment:** The model's various flows can be implemented in stages. The initial focus typically lies on the compulsory B2B and B2G exchange of business documents, utilizing the advantages of business automation. Once this is established and deployed, a separate flow between the certified service providers and the central platform can be introduced with minimal impact on business partners.

+ **Tax Control Customization:** Different countries may have varying requirements for the data they need under a tax reporting scheme. This might include different invoice data sets or additional trade cycle documents. In every scenario, only a subset of the document is used, ensuring data confidentiality and minimization. Changes in requirements do not impact the economic operators as the extraction is managed by the certified service providers.

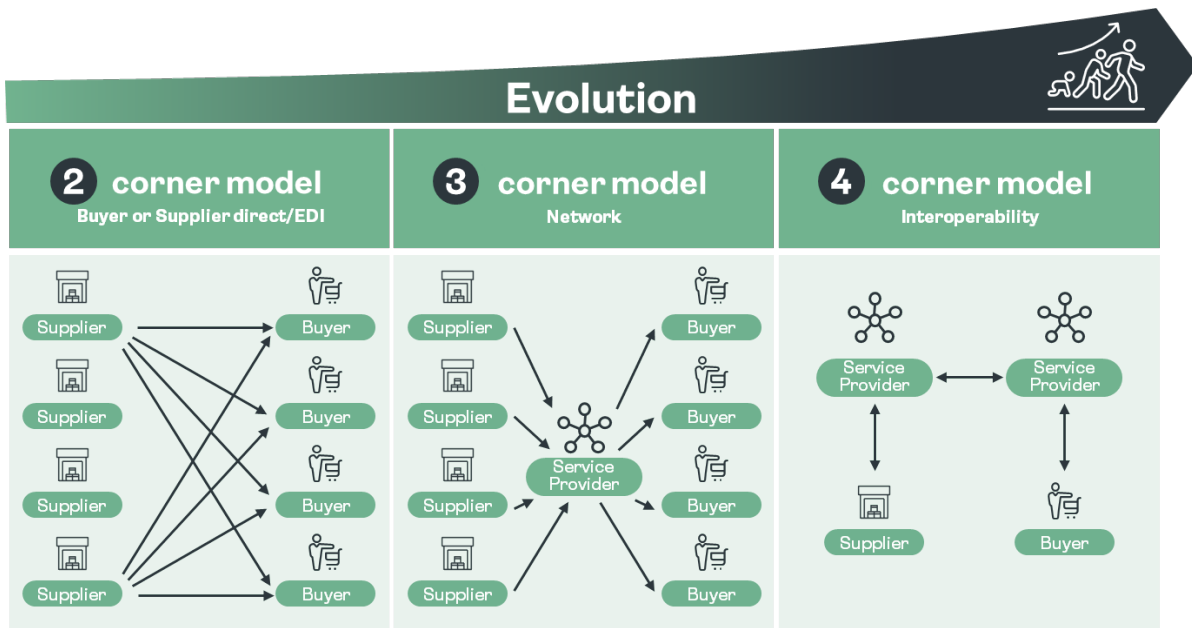
+ **SME Friendly:** Considering the prevalence of SMEs in many countries, these models often incorporate low-cost or complimentary services mandated for service providers as part of the certification process. This typically relates to a specific number of invoices (e.g., up to 50 invoices per year) and is contingent on the company's size.

+ **No Single Point of Failure:** The main exchange of business documents occurs between certified service providers. The central platform receives only a minimal data set, once data quality and compliance are assured. Consequently, the platform only has to maintain and support a limited number of interfaces.

+ These findings have significantly propelled interest among a wide range of nations towards adopting the Continuous Transaction Controls (CTC) framework, particularly the 5-corner model, in pursuit of achieving similar economic benefits. Consequently, it is anticipated that numerous countries worldwide will have established the 5-corner CTC model by 2030.

3.2 Private Exchange Models

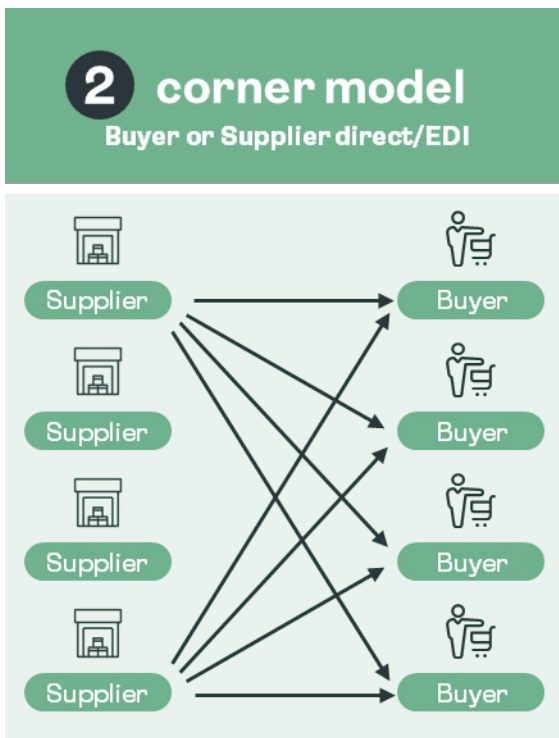
Next to tax driven models there exist private exchange models that can be offered by service providers or used by companies in order to exchange business documents with their trading partners. Starting from early days of e-invoicing until today, there is a clear evolution of models in B2B/B2G beginning with two corner models up to four corner models.



The main advantage for companies to use e-invoicing or Integrated Digital Trade is business efficiency and cost savings. Obviously for end users the focus is rather on automated payment transactions and avoiding the usage of different portals. As payment (and also financing) is getting more and more aligned with e-invoicing, related models emerge in the area of B2C.

3.2.1 2 Corner Model (Buyer or Supplier direct/EDI)

A **purchaser** incorporates an electronic invoicing and/or invoice management solution into their operational framework to receive electronic invoices through various channels:



- + Receives invoices directly as a data stream for seamless integration into their Accounts Payable (AP) solution, primarily preferred for invoices from major suppliers.
- + Smaller suppliers input invoice data into a web template on the buyer's corporate invoice portal (webEDI). This data can be automatically processed and imported into the AP system.

This model is favored by larger organizations with a limited supplier base. It can also prove effective for smaller suppliers when electronic orders are exclusively transmitted to them (e.g., via an extranet portal). Numerous solution providers offer functionality to easily convert these electronic purchase order data into invoices for submission back to the buyer.

On the supplier side, an entity implements an e-billing/e-invoicing solution within its environment to disseminate electronic invoices through various channels:

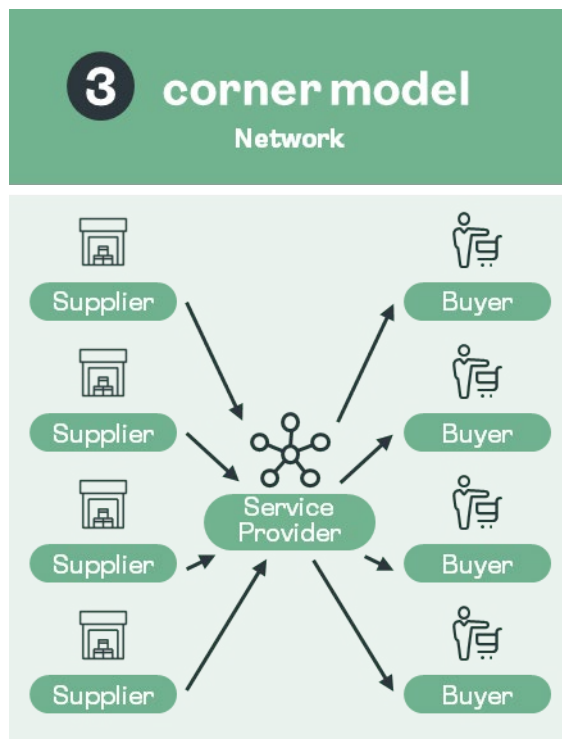
- + Sends invoices to customers via email, Apps, etc.
- + Provides e-invoices on its customer portal, allowing customers to log in, view, and download them.

The **supplier** direct model is particularly popular in high-volume industries such as telecommunications, utilities, card companies, and online shopping portals. Small businesses also prefer exchanging e-invoices directly with their trading partners. Due to their scale, these businesses may lack the capacity to host e-invoices on their own portals, opting instead to exchange them as PDF attachments to emails.

Over time, large organizations employing biller or buyer direct models have found that the marketing rollout is more challenging than anticipated, and the maintenance of their applications is ultimately too costly. Consequently, some service providers offer white-label services, operating under Software as a Service (SaaS) or Platform as a Service (PaaS) models. These providers manage the direct model on behalf of large issuers and recipients of invoices, handling software development, maintenance, and operations. Customers pay a fixed integration fee along with a volume- or time-based fee.

3.2.2 3 Corner Model (network)

The three-Corner Model emerges as a comprehensive framework for orchestrating e-invoicing processes among buyers, suppliers, and service providers. This model delineates the interactions and responsibilities of these three key entities within the e-invoicing landscape, offering a structured approach to facilitate seamless and secure electronic document exchange.



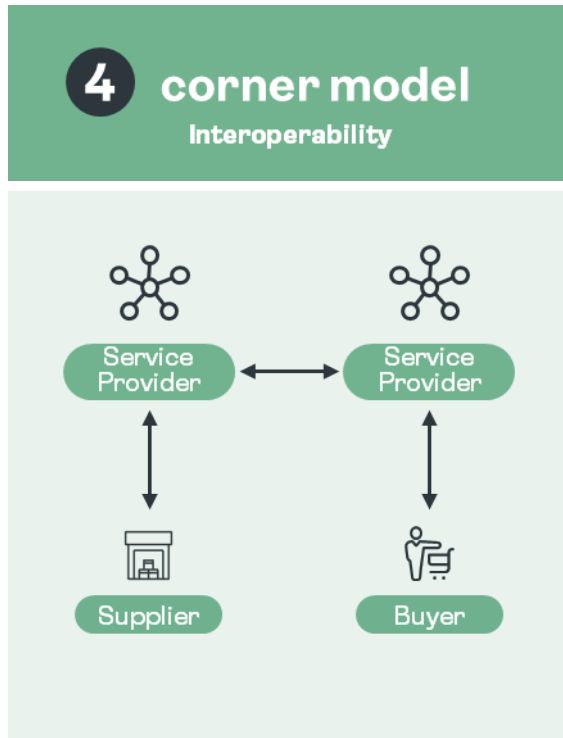
The **first corner** of the model represents the buyer, where initiation and reception of e-invoices take place. By leveraging a single interface to the service provider based on a defined data format and communication protocol, buyers can seamlessly integrate e-invoicing into their procurement systems, automating the invoice approval workflow and expediting payment processes. This happens regardless of how suppliers transfer their documents to the service provider. Central databases are usually used to ensure that incoming documents in various formats (PDF, XML, portals, etc.) are converted into the data format agreed with the recipient. Increasingly, the necessary data is extracted using Artificial Intelligence, meaning that traditional document scanning or data mapping is no longer required.

The **second corner** focuses on the supplier, responsible for generating and delivering e-invoices. The model emphasizes the importance of compliance with established e-invoicing standards, ensuring uniformity and interoperability across diverse business ecosystems. Based on one single interface to the service provider the model still caters for individual requirements imposed by large buyers. Suppliers benefit from reduced processing times, increased accuracy, and improved cash flow management through the adoption of the Three-Corner Model.

The **third corner** introduces service providers, acting as facilitators in the e-invoicing process. These entities play a crucial role in offering e-invoicing solutions, such as platforms for invoice creation, validation, and transmission. Intermediaries contribute to the scalability of e-invoicing adoption by providing a bridge between diverse systems and ensuring a smooth exchange of electronic documents. The service provider supports the main legal requirements, authenticity, and the end-to-end data integrity. An increasing number of operators offer additional services such as tax compliant long-term archiving.

3.2.3 4 Corner Model (Interoperability)

The four-corner model operates as an exchange framework facilitating the transmission of invoice messages, with distinct service providers supporting both the sender and the receiver. This model can be viewed as an extension of the two and three-corner models, where service



providers of the former models connect to each other, resulting in the establishment of a four-corner model.

A notable advantage of the four-corner model lies in affording flexibility to both buyers and suppliers in selecting their preferred service providers. Simultaneously, it broadens the reach for each service provider and their customers, as engaging with an additional service provider can expand the electronic business partner network for a company.

To enable interoperability within a four-corner model, service providers must reach consensus on various standards, including legal agreements, service level agreements, data formats, protocols, and potentially commercial agreements. Such agreements can be bilateral or based on international standards. Currently, three prominent global associations—GENA (Global Exchange Network Association), OpenPeppol, and DBNA (Digital Business Networks Alliance), the latter

recently started operations — are instrumental in setting these standards. The adoption of international standards streamlines the process, allowing seamless access to the entire customer base of another service provider through a single interface, whereas bilateral agreements may entail individualized setups for each customer.

As the global trend towards e-invoicing implementation continues, a surge in companies adopting these solutions is anticipated. This necessitates a value proposition focused on reducing complexity, consequently saving time and costs associated with achieving business process interoperability among trading partners. In response to this, OpenPeppol and GENA have initiated a collaborative incubation project to harmonize their existing interoperability frameworks, creating a unified framework for seamless business cooperation.

The Global Interoperability Forum (GIF) extends the concept of interoperability between diverse frameworks, including associations such as DBNA and ConnectONCE in the United States. This collaborative effort aims to establish common standards, fostering a more cohesive and efficient global business environment.

3.2.4 Consumer Driven E-invoicing Models

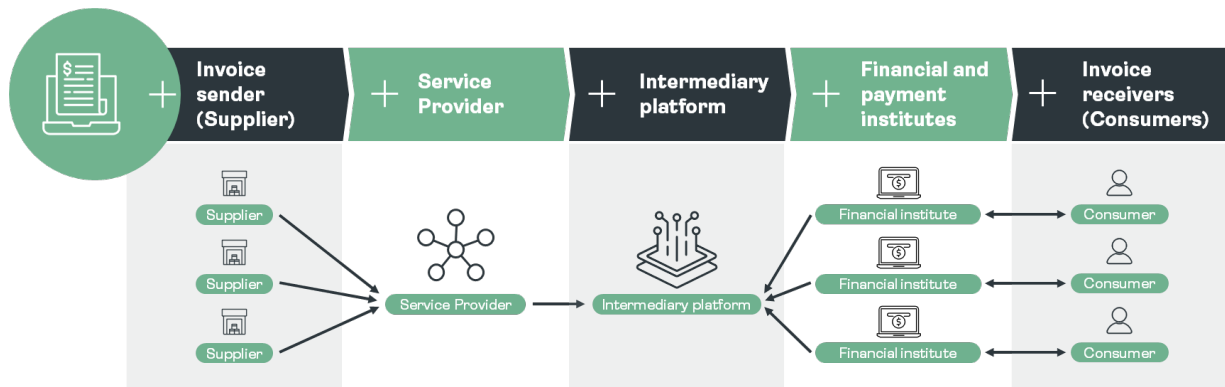
The various two, three, and four corner models are evidently well-suited for processing consumer (B2C) invoices as well. However, the advantages of employing electronic invoices for consumers differ significantly from those in B2B or B2G contexts. Rather than navigating diverse IT systems for invoice processing, consumers prioritize a convenient method for making payments and managing their invoices. The same principle applies to the receipt and storage of invoices, leading consumers to seek streamlined processes and avoid downloading or receiving invoices from disparate sources.

In response to these consumer-centric requirements, additional B2C models have emerged that closely integrate the e-invoicing process with payments, invariably involving payment and

financial institutions. The role of these supplementary intermediaries is to bridge the gap between invoice senders and end users by incorporating information about the end user's bank account, which is typically not available to the sending party.

This process typically encompasses the following components:

- + Access to the intermediary platform for invoice senders is restricted to certified service providers.
- + End users receive e-invoices through existing Online Banking solutions to adhere to security and accessibility requirements.
- + Payments are facilitated without the need for re-entering payment information, leveraging the existing Online Banking process.



Comparable solutions have been deployed in Finland, Belgium, and Switzerland. The integration of the upcoming Request-to-Pay scheme by the European Payments Council into the solution remains uncertain. It is yet to be determined whether the new scheme possesses the capacity to supplant existing models.

The imposition of B2C mandates for e-invoicing is anticipated to influence the model. In an optimal scenario, this model could potentially be connected to a centralized tax administration platform, facilitating the seamless onboarding of B2C transactions.

3.3 Supporting Associations and Initiatives

3.3.1 Relevant Global E-invoicing Associations and Initiatives

The Global Exchange Network Association (GENA) is an international not-for-profit trade association established under Belgian law, representing a diverse and expanding network of providers of e-invoicing and integrated digital trade solutions. Originally founded in 2011 as the European E-Invoicing Service Providers Association (EESPA), the organisation has since undergone a strategic transformation into a global entity, reflecting an expanded geographical scope and mandate. This transition has been accompanied by the development of regional chapters, enabling the association to integrate local expertise within a coordinated global framework.

GENA's overarching objective is to promote the development of a global digital trade ecosystem characterised by seamless, secure, and interoperable data exchange. To this end, the association pursues a multi-faceted mission encompassing the advancement of interoperability through standardisation, the facilitation of market adoption via stakeholder education, the promotion of collaboration among service providers, and the support of technological innovation in digital business processes.

The association comprises more than 150 full and associate members across over 25 countries, including organisations operating in e-invoicing and adjacent sectors such as financial services, network infrastructure, and digital trade technologies. These members engage in

structured collaboration within a non-competitive environment to develop common standards, exchange knowledge, and contribute to the harmonisation of digital transaction frameworks at a global level.

Institutionally, GENA operates as a member-driven organisation with a formal governance structure. The association's substantive work is conducted through specialised working groups addressing key domains, including interoperability and standards, public policy and compliance, supply chain digitisation, invoice financing, and innovation, with particular attention to emerging technologies such as artificial intelligence.

Through its activities, GENA contributes to the shaping of the global regulatory and technical environment for digital transactions. It engages with public authorities and international organisations, participates in policy consultations, and promotes the convergence of standards across jurisdictions. In doing so, the association plays a significant role in reducing fragmentation, enhancing interoperability, and supporting the efficient and secure exchange of business data within the global digital economy.

OpenPeppol is an organization that was established in 2012 to support the expansion and adoption of the Peppol specifications. These specifications were initially developed as part of a large-scale project funded by the European Commission to facilitate electronic procurement and invoicing processes across different European countries. The main goals of OpenPeppol and the Peppol specifications are:

- + **Interoperability:** Peppol specifications ensure that different eProcurement and e-invoicing systems can communicate with each other globally. This interoperability is crucial for efficient domestic and cross-border transactions.
- + **Standardization:** By standardizing the formats and protocols for electronic procurement documents (like invoices, purchase orders, etc.), Peppol simplifies the process of electronic transactions between businesses, and between businesses and governments.
- + **Connectivity:** Peppol provides a network (known as the Peppol Network) that enables the secure exchange of business documents. This network is supported by Peppol Access Points, which are service providers that connect users to the Peppol Network.
- + **Governance:** the OpenPeppol legal and compliance framework ensures that the Peppol specifications and Peppol Network facilitate a trusted and secure implementation of eProcurement and e-invoicing processes across different jurisdictions.

Beyond electronic invoicing, Peppol is increasingly relevant for the exchange of other electronic business documents, such as tax reporting, logistics, catalogues, and procurement. With the growing emphasis on digital transformation globally, the role of OpenPeppol in standardizing and promoting electronic business document exchange is increasingly important in the B2B and B2G sectors.

The Inter-American Center of Tax Administrations (CIAT) is an international organization that brings together tax administrations from the Americas, Europe, Africa, and Asia to promote cooperation, modernization, and the exchange of best practices in tax policy and administration. Founded in 1967, CIAT supports its member countries through technical assistance, research, training, and the development of digital tax administration frameworks.

In the area of electronic invoicing and digital tax reporting, CIAT has played an important role in promoting knowledge sharing and regional alignment across Latin America, one of the most advanced regions globally for Continuous Transaction Controls (CTC) and clearance-based e-invoicing models. CIAT regularly publishes studies, guidance papers, and comparative analyses on e-invoicing developments and supports tax administrations in the implementation of

digital compliance systems aimed at improving tax collection, reducing fraud, and increasing transparency. Through conferences, working groups, and collaboration with international organizations and industry stakeholders, CIAT has contributed significantly to the spread and evolution of e-invoicing frameworks across the region.

The **OECD's** international VAT policy dialogue encompasses discussions on various aspects of VAT, including digital reporting and e-invoicing. The organization seeks to promote international cooperation, standardization, and best practices to ensure that VAT systems are efficient, transparent, and adapted to the challenges posed by digitalization in the modern economy. This helps countries harmonize their tax policies and facilitate cross-border trade while maintaining effective tax collection and compliance.

GS1, known for its standards in supply chain management and global data synchronization, also plays a role in the area of e-invoicing. Their activities typically include:

- + **Standardization:** GS1 develops and promotes standards for electronic invoicing. This includes standardizing the format and content of e-invoices to ensure consistency and interoperability between different systems and organizations.
- + **Global Data Synchronization:** GS1's Global Data Synchronization Network (GDSN) allows companies to share standardized and synchronized data, including pricing information, which is essential for accurate and efficient e-invoicing.
- + **Barcoding and Identification:** GS1 is renowned for its barcode standards, which can be used in e-invoicing for product and service identification. This ensures that the items on an invoice can be accurately identified and matched to a product database.
- + **Electronic Data Interchange (EDI):** GS1 supports EDI standards, which are often used for transmitting e-invoices between companies. These standards help streamline the invoicing process and integrate it with other supply chain functions.
- + **Education and Training:** GS1 provides resources, training, and support to businesses implementing e-invoicing. This includes guidelines on best practices and the use of GS1 standards in the invoicing process.

3.3.2 Relevant Regional E-invoicing Associations and Initiatives

In the meantime, e-invoicing is reflected in almost every organisation or initiative that is related to trade and commerce. For example, it became a topic in bi- and multilateral trade negotiations like the Indo-Pacific Economic Framework (IPEF), the EU-US Trade and Technology Council (TTC) and the Digital Trade Agreement negotiations between EU and Singapore/Republic of Korea/Japan.

VAT in the Digital Age (ViDA) represents a significant development in the evolution of electronic invoicing and digital tax reporting within the European Union [4]. The legislative package entered into force in April 2025 and introduces mandatory intra-Community electronic invoicing alongside business-to-business (B2B) digital reporting requirements. Under the new framework, all businesses—without thresholds or exemptions—will be required to exchange intra-Community invoices electronically by 2030 and to comply with corresponding digital reporting obligations.

The European Commission estimates that, over a ten-year period, these measures could result in additional VAT revenues of approximately EUR 111 billion, while generating compliance cost savings for businesses of around EUR 41 billion.

Key elements of ViDA affecting electronic invoicing:

- + The introduction of digital reporting requirements will lead to the discontinuation of recapitulative statements (EC Sales Lists).
- + The definition of an electronic invoice has been clarified to require structured data. Consequently, unstructured formats such as standard PDF invoices no longer qualify as electronic invoices. The data elements and reporting formats for intra-EU digital reporting are based on EN 16931, the European standard for e-invoicing. Electronic invoicing will become the default, although Member States may opt out for domestic invoices.
- + The requirement for customer consent to receive electronic invoices has been removed, allowing suppliers to issue e-invoices without prior agreement from the recipient.

Under the ViDA framework, taxpayers will submit transactional data to their respective national tax authorities. These authorities will subsequently share relevant data with other Member States via a centralised system managed at the EU level. This approach is intended to enhance transparency and improve the efficiency of cross-border VAT controls.

The United Nations, through the Economic and Social Commission for Asia and the Pacific (ESCAP), supports the implementation of the Framework Agreement on Facilitation of Cross-border Paperless Trade in Asia and the Pacific (CPTA). Within this framework, participating countries have agreed to prioritize a set of key trade-related documents for electronic exchange and mutual recognition, including certificates of origin, phytosanitary certificates, commercial invoices, and electronic bills of lading.

To support these efforts, the CPTA Standing Committee, in collaboration with international experts and its working group on mutual recognition of trade-related documents and data, has developed guidance on the adoption of cross-border electronic invoicing. Building on this work, the ESCAP secretariat, together with the International Islamic Trade Finance Corporation (ITFC), has initiated a subregional study focusing on selected Central Asian countries. The study aims to evaluate existing national e-invoicing frameworks, identify viable models for cross-border recognition, and support the development of pilot implementations among participating countries.

The Digital Business Networks Alliance (DBNA) is an initiative aimed at enhancing the electronic exchange of business documents, particularly e-invoices, in the United States. Established in 2023, it represents a significant effort to address the challenges and inefficiencies associated with the B2B payments industry in the country, which has been heavily reliant on manual processes.

The core mission of the DBNA is to create a secure and standardized electronic delivery network for the safe exchange of business information, including e-invoices and supply chain documents. This is achieved through an exchange framework that the DBNA oversees. This framework is designed to standardize how businesses connect, what information they send, and how they electronically deliver this information.

One of the key features of the DBNA's exchange network is its support for a variety of electronic payment methods, such as instant payments, ACH, wire transfers, and card payments. This network is developed to resolve issues arising from the lack of a centralized system for sharing supply chain documents in the U.S. It ensures secure information sharing between businesses, even if they use different software systems.

The DBNA uses a Four-Corner Model for its exchange framework, which means that e-documents are received through an Access Point service provider that connects the network to its users. Once connected, users can securely exchange electronic invoices and other electronic supply chain documents. The communication protocol used on the network is AS4.

This initiative was tested through a pilot project implemented in three stages throughout 2022, which went into production and is available to all U.S. businesses since January 2024.

3.4 Cross-border E-invoicing and Digital Trade

From Fragmentation to Interoperability in Global Trade

While domestic e-invoicing has rapidly evolved into a tax-driven and increasingly regulated environment, cross-border e-invoicing remains significantly less mature and more fragmented. This difference reflects the complexity of international trade, where invoicing is not only linked to tax reporting, such as reverse-charge VAT and tariffs, but also to customs procedures, logistics, financing, and regulatory compliance [5].

Globally, approximately 560 billion invoices are exchanged annually, yet only a small proportion applies to cross-border trade transactions, perhaps less than 10%. At the same time, electronic invoicing penetration remains low, indicating substantial untapped potential as part of the move to the digitalisation of international trade.

Despite increasing digitalisation efforts, many cross-border processes continue to rely heavily on:

- + Paper-based trade documentation and limited use of digital documents and data
- + Paper or PDF invoices exchanged by email or other means
- + Proprietary Electronic Data Interchange (EDI) systems and other network connections with limited interoperability

As a result, international trade processes involve high levels of manual intervention, inconsistent standards, fragmented communication channels, and limited automation.

The Role of the Invoice in International Trade

In cross-border trade, the invoice performs a broader function than in many domestic transactions, hence it is usually described as the 'commercial invoice'. Beyond serving as a payment request or tax document, the commercial invoice forms part of a wider ecosystem of trade-related documents supporting the movement of goods, customs clearance, financing processes, and regulatory controls. However, for international trade in services, which are significant, processes are much simpler.

Commercial invoices for goods are therefore frequently linked to additional trade documents such as:

- + Bills of Lading
- + Certificates of Origin
- + Packing lists
- + Customs and compliance documentation
- + Negotiable instruments such as Bills of exchange and Promissory Notes

This environment differs substantially from domestic invoicing models within one jurisdiction, where requests for payment and tax reporting are usually the primary focus. In international trade, invoicing requirements are influenced simultaneously by the interplay between multiple jurisdictions, customs obligations, differing legal frameworks, and trade agreements. Consequently, the standardisation of cross-border invoicing remains challenging.

Increasing Standardisation and Interoperability

Governments, international organisations, and industry associations are increasingly promoting the digitalisation of international trade processes. The objective is to improve interoperability, reduce administrative burdens, increase transparency, and support more efficient cross-border operations.

The major initiative towards coherent standardisation is being coordinated through the Digital Standards Initiative (DSI) coordinated by the International Chamber of Commerce and including the World Trade Organization (WTO), the World Customs Organization (WCO), the UN-ESCAP, the Asia Development Bank, the Singapore Government and many other stakeholders and standards bodies. Key elements of this work are:

- + Identification of the thirty-six trade documents used in international trade with an action plan for each
- + The harmonisation and promotion of technical standards
- + The legal recognition of electronic trade documents under the UN Model Law on Electronic Transferability Records (MLETR)
- + Improving interoperability between separate country jurisdictions and market actors of many kinds including SMEs
- + The reduction of trade barriers through digitalisation

These initiatives are contributing to the gradual alignment of technical and legal frameworks across international markets.

A key development in this context will be the growing adoption of structured, machine-readable invoice formats and standardised data models. XML-based standards (e.g. Universal Business Language (UBL), UNCEFACT Cross Industry Invoice (CII) including interoperable mapping between standards) will become more widely adopted to facilitate interoperability between trading partners, service providers, and platforms.

In parallel, interoperable exchange networks are gaining importance. Initiatives such as Peppol demonstrate how standardised messaging frameworks, identity models, and common access structures can support secure document exchange across multiple jurisdictions. At present networks used by the international trade community are fragmented, but there is a major requirement to create a set of interoperable 'rails' on which to carry transactions in the life cycle of a digital trade transaction, including procurement, transport and logistics, tax, duties and reporting, trade finance, and other trade-related processes.

From E-invoicing to Integrated Digital Trade

Especially in the context of cross-border trade, the market is increasingly moving from isolated E-invoicing initiatives toward broader Integrated Digital Trade ecosystems. Within these environments, invoices become part of a larger flow of structured business data exchanged between suppliers, buyers, logistics providers, financial institutions, customs authorities, and tax administrations, acting as the "anchor" or "meta-data" document, linking all related trade data. The emphasis shifts from 'documents' to 'data.'

This transition is also reinforced by the emergence of digital trade corridor initiatives, where countries seek to establish interoperable frameworks for cross-border digital trade. These initiatives combine:

- + Legal and regulatory alignment (e.g., digital trade agreements)
- + Standardised technical frameworks
- + Interoperable exchange infrastructures

The objective is to enable more efficient, secure, and transparent international trade processes. It is interesting to observe that learnings from the massive uptake of E-invoicing under domestic mandates could also contribute to interoperability in international trade. Peppol is a very widespread global network and through adoption, further pilots and test cases are demonstrating the potential for creating a standardised set of 'rails' for communication in the trade space.

At the same time, several challenges continue to affect the market. Cross-border trade remains influenced by divergent national regulations, varying technical standards, the lack of verifiable credentials, inconsistent levels of digital maturity, and limited interoperability between existing platforms. Small and medium-sized enterprises (SMEs) may face difficulties adapting to multiple standards and compliance requirements across jurisdictions. The Digital Standards Initiative is very aware of the need to meet these challenges head-on.

Indeed, the continued development of interoperable digital trade ecosystems is designed to improve automation, transparency, and supply chain visibility. Organisations that invest in scalable, standards-based infrastructures for data, transmission and identity will achieve operational efficiencies and improve their agility to adapt to future regulatory and technological developments in multiple locations. This places the adoption cross-border e-invoicing into the context of broader digital transformation and compliance.

In the context of the "tornado," cross-border e-invoicing represents the next frontier—moving beyond compliance in domestic markets toward fully integrated, digital, and data-driven global trade.

3.5 Organisations Boost Environmental, Social and Governance (ESG) Performance through Strategic E-invoicing Transition

Environmental, Social, and Governance (ESG) constitutes a paradigm through which investors and corporations assess the operational impact of a business within the broader environmental and societal frameworks. Electronic invoicing significantly enhances the ESG values, aligning with overarching objectives of sustainability and ethical corporate conduct. While the environmental advantages are the most apparent, e-invoicing also substantially contributes to social and governance improvements. Consequently, organizations may leverage the transition to e-invoicing as a strategic measure to bolster their ESG performance and reporting.

The **environmental implications** of invoicing are significantly influenced by considerations surrounding their carbon dioxide (CO₂) emissions. The assessment of a paper invoice's CO₂ footprint necessitates a comprehensive analysis encompassing the entire lifecycle of the invoice, from paper production through to its final delivery to the recipient. Key factors include:

- + Invoice Production:
 - Paper Type: The use of recycled paper is associated with lower CO₂ emissions in comparison to virgin fiber paper.
 - Energy Source: Employing renewable energy sources, such as wind or solar, during the manufacturing process markedly diminishes the CO₂ footprint relative to the utilization of fossil fuels.
 - Manufacturing Efficiency: Advanced, efficient manufacturing facilities are capable of reducing energy consumption and consequently, CO₂ emissions.
 - Materials: The environmental impact assessment extends beyond the paper itself to include related materials such as envelopes and stamps.
 - Number of Sheets: The average number of sheets per invoice also affects the CO₂ calculation. This average can fluctuate based on the customer type (Business-to-Business (B2B) vs. Business-to-Consumer (B2C)) and varies across different sectors (e.g., telecommunications/utilities vs. industry). It is posited by various stakeholders within the e-invoicing sector that the average is approximately 2.5 pages per invoice.

- + Printing of invoices:
 - Digital Printing Efficiency: Employing digital printing techniques can enhance efficiency over conventional printing methods, particularly for smaller quantities.
 - Ink Selection: The environmental impact, including the carbon footprint, is influenced by the choice of ink, such as oil-based versus water-based. The environmental detriment arises from the harmful chemicals in printer ink, the non-degradable plastic components, and petroleum oil in some ink and toner cartridges, leading to significant pollution when they reach the end of their lifecycle. Often disposed of in landfills or aquatic environments, these cartridges release toxic metals and volatile organic compounds (VOCs), causing extensive soil and water contamination. Presently, less than 30% of these cartridges are recycled [6].
- + Invoice Processing and Administration:
 - Efficiency of Office Appliances: Utilizing energy-efficient machinery for invoice preparation tasks like folding, enveloping, and sorting can contribute to the reduction of carbon emissions.
 - Administrative Energy Use: The energy expended in the invoicing process, particularly through computer systems, and the additional time required for processing paper invoices, should be factored into the carbon footprint calculation of the personnel involved.
- + Transportation and Delivery:
 - Transportation Method: The choice of transportation, with air freight markedly increasing carbon emissions in contrast to alternatives like trucks, trains, or ships.
 - Transportation Distance: Carbon emissions are also dependent on the distance between the printing facility and the invoice recipient.
 - Delivery Efficiency: Enhancing the efficiency of the last-mile delivery, especially in urban areas through the use of low-emission vehicles (for instance, electric cars or bicycles), can mitigate emissions.
- + Disposal and Recycling:
 - Recycling Practices: The potential for recycling used paper can significantly decrease the overall carbon footprint of an invoice, as recycled materials necessitate fewer resources for the production of new paper goods.
 - Disposal Methods: The technique employed for the disposal of paper invoices (e.g., landfill versus incineration) influences the carbon balance.
 - Digital Archiving: Adopting electronic invoicing eliminates the need for physical archiving, thereby saving on the energy and space required for storage.

Determining the exact carbon dioxide (CO₂) footprint of a paper invoice requires a comprehensive analysis of various factors, encompassing the emissions from production, printing, shipping, and disposal processes. Given the complexity of quantifying several of these elements, numerous studies have concentrated solely on the emissions saved by foregoing paper.

The CO₂ emissions associated with producing one kilogram of paper can significantly fluctuate based on the paper type, raw material sources, manufacturing process, and the energy utilized during production. Typically, paper production entails tree harvesting, transportation, pulping, paper manufacturing, and, in some cases, recycling—each phase adding to the total CO₂ emissions.

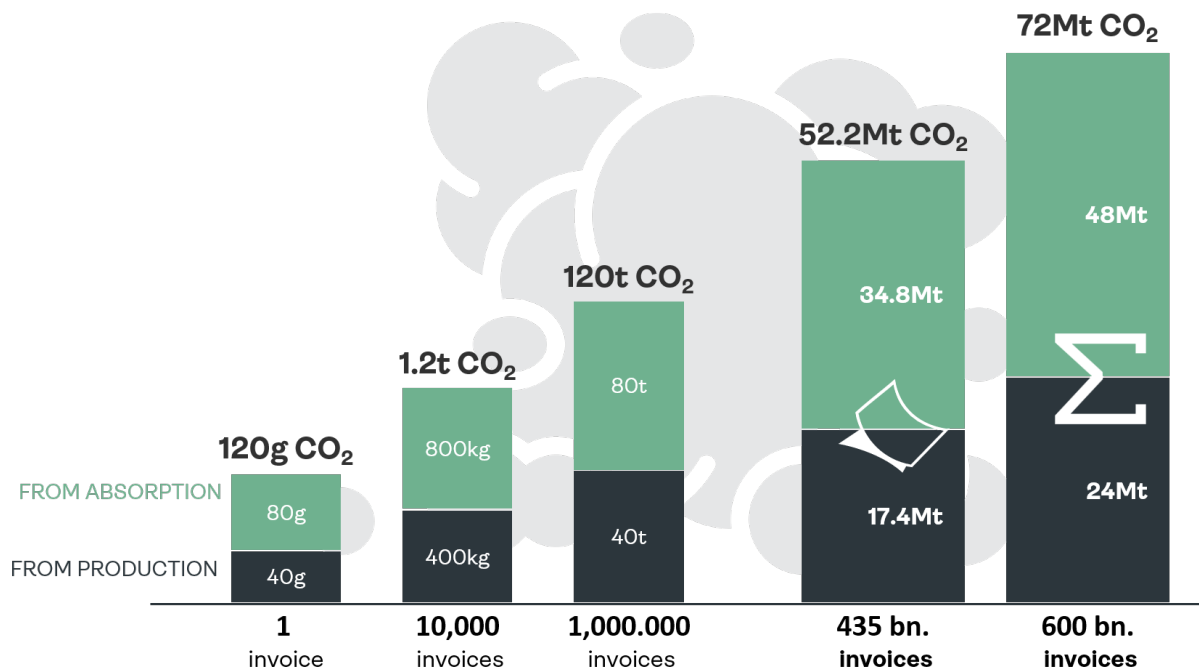
The carbon footprint of paper is commonly estimated to range from 1.45 kg to 3.6 kg of CO₂ per kilogram of paper, reflecting the diversity in production techniques. Recycled paper generally exhibits a lower carbon footprint compared to virgin fibre paper. The lower end of this

spectrum is indicative of modern, efficient, and environmentally friendly production methods that often leverage renewable energy and a greater proportion of recycled content. Conversely, the higher end may reflect less efficient production methods, reliance on fossil fuels, and the use of virgin wood fibres.

Adopting a conservative estimate of 2 kg CO₂ per kilogram, the CO₂ footprint for a single 20g paper invoice would be approximately 40g. This figure acknowledges that the CO₂ footprint from electronic invoicing is not sufficient to offset the emissions from printed invoices other than paper production (including transport, ink, archiving), thus maintaining the 40g CO₂ estimate as a cautious approach.

Furthermore, the conservation of paper also contributes to the preservation of trees, which are capable of sequestering additional CO₂. On average, a mature pine tree, commonly utilized in paper production, can yield about 8,333.3 sheets of standard office paper [7]. However, this simplistic calculation does not account for the complete lifecycle of paper production, including yield loss during processing, the incorporation of recycled paper, and variances in tree size and type. Therefore, the actual figures may significantly differ. Assuming an invoice uses an average of 2.5 pages, approximately 3,000 invoices equate to the usage of one tree.

The capacity for CO₂ absorption by a single tree is highly variable, influenced by the tree's species, age, environment, and health. A general estimate from the United States Department of Agriculture (USDA) suggests that a mature tree can absorb about 22 kilograms of CO₂ annually. This average acknowledges the variability in absorption rates due to the previously mentioned factors. Based on this, 3,000 invoices, each comprising 2.5 sheets of paper, would result in the absorption of approximately 22 kg of CO₂ annually. Assuming a minimum lifespan of ten years for a mature tree prior to harvest, this equates to an absorption of 80 grams of CO₂ per invoice.



The implementation of electronic invoicing offers numerous **social advantages**, particularly benefiting Small and Medium Enterprises (SMEs) in the following ways:

- + **Accessibility and Inclusivity:** E-invoicing enhances accessibility for individuals and businesses globally, including those in remote or underserved regions. It facilitates quicker and more efficient transactions, bolstering the economic sustainability of SMEs and potentially aiding in broader economic growth.

- + **Transparency and Traceability:** Electronic invoices offer superior tracking and storage capabilities compared to traditional paper invoices, enhancing transactional transparency and facilitating easier audits and verification processes. This improvement aids in combating fraud and ensures adherence to regulatory standards, benefiting all parties involved.
- + **Financial Efficiency:** E-invoicing introduces significant financial benefits. Primarily, electronic invoices tend to be settled 5-7 days sooner than paper invoices, diminishing the need for external financing. This is particularly crucial for SMEs, which often face challenges in accessing financial resources. Additionally, the advent of new Invoice Finance solutions, such as those allowing for the financing of individual invoices and those not requiring a historical financial track record as they are based on approved invoices, simplifies and accelerates the financing process, making it less bureaucratic and more accessible.
- + **Impact on the Shadow Economy:** As outlined in previous chapters, the initiation of tax reporting mechanisms significantly boosts a country's tax revenue. This increase in revenue benefits society as a whole by potentially reducing the size of the shadow economy.

E-invoicing significantly enhances **governance benefits** across several dimensions:

- + **Compliance and Standardization:** It streamlines adherence to regulatory frameworks by simplifying compliance with tax laws and invoicing standards. As many jurisdictions increasingly mandate e-invoicing for tax purposes, electronic systems offer the flexibility to promptly adapt to legislative amendments, ensuring that governance standards are consistently upheld.
- + **Improved Internal Controls:** The integration of e-invoicing systems bolsters internal oversight of financial transactions. By automating invoice processing and reconciliation, it diminishes the likelihood of inaccuracies and fraudulent activities, thus ensuring more reliable financial reporting.
- + **Enhanced Efficiency and Accountability:** E-invoicing enables organizations to optimize their invoicing procedures, reduce administrative burdens, and enhance accountability. This automation not only leads to more efficient operations but also promotes a culture of transparency and responsibility within enterprises.
- + **ESG Reporting Enhancement:** An increasing number of companies are mandated to conform to ESG reporting standards. While in the UK and US, this requirement predominantly applies to capital market participants, the European Union's Corporate Sustainability Reporting Directive (CSRD) extends it to nearly 50,000 companies from January 2024. The CSRD aims to bridge the gaps in existing reporting frameworks and broaden the scope of sustainability reporting, marking the introduction of compulsory reporting standards at the EU level for the first time, thereby elevating the accountability of European businesses in sustainability matters.

The implementation of e-invoicing is particularly pivotal in this context, especially as it pertains to the intricate task of ESG reporting, which becomes significantly more demanding for SMEs. Reporting on scope 3 emissions, which necessitates integrating supplier data, presents a notable challenge. E-invoicing stands out as a crucial tool in this regard, potentially providing essential data, including the Product Carbon Footprint and Scope 1, 2, and 3 emissions according to the Greenhouse Gas Protocol. Should such information be incorporated into the European standard for e-invoicing, companies could leverage an established process to extract all requisite data, facilitating comprehensive reporting across various supply chain levels.

3.6 Artificial Intelligence and Innovation in E-invoicing

Asia Jane Leigh, Researcher of International Observatory on E-invoicing, Politecnico di Milano

Artificial intelligence is widely expected to become a transformative force in E-invoicing, even though its role today remains largely confined to experimental deployments and early-stage integrations. While current solutions demonstrate promising capabilities, they should be understood primarily as signals of what may be possible rather than as evidence of a fully realised transformation. Looking ahead, AI has the potential to fundamentally reshape the entire E-invoicing lifecycle. From how invoices are created and validated, to how compliance is ensured, risks are identified, and transactional data is ultimately leveraged for decision-making. In the future AI could move well beyond task-level automation. It may enable adaptive invoice generation based on contextual business data, predictive compliance aligned with continuously evolving regulatory frameworks, and intelligent interpretation of structured and semi-structured financial information at scale. Instead of treating invoices as static compliance artefacts, AI-driven systems could turn them into dynamic sources of operational and strategic insight. At present, however, most implementations represent pilot initiatives: limited in scope, cautiously deployed, and often operating alongside traditional rule-based systems rather than replacing them.

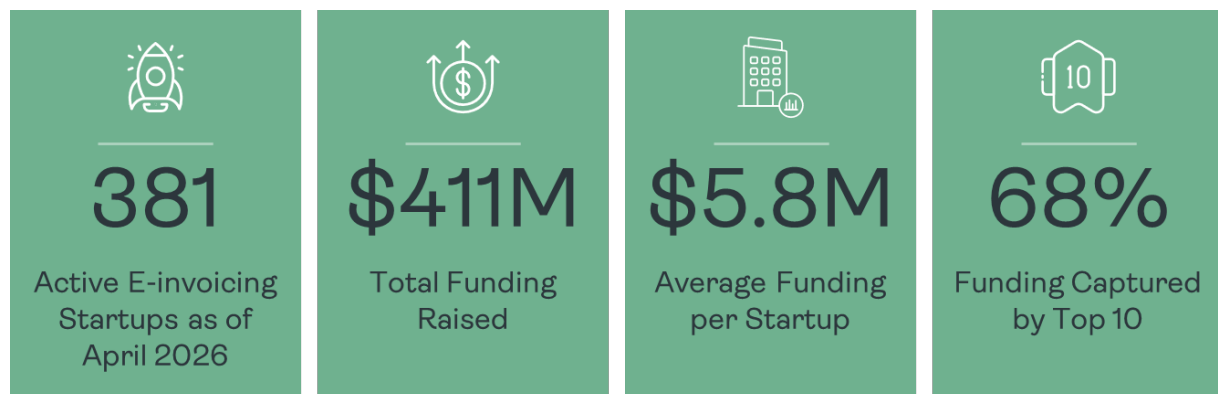
This chapter explores the future trajectory of AI in E-invoicing through two complementary perspectives. First, it analyzes invoicing startups to highlight emerging trends, investments, and early signals of AI-driven innovation. Second, it explores how AI could transform each stage of the E-invoicing lifecycle—from document creation to validation, monitoring, and data handling—pointing toward a broader, long-term redesign of invoicing processes.

3.6.1 Reading the Market: Innovation Signals from the Startup Ecosystem

Startup activity is one of the most reliable leading indicators of where a technology market is heading. Early-stage companies, unconstrained by legacy infrastructure and motivated by the need to find differentiated positions in competitive markets, tend to cluster around the problems and opportunities that established players have not yet fully addressed. Analysing the E-invoicing startup landscape therefore offers a privileged view into the innovations that are likely to define the sector over the coming years.

The Scale and Shape of Investment

According to its census of international startups updated as of April 29th, 2026, the International Observatory on E-invoicing of Politecnico di Milano identified 381 startups currently active in the E-invoicing innovation space, collectively attracting a total of approximately \$411 million in funding — an average of \$5.8 million per company. This figure, while modest by the standards of some technology sectors, reflects a market in which most innovation is early-stage and task-driven, with a small number of more advanced players attracting a higher share of capital.



The concentration of funding at the top of the distribution is striking: the ten best-funded startups account for 68% of total financing in the sector. This pattern is typical of emerging technology markets, where investors place large bets on a small number of companies they believe can achieve platform-level scale, while the remainder of the ecosystem operates on leaner capital, often pursuing narrower or more specialised applications.

Four Innovation Frontiers

Across the 381 startups analysed, four major innovation themes dominate the landscape, each representing a distinct strategic response to the challenges and opportunities of modern invoicing workflows.

- + **Embedded payments** is the most prevalent theme, with 157 startups operating in this space. These companies are focused on integrating payment execution directly within the invoicing workflow — collapsing the traditional separation between invoice approval and payment initiation into a single, seamless process. The appeal is clear: removing friction from the payment step reduces days sales outstanding, accelerates cash conversion, and creates new opportunities for financial service providers to embed themselves into commercial transactions.
- + **AI and automation** represent the second most prominent frontier, with 124 startups explicitly positioning artificial intelligence at the core of their value proposition. These companies apply machine learning, natural language processing, and intelligent automation across the invoice lifecycle — from data extraction and validation to compliance verification and anomaly detection. What is particularly notable is the breadth of ambition: AI is rarely presented as a single add-on feature. Instead, it is framed as a foundational capability intended to reshape how invoicing workflows adapt, learn, and scale. Because of its cross-cutting impact and its potential to redefine automation itself, AI warrants a deeper and more focused analysis.
- + **Advanced integration** lands in third place, with 111 startups focused on connectivity — ensuring that E-invoicing platforms can exchange data reliably with ERP systems, procurement platforms, tax authority portals, and structured exchange networks. As the regulatory environment becomes more complex and cross-border invoicing more common, the ability to integrate across heterogeneous systems becomes a critical competitive differentiator.
- + **Data analytics** attracts 103 startups, reflecting a growing recognition that the structured data generated by E-invoicing processes is itself a strategic asset. Companies in this space are building tools that allow businesses to analyse invoice flows for patterns, inefficiencies, and opportunities — turning the transactional record into a source of operational intelligence.

3.6.2 AI Across the Invoice Lifecycle: Applications and Use Cases

Artificial Intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think and learn like humans. The goal of AI is to create systems capable of performing tasks that would require human intelligence, such as reasoning, learning, problem solving, perception, and understanding natural language.

The potential impact of Artificial Intelligence in E-invoicing becomes most evident when it is examined across the individual stages of the invoice lifecycle. Rather than approaching AI as a standalone or generic enhancement, this section considers how it could be embedded at each phase of the process, from invoice creation through to secure, verifiable disposal. Viewed in this way, AI points toward a broadly transformative future: there are few, if any, stages of the invoicing workflow that could not be significantly enhanced as these technologies mature.

Invoice Generation

Invoice generation is the entry point of the invoice workflow, and it encompasses a broader range of activities than the term might suggest. A generated invoice may originate as a native electronic document, structured according to a defined format and produced directly from an ERP or billing system. Or it may begin as a paper document — a physical invoice from a supplier, a contract-based billing note, or a manually composed document — that must be converted into a structured electronic format before it can be processed. In both cases, AI offers capabilities that significantly reduce manual effort and improve output quality.

For native electronic generation, AI-powered dynamic templates allow invoice structures to adapt automatically to the requirements of different recipients, jurisdictions, or transaction types: eliminating the need for manual customisation while ensuring compliance with format requirements. For documents generated from heterogeneous inputs, AI can draw on structured sources such as ERP and CRM systems alongside unstructured inputs including emails, messaging systems, and scanned attachments, synthesising these into a coherent, properly formatted invoice without human intervention.

The dematerialisation of paper invoices is perhaps the most mature of the AI applications in this phase. AI-driven optical character recognition (OCR) technology has advanced considerably in recent years, enabling accurate extraction of invoice data from documents of widely varying quality, layout, and language. Modern OCR systems trained on large invoice datasets can recognise and classify fields — supplier identity, line items, tax codes, payment terms — with a reliability that approaches human accuracy on well-formatted documents, and often exceeds it in terms of speed and consistency.

Phase 1 Generation: Creation of native electronic invoices and dematerialisation of paper-based documents.



AI applies dynamic templating to adapt invoice formats to recipient requirements automatically. It draws on both structured system data and unstructured inputs to generate invoices without manual composition. AI-driven OCR enables fast, accurate conversion of paper invoices into structured electronic formats, significantly reducing manual data entry and associated errors.

Invoice Processing

Invoice processing, which covers data extraction, validation, classification, and approval, is the phase where the volume of manual work has historically been greatest, and where the business case for AI is consequently most compelling. The challenge is not simply handling large numbers of invoices but handling them consistently and accurately across documents that differ in format, content, language, and compliance requirements.

AI-powered data extraction goes beyond simple field recognition to understand the semantic content of invoice documents, identifying the meaning and relationships between data elements even when their presentation varies. Once extracted, data is automatically indexed and tagged with metadata — supplier category, cost centre, project code, fiscal period — enabling downstream search, reporting, and audit functions to operate efficiently without manual classification effort.

Validation is another area of significant AI impact. Machine learning models can cross-reference invoice data against purchase orders, contracts, and delivery records, flagging discrepancies for human review rather than requiring manual three-way matching. Anomaly detection

algorithms, trained on historical invoice data, identify patterns that suggest errors or potential fraud — duplicate submissions, mismatched totals, unusual payment destinations — often before the invoice has progressed further in the approval workflow.

Legal and fiscal compliance detection represents one of the more sophisticated AI applications in this phase. Regulatory requirements around invoice content, VAT treatment, and electronic format vary significantly across jurisdictions and change over time. AI models can be trained to validate invoices against the current requirements of multiple tax regimes simultaneously, flagging non-compliant documents and suggesting corrections.

Phase 2 Processing: Data extraction and analysis, indexing and metadata tagging, classification, validation, and approval.

AI extracts and interprets invoice data from diverse document formats, automatically classifying and tagging records for down-stream use. Validation models cross-reference invoice data against purchase orders and contracts, enabling automated two- and three-way matching. Anomaly detection algorithms identify duplicates, mismatched figures, and fraud signals from historical patterns. Legal and fiscal compliance engines validate invoices against current regulatory requirements across multiple jurisdictions simultaneously.

Distribution and Emission

Once an invoice has been generated and processed, it must be routed to the appropriate recipient, whether a business partner, a public authority, or a shared service centre, through the correct channel and in compliance with applicable format and transmission requirements. This distribution phase has traditionally been a source of delay and error, particularly in organisations that manage multiple channels and recipient requirements simultaneously.

AI-powered workflow automation transforms this phase by orchestrating the end-to-end routing and transmission process without manual intervention. Intelligent process orchestration tools determine the optimal route for each invoice based on recipient identity, applicable regulations, preferred channels, and current network availability — adapting dynamically as conditions change. AI-enhanced document routing ensures that invoices are sent in the correct format for each destination, applying any necessary transformations between standards — for example, converting between national E-invoicing formats or adapting to the requirements of a specific Peppol access point.

AI-assisted payment scheduling adds a further layer of intelligence to this phase. By analysing invoice due dates, available liquidity, early payment discount opportunities, and supplier payment terms, AI tools can recommend or automate payment timing decisions that optimise cash flow and capture available savings — decisions that were previously made by treasury analysts working with incomplete or delayed information.



Phase 3 Distribution & Emission: Routing and transmission of invoices to business partners or public authorities across applicable channels. AI orchestrates end-to-end routing, selecting channels and formats based on recipient requirements and real-time network conditions. Format transformation ensures invoices comply with destination-specific standards without manual intervention. Payment scheduling tools analyse due dates, liquidity positions, and discount opportunities to optimise payment timing and cash flow, turning distribution into an intelligent financial management function rather than a mechanical routing task.

Preservation and Archiving

The preservation and archiving of electronic invoices is an area that has historically received less attention than invoice generation or processing, yet it carries significant legal and operational consequences. In most jurisdictions, invoices must be retained for a defined period — typically between five and ten years — in a format that ensures their authenticity, integrity, and readability throughout the retention window. For large enterprises handling millions of invoices annually, the management of these archives represents a substantial operational challenge.

AI transforms archiving from a passive storage function into an active, intelligent capability. Intelligent search and retrieval tools allow users to locate specific invoices or groups of documents using natural language queries — searching by supplier, date range, amount, project code, or any combination of attributes — without needing to know the precise structure of the archive or the exact metadata tags applied at ingestion. This dramatically reduces the time and effort required to respond to audit requests, tax authority queries, or internal management information needs.

AI-driven document recommendations and long-term storage optimisation help organisations manage the cost and complexity of large archives. Systems can identify documents that are approaching the end of their mandatory retention period, flag those that may need to be retained for longer due to ongoing disputes or regulatory scrutiny, and recommend consolidation or migration strategies as storage formats evolve. AI-powered user identification and permission management adds a further layer of security and governance, ensuring that access to sensitive invoice data is granted appropriately and that permission changes are automatically audited.



Phase 4 Preservation & Archiving: Compliant long-term storage, intelligent retrieval, permission management, and periodic review. AI enables natural language search across large invoice archives, making retrieval fast and accessible regardless of the user's familiarity with the underlying data structure. Storage optimisation tools manage archive size and format evolution proactively. Recommendation engines flag documents approaching retention milestones or warranting extended preservation. AI-powered permission management governs access to sensitive records, adapting to organisational changes and maintaining a complete, auditable access history.

Elimination and Secure Disposal

The final phase of the invoice lifecycle — the controlled elimination of documents that have reached the end of their mandatory retention period — is one that receives little attention in most discussions of E-invoicing technology, yet it carries real legal and operational risk if handled incorrectly. Premature disposal of documents that are subject to ongoing audits or legal proceedings can expose organisations to significant liability. Conversely, the indefinite retention of documents beyond their required period represents unnecessary cost, complexity, and data privacy risk.

AI addresses this challenge by introducing intelligence into what has typically been an entirely manual and often ad hoc process. AI-based document elimination recommendation systems analyse retention schedules, regulatory requirements, and the status of any associated disputes or proceedings to determine which documents are eligible for disposal at any given point. Risk-based approaches allow organisations to prioritise the elimination of lower-risk documents while flagging those that warrant extended retention for human review.

AI-driven document destruction tools execute the elimination process in a manner that is both secure and auditable. Automated audit trail generation ensures that a verifiable record of the disposal action is created and retained — documenting what was destroyed, when, under what authority, and in accordance with which regulatory requirement. This provides organisations with defensible evidence of compliant document management in the event of future regulatory scrutiny.

Phase 5 Elimination & Disposal: Retention monitoring, risk-based elimination decisions, secure destruction, and audit trail generation.

AI recommends which documents are eligible for disposal based on retention schedules, regulatory status, and associated proceedings. Risk-based elimination models prioritise lower-risk records while escalating uncertain cases for human review. Secure, AI-driven destruction processes execute disposal in a controlled manner, and automated audit trail generation produces verifiable records of every elimination action — providing organisations with defensible evidence of compliant document lifecycle management.

3.6.3 Barriers and Drivers Shaping AI Adoption in E-invoicing

The adoption of artificial intelligence in E-invoicing has not followed a smooth or uniform trajectory. Instead, progress has been uneven, marked by pilots, pauses, and selective implementations rather than full-scale transformation. This pattern is best explained by the interaction between structural barriers that slow adoption and powerful drivers that continue to push organisations forward despite those constraints.

Why Adoption Has Been Slower Than Expected

One of the most persistent obstacles is data quality. In many organisations, invoice data reflects years of fragmented processes, local exceptions, and inconsistent standards. Even where invoices are exchanged electronically, fields may be incomplete, differently interpreted by counterparties, or polluted by manual corrections. AI systems trained on such data struggle to move beyond superficial automation. Instead of enabling intelligence, poor data often forces models to replicate existing inefficiencies. In practice, this means that organisations expecting AI to “fix” invoicing without first addressing data foundations are frequently disappointed.

Closely related is the challenge of legacy system environments. Large enterprises often operate multiple ERP instances, bespoke document repositories, and country-specific compliance tools, all developed or acquired at different times. Integrating AI into this landscape can require significant architectural change, making adoption appear risky or costly relative to incremental improvements to existing rule-based workflows. As a result, AI projects are often confined to narrow scopes or non-critical processes.

Beyond technology, organisational resistance to change plays a decisive role. Invoicing has traditionally been treated as a back-office, compliance-driven function, with strong reliance on manual checks and established procedures. Ownership of invoice processes is frequently fragmented across finance, IT, tax, and operations, making it difficult to introduce systems that adapt dynamically rather than follow fixed rules. In such environments, AI is sometimes perceived as opaque or uncontrollable, reinforcing inertia.

Concerns around liability and accountability further constrain adoption. When an AI system flags an invoice as compliant, rejects it, or routes it differently, who bears responsibility if that decision later proves incorrect? This question becomes especially sensitive in regulated E-invoicing environments, where errors can carry financial penalties. Until governance models, auditability, and explainability mature, many organisations remain cautious about delegating decision-making authority to AI.

Finally, privacy and security concerns cannot be ignored. Invoices contain sensitive commercial and personal data, and AI systems—particularly those based on machine learning or generative models—raise questions about data exposure, model training practices, and cross-border data flows. These risks are manageable, but they require deliberate design choices that many early adopters are still working to formalise.

Why Momentum Continues to Build

Despite these barriers, AI will surely play an increasingly central role in E-invoicing. The primary driver is operational efficiency. Even limited AI deployments have demonstrated tangible reductions in manual data entry, exception handling, and invoice rework. For high-volume environments, small percentage gains translate into significant cost and time savings, making experimentation economically compelling.

Another strong driver is the shift toward data-centric, end-to-end processes. As E-invoicing becomes embedded within broader digital transaction chains, invoices are no longer isolated compliance documents but integral components of order-to-cash and procure-to-pay workflows. AI enables these documents to be interpreted, validated, and enriched automatically, allowing information to flow seamlessly across systems rather than stopping at organisational boundaries.

AI also offers clear value through improved decision-making. Invoice data, once standardised and analysed at scale, provides insights into payment behaviour, supplier performance, dispute patterns, and cash-flow dynamics. Instead of relying on periodic reports or manual analysis, organisations can surface risks and opportunities in near real time, supporting more responsive financial management.

In regulated environments, stronger compliance and governance represent another powerful incentive. Continuous validation, anomaly detection, and audit-ready documentation reduce the burden of periodic controls and inspections. AI does not eliminate the need for governance; rather, it reinforces it by embedding compliance checks directly into operational workflows.

Finally, AI-enabled E-invoicing contributes to better relationships with partners. Smoother invoice exchanges, faster resolution of discrepancies, and clearer communication reduce friction with suppliers, customers, and intermediaries. Over time, this reliability becomes a competitive advantage, particularly in complex or multi-jurisdictional supply chains.

3.6.4 What AI Ultimately Means for the Future of E-invoicing

As this analysis shows, the significance of artificial intelligence in E-invoicing lies not in any single use case or technological breakthrough, but in a set of deeper shifts that are already reshaping how invoicing is designed, governed, and valued within organisations.

The first and most consequential shift introduced by AI is a fundamental redefinition of what “automation” means. Traditional automation — whether implemented through workflow engines or Robotic Process Automation (RPA) — has historically focused on execution. Tasks are automated by encoding rules, decision trees, and predefined exceptions, all designed around the assumption that processes behave predictably and repeatedly. When conditions change, the system does not adapt; it must be reconfigured, reprogrammed, or surrounded by additional rules.

RPA, in particular, has been effective at mimicking human actions within stable environments: copying data between systems, triggering validations, or following structured approval paths. However, its core limitation lies in its rigidity.

AI introduces a qualitatively different automation paradigm. Rather than executing predefined instructions, AI systems interpret context. They evaluate invoices not only against static rules, but against patterns learned from historical data, behavioural signals, counterparty profiles, and regulatory logic. This enables invoicing processes to behave differently when conditions differ, without requiring explicit reengineering for every variation.

The strategic implication is clear: AI shifts E-invoicing from process automation to process intelligence. Automation is no longer defined by how many steps can be eliminated, but by how effectively the system can respond to real-world complexity.

Yet the central constraint on AI adoption in E-invoicing remains not technological capability, but data readiness and governance maturity. The effectiveness of AI is determined far more by the quality, consistency, and ownership of invoice data than by the sophistication of the algorithms applied to it. Fragmented system architectures, inconsistent data semantics, and unclear accountability strip AI of its contextual understanding, reducing it to little more than an expensive layer of basic automation. In such conditions, intelligence cannot emerge, because the underlying information lacks coherence and trust.

By contrast, organisations that invest deliberately in clean data models, shared definitions, and robust governance structures create the conditions in which AI can deliver its full value. In these environments, AI becomes capable of learning, adapting, and scaling responsibly across jurisdictions, partners, and regulatory regimes.

The implication for the future of E-invoicing is unambiguous. AI will not compensate for structural weaknesses in data and governance; it will expose them. Where foundations are weak, AI adoption will stagnate at the level of isolated pilots. Where foundations are strong, AI will evolve into a strategic capability that reshapes invoicing from a compliance obligation into a source of operational intelligence and coordination.

Ultimately, the transition to AI-enabled E-invoicing is less about adopting new technology and more about achieving organisational readiness. The organisations that succeed will be those that recognise intelligence as an outcome of structure.

4. The Global Market

4.1 Invoices and Electronic Invoice Penetration

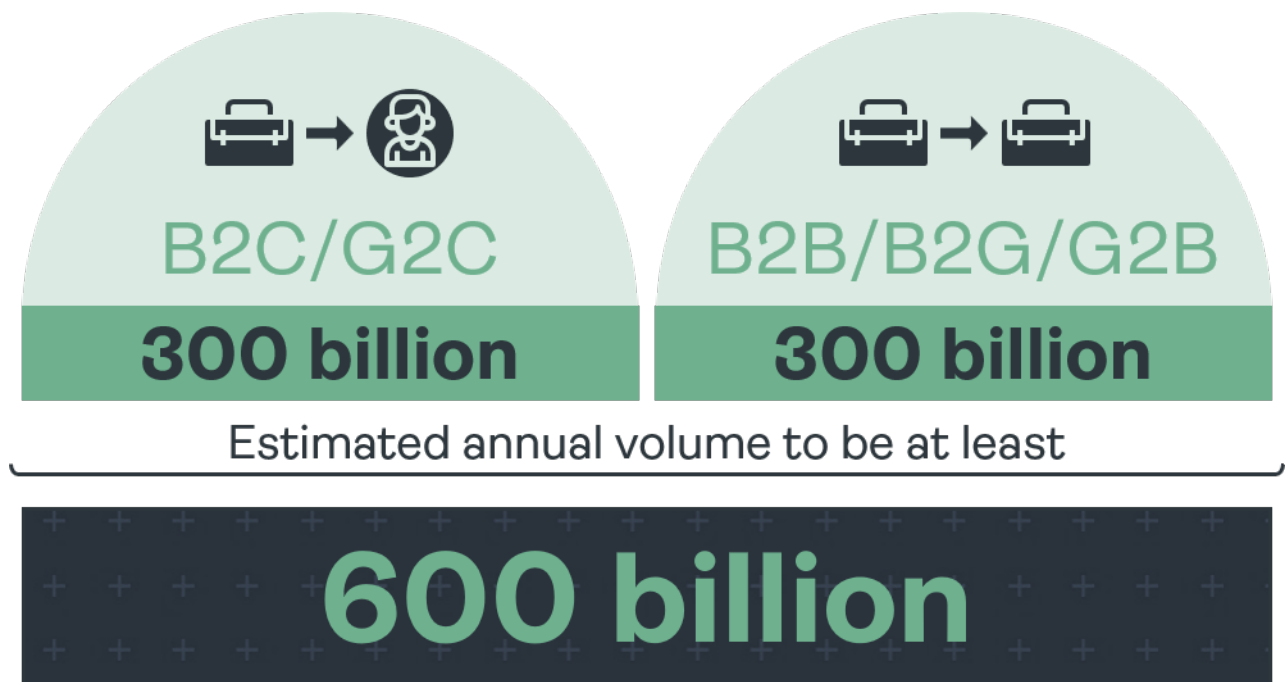
4.1.1 Total Volume of Bills and Invoices

This year's report introduces, for the first time, the use of Artificial Intelligence to incorporate a broader range of data sources and establish the foundation for more detailed segment- and region-specific market analysis. This enhanced approach supports a reflection of the increasingly dynamic developments shaping the global e-invoicing and tax compliance landscape.

The new model estimates national invoice volumes by combining documented market evidence with a structured country-level estimation framework. Verified invoice counts from tax authorities, official reporting systems, surveys, industry sources, and more than two decades of billentis research serve as anchor points. Additional indicators, including nominal GDP growth and shadow economy share, are used to support estimates in markets where direct data is limited or unavailable.

Because invoice markets differ significantly across countries and official statistics are often incomplete or inconsistent, the model should be interpreted as a structured estimation framework rather than a source of exact point measurements. Its objective is to provide a consistent, transparent, and comparable basis for cross-country market sizing while clearly distinguishing between observed data and inferred estimates.

Estimate for global bill/invoice volume 2026:



Recent developments in major markets such as Brazil, Mexico, Greece, and China have highlighted the growing importance of electronic receipts generated at the point of sale. These transaction volumes are increasingly driving growth within the **B2C segment**. While data availability in Latin America and parts of Asia has improved substantially, coverage remains uneven and future developments remain difficult to predict in some jurisdictions.

The continued digitalisation of retail transactions suggests that electronic receipts will increasingly evolve into fully compliant electronic invoices. As a result, these invoice-like documents are expected to significantly outnumber traditional B2C invoices in the coming years.

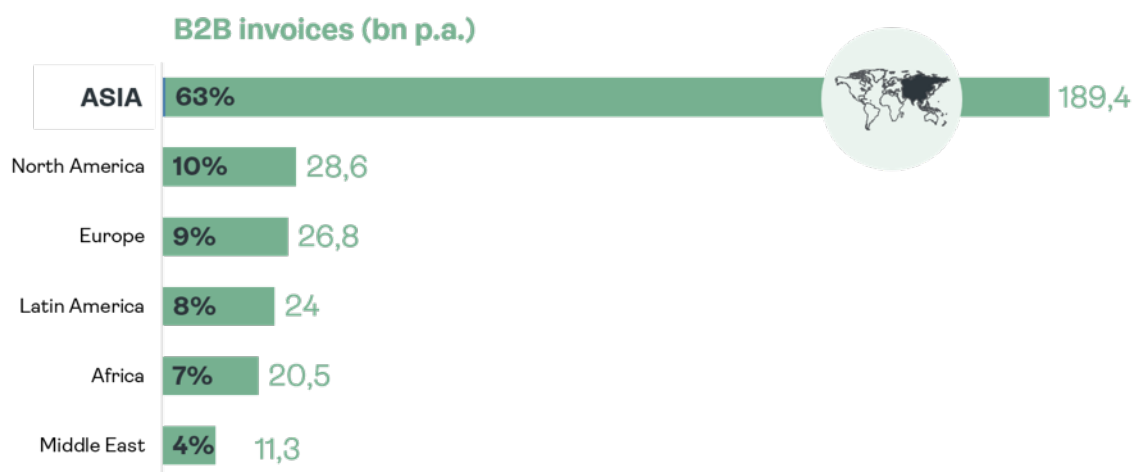
Given the ongoing uncertainty regarding the comparability and availability of B2C receipt data across regions, the primary **focus of this report remains on B2B and B2G invoice volumes**. This also reflects the current regulatory landscape, where the majority of new e-invoicing and e-reporting mandates are targeting business and public-sector transactions.

Growth in B2B and B2G invoice volumes is influenced by a combination of macroeconomic factors and structural market developments. While economic growth remains an important driver, invoice volumes are increasingly affected by the transition from aggregated or periodic billing practices toward transaction-level electronic invoicing. The replacement of monthly summary invoices by individual line-item electronic invoices improves transparency, supports business automation, and contributes to higher invoice volumes.

Based on the available market evidence, it is projected that approximately 50% of global invoice volumes relate to service transactions, while the remaining 50% are associated with the exchange of physical goods.

4.1.2 B2B Invoice Volumes and Electronic Share By Region and Country

The global B2B invoice market remains highly diverse in 2026. Worldwide, around **300 billion B2B invoices** are expected to be issued annually, of which approximately **87 billion, or 29%, are electronic B2B invoices**. The figures refer to e-invoices digitally issued by suppliers and digitally received by buyers.



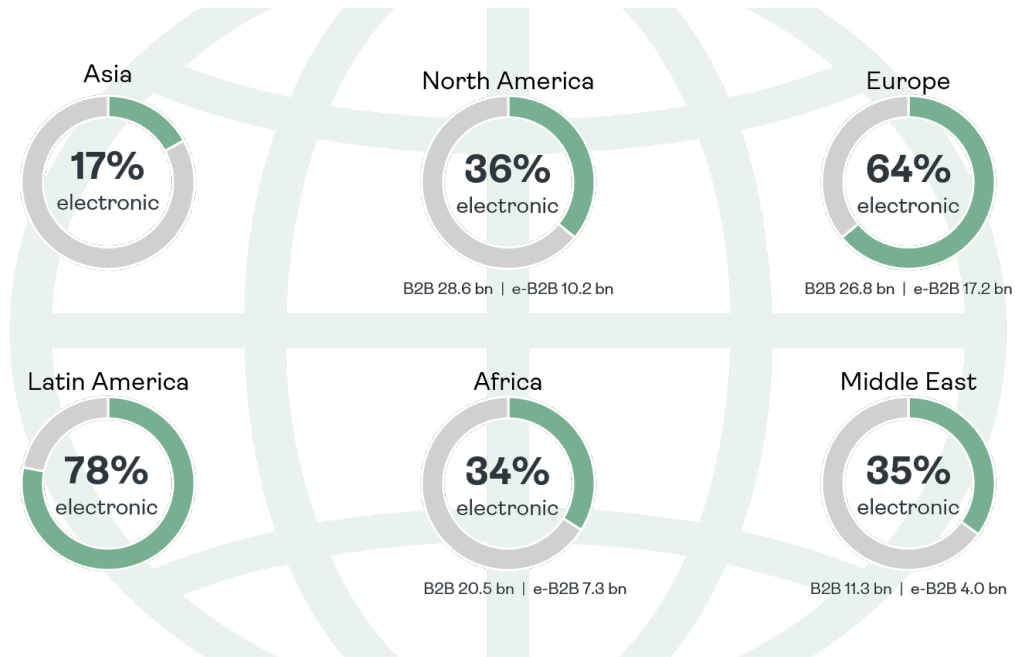
Asia represents by far the largest B2B invoice market, with an estimated 189.4 billion B2B invoices per year. However, only around 31.3 billion of these are electronic, corresponding to an electronic share of 17%. This reflects the region's size and diversity: highly mature e-invoicing markets coexist with countries where adoption is still emerging.

Europe and Latin America show significantly higher electronic shares. Europe records around 26.8 billion B2B invoices, of which 17.2 billion are electronic, equal to 64%. Latin America is the most advanced region by share, with 18.6 billion electronic B2B invoices out of 24.0 billion, or 78%. This is largely driven by long-established clearance and mandate models in several countries.

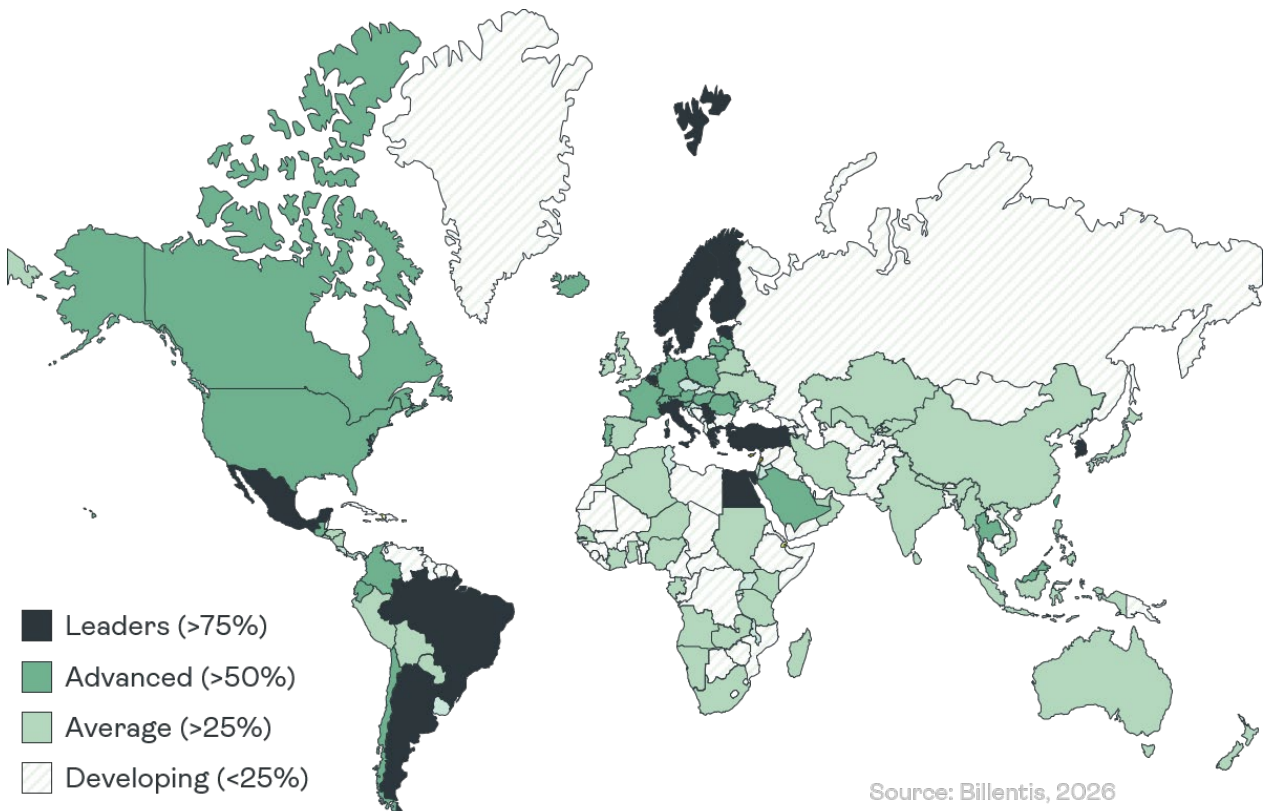
North America accounts for 28.6 billion B2B invoices, with around 10.2 billion electronic, representing 36%. Africa and the Middle East remain smaller markets in absolute terms, with 20.5 billion and 11.3 billion B2B invoices respectively. Their electronic volumes are estimated at 7.1 billion in Africa and 4.0 billion in the Middle East, corresponding to electronic shares of around 34% and 35%.



Worldwide, billentis expects a total volume of 87 billion electronic B2B invoices, or 29%, by 2026



Overall, the data confirms that market maturity differs substantially not only across continents, but also within the individual countries of each region. Regulatory mandates, tax reporting models, digital infrastructure, business readiness, and platform penetration all influence the pace of adoption. As a result, regional averages should be interpreted as indicators of broad market development rather than as uniform levels of maturity across all countries in a continent.



4.1.3 Mandate-Driven E-B2B Growth To 2030

Based on officially announced mandates, global electronic B2B invoice volumes are expected to increase from around 88.3 billion in 2026 to 107.0 billion by 2030, representing growth of

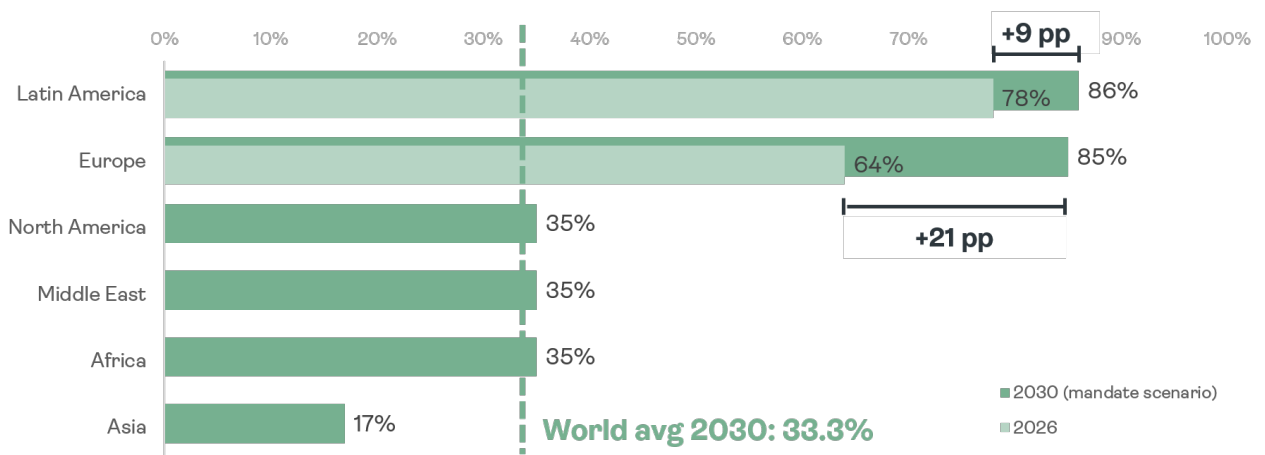
approximately 21%. This scenario reflects only regulatory measures that have already been announced and can therefore be interpreted as a conservative baseline.

The strongest absolute growth is expected in Europe, where e-B2B volumes rise from 17.2 billion to 26.3 billion invoices, an increase of 53%. Latin America also continues to expand from an already mature base, growing from 18.6 billion to 25.5 billion electronic B2B invoices, or 37%. These regions benefit from broad mandate coverage and further rollouts in countries that are still transitioning.

In Asia, the largest market by volume, mandate-driven growth is more moderate in relative terms, increasing from 31.3 billion to 32.5 billion e-B2B invoices, or 4%. North America shows only limited mandate-driven growth, from 10.2 billion to 10.4 billion invoices, or 2%, as adoption is less strongly shaped by government mandates. Africa is expected to grow from 7.1 billion to 7.9 billion e-B2B invoices, an increase of 12%, while the Middle East rises from 4.0 billion to 4.4 billion, or 10%.

It is important to note that this forecast includes only volumes resulting from officially announced mandates. It does not fully capture the additional upside from corporate digitalisation programmes, supply-chain automation, interoperability initiatives, ERP modernisation, or voluntary adoption by businesses. Consequently, the actual growth potential for e-B2B invoicing through 2030 is likely to be significantly higher than shown in this mandate-only scenario

Electronic B2B share by region – mandate impact to 2030:



4.2 Global Progress in the Adoption of Electronic Invoices and Receipts

4.2.1 Regions Diverge in Focus: Tax Optimization and Trade Automation Trends Vary Globally

Numerous parallels exist in the utilization of invoices globally. The endeavour to adopt electronic invoicing and persuade trading entities presents a similar challenge. Nonetheless, significant disparities arise from diverse legislation, languages, cultures, and the current emphasis on optimization. While not universally applicable across all countries and organizations, it has been determined that the focus on optimization can generally be summarized as follows:

Africa, Asia, Latin America and some European countries: Tax authorities are initiating nationwide initiatives focused on minimizing tax evasion. These require taxpayers to submit either detailed invoice data or, at the very least, electronic invoice subsets for validation and audit purposes.

In a departure from conventional paper-based methods, tax authorities are creating and instituting an entirely new framework. This introduces a CTC system for trading entities, which is relatively complex. While this transformation may not immediately enhance the efficiency of companies' internal invoice processing or the electronic collaboration between suppliers and buyers, it significantly simplifies and improves the process of VAT declarations and tax filings.

North America to date: Large and medium-sized enterprises primarily focus on optimizing their internal processes. Automation of Accounts Receivable and Accounts Payable, along with Trade Finance and Working Capital Management, are key areas of concentration. However, the market is progressively maturing, making it a ripe time to prioritize focus area three.

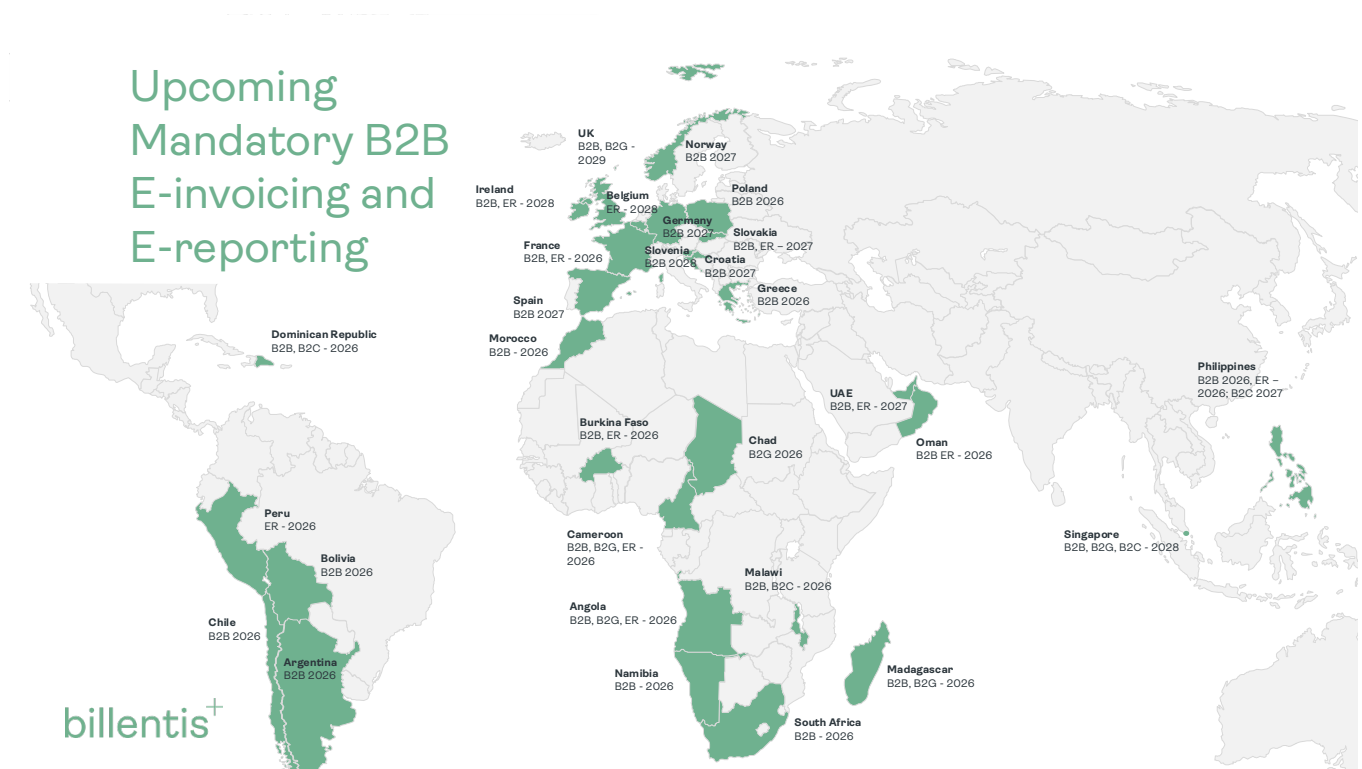
Major parts of Europe, Japan, Southeast Asia, Pacific Region and increasingly the U.S.:

Traditional invoicing and processing techniques have not been subjected to rigorous examination; instead, they have been substituted with an equivalent functional digital alternative. Where necessary, either a tax related portion or the entirety of the invoice details may also be shared with tax authorities.

Despite the market remaining considerably segmented, the strategy within Europe is characterized by a comprehensive and unified approach, underpinned by a pronounced willingness to cooperate among all involved parties. Furthermore, previous investments in business process automation are safeguarded.

Presently, there is significant momentum toward the adoption of the **5-corner model** across numerous countries in Europe, the Middle East, and Southeast Asia. This movement stems from the belief that the solution should not only address the requirements of tax authorities but also establish a foundational framework for the comprehensive automation of Integrated Digital Trade.

In most countries this development is also combined with the introduction of mandatory B2B e-invoicing shown on this map of upcoming mandatory B2B E-invoicing and E-reporting schemes:



4.2.2 Africa

Despite some limitations in digital infrastructure within these regions, Africa developed as a hidden champion of mandatory e-invoicing and e-reporting since our last report from 2024.

Additionally, mobile devices are emerging as a viable foundation for many African countries, with notable acceptance within the Small and Medium Enterprise (SME) sector and amongst consumers. Digital finance and electronic point-of-sale (POS) invoicing are perceived as the most viable strategies to boost e-invoicing adoption in the African mass market. Mobile phone adoption stands at approximately 60%, while internet penetration is around 36%. Beyond mobile applications, cloud-based platforms also offer a solution for generating invoices.

The VAT compliance gap in Africa is close to 50%, as reported by the United Nations Economic Commission for Africa [8]. Consequently, African tax authorities are rapidly moving to mandate electronic invoicing to improve VAT compliance and reduce fraud. As of mid-2026, numerous countries have announced or planned e-invoicing systems to complement or replace paper and fiscal device regimes. These initiatives generally target B2B and B2G transactions (and in some cases high-value B2C), often via a centralized real-time reporting platform or other continuous transaction control (CTC) mechanisms. Key trends include requiring structured electronic invoices (often in JSON or UBL format) with real-time validation, QR codes and unique IDs; phased rollouts by taxpayer size; and expanded e-reporting linking invoice data directly to tax systems. Below is a consolidated table of planned e-invoicing mandates and e-reporting schemes by country.

Country	Scope	Status	Model/requirements
Angola	+ B2B, B2G, e-reporting	+ Mandatory in two phases: Transactions with amount above AOA25M (~23K€) from 1 Jan 2026; All VAT taxpayers (incl. B2G) from 1 Sep 2026	+ Post-clearance, JSON e-invoices submitted post-transaction and billing SAF-T via certified invoicing software or AGT portal/API. Unique invoice ID assigned by tax authority
Burkina Faso	+ B2B, B2C, e-reporting	+ Phase 1 (from 1 Jul 2026): Domestic companies under standard tax regime with annual turnover ≥ XOF50M (~€76k). Subsequent phases: smaller taxpayers.	+ FEC (Facture Électronique Certifiée) under SECeF platform: Certified invoicing software (in-house or third-party) required. Invoices include unique authentication and QR code. Real-time monitoring.
Cameroon	+ B2B, B2G, e-reporting	+ Enacted in 2026 Finance Law (promulgated late 2025); All businesses (all VAT-registered taxpayers) for all invoiced transactions	+ Real-time CTC model. All invoices (taxable, VAT-exempt or out-of-scope) must be issued via an approved e-invoicing solution, with near-real-time transmission of structured invoice data to tax authorities
Chad	+ B2G (public sector/NGOs), with	+ Finance Law 2026 (effective 1 Jan 2026) mandates e-invoices for public expenditure; gradual rollout to VAT companies is planned	+ Standardized e-invoice (XML format envisioned) via government e-Tax platform. Likely adoption of digital signatures for authenticity.

	plans for B2B		
Gabon	+ B2B	+ Law No. 041/2025 (promulgated 30 Dec 2025) takes effect Jan 2026; six-month transition period for e-invoice requirement	+ “Factures électroniques normalisées” required. E-invoicing (JSON) standards via a central platform.
Madagascar	+ B2B and B2G; B2C eventually	+ Decree of 2 Jul 2025 mandates e-invoicing for all B2B/B2G transactions. Implementation is phased by company size	+ Centralized e-invoicing platform run by tax admin (DGI). The platform will issue, receive and archive invoices, and support pre-filled VAT returns. Rollout timeline: large co’s within 6 months of launch, midsize within 1 year, small/micro within 2 years.
Malawi	+ B2B and B2C (all VAT-regulated sales)	+ MRA confirmed mandatory E-Invoicing System (EIS) from 1 May 2026 (after pilot Aug 2025)	+ Cloud-based EIS replaces legacy fiscal devices. All VAT invoices must be issued via EIS or accredited solutions, with instant validation by the tax authority (real-time reporting). After go-live, EIS e-invoices only are valid for VAT credits.
Morocco	+ Phase 1: B2B (all invoices); later extension to B2C	+ Pilot launched Oct 2024; Finance Ministry confirms phased mandatory rollout during 2026	+ Centralized model (Phase 1): UBL format e-invoices are sent through a DGI portal for validation before issuance. Later phases will allow certified service providers (CSPs) to relay invoices (delegation/CTC model).
Namibia	+ B2B (VAT transactions, all businesses)	+ Originally set for Apr 2026, but revised to a phased rollout over 2026/27–2028/29 (announced in Budget 2026/27)	+ Direct CTC model: cash registers and invoicing systems link directly to the NRA’s tax administration system for real-time reporting. Technical details pending, but phased integration by taxpayer category is expected.
Nigeria	+ B2B, e-reporting	+ The Nigerian tax authority, Federal Inland Revenue Service (FIRS) has confirmed that the second wave of e-invoicing and e-reporting will become mandatory on 1 July 2026. This is for taxpayers with annual	+ FIRS was announced as the national Peppol Authority, on 19 October 2025 responsible for the introduction of Peppol-based invoicing in the country. + B2B pre-clearance structured e-invoicing between

		revenues between N1 bn (625K €) and N5 bn (3.125K €). There will be a six-month soft landing on penalties – which come effective in 2027.	+ businesses via the government. Businesses may use a variety of 'Access points' to send the invoice to FIRS (same for buyers); and B2C transactions must be e-reported direct to FIRS within 24 hours but mandate on this to be confirmed. FIRS will return a QR code for inclusion on the B2C receipt for the buyer to validate if they wish.
South Africa	+ B2B (VAT transactions); B2G likely	+ Multi-year plan announced (Feb 2026), based on a 2025 draft law. Phased rollout expected 2026–27, full by 2028	+ Hybrid centralized model: all invoices (VATable) will be routed via the SARS central hub for real-time clearance. Invoices must be in a structured format and transmitted continuously (near-real-time) to SARS. The system will use accredited exchange providers (CTC)

4.2.3 The Asia and Pacific Region

Leaders in the field—including India, Kazakhstan, Singapore, South Korea, Taiwan, and Turkey—have already achieved substantial levels of market adoption. Following these developments, countries such as Indonesia, Russia, Thailand, and Vietnam have initiated nationwide programs. At the same time, a number of other jurisdictions are either launching new initiatives or expanding existing electronic invoicing and tax reporting frameworks to include broader user groups.

Regional approaches to implementation vary. In Central Asia, solutions tend to be more centralized, reflecting legacy systems and institutional preferences. In contrast, regions such as Southeast Asia, Japan, Oceania, and the Middle East more commonly adopt decentralized models for electronic invoicing and reporting, frequently leveraging frameworks such as Peppol. The Gulf region, in particular, is emerging as a significant hub for continuous transaction control (CTC) and e-invoicing initiatives, with Bahrain, Oman, and the United Arab Emirates advancing national projects. While earlier initiatives often relied on voluntary participation, several countries introducing new requirements are shifting toward mandatory compliance regimes.

APEC economies are undertaking coordinated efforts to improve interoperability in electronic invoicing, building on the 2023 Principles for the Interoperability of Electronic Invoicing Systems in the APEC Region [9]. This initiative is intended to strengthen understanding of e-invoicing policies, infrastructure, and operational processes across member economies, while supporting more consistent and effective implementation of the principles.

The principles were developed by the APEC Committee on Trade and Investment in collaboration with the APEC Digital Economy Steering Group. Their development was informed, in part, by the ABAC 2022 report to APEC leaders and related inputs, which identified e-invoicing as a key enabler of digital supply chain finance and as a mechanism for improving efficiency, particularly for microenterprises and small and medium-sized enterprises (SMEs).

Upcoming and confirmed requirements:

Country	Scope	Status	Model/requirements
Malaysia	+ B2B, B2G, B2C, e-reporting	+ Phase 4 for taxpayers with turnover of RM 1–5 million (~€217,000–€1.08 million) is active from January 1, 2026. This cohort benefits from an interim relaxation period ending December 31, 2027. Micro-businesses under RM 1 million (~€217,000) are permanently exempt.	+ Centralized CTC clearance model via the government's MyInvois XML/JSON portal or API. Business-to-business exchange is supported by voluntary integration with the Peppol-based MY PINT framework.
Oman	+ B2B, e-reporting	+ Phase 1 starts with 100 large VAT-registered companies in Aug 2026; all large VAT taxpayers from Feb 2027; all remaining VAT taxpayers from Aug 2027.	+ 5-corner model, certified service providers, Peppol based e-invoicing framework
Philippines	+ B2B, B2C, e-reporting	+ The Philippines Bureau of Internal Revenue (BIR) restarted its pilot for B2B e-invoicing in March 2025 – but the first wave completion has now been extended from March to 31 December 2026. This includes large taxpayers and e-commerce businesses. Following waves (B2C and exporters) will follow in 2027 + Voluntary e-reporting was running in 2022. At a later stage the project was suspended. No new date announces for compliance yet.	+ Structured e-invoices, which in-scope businesses must issue to their customers. Invoices are created with a digital signature and transmitted to the authorities in JSON format. There is no requirement for a pre-clearance or e-invoice exchange. Taxpayers may use EIS invoice accreditation and invoice transmission system; and + Electronic Sales Reporting, 3-day listing of transactions being transmitted to the authorities; not a pre-clearance e-invoicing model. This may be done in either JSON or XML format.
Singapore	+ B2B / B2G / B2C	+ April 1, 2028: newly GST-registered entities and existing GST-registered entities with annual supplies ≤ SGD 200k; April 1, 2029: ≤ SGD 1 million; April 1, 2030: ≤ SGD 4 million; April 1, 2031: > SGD 4 million	+ InvoiceNow, Peppol
United Arab Emirates	+ B2B, e-reporting	+ Mandatory for in-scope business transactions	+ Peppol based 5-corner model, accredited service providers

		from 1 Jan 2027 if revenue is at least AED 50m, and from 1 Jul 2027 if below AED 50m.	
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4.2.4 North America

In the business-to-business (B2B) and business-to-government (B2G) sectors, the strategies and goals widely vary from those observed in European and Latin American contexts. Presently, U.S. companies are prioritizing the enhancement of internal processes, specifically in the areas of 'order-to-cash and accounts receivable (AR) automation' along with 'purchase-to-pay and accounts payable (AP) automation'. Research indicates that the United States has moved beyond the initial stages of adopting electronic invoicing, with a growing interest in this area.

Because the U.S. does not have VAT, but a sales tax system, invoices are not considered any different from other business documents. This has delayed the acknowledgment of the benefits provided by e-invoicing network operators within the U.S. market. However, a steady increase in the number of such operators is now anticipated. International corporations operating in the U.S. are mandated to adhere to local regulations, often engaging third-party service providers for compliance.

There is a scarcity of surveys that include or relate to e-invoicing, with most concentrating on the AP aspect and largely targeting significant enterprises.

The findings from various sources for larger corporations are summarized as follows:

- + Approximately two-thirds of businesses send invoices as PDFs via email, but less than 20% dispatch structured e-invoices through Electronic Data Interchange (EDI). Major suppliers are either willing or obliged to transmit electronic files in the format preferred by their customers, establishing connections on an individual basis. These suppliers do not show a preference for any particular network, being part of many.
- + Over half of the invoices are still received in unstructured formats, such as paper or PDF, making the extraction of data from machine-readable PDFs increasingly popular.
- + Supplier portals have been established.
- + Commercial Cards, including purchasing cards, ePayment, and virtual cards, are extensively used for high-volume, low-value purchases, with a moderate trend of increase and expansion into high-value transactions.
- + The use of third-party services, such as e-invoicing networks or Software as a Service (SaaS) platforms, is growing, offering substantial cost savings over significant in-house investments.
- + There is a noticeable trend towards invoice financing and novel payment solutions.

It is important to note, however, that the majority of U.S. businesses employ fewer than 500 people, and their practices and preferences are not adequately represented in findings as mentioned above. Should the market trends align with those in other countries, a significant surge in the adoption of third-party cloud services is anticipated.

Outside of North America, tax authorities and the public sector play a significant role in driving e-invoicing adoption, a trend not as prevalent in North America despite the U.S. Federal Administration's previous announcement of an e-invoicing mandate. Following a pilot program that evaluated the advantages and feasibility of e-invoicing within the public sector, the Office of Management and Budget issued a directive for federal agencies to transition to electronic invoicing. The goal was for these agencies to start processing all invoices electronically by the end of the 2018 fiscal year. Although digitalization has begun within federal administration, it has yet to significantly influence B2B e-invoicing as seen with B2G mandates in Europe.

To facilitate the increase in B2B efficiency, the Federal Reserve initiated a program aimed at boosting e-invoice adoption across U.S. businesses of all sizes. This initiative led to the establishment of the Digital Business Networks Alliance (DBNA).

The market evolution in Canada mirrors that of the U.S.

4.2.5 Latin America

Latin America remains one of the most mature and influential regions in the global e-invoicing landscape. Many countries in the region pioneered the adoption of Continuous Transaction Control (CTC) models and have accumulated more than a decade of operational experience with real-time or near-real-time invoice validation and tax reporting.

As a result, the regional focus has largely shifted from the initial implementation of electronic reporting and invoicing toward the optimisation and expansion of existing frameworks. Tax authorities continue to refine data quality requirements, strengthen validation mechanisms, and extend coverage to additional taxpayer segments. Increasing attention is also being paid to the integration of invoicing data with broader tax reporting, customs, logistics, and business intelligence initiatives.

The widespread adoption of electronic invoicing has generated significant benefits for tax administrations through increased transparency, improved tax collection, and a reduction in tax evasion. Several countries have reported substantial improvements in tax compliance and administrative efficiency following the introduction of mandatory electronic invoicing frameworks.

For businesses, Latin America continues to represent one of the most demanding regulatory environments globally. Compliance requirements are typically characterised by detailed technical specifications, frequent updates, and close integration with tax authority platforms. Consequently, organisations operating across multiple countries often require dedicated compliance capabilities and specialised technology solutions.

At the same time, the region provides valuable insights into the future evolution of digital trade. The extensive use of structured transaction data has demonstrated how electronic invoicing can serve as a foundation for broader digitalisation initiatives, including automated tax reporting, supply chain visibility, digital payments, and integrated trade ecosystems.

Given its maturity and accumulated experience, Latin America continues to serve as an important reference model for governments and policymakers worldwide that are designing or expanding their own e-invoicing and digital reporting frameworks.

These upcoming requirements (all future or announced mandates, not existing ones) are summarized below.

Country	Scope	Status	Model/requirements
Argentina	+ B2B	+ Enforced from July 1, 2026	+ ARCA Resolution 5824: Financial institutions, insurers, credit card/payment operators, private educational institutions, and pre-paid health providers must issue electronic receipts.
Bolivia	+ B2B	+ Deadline extended to Sept 30, 2026	+ Extended for certain groups in the phased e-invoicing rollout. From Oct 1, 2026, all

			such taxpayers must use the assigned online invoicing.
Brazil	+ B2B, B2G, B2C, e-reporting	+ Reporting of new dual-VAT (IBS/CBS) fields on electronic invoices (NF-e/NFS-e) is mandatory starting August 2026	+ Amendment to existing CTC model. Taxpayers must add the newly defined IBS and CBS tax fields to all standard electronic document XML formats.
Chile	+ B2B	+ Compliance by Nov 1, 2026	+ Electronic invoices and dispatch guides for goods transport must include new data fields (origin/destination, transport ID, goods description, transfer classification)
Dominican Republic	+ B2B, B2C	+ Effective May 15, 2026	+ Mandatory e-invoicing for micro and small businesses, unclassified taxpayers and state entities
Peru	+ E-reporting	+ Phased – postponed to June 2026	+ Main taxpayers (2024 net income > ~US\$3.5M) required to maintain electronic Sales and Purchases Registers (RVIE/RCE) via the SIRE system.

4.2.6 Europe

At the turn of the millennium, European Union regulatory bodies primarily focused on eliminating legal barriers to e-invoicing, initiating standardization projects, establishing the Peppol interoperability framework, and advancing **Business-to-Government (B2G) e-invoicing**. In this context, approximately 300,000 public entities were mandated a few years back to upgrade their systems and workflows in order to accommodate standardized e-invoices. Subsequently, several nations have progressed to mandating e-invoicing for transactions with the public sector by suppliers.

The fragmented market structure across Europe has posed significant challenges for companies, leading to a preference for utilizing external **service and solution providers** for e-invoice processing and Business-to-Business/Government (B2B/B2G) exchange. Currently, approximately 1,000 providers are operational within Europe, handling significantly more than half of all B2B/B2G e-invoice transactions. The volume of e-invoices processed through these providers has seen a higher growth rate than direct data exchange for about the past five years, a trend expected to notably increase in the forthcoming years.

The **VIDA** initiative has prompted Member States to review existing e-invoicing frameworks and to consider or implement mandatory B2B e-invoicing at the domestic level. As a result, it is anticipated that all EU Member States will have introduced or initiated national digital reporting platforms and e-invoicing requirements by 2030.

Given the design of the framework, many countries are expected to adopt decentralised models, often aligned with the Peppol network and based on a so-called “five-corner” architecture for data exchange within the next couple of years.

Upcoming and confirmed requirements:

Country	Scope	Status	Model/requirements
Belgium	+ E-reporting	+ Planned under the federal coalition agreement; expected timing 2028 but not yet transposed into Belgian law.	+ Peppol based 5-corner model
Croatia	+ B2B	+ Small taxpayers are to come into the regime from 1 January 2027. EU ViDA intra-community e-invoicing starts in July 2030.	+ Peppol based 5-corner model
France	+ B2B: national level; e-reporting incl. B2C	+ Legally mandated; rollout starting September 1, 2026, for receipt by all companies and mandatory issuance for large and medium-sized enterprises; September 1, 2027, for SMEs and micro-enterprises.; The e-reporting of invoice data is an integral part of the B2B mandate, rolling out with the same deadlines.	+ 5-corner Modell + Transactions via certified service providers (PA)
Germany	+ B2B	+ From January 2027, companies with revenues exceeding 0.8 million euros, and from January 2028 all businesses, will be required to issue structured e-invoices. The timeframe for the e-reporting of invoice data is to be determined later, most likely aligned with the ViDA deadlines.	+ Hybrid/decentralized model. Structured e-invoices must comply with EN 16931 (e.g., XRechnung, ZUGFeRD). Transmission via private service providers or direct exchange; no central government database/pre-clearance is mandated.
Greece	+ B2B	+ In Greece, mandatory e-invoicing for all businesses is being rolled out within 2026 in two phases, based on gross revenues of fiscal year 2023. + For businesses with annual gross revenues above €1 million, the deadline was March 2, 2026. + For businesses with annual gross revenues	+ Regarding the implementation model, businesses are required to either: + contract with a licensed e-invoicing service provider approved by the Greek Tax Administration, or + use the official invoicing application "timologio" provided by the Greek Tax Administration.

		below €1 million, the obligation starts from October 1, 2026.	
Latvia	+ B2B, e-reporting	+ The Latvian Parliament has officially adopted the amendment to the Law on Accounting, confirming the postponement of the mandatory B2B e-invoicing and e-invoice data reporting go-live date to 1 January 2028 (previously proposed go-live date was Jan 2026).	+ The Ministry announced their plans to develop a decentralized CTC e-invoicing model by allowing three invoice exchange methods, via the tax authority solution, PEPPOL, or via any method agreed upon between the parties
Ireland	+ B2B: in phases, e-reporting	+ Officially announced administrative rollout: November 1, 2028 (Phase 1); November 1, 2029 (Phase 2); July 1, 2030 (Phase 3), aligned with ViDA.	+ Structured e-invoices in accordance with EN 16931 (e.g., XML); Phase 1 links e-invoicing with real-time reporting for large enterprises; as of the same date, all companies must be able to receive e-invoices.
Norway	+ B2B	+ Planned dates are January 1, 2027, for the issuance of e-invoices between companies subject to statutory accounting requirements, and January 1, 2030, for digital bookkeeping, including the capability to receive e-invoices.	+ Mandatory issuance of e-invoices to recipients subject to statutory accounting requirements who are registered in ELMA and capable of receiving e-invoices.
Poland	+ B2B	+ The initial KSeF mandatory phases already commenced on February 1, 2026, and April 1, 2026; going forward, the final phase from January 1, 2027, will apply to the smallest businesses with very low, invoice-documented monthly turnover.	+ Structured invoices exclusively via KSeF 2.0; technical invoice standard FA(3) XML.
Slovakia	+ B2B, e-reporting	+ Legally enacted; the relevant provisions for the e-invoicing phase take effect from January 1, 2027; extension to cross-border transactions is planned for July 1, 2030. Voluntary adoption from 2026 possible.	+ Invoices must be issued as structured electronic documents in accordance with EN 16931; the official FAQs reference XML / Peppol BIS. Transmission and receipt are handled via a certified delivery service (“Digitálny poštár”), based on Peppol.

Slovenia	+ B2B	+ Law adopted by Parliament; effective from January 1, 2028.	+ E-invoice as a structured XML dataset. Permissible standards under the law: e-SLOG; companies must use at least one e-route provider.
Spain	+ B2B	+ Royal Decree 238/2026 is in force; however, its substantive application depends on a pending ministerial order. Thereafter, the timelines are +12 months for companies with turnover > EUR 8 million and +24 months for all others. Implementation is expected by October 2027 for companies with turnover above EUR 8 million and from October 2028 for all others.	+ Structured e-invoicing in accordance with EN 16931; permitted syntaxes: CII, UBL, EDIFACT, Facturae; Peppol BIS is allowed within the platform environment, provided it is UBL/EN 16931-compliant. Interoperability between private platforms is mandatory; in addition, invoice status and payment information are envisaged.
United Kingdom	+ B2B/B2G	+ Mandatory for all VAT invoices from 2029; the implementation roadmap is expected to be included in the 2026 budget in Q4.	+ The government favors a decentralized four-corner model in its design; international compatibility—particularly with Peppol—is explicitly under discussion but has not yet been defined as the final technical standard.

5. E-invoicing: Business Impact and Transformation

Asia Jane Leigh, Researcher of International Observatory on E-invoicing, Politecnico di Milano

The introduction of E-invoicing — whether driven by a national regulatory mandate or by a voluntary strategic decision — rarely leaves a company unchanged. Far from being a simple technology upgrade, the shift to electronic invoicing triggers a cascade of organisational and operational transformations that ripple across every function of the business. Finance teams must rethink how they validate and reconcile data. Procurement must redefine how it manages supplier relationships. IT must ensure that new systems integrate securely and at scale. Compliance officers must navigate an increasingly complex regulatory landscape. And executive leadership must frame all of these changes within a coherent strategic narrative.

This chapter examines the nature and depth of those transformations. It explores how different stakeholder groups within a company experience and respond to the introduction of E-invoicing processes, and it traces the broader organisational evolution that follows. It also considers how the drive for change does not stop once E-invoicing is in place: companies that successfully adopt E-invoicing consistently find themselves reaching for the next layer of digital innovation, generating new demand for complementary services.

5.1 The Stakeholder Landscape: Who Is Affected and How

No single department experiences the arrival of E-invoicing in isolation. The mandate lands differently depending on each team's existing processes, technology maturity, and tolerance for change. Understanding these differentiated impacts is essential for companies that want to manage the transition smoothly and capture its full potential.

Finance and Accounting

For finance and accounting teams, E-invoicing is simultaneously the most disruptive and the most immediately rewarding transition. The traditional invoice lifecycle — anchored in paper documents, manual data entry, and periodic reconciliation cycles — gives way to a continuous, digitally validated flow of structured data. Audit processes become more reliable as invoice data is automatically matched against purchase orders and delivery records, reducing the risk of discrepancies and shortening the time needed to close books at period end.

Reconciliation, in particular, is fundamentally altered. Where reconciliation once required teams to manually cross-reference entries across multiple systems, E-invoicing enables near real-time matching between ERP records and the data held by tax authorities or central platforms. The result is faster period-end closes, fewer manual corrections, and a significantly reduced risk of VAT errors. Reporting, too, becomes more structured: compliance reports are generated automatically, covering areas such as VAT validation, transaction-level checks, and alignment with revenue agency data — work that previously fell to human analysts working under time pressure.

Procurement and Supply Chain

In procurement and supply chain functions, the impact of E-invoicing is felt primarily through the speed and predictability it brings to supplier interactions. Payment cycles become more transparent: once an invoice is received and validated electronically, the timeline from receipt to due date is visible to all parties, removing uncertainty from cash flow planning on both sides of the transaction.

Supplier management evolves accordingly. The quality of master data — VAT numbers, tax codes, bank details — becomes critically important, since errors in these fields can cause invoices to be rejected automatically. This creates a strong incentive for procurement teams to invest in data governance and supplier onboarding processes that would previously have been

considered back-office concerns. The discipline imposed by E-invoicing, in other words, raises the bar for data quality across the entire supplier relationship.

The introduction of supply chain finance solutions also accelerates in this environment. Increased transparency around invoice timelines enables dynamic discounting arrangements and reverse factoring programs that were difficult to administer without reliable, real-time invoice data. For small suppliers E-invoicing platforms open access to early payment options and invoice trading mechanisms that can meaningfully improve liquidity.

Information Technology

IT departments face a set of challenges that are technical in nature but strategic in consequence. The integration of E-invoicing systems with existing ERP platforms, document management systems, and workflow tools demands careful architectural planning. Data must flow accurately and securely between systems that were often designed without interoperability in mind. This is a challenge that has pushed many organisations to accelerate their adoption of integration middleware, APIs, and robotic process automation.

Security and scalability are also elevated concerns. E-invoicing involves the exchange of sensitive financial and tax data at high volumes and, in many cases, in near real-time. This requires IT teams to implement robust data protection standards, including compliance with GDPR and international data protection norms, while ensuring that systems can handle peak invoice volumes. In many organisations E-invoicing acted as a catalyst for broader technology modernisation that extends well beyond the invoicing function itself.

Compliance and Legal

Compliance and legal teams find that E-invoicing raises the stakes for regulatory adherence while simultaneously providing better tools to meet those obligations. In jurisdictions with active mandates, invoices must conform to precise technical and legal standards with resulting in tax authority rejections, penalties, or audit triggers. The compliance function must therefore develop a deep understanding of the applicable regulations, including rules around electronic signatures, document preservation, and VAT reporting.

At the same time, the automation of compliance checks significantly reduces the human error that is the most common source of regulatory risk. VAT validations, two- or three-way matching, and automatic cross-referencing with authority portals all contribute to a more controlled compliance environment.

Executive Leadership

For executive leadership, the significance of E-invoicing extends well beyond process efficiency. The adoption of a structured E-invoicing capability is increasingly seen as a marker of operational maturity and competitive readiness.

The strategic case is built on measurable ROI: faster payment cycles, reduced dispute resolution costs, lower audit risk, and improved cash flow predictability all contribute to a financial return that leadership can quantify. But the more significant opportunity lies in the data. A fully digital invoicing process generates a continuous stream of structured, high-quality financial data that can inform decision-making in ways that paper-based processes never could. Leaders who understand this potential treat E-invoicing not as a compliance burden, but as the foundation for a broader data strategy.

5.2 How Companies Evolve: Five Dimensions of Transformation

Upon observing the experience of large enterprises (e.g. with more than 250 employees) following the implementation of an E-invoicing system, the International Observatory on E-invoicing of Politecnico di Milano identified and analysed gradual yet profound shift in at least

five interconnected business dimensions: organisation, technology, compliance, finance, and collaboration. The study, which began in 2019 in relation to the introduction of an E-invoicing mandate in Italy, was validated by international experts and companies from across Europe through workshops, meetings, and selected interviews.

Organisational Transformation

The most visible organisational change is a redefinition of roles and responsibilities. Tasks that were once the domain of data entry clerks — manual capture, verification, and routing of invoice information — become automated, freeing human attention for more strategic work. Teams that previously monitored exceptions by scanning paper stacks now oversee automated workflows through dashboards, tracking KPIs that measure process performance rather than individual transaction accuracy.

This shift requires not just new tools, but new skills and new mindsets. Organisations have responded by creating specialist roles that did not previously exist: KPI managers responsible for defining and monitoring the metrics that govern P2P and O2C performance; process mining teams whose function is to analyse workflow data and identify inefficiencies; and digital preservation officers charged with ensuring that electronic documents meet archiving requirements over their legally mandated retention periods.

Transparency is another area enhanced by digitalisation. When eInvoices flow through structured, auditable channels, the visibility into process status improves dramatically. This heightened transparency has a secondary effect on the organisational aspect, reducing opportunities for internal fraud with manual handling, historically a key point of vulnerability, minimised.

Technology Transformation

From a technology perspective, E-invoicing has consistently acted as a powerful accelerant of digital transformation, particularly within P2P and O2C processes. The need to handle structured electronic data accurately and at scale has driven the adoption of a range of complementary technologies: electronic signature solutions, document management systems, warehouse management integrations, and intelligent process automation platforms.

Furthermore by generating detailed, timestamped records of every step in the invoice lifecycle, E-invoicing creates the raw material for process mining tools to analyse workflow performance with a level of granularity that was previously unattainable. Organisations use these insights to identify bottlenecks, pinpoint where exceptions cluster, and determine where robotic process automation can be most effectively deployed.

RPA itself has become a central feature of the post-E-invoicing technology landscape. Bots are deployed to handle repetitive tasks that fall outside the automated core of the E-invoicing platform but are too high-volume to be handled efficiently by human operators (e.g. data validation, system-to-system data transfer, exception logging, etc.).

Compliance Transformation

Compliance transformation is perhaps the most structurally significant dimension, because it involves a fundamental change in the relationship between the organisation and its regulatory obligations. Manual compliance where human judgement was applied to interpret and apply rules gives way to automated compliance, where rules are encoded into systems and applied consistently at transaction level.

The quality of ERP master data becomes a compliance issue in a way it never quite was in a paper environment. Errors in VAT numbers, tax codes, or supplier identifiers that might once have been caught and corrected during manual processing now cause invoices to be rejected

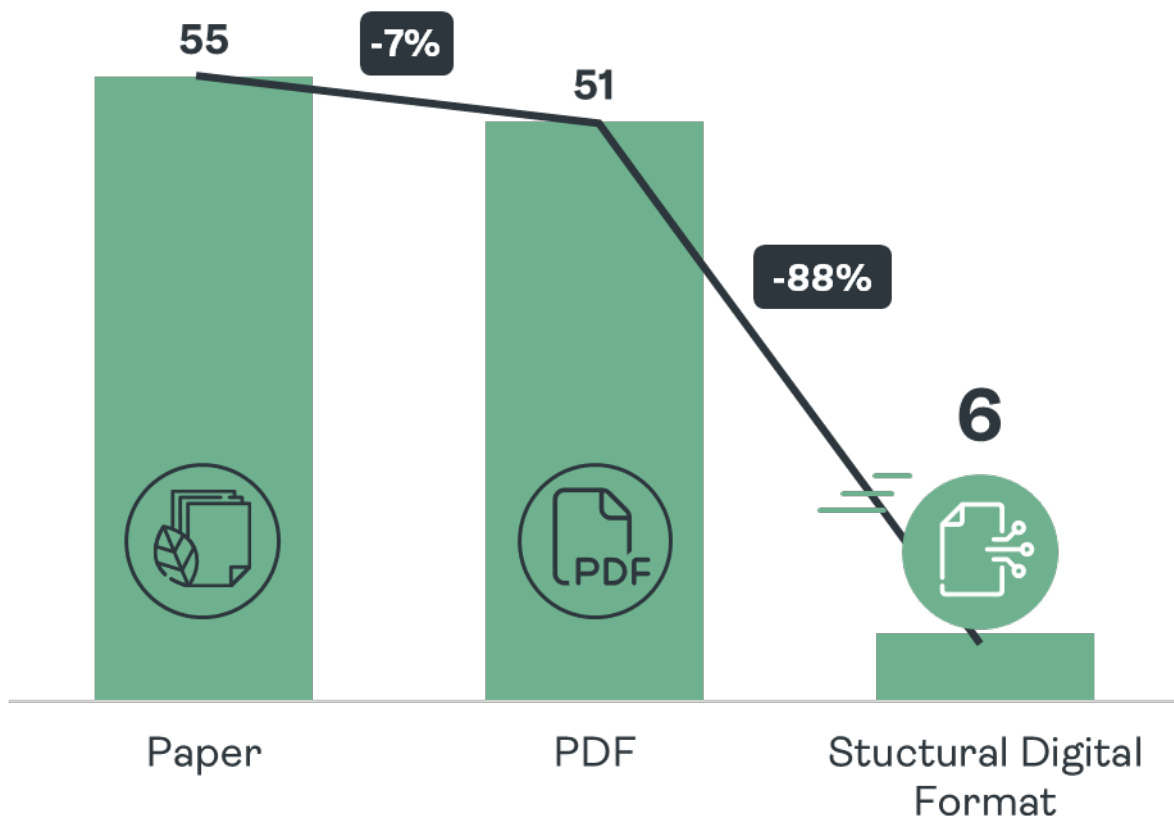
before they can be processed. This disciplines organisations to maintain data quality standards that have positive effects well beyond the invoicing function.

Ensuring alignment between ERP records and the data held on revenue agency portals provides also a near real-time compliance checkpoint. Exceptions are flagged by the system rather than discovered during audits, giving organisations the opportunity to correct errors before they become regulatory problems. The compliance reporting that emerges from these automated processes gives auditors access to higher-quality, more comprehensive information than was previously available, often shortening audit cycles and reducing the costs associated with regulatory review.

Financial Transformation

In financial terms, E-invoicing's most immediate impact is the cost savings resulting from increased efficiency and reduced times. According to the most recent studies by the International Observatory on E-invoicing of Politecnico di Milano, which mapped the time saved by switching from a paper-based invoicing system to a PDF-based one and then to a structured digital format, the time saved by switching from PDF to digital is roughly 88%, resulting in significant cost savings.

Minutes per Individual Invoice



The analysis focused exclusively on actual activity time. It does not consider issues related to waiting for a response from the supplier and the payment phase

Moreover, the predictability introduced by structured, transparent invoice timelines allows treasury functions to forecast payment obligations with greater precision, reducing the need for precautionary cash reserves and enabling more sophisticated liquidity management.

For large enterprises, the availability of reliable invoice data has enabled the development of more sophisticated supply chain finance programs. Dynamic discounting — where buyers offer suppliers early payment in exchange for a discount — and reverse factoring — where a financial institution pays the supplier early against confirmed invoices — both become more viable when invoice status is transparent and automated. These instruments allow large buyers to support their supply chains financially while generating a return on their own surplus liquidity.

For smaller companies, the options differ but are no less significant. E-invoicing platforms create new mechanisms for converting accounts receivable into immediate cash — through invoice trading platforms and auction mechanisms that allow suppliers to sell their receivables to the highest bidder. This democratisation of supply chain finance represents one of the more far-reaching financial consequences of E-invoicing adoption.

Collaboration Transformation

Perhaps less immediately obvious than the organisational or technology changes, the transformation in collaboration is nonetheless profound. Internally, E-invoicing breaks down information silos between finance, procurement, IT, and compliance that had previously been maintained by separate paper-based processes and incompatible systems. The shared data layer created by a structured E-invoicing platform enables cross-functional visibility and coordination that changes how departments interact.

Externally, the shared standards and protocols underpinning E-invoicing — including networks such as Peppol — create a common language for business-to-business and business-to-government document exchange that reduces friction in supplier and customer relationships. Companies that are already operating on these networks can onboard new partners more quickly, process disputes more transparently, and respond to regulatory changes more efficiently.

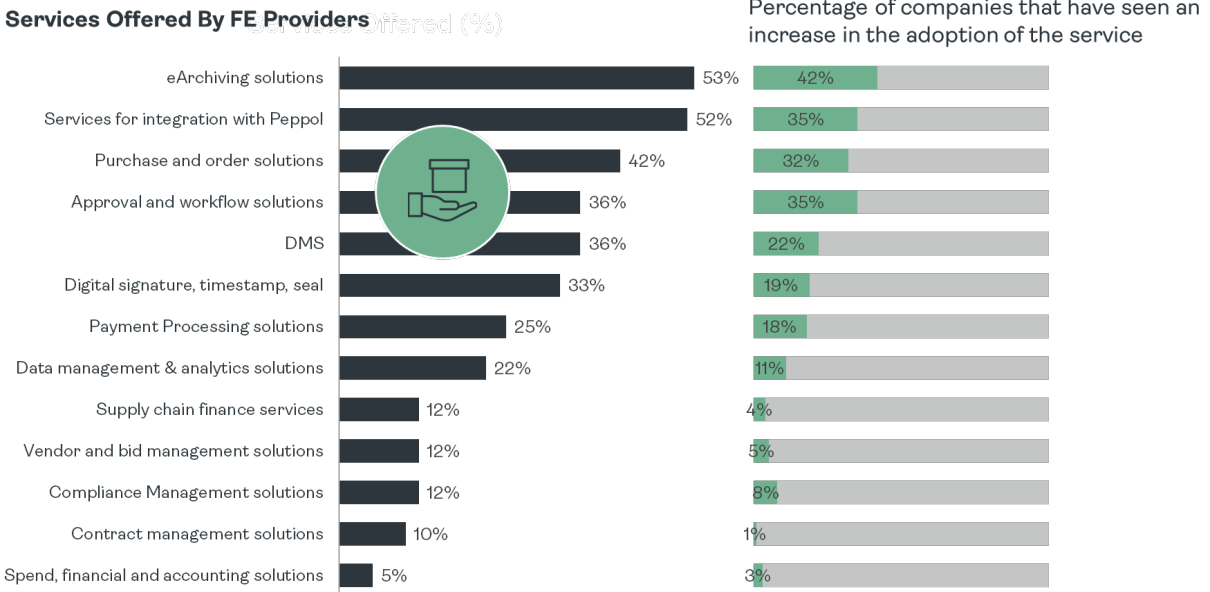
5.3 Beyond Compliance: The Drive for Further Innovation

If the adoption of E-invoicing were simply a compliance exercise one might expect the demand for new services to plateau once the mandate was met. In practice, the opposite tends to occur. Companies that have successfully implemented E-invoicing processes find that the experience of digitisation creates both new capabilities and new needs. The visibility, the data quality, and the operational discipline that E-invoicing instils all point toward further opportunities and generate demand for the services that can unlock them.

Complementary Services and Horizontal Adoption

The most immediate expression of this evolving demand is the uptake of services that complement the E-invoicing core. According to a 2024 survey by the International Observatory on E-invoicing of Politecnico di Milano document archiving and management solutions rank among the most widely adopted in the aftermath of mandate implementation. This is a reflection of both the legal requirements around electronic document retention and the growing recognition that digital archives, properly structured, are a strategic asset rather than a compliance cost.

Integration with structured exchange networks such as Peppol has also seen strong adoption, as companies recognise that the value of E-invoicing is amplified when it is connected to a wider ecosystem of trading partners operating on the same standards. The more comprehensive a country's E-invoicing mandate — in terms of coverage, format requirements, and enforcement — the stronger this horizontal adoption effect tends to be.



Process Automation as the Next Frontier

As companies become more comfortable with structured data flows and automated compliance, their attention turns to the broader P2P and O2C processes that surround the invoicing transaction itself. This drives investment in order management automation, goods receipt confirmation, dispute resolution workflows, and supplier portal capabilities, all of which are enabled by, and build upon, the E-invoicing foundation.

The data generated by mature E-invoicing implementations provides the raw material for detailed workflow analysis, revealing inefficiencies that span departmental boundaries and pointing toward automation opportunities that individual departments could not identify on their own.

A Platform for Broader Digital Strategy

Taken together, these trends lead to a consistent conclusion: E-invoicing, once adopted, does not mark the end of a transformation journey. It marks the beginning of one. The organisations that extract the most value from E-invoicing are those that treat it not as a standalone compliance requirement, but as the first element of a more comprehensive digital infrastructure.

As E-invoicing regulations continue to expand globally, this dynamic is set to intensify. Countries with structured and comprehensive mandates are already seeing higher rates of adoption for related P2P and O2C services, and this trend is expected to deepen as regulatory coverage broadens and as the technology ecosystem around E-invoicing matures. For companies operating in or preparing to enter these markets, the strategic implication is clear: the question is not whether E-invoicing will change the business, but how far that change will reach and how effectively the organisation positions itself to benefit from it.

6. Recommended Roadmap for Companies

The increasing convergence of e-invoicing, digital reporting requirements, tax compliance, and broader digital trade initiatives is fundamentally reshaping the operational environment for organisations worldwide. What initially emerged as isolated compliance projects has evolved into a continuous transformation affecting finance, procurement, tax, information technology, and supply chain operations.



The deluge of new mandates is expected to continue, underscoring the need for organisations to re-evaluate their existing fragmented infrastructures to align more closely with future demands. Electronic invoicing and tax reporting should be viewed not as a project with an end date but as an ongoing journey towards full Integrated Digital Trade.

As regulatory frameworks become more dynamic and interconnected, organisations are required to establish scalable and adaptable operating models capable of supporting both compliance obligations and broader business automation objectives. In this context, the successful implementation of e-invoicing and integrated digital trade initiatives increasingly depends on a structured and long-term roadmap rather than isolated technical deployments.

This roadmap typically includes the assessment of current capabilities, the definition of an appropriate strategic model, the selection of suitable technology and service providers, the implementation and onboarding of trading partners, and the establishment of continuous monitoring mechanisms to manage ongoing regulatory change.

From our consultancy perspective, we have observed that many organisations' solutions and process frameworks are not ideally positioned for future challenges. We recommend a proactive assessment and strategic realignment towards the automation of Integrated Digital Trade to ensure readiness for upcoming developments.

6.1 Assessment: Current Maturity and Gap Analysis

A comprehensive assessment of the current organisational landscape represents the starting point for any e-invoicing or digital trade initiative. This assessment should extend beyond technical readiness and include organisational structures, business processes, governance models, data quality, and regulatory exposure.

Many organisations have historically implemented invoicing and reporting processes on a country-by-country basis, often resulting in fragmented architectures, inconsistent workflows, and multiple local solutions. While such approaches may have addressed short-term regulatory requirements, they frequently create operational complexity and increased maintenance costs over time.

The assessment phase therefore typically focuses on evaluating:

- + Existing invoicing and tax reporting processes
- + ERP and financial system capabilities
- + Current integration models with trading partners
- + Data quality and standardisation levels
- + Regulatory exposure across jurisdictions · Internal governance and ownership structures

A key objective is to determine the organisation's current level of maturity and identify operational, technical, and compliance-related gaps.

Organisations with lower maturity levels often rely heavily on manual intervention, local workarounds, and disconnected systems. In contrast, more mature organisations generally demonstrate:

- + Standardised end-to-end invoicing processes
- + Central governance structures
- + Structured and consistent master data
- + Automated integration between systems and platforms
- + Real-time visibility into transaction and compliance status

This assessment also provides the basis for prioritising implementation phases, defining future operating models, and identifying areas requiring investment or organisational change.

6.2 Strategy: Make or Buy and Centralised versus Decentralised Approaches

Following the assessment phase, organisations are required to define an appropriate strategic and operational model.

One of the most important decisions concerns the extent to which capabilities should be developed internally or sourced externally through specialised service providers. Historically, many large enterprises developed proprietary solutions to address local invoicing and reporting requirements. However, the increasing complexity and speed of regulatory change have significantly increased the operational burden associated with maintaining internally developed systems.

As a result, many organisations are increasingly relying on external platforms and managed services to support:

- + Regulatory monitoring and updates
- + Connectivity to tax authority platforms
- + Interoperability with trading partners
- + Document exchange and validation
- + Long-term archiving and compliance management

The decision between internal development and external sourcing is influenced by multiple factors, including organisational scale, internal technical capabilities, geographic footprint, regulatory complexity, and long-term cost considerations.

At the same time, organisations must determine the appropriate governance structure for compliance management. In practice, approaches typically range between highly decentralised local implementations and fully centralised global operating models.

Decentralised approaches may offer greater flexibility for local business requirements and country-specific regulations. However, they frequently result in duplicated efforts, inconsistent processes, limited visibility, and increased operational complexity.

In contrast, centralised models generally aim to establish:

- + Common governance structures
- + Harmonised processes and data models
- + Shared technology platforms
- + Central regulatory monitoring
- + Standardised integration frameworks

Many multinational organisations are therefore moving toward hybrid operating models, where strategic governance and technology standards are centralised while allowing limited local adaptations where necessary.

The strategic objective increasingly extends beyond pure compliance. Organisations are seeking to integrate invoicing, tax reporting, procurement, payments, and broader supply chain processes into a unified integrated digital trade architecture.

6.3 Vendor Selection: Criteria for Solution Providers

The selection of appropriate technology and service providers has become a critical success factor in e-invoicing and integrated digital trade projects.

The market has evolved significantly over recent years and now includes a wide range of providers offering different capabilities, operating models, geographic coverage, and technology architectures. As regulatory requirements continue to evolve globally, organisations increasingly require providers capable of supporting multi-country compliance and long-term scalability.

Vendor selection processes therefore typically consider both technical and operational criteria. Key evaluation areas often include:

- + Geographic coverage and regulatory expertise
- + Support for multiple invoice formats and standards
- + Interoperability capabilities and network connectivity
- + Scalability and performance
- + Integration capabilities with ERP and financial systems
- + Security, data protection, and compliance certifications
- + Long-term product and regulatory roadmap
- + Service quality and implementation support

Increasingly, organisations are also evaluating providers based on their ability to support broader digital trade capabilities beyond traditional invoicing, including procurement integration, tax reporting, payment processes, analytics, and supply chain automation.

Another important consideration is interoperability. As companies operate across multiple jurisdictions and exchange documents with numerous trading partners, the ability to connect seamlessly with external networks and platforms becomes increasingly important.

The long-term viability and adaptability of solution providers are also becoming more relevant as regulatory frameworks continue to evolve. Organisations therefore increasingly favour providers with strong international capabilities, active participation in standards initiatives, and established regulatory monitoring functions.



Our analysis indicates that many multinational corporations engage with 3 to 20 distinct electronic invoicing service providers for incoming invoices. The scenario is more fragmented on the outgoing invoice and tax reporting front, with organizations navigating between 20 to 160 different platforms, services, and portals.

6.4 Implementation: Phased Rollout and Change Management

The implementation of e-invoicing and digital trade initiatives typically represents a multi-year transformation programme rather than a single technical project.

Given the complexity of regulatory environments, system landscapes, and trading partner ecosystems, organisations increasingly adopt phased implementation strategies. These approaches help reduce operational risks while enabling gradual process harmonisation and organisational adaptation.



Transitioning to electronic and automated processes is generally beneficial. Nonetheless, within most organizations, it is recommended to conduct a thorough review and refinement of current processes before implementation. It is often possible to eliminate up to 30% of legacy inefficiencies without sacrificing functionality.

Implementation programmes often begin with pilot countries, business units, or trading partner groups before expanding to broader regional or global deployments. Common implementation phases include:

- + Assessment and design
- + Technical integration and testing
- + Regulatory validation and certification
- + Trading partner onboarding
- + Operational rollout and stabilisation

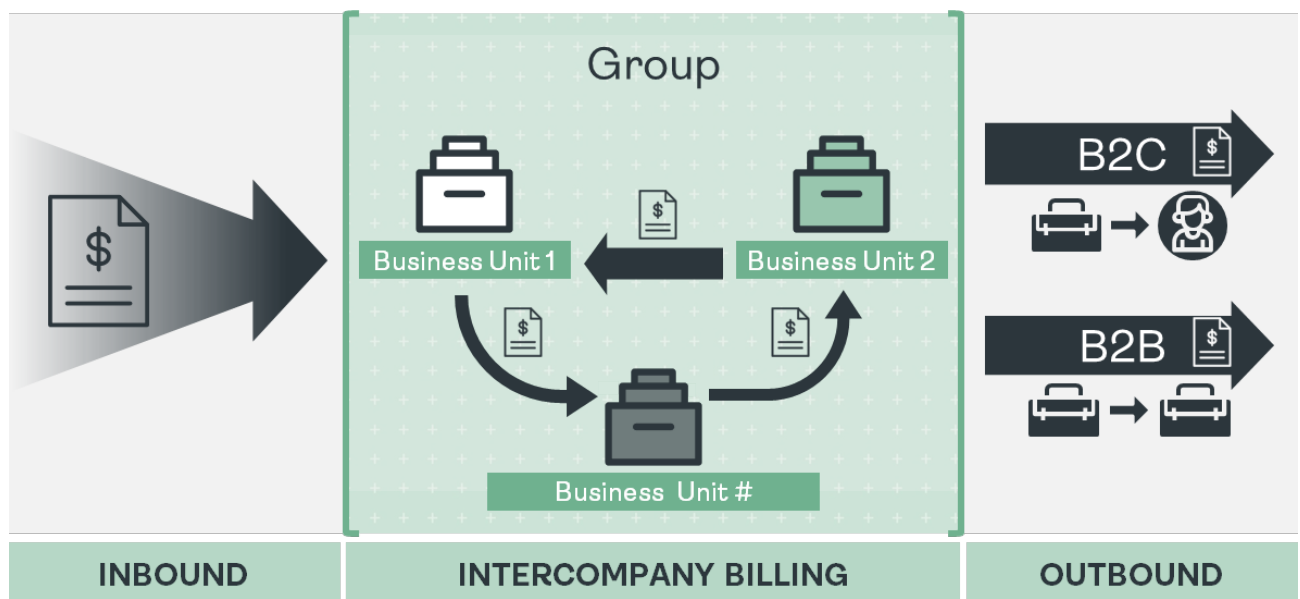
At the same time, organisational change management plays a central role in implementation success. E-invoicing initiatives frequently affect multiple departments, including finance, tax, procurement, legal, customer service, and information technology.

Successful organisations therefore typically establish:

- + Cross-functional governance structures
- + Executive sponsorship
- + Clear ownership and accountability
- + Dedicated programme management offices
- + Internal communication and training programmes

The transition toward structured electronic invoicing also frequently requires adjustments to existing business processes, data governance models, and internal controls. In many cases, organisations must improve master data quality, harmonise approval workflows, and redesign operational procedures to support real-time reporting requirements.

Prioritizing Digital Transition of Invoice Streams:



Inbound Invoices: Organizations with substantial purchasing power may prioritize the digital transition of inbound invoices to leverage their position and encourage suppliers towards electronic invoice submission.

Intercompany Billing: The potential for optimization within intercompany billing is often overlooked. This stream offers complete control to the organization and, in scenarios where all entities are within the same tax jurisdiction, invoices can be efficiently processed electronically or through account transfers. In instances of diverse tax jurisdictions, adopting a standardized approach to electronic invoices, mirroring external processes, ensures authenticity, integrity, and readability.

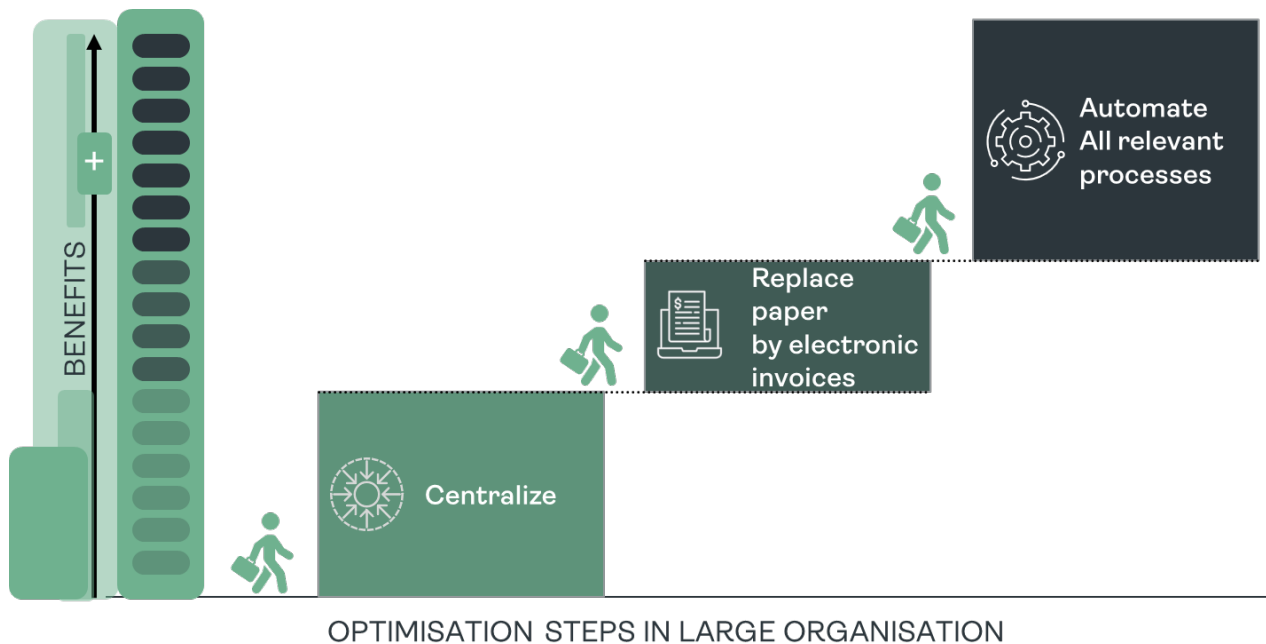
Outbound Invoices: Organizations with a high volume of consumer transactions (B2C) have begun issuing electronic invoices directly. Despite this, widespread adoption remains modest; achieving a 60% client utilization rate is deemed successful, with most organizations reaching only 45-60%, and the highest performers achieving 85-97%.

Furthermore, implementation timelines are increasingly influenced by external regulatory deadlines. As a result, organisations must balance long-term transformation objectives with short-term compliance obligations.

Approximately 30% of larger organizations continue to manage their invoices in a decentralized manner, frequently employing multiple ERP and accounting systems. Such a setup restricts financial managers from achieving comprehensive visibility regarding the quantity, total value, and status of invoices.

Adopting electronic invoicing typically establishes a centralized gateway for both sending and receiving invoices, significantly enhancing the transparency available to finance managers. This centralization is a crucial step towards optimizing working capital.

In a dispersed and extensive operational landscape, the greatest benefits are realized by adhering to these specific procedural steps:



6.5 Trading Partners: Managing Digital Collaboration

The successful adoption of e-invoicing and integrated digital trade processes depends not only on internal readiness but also on effective collaboration with external trading partners.

In practice, organisations often operate within highly fragmented ecosystems involving suppliers, customers, logistics providers, financial institutions, and service providers with varying levels of digital maturity. As a result, onboarding and managing trading partners remains one of the most challenging aspects of implementation.

Historically, many organisations attempted to implement proprietary supplier or customer portals. While these models enabled initial automation benefits, they frequently created scalability limitations and onboarding challenges, particularly for smaller trading partners.

Increasingly, organisations are therefore moving toward interoperable exchange models and network-based approaches that reduce complexity for both buyers and suppliers.

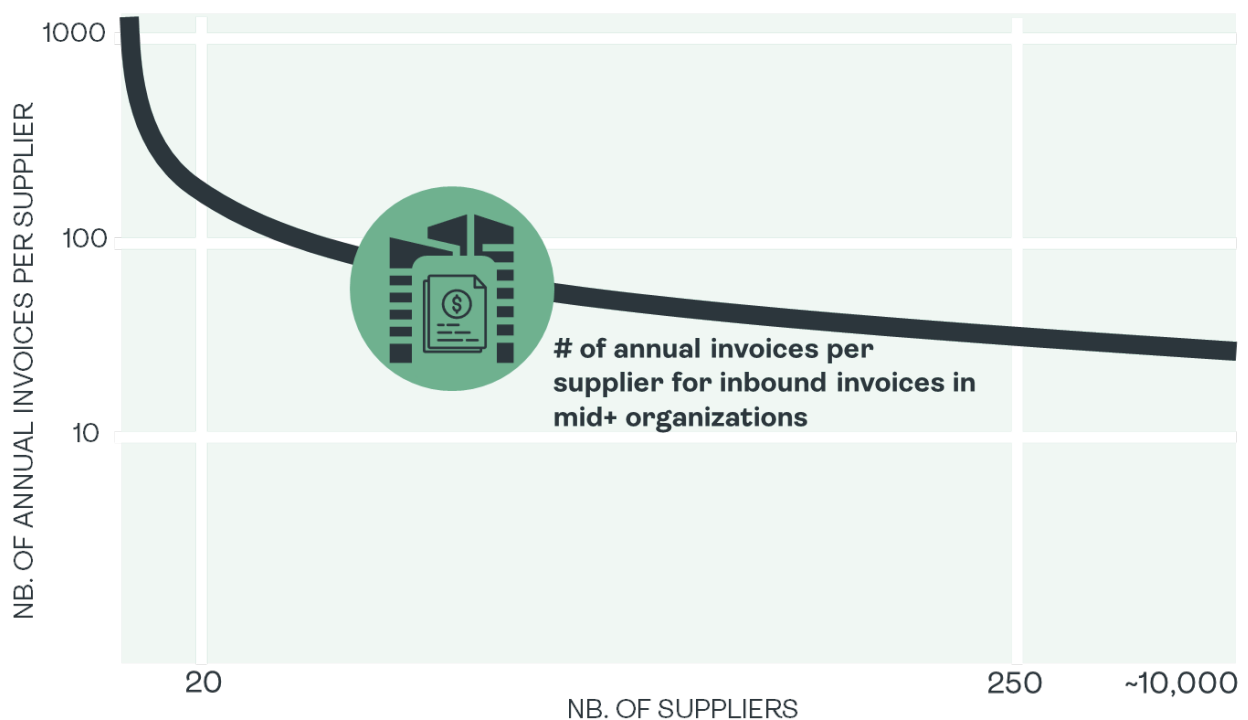
Successful digital collaboration strategies typically include:

- + Support for multiple exchange channels and formats
- + Standardised onboarding processes
- + Clear communication and support structures
- + Integration with existing supplier and customer workflows
- + Scalable interoperability frameworks

The onboarding of small and medium-sized enterprises (SMEs) requires particular attention. Many SMEs continue to operate with limited technical capabilities and may rely heavily on manual or semi-digital processes.

To support adoption, organisations and service providers increasingly offer simplified onboarding models, web portals, low-cost connectivity solutions, and managed services.

While the Pareto Principle (80:20 rule) holds validity across various sectors, it does not generally apply to invoice flows, with rare exceptions in certain industries. A more representative scenario for **inbound invoices** in medium to large organizations is as follows:



Typically, between 20 to 50 suppliers issue over 100 invoices annually. Around 1,000 suppliers may send between 10 to 100 invoices yearly, whereas the vast majority dispatch fewer than 10 invoices. Large corporations usually engage with approximately 10,000 suppliers and, depending on their product portfolio, a significant number of customers. Most of these suppliers and customers are small and medium-sized enterprises (SMEs) characterized by a highly fragmented IT infrastructure, with limited abilities in structured invoice data exchange and electronic archiving. Furthermore, these entities may operate across different jurisdictions, each with its unique legal requirements for tax-compliant invoicing, archiving, and adjustments for language and cultural differences.

The increasing adoption of interoperable frameworks such as Peppol and other multi-corner exchange models further supports broader digital collaboration by reducing the need for bilateral integrations and proprietary connections.

At the same time, digital collaboration is increasingly extending beyond invoicing into broader trade and supply chain processes, including procurement, logistics, payment processing, and tax reporting.

6.6 Continuous Monitoring: Adapting to Evolving Regulations

E-invoicing and digital reporting requirements continue to evolve rapidly across jurisdictions worldwide. Consequently, compliance can no longer be viewed as a one-time implementation project but instead requires continuous monitoring and ongoing adaptation.

Governments are progressively expanding reporting obligations, introducing new technical standards, increasing data requirements, and shortening reporting timelines. In many regions, tax authorities are moving toward real-time or near-real-time transaction visibility through Continuous Transaction Controls (CTC) models.

As a result, organisations require structured processes for monitoring and managing regulatory developments. Continuous monitoring activities typically include:

- + Tracking upcoming legislative changes
- + Assessing the impact on systems and processes
- + Managing updates to invoice formats and reporting schemas
- + Monitoring operational compliance and transaction status
- + Coordinating with technology and service providers

Increasingly, organisations are establishing dedicated compliance governance functions or centres of excellence responsible for coordinating regulatory monitoring activities across regions and business units.

At the same time, technology architectures must remain sufficiently flexible to accommodate future regulatory changes without requiring repeated large-scale re-implementations.

This requirement is driving increased adoption of:

- + Cloud-based architectures
- + API-driven integration models
- + Configurable compliance platforms
- + Standardised data models

For the purpose of automating business processes, organizations utilize over 150 messages, of which approximately 30 have fiscal significance and are, eventually, required for digital submission to tax authorities. A majority of business operations are either directly or indirectly influenced by tax and audit regulations. Consequently, various items listed in the forthcoming chart may be targeted for digitization and data exchange Continuous Transaction Control (CTC) models.

The digitization process encompasses numerous aspects of business, significantly impacting the handling of tax-relevant documents:



The anticipated evolution of compliance and tax requirements is set to encompass a wide range of fiscal documents, including but not limited to invoices, payments, payment receipts, credit notes, debit notes, waybills, and monthly salary statements. Below is a comprehensive overview of the expected developments:

- + The entire lifecycle of invoices, from issuance to settlement, will be subject to meticulous tracking and tracing.
- + There is an anticipated transition from periodic post-audit reporting mechanisms towards the implementation of real-time electronic Continuous Transaction Controls (CTC) systems.
- + The obligation to participate in the electronic cycle is expected to extend to buyers, marking a shift from initial regulations that primarily targeted suppliers. This change is already being observed in multiple jurisdictions.
- + Mid-term directives will also encompass cross-border invoicing, as demonstrated by the European Union's ViDA project.
- + The scope of regulatory oversight is poised to expand to include inventory reporting, ensuring seamless integration with the physical supply chain. This entails tracking and tracing supplies from their point of entry into the domestic market or production phase through to their sale and correlating this data with Integrated Digital Trade documentation such as invoices.
- + Tax authorities in several jurisdictions are mandating that businesses utilize only accredited service providers for CTC reporting or message transmission to trade partners.

The long-term objective for many organisations is therefore shifting from reactive compliance management toward proactive digital trade enablement.

In this context, organisations that establish scalable governance structures, interoperable architectures, and continuous monitoring capabilities are generally better positioned to manage regulatory complexity while simultaneously supporting broader business transformation initiatives.

6.7 Building an Integrated Financial and Compliance Architecture for Digital Trade

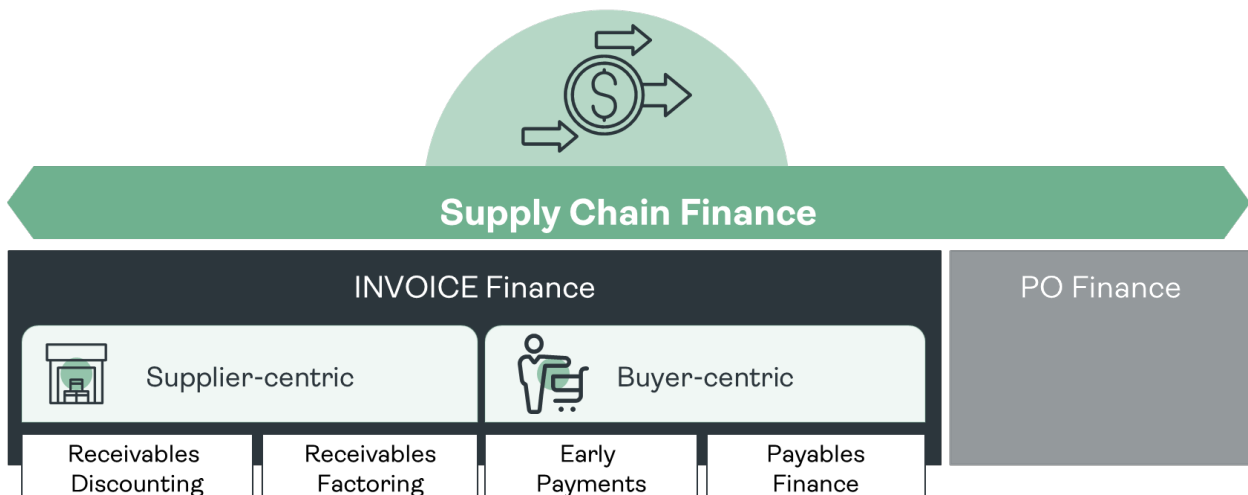
6.7.1 Invoice Finance as a Strategic Lever for Supply Chain Finance

Invoice finance has evolved from a tactical liquidity instrument into a strategic component of working capital management. In an environment characterized by rising interest rates, increased supply chain volatility, and extended payment cycles, companies are under growing pressure to optimize cash flow while maintaining stable supplier relationships.

Electronic invoicing plays a central enabling role in this context. By providing structured, real-time data on receivables, it improves transparency, accelerates invoice validation, and reduces disputes. This enhances the reliability of underlying assets used in financing arrangements and allows financial institutions to make faster and more accurate risk assessments.

Despite strong market growth projections, supply chain finance solutions still cover only a fraction of their theoretical potential. This indicates that many companies have yet to systematically evaluate invoice finance as part of a broader financial strategy.

From a decision-making perspective, companies should first determine whether their primary objective is to increase liquidity, reduce financial risk, improve supplier relationships, or achieve a combination of these goals. The selection of appropriate instruments depends on this strategic positioning [10].



Receivables or invoice discounting represents a flexible solution primarily suited to companies with diversified and creditworthy customer bases. It allows organizations to selectively monetize receivables while retaining control over customer relationships and collections. This approach is particularly attractive for companies seeking liquidity without outsourcing operational processes.

Factoring, by contrast, offers a more comprehensive solution that combines financing with outsourced credit management. In addition to immediate liquidity, the factor typically assumes responsibility for collections and, in some cases, credit risk. This makes factoring particularly relevant for companies operating in higher-risk environments or those seeking to reduce internal administrative burdens.

Early payment models, including dynamic discounting, shift the perspective from external financing to internal optimization. In such arrangements, buyers use their liquidity to offer suppliers early payment in exchange for discounts. The effectiveness of these models is highly dependent on process efficiency. Companies relying on manual or paper-based invoicing frequently fail to capture available discounts due to processing delays, whereas automated environments enable systematic exploitation of these opportunities.

Payables finance, often referred to as reverse factoring, represents a strategic instrument for large buyers seeking to stabilize their supply chains. By leveraging their own creditworthiness, buyers enable suppliers to access financing at more favourable rates. This approach is increasingly used as a tool to strengthen supplier resilience, particularly among small and medium-sized enterprises.

In conclusion, invoice finance should not be treated as an isolated financial mechanism. Its full value is realized when it is embedded within a digitally integrated environment that connects invoicing, procurement, and payment processes. Companies that adopt such an integrated approach are better positioned to optimize working capital while simultaneously enhancing operational efficiency.

6.7.2 Payment Solutions and E-invoicing: Addressing Structural Inefficiencies

Late payments remain a persistent structural challenge in both domestic and international trade. They negatively affect liquidity, increase financing costs, and place disproportionate pressure on smaller suppliers. The underlying causes are often operational rather than financial, including manual processing, data inconsistencies, and lack of integration between invoicing and payment systems.

E-invoicing addresses several of these issues by enabling standardized, structured data exchange. This reduces discrepancies, accelerates approval workflows, and improves overall process transparency. At the same time, regulatory developments—particularly the introduction of continuous transaction controls—are forcing organizations to adopt more disciplined and standardized processes, indirectly contributing to improved payment performance.

Parallel to these developments, the payments landscape is undergoing significant transformation. The emergence of instant payment schemes, request-to-pay frameworks, and API-based payment initiation is enabling a shift toward real-time financial transactions. These innovations allow payments to be triggered directly from invoice approval processes, thereby reducing delays and improving cash flow predictability [11].

A key strategic development is the increasing integration of invoicing and payment functionalities within unified platforms. Rather than treating invoicing and payment execution as separate processes, leading solutions now offer end-to-end capabilities covering invoice issuance, validation, approval, and settlement. This integration reduces reconciliation efforts, enhances visibility, and supports more accurate cash flow forecasting.

For companies, the critical decision lies in whether to maintain fragmented systems or to transition toward integrated invoice-to-pay environments. The latter requires investment in technology and process redesign but offers substantial long-term benefits in terms of efficiency, control, and financial performance.

6.7.3 E-procurement as a Core Element of Integrated Digital Trade

E-procurement has become a fundamental component of digital transformation strategies, extending far beyond its traditional role in sourcing and purchasing. It now represents the starting point of an integrated, end-to-end transaction lifecycle that encompasses ordering, delivery, invoicing, and payment.

The absence of digital procurement processes significantly limits the potential benefits of e-invoicing. Without structured purchase orders and automated matching mechanisms, organizations continue to rely on manual reconciliation, which increases error rates, prolongs processing times, and contributes to payment delays.

Modern e-procurement solutions enable the digital exchange of structured data across the entire procure-to-pay cycle. This includes supplier onboarding, electronic purchase orders, delivery confirmations, and invoice matching. By establishing a consistent data foundation,

these systems facilitate higher levels of automation and reduce the need for manual intervention.

From a decision-making perspective, companies should evaluate e-procurement solutions based on their ability to integrate with existing enterprise systems, support supplier connectivity, and ensure data standardization. The use of internationally recognized standards, such as those promoted by interoperability networks, is increasingly important for enabling cross-border transactions and reducing integration complexity.

Empirical evidence from market studies [12] indicates that organizations with mature e-procurement implementations achieve significantly higher levels of automation, often exceeding 80% touchless invoice processing. This translates into substantial reductions in operational costs and processing times, as well as improved compliance and auditability.

Ultimately, e-procurement should be viewed not as a standalone function but as the structural foundation upon which integrated digital trade is built. Companies that fail to digitize procurement processes risk limiting the effectiveness of downstream initiatives in invoicing, payments, and tax compliance.

Issue	Impact of procurement managers on invoice process automation
Heterogeneous processes and systems for e-procurement and e-invoicing	+ Holistic digitalisation and automation strategy
Supplier management and engagement	<ul style="list-style-type: none"> + Reducing fraud and identifying bad actors + Considering only the master data of tax-registered partners and increasing tax compliance + Streamlining and automating supplier interaction from onboarding to the processing of invoices and updating of master data
Contract and catalogue management	+ Avoiding invoicing with incorrect amounts, ensuring accuracy of prices and compliance with synchronisations and data validations
Discount management	+ Applying discounting models that can be reflected in business process automation solutions
Fake invoices, no or incomplete supply behind an invoice	+ Establishing tax compliance processes, including evidence for supplies behind invoices
Purchase process	<ul style="list-style-type: none"> + Increasing the proportion of electronic orders and invoices + Automating the matching process
Evidence for tax compliance	+ Storing the documents in a way they can be retrieved in the same index for the entire process cycle

6.7.4 VAT and Sales Tax Automation: Toward Real-Time Compliance

The regulatory landscape for indirect taxation is undergoing a profound transformation. Governments worldwide are moving away from periodic reporting models toward real-time or near-real-time transaction controls. This shift requires companies to rethink how tax compliance is managed within their systems and processes.

Traditionally, tax determination and reporting have been handled through separate systems or manual processes, often disconnected from core transaction flows. This approach is increasingly inadequate in a real-time reporting environment, where data must be accurate, complete, and immediately available to tax authorities.

The integration of VAT and sales tax automation into e-invoicing systems represents a critical step toward addressing these challenges. By embedding tax logic directly into transaction processes, companies can ensure that invoices are compliant at the point of issuance, rather than relying on subsequent corrections or reconciliations.

From a strategic perspective, companies must evaluate whether their current systems are capable of supporting continuous compliance across multiple jurisdictions. This includes the ability to adapt to frequently changing regulations, manage diverse reporting requirements, and maintain audit-ready data structures.

The European Union's "VAT in the Digital Age" initiative exemplifies the direction of travel. It introduces mandatory structured e-invoicing for intra-EU transactions and establishes digital reporting requirements that will fundamentally alter existing compliance processes. Companies operating internationally must therefore prepare for a future in which tax reporting is fully integrated into the transaction lifecycle.

In this context, VAT automation should no longer be considered a peripheral compliance function. Instead, it must be treated as a core component of the digital architecture supporting business transactions. Organizations that proactively invest in integrated, scalable solutions will be better positioned to manage regulatory complexity while reducing operational risk.

6.8 Success Factors

In our globally innovative landscape, it's evident that the propensity for behavioural change among the majority hinges on external pressures. Consequently, merely extending an invitation to trade partners to adopt e-invoicing might not swiftly yield the anticipated success.

Given the unpredictable economic climate, which exacerbates cost pressures, it's likely that such conditions will serve as catalysts for modifications in invoice processing methods. It's advisable for organizations not to await coercion from customers or suppliers but to proactively embark on e-invoicing initiatives. This approach allows for the resolution of details without undue haste, facilitating a smooth transition from traditional paper invoicing to digital formats.

Historically, the immediate success of e-invoicing projects has been hampered by several factors:

- + Insufficient recognition of the project's impact across various processes and departments.
- + Inadequate project management.
- + An excessive focus on technical aspects rather than on critical challenges such as process automation and the integration of a significant number of suppliers or customers in a brief timeframe.

For e-invoicing initiatives to succeed, several critical factors must be considered:

- + Recognition by top management of e-invoicing's extensive potential, beyond mere savings on printing and postage or the manual entry of invoice data into ERP systems.
- + Support from management, given the cross-departmental nature of such projects.
- + Designation of a committed project lead.
- + Establishment of a three-year plan with phased implementation, starting with an initial phase that delivers immediate benefits (ideally, involving a single invoice stream within one division of a large organization).

- + Effective internal and external communication with all stakeholders involved.
- + Excellence in rollout strategy, aiming for a high adoption rate among suppliers/customers through preferable opt-out policies coupled with dynamic marketing efforts.
- + Realistic assessment of the organization's mid- to long-term technical capabilities in terms of workflow and archiving, making informed decisions on in-house development versus purchasing, and choosing between direct or networked solutions.
- + Avoidance of unnecessary development of solutions that are readily available at a fixed price and have been successfully tested in other organizations.
- + A practical understanding of the technical abilities of partners to send, receive, and archive electronic invoices, often significantly lower than anticipated. Simple, cost-effective interfaces and, if necessary, third-party archiving services are crucial.

6.9 Benefits and Business Case

For the past two decades, the momentum for the adoption of electronic invoicing has been predominantly driven by the private sector. Organizations have been transitioning to digital processes to leverage multiple benefits, including:

- + Enhancement of process innovation and automation
- + Increased operational efficiency and reduction in discrepancies and manual interventions
- + Enhanced accuracy of master data and invoice content, ensuring alignment with orders and contracts
- + Improved compliance with tax regulations
- + Optimization of cash flow management
- + Enhanced business flexibility
- + Minimization of invoice fraud
- + Enhanced transparency and accountability
- + Environmental benefits
- + Meeting digital interaction demands from key trade partners
- + Cost reduction

The shift towards e-invoicing is, to a significant extent, an information technology (IT) initiative. This reality has compelled especially larger enterprises to conduct comprehensive business case analyses historically.



These analyses have generally validated a fundamental principle: By adopting electronic and automated invoicing processes, businesses can achieve cost reductions of 60-80% compared to traditional paper-based systems, with a return on investment typically realized within 0.5 to 1.5 years [13].

Contemporary surveys indicate that approximately 90% of major corporations in developed economies have adopted e-invoicing to some degree. Although in some cases the electronic exchange of invoices might represent a small fraction of their total invoicing, these companies likely still perceive a positive business case. Exceptions to satisfactory outcomes are relatively rare, with common issues including the continued operation of traditional paper-based systems alongside digital processes, attempts by companies to develop proprietary solutions rather than deploying proven third-party systems, and a reactive rather than strategic approach to e-invoicing implementation. These challenges often arise from the complex and varied IT, process, and compliance landscapes that develop over time.

It is projected that by 2030, up to 90% of organisations will be compelled to adopt e-invoicing, driven by legislative mandates or requirements from key business partners, making the necessity of a traditional business case less critical. Instead, the focus may shift towards evaluating the value proposition offered by various solution providers.

7. Conclusion and Call to Action

The transformation of invoicing and tax compliance is no longer a future scenario—it is an ongoing reality. What began as a regulatory-driven shift toward electronic invoicing has evolved into a broader and more profound transformation of business processes, data exchange, and international trade. Around the world, governments continue to introduce new digital reporting requirements, mandatory e-invoicing frameworks, and real-time compliance models. At the same time, organizations are increasingly seeking greater efficiency, automation, transparency, and resilience across their operations.

The "**e-invoicing tornado**" described in previous editions of this report has now entered a new phase. While compliance remains a critical driver, the focus is expanding beyond invoices and tax reporting. Structured business data is becoming the foundation for broader digital collaboration between buyers, suppliers, financial institutions, logistics providers, and public authorities. As a result, the e-invoicing tornado is increasingly transforming into a **tornado of Integrated Digital Trade**.

For many organizations, the challenge is no longer limited to implementing country-specific compliance requirements. They must now manage a rapidly growing ecosystem of digital obligations, interoperability frameworks, procurement processes, financial services, tax controls, and cross-border trade requirements. Organizations that continue to address these developments through isolated local projects risk creating fragmented architectures, rising costs, duplicated efforts, and reduced agility.

The most successful organizations are **shifting from a reactive compliance mindset toward a proactive transformation strategy**. Rather than viewing e-invoicing as a regulatory burden, they increasingly recognize it as an opportunity to modernize operating models, improve data quality, strengthen supply chain collaboration, and create competitive advantage.

To navigate this environment successfully, companies should consider the following priorities:

1. Establish a Global Assessment and Governance Framework

Develop a clear understanding of current compliance obligations, process maturity, system landscapes, and organizational responsibilities. Establish governance structures that enable coordinated decision-making across finance, tax, procurement, compliance, and IT functions.

2. Define a Long-Term Digital Trade Strategy

Move beyond individual country mandates and develop a target architecture that supports future business requirements. This strategy should consider e-invoicing, e-reporting, procurement, payments, tax automation, and digital trade processes as interconnected elements of a broader transformation journey.

3. Standardize and Consolidate Processes

Reduce complexity by harmonizing invoicing, reporting, and trading partner processes wherever possible. Standardized operating models improve scalability, reduce implementation costs, and facilitate adaptation to future regulatory changes.

4. Build a Flexible Technology Ecosystem

Invest in scalable solutions that support structured data exchange, interoperability standards, API-driven integration, and multi-country compliance requirements. Flexibility will become increasingly important as regulatory and business requirements continue to evolve.

5. Continuously Monitor Market and Regulatory Developments

The pace of change is unlikely to slow. Organizations should establish mechanisms to continuously monitor new mandates, emerging standards, technological innovation, and evolving digital trade initiatives to ensure long-term readiness.

The business case for action is compelling. Compliance remains a fundamental requirement, but it is only one component of the overall value proposition. Organizations that successfully embrace digital invoicing and integrated digital trade can achieve significant benefits, including:

- + Reduced compliance risks and avoidance of penalties
- + Lower processing and operational costs
- + Increased automation and productivity
- + Improved data quality and transparency
- + Enhanced working capital and financial visibility
- + Stronger supplier and customer collaboration
- + Greater agility in responding to regulatory and market changes
- + Better foundations for AI-driven automation and innovation

The coming years will likely be defined by the convergence of compliance, finance, procurement, logistics, and digital trade ecosystems. Structured business data will increasingly become the common language connecting these domains.

In this environment, **standing still is not a neutral option.** The organizations that act early, establish a clear strategy, and build scalable digital foundations will be best positioned to transform regulatory change into business value. The tornado is no longer approaching—it is already here.



It is no longer just an E-invoicing tornado. It is becoming a Tornado of Digital Trade.

8. Esker

Headquarters:

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Villeurbanne
France



Countries with subsidiaries	France, U.S., Argentina, Australia, Belgium, Canada, Germany, Hong Kong, Italy, Malaysia, Spain, Singapore, U.K.
Number of employees (entire company)	1,000-2,499
Member of	OpenPeppol, GENA, FNFE, VeR, GS1, Conectic, Ametic, FNTC
Processed volume on own platform in 2025	135 million invoices processed in the past 12 months
Offering for electronic invoicing	Inbound and outbound e-invoicing, legal archiving, e-signature, audit trail, approval workflows, scanning, EDI, OCR and connectivity to public portals.
Tax compliant e-invoice processing guaranteed for	60 countries across Europe, the Americas, Africa and Asia
Offering for Integrated Digital Trade (IDT)	Invoice Delivery, Accounts Payable, Sourcing, Supplier Management, Contract Management, Procurement, Customer Inquiry Management, Order Management, Claims Management, Credit Management, Cash Application, Deductions Management, Collections Management
Generic certifications	ISO 27001, EU GDPR, AICPA SOC, HIPAA and HITECH
Customer segments	Mid-sized and large multinational companies
Target industries	All industries
Supported languages (with application/service and customer support)	The user interface is available in: English, French, German, Italian, Spanish, Dutch, Portuguese, Chinese, Polish, Slovak, Danish and Japanese. Customer support is available in: French, English, Italian, German, Spanish, Chinese, Malaysian and Japanese (via partners).
Competitive differentiator	A single platform to automate e-invoicing in full compliance with local regulations, while streamlining end-to-end order-to-cash and source-to-pay processes.

Esker**Esker's Agentic AI Suite for the Office of the CFO**

Esker's Agentic AI Suite for the Office of the CFO leverages the latest in AI and intelligent automation technologies to optimize working capital and cashflow, enhance strategic decision-making, and improve relationships with customers, suppliers and employees. Esker's Source-to-Pay (S2P) and Order-to-Cash (O2C) solutions automate any business process while supporting long-term growth strategies.

AI that elevates finance operations

Esker Synergy AI is embedded into Esker's end-to-end automation suite to assist teams across S2P and O2C processes, supporting the Office of the CFO to improve efficiency, increase visibility and reduce errors. Esker Synergy AI Agents assist with decision-making, process optimization and workflow automation in real time. With more than 50 practical use cases, Esker Synergy AI supports consistent, streamlined finance operations.

Transforming e-invoicing — from compliance to performance

Esker helps companies navigate the complexities of global e-invoicing compliance with confidence. With proven expertise across multiple countries and regulatory frameworks, Esker enables businesses to meet evolving requirements efficiently and reliably.

Beyond traditional EDI or compliance support, Esker's solutions are designed to not only ensure conformity with regulations but also optimize the overall invoicing process by unlocking unmatched efficiency and providing powerful insights so companies can stay focused on growing their business.

Why choose Esker**Market leader**

Recognized as a Leader in the IDC MarketScape: European Compliant e-Invoicing 2024 Vendor Assessment.

**Global presence**

15 subsidiaries around the world to ensure thorough understanding of local e-invoicing requirements.

**End-to-end provider**

A unique platform gives you full visibility over all accounts payable and accounts receivable processes.

**Worldwide e-invoicing compliance coverage**

E-invoicing solutions that are compliant with regulations in over 60 countries.

**Interoperability capabilities**

Connected to a wider variety of interoperability networks and platforms.

**Certified Peppol Access Point**

Secure and compliant e-invoicing exchanges in line with Peppol standards.

Website: www.esker.com
info@esker.com

Ensuring Worldwide E-invoicing Compliance with One Global Solution



Emmanuel Olivier, Deputy CEO, Worldwide CRO, Esker

Rules are rules

Moving to e-invoicing is no longer an option for businesses – it's an obligation. Propelled by the goal of preventing tax evasion, mandatory e-invoicing legislation is on the rise globally, driving the transition from paper to electronic invoicing and archiving.

Latin America was the first to enforce the use of e-invoicing in the late 2000s, using the clearance tax audit system (real-time invoice verification by the local tax authority). In Europe, the EU Directive on e-invoicing and public procurement was put in place to make e-invoicing the predominant method of invoicing in Europe by 2020. To support this directive, many governments introduced legislation requiring vendors to send e-invoices to all public administrations. Italy became the first European member state to mandate business-to-business (B2B) and business-to-government (B2G) e-invoicing. Other countries, which include France, Poland, Spain and Germany, have followed Italy's lead.

This momentum is further reinforced by the VAT in the Digital Age (ViDA) initiative, which aims to harmonize and modernize VAT reporting across the EU through real-time digital reporting and e-invoicing obligations.

The growing number of governments and corporations adopting e-invoicing means that companies need to send e-invoices to do business and get paid. However, the increasing number of rules, formats, platforms and certificates brings a lot of complexity to compliance. And the time from when the requirement is published to the deadline for businesses to comply is very short, while the number of regulations continues to grow. Efforts have been made to standardize public procurement and simplify document exchanges between companies and public entities, notably with Peppol; however, in reality, compliance remains highly complex in the B2B world, where each country creates its own system and standards.

While it might be tempting to sit back and wait for deadlines to draw near, businesses must embrace the shift to e-invoicing or risk being left behind.

E-invoicing on the rise

We're seeing a significant rise in e-invoicing driven by regulatory requirements, as highlighted in reports such as Billentis. This growth is driven by the expansion of regulatory requirements, the digitalization of processes, and initiatives such as ViDA in Europe, which aim to harmonize and modernize VAT management and e-invoicing at the European level. The private sector was the main driver for market development in the first phase; however, it is now being heavily pushed by governments. The VAT gap is increasingly becoming the main accelerator for the digitization of business, fiscal, reporting, inventory, trade and logistical documents.

As more and more companies replace their costly paper-based invoice processes with less expensive and more efficient e-invoicing delivery and archiving solutions, they are discovering new ways to help increase their competitive advantage and business efficiency (including reduced invoice-related errors, time and cost savings, faster payment, etc.). While e-invoicing is beginning to realize its potential, one of the reasons it has not been widely adopted so far is the confusion around aforementioned tax compliance.



E-invoicing mandates

are rapidly accelerating worldwide

One solution to send e-invoices

Selecting a solution that's capable of meeting specific billing needs is vital for businesses. Companies that rely on multiple local services providers to ensure e-invoice compliance in different countries find it difficult to uphold rigid local specifications and manage numerous providers.



An obligation, not an option

Businesses must embrace the shift to e-invoicing or risk being left behind.

Working with one provider and one solution is the preferred way to go.

Five reasons to select a global e-invoicing solution

- **Increased visibility:** An international organization located in multiple countries requires a solution that provides visibility over all invoices worldwide as well as on a subsidiary or entity level. Multi-user solution access improves collaboration among accounts receivable (AR) and accounts payable (AP) teams.
- **Improved compliance with local regulations:** Businesses must comply with different e-invoicing regulations in the countries they do business to avoid penalties by formatting their invoices into an XML or specific local format file and connecting to tax authorities' platforms to submit their invoices (e.g., Chorus Pro in France, SDI in Italy, FAcE in Spain) or using networks such as Peppol.
- **Ability to anticipate future mandates:** As e-invoicing regulations continue to evolve, businesses need to ensure that they are up to date on new requirements and able to quickly respond to changes.
- **Optimized internal processes:** Companies are always looking to speed up internal processes and improve team productivity, particularly in AR and AP. By automating these processes, businesses can manage 100% of invoices regardless of format, reduce errors and costs associated with manual handling, and lower DSO.
- **Enhanced user experience:** Solution user adoption rates are greater when only one solution is used.

All roads lead to Esker

Esker delivers and receives compliant customer and supplier e-invoices on a global scale. Esker is capable of processing different formats (PDF, XML, UBL, Peppol BIS and Peppol PINT, Facturae, Fattura-PA, XRechnung, Factur-X, etc.), as well as communicating with different public administration platforms (Chorus Pro, FAcE, Billexco, SDI, etc.) to send and receive e-invoices and provide visibility on invoice status.

Esker's cloud platform enables businesses to meet global e-invoicing compliance requirements across a range of technologies – including e-signatures, time stamps and verifications in over 60 countries, Business Controls Audit Trail (BCAT) with Esker's audit trail, and EDI. Esker also provides e-invoice archiving that complies with both local and international regulatory frameworks.

Esker has proficient technological and local market knowledge to adapt its solution to evolving legislative requirements and help businesses navigate the complex universe of e-invoicing.

However, it's not just e-invoicing that is becoming mandatory. The evolving market trend toward full business automation with the government is on the rise. Some, like Italy, have started requiring businesses to receive electronic orders as well (Nodo Smistamento Ordini). Esker's unique platform delivers the full scope of automation across the source-to-pay and order-to-cash processes and can support the global movement to standardize exchanges between the private and public sectors.



Multiple countries, one solution

Esker delivers and receives compliant customer and supplier e-invoices on a global scale.

Esker Invoice Delivery

Automate 100% of your customer invoices, via any media

Esker Invoice Delivery automates the end-to-end invoicing process – from sending to archiving – while ensuring compliance with regulations in over 60 countries and aligning with customer delivery channel preferences. The solution provides real-time visibility into invoice status, streamlines issue resolution and improves customer communication through a self-service payment portal. By reducing manual errors and increasing process efficiency, Esker helps accelerate payment collection and improve overall cashflow.

Why automate with Esker?



Optimize cashflow with faster payments
Automate receivables, reduce DSO, ensure timely invoices and accelerate cash collection for financial stability.



Ensure worldwide compliance
Ensure compliance with global e-invoicing regulations while seamlessly meeting customer delivery preferences.



Improve customer satisfaction
Enhance communications and empower customers with a self-service portal to minimize payment delays.



Reduce operational costs
Automate invoicing to minimize errors, cut administrative expenses and improve efficiency.

How it works

Esker Invoice Delivery streamlines and secures each step of the invoicing process, automating invoice delivery through the channel your customers prefer. It enhances invoicing accuracy, ensures compliance, provides real-time tracking and strengthens customer communication.

Data transmission & extraction

Invoices are securely transmitted from the ERP system to Esker's solution. Esker Synergy AI extracts key data from headers, footers and line items, and validates it against approval workflows.

Formatting & compliance

Invoices are automatically formatted based on customer preferences. Additional documents can be attached and digital signatures applied to ensure compliance with regulations.

Multi-channel delivery

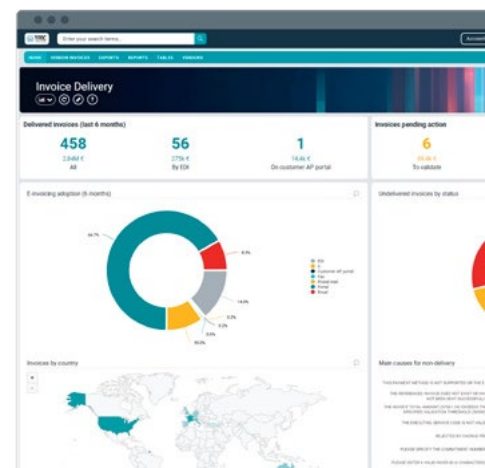
Invoices are sent through multiple channels to match each customer's preferred delivery method (e.g., AP portals, email, postal mail, fax, government platforms and EDI).

Tracking & issue resolution

A dashboard monitors invoice status in real time, providing analytics and alerts. Users can quickly resend failed invoices or access documents to resolve issues.


Customer collaboration & archiving


Customers can retrieve invoices, send messages and process payments via a portal. All invoices and related data are securely stored for compliance and future reference.





Solution features


Esker's 40+ years of experience and dedication to product development are key to our Invoice Delivery solution's continued innovation. Below are some of the most prominent features behind the benefits:


-  **Perfect invoice creation**

Esker ensures every invoice is complete, accurate and tailored to meet supplier and customer expectations. The solution supports customizable formats, digital signatures and the automatic inclusion of essential documents such as Terms and Conditions. This guarantees that each invoice is compliant and ready for seamless processing.
-  **Global visibility**

Esker offers dynamic dashboards to monitor invoice statuses, processes and key indicators at the customer level. It ensures secure invoice archiving and integrates seamlessly with any ERP system. All customer information is consolidated into a centralized platform, giving teams full visibility and control over the entire invoicing lifecycle.
-  **Multi-channel & worldwide compliant delivery**

Esker automates the delivery of 100% of invoices across multiple channels based on customer preferences (email, fax, postal mail, EDI, etc.). The solution ensures full compliance with e-invoicing and archiving regulations in over 60 countries, reducing the complexity of international billing.
-  **Collaborative EIPP portal**

Esker's Electronic Invoice Presentment and Payment (EIPP) portal improves customer collaboration by centralizing communication and payment options in a simple, easy-to-use interface. It offers branded experiences, real-time dashboards and secure online payments in over 40 countries and 135 currencies. The portal also supports dispute management and status tracking to speed issue resolution and reduce manual follow-up.
-  **Automated AP portal invoicing**

Esker removes the manual burden of portal submissions by automatically uploading invoices to over 300 AP portals according to buyer requirements. It retrieves real-time status updates – such as acceptance, rejection or failure – ensuring transparency and enabling faster resolution of potential issues.
-  **Fast ROI & future-proof flexibility**

Esker delivers rapid implementation and a fast return on investment, with immediate impact on reducing DSO through accelerated payment cycles and fewer processing delays. The solution easily adapts to regulatory changes and business expansion across regions, offering an intuitive user interface, built-in tutorials and AI agent assistance for quick user adoption.

Want to automate other invoice-to-cash processes?

Invoice delivery is just one aspect of the broader invoice-to-cash process. Esker provides a comprehensive and scalable Accounts Receivable solution suite designed to optimize the entire invoice-to-cash cycle. By automating key functions such as credit management, customer invoicing, payments, cash application, deductions and collections management, Esker drives efficiency across every stage. This end-to-end approach helps the Office of the CFO to accelerate cash collection, reduce DSO, improve cash forecasting and optimize working capital.



Esker Accounts Payable

Take the chaos out of cash management

Esker Accounts Payable allows businesses to eliminate the manual pains of traditional accounts payable (AP) invoice processing with AI-driven data capture, touchless processing and electronic workflow capabilities. The result? A simpler, more efficient way to manage cashflow and generate new revenue.

Why automate with Esker?



Increase speed & visibility

Gain greater control over invoices and closing procedures while ensuring regulatory compliance and easily identifying process improvements.



Reduce risk & prevent fraud

Leverage a full audit trail and rule-based electronic workflows to identify and prevent duplicate payments.



Improve supplier relationships

Ensure on-time invoice payments, accelerate dispute resolution and enable real-time communication.



Lower operational costs

Eliminate expenses associated with paper, transportation, physical archiving and low productivity.

How it works

Esker Accounts Payable automates every phase of AP invoicing – from reception of the original document to the creation of an accounting book entry in the ERP system – minimizing manual touch points and helping employees work smarter, not harder.

Receive & dispatch

Invoices are automatically captured by the solution regardless of the channel in which they arrive (e.g.: emails, postal mail, fax, government platforms, EDI).

Data extraction

Using machine-learning technology, invoice data is accurately extracted and populated into a validation form (or auto-approved when no exception is detected).

Verify & manage

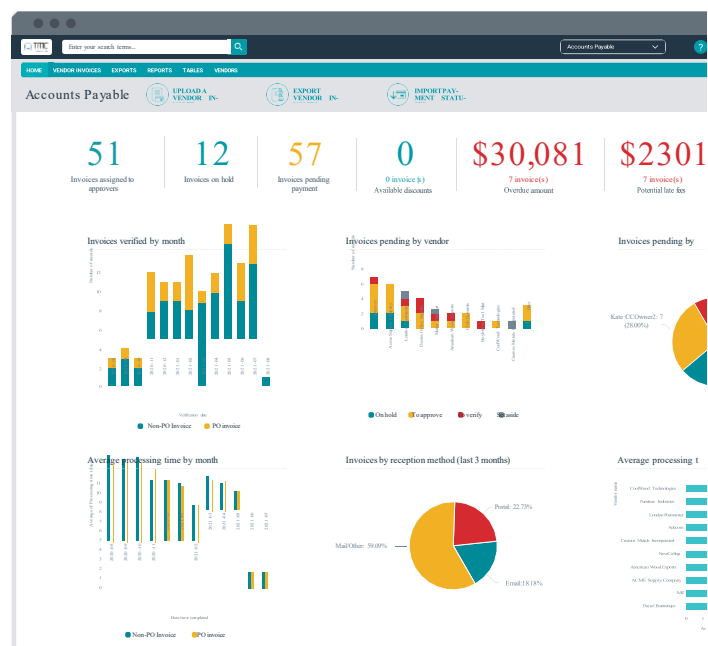
Invoice data is auto-matched with the corresponding orders and goods receipts – enabling staff to quickly review and resolve exceptions from a single, consolidated view.

Payment approval

Invoices that require payment approvals are automatically routed to the right individual or group in charge.

Integrate & archive

The validated invoice is entered into the accounting book, archived and made accessible for as long as necessary.



Solution features

Esker's 40+ years of experience and dedication to product development is key to our Accounts Payable solution's continued innovation. Below are some of the most prominent features behind the benefits:



Multi-channel cloud platform & worldwide compliant reception

Esker offers a single, collaborative and cloud-based platform that promotes invoice visibility across all formats and reception channels, including government platforms and EDI. With one process consolidating all invoices – no matter the reception channel – AP departments can help streamline the source-to-pay cycle and businesses can grow without operational restraints.



AI-driven invoice processing

Powered by advanced technologies that mimic human intelligence, Esker Synergy AI handles both structured and semi-structured invoice data. From batch separation and smart routing to precise data extraction and predictive coding, it automates every step of the process. Esker Synergy Agent provides real-time support freeing up your AP team to focus on strategic priorities.



Dashboards & analytics

Esker's solution is equipped with intelligent dashboards that display live, visual analytics (AP cash flow, AP process metrics, spend by category, volume and supplier, requests pending approval, budget control and forecasts, etc.). This feature is fully customizable so that users can choose what they want to see and track.



ERP integration

Esker's solution integrates with any ERP system and has prebuilt integration for SAP®, Oracle® and Microsoft Dynamics 365. Esker also provides simultaneous integration with multiple ERPs, simplifying diverse environments resulting from M&A activity. Business advantages include: better business continuity, anytime access, non-ERP user approval capability, easier onboarding and simplified setup of shared services centers.



Mobile reach

The Esker Anywhere™ mobile application enables managers to review and approve supplier invoices and track KPIs while on the go directly from their Apple or Android devices. Users also have the opportunity to collaborate by entering comments for others involved in the workflow.



Supplier portal

As part of Esker Accounts Payable, a convenient online portal gives suppliers self-service access to payment information, helping them get paid quicker and reduce costs and, in turn, saving your company time and money previously allocated to responding to invoice status calls. Users also have the ability to easily collaborate with chat tools.

Want to automate your entire source-to-pay process?

Accounts payable is just one part of the source-to-pay process. Esker's Source-to-Pay suite is designed to help Procurement and Finance leaders achieve their goals by removing departmental siloes, streamlining procurement processes, improving enforcement of policy compliance, and enhancing supplier management with visibility over the entire buying process. By aligning procurement and finance, Esker helps CFOs and CPOs achieve better financial outcomes and foster collaboration across all operations. Companies that use Esker's Source-to-Pay suite have the flexibility and agility to reduce costs, increase process efficiency and mitigate supply chain risks, resulting in a more sustainable and profitable business.





Press release

McDonald's Force Builds a Winning Financial Strategy with Esker

LYON, France, and MIDDLETON, Wis. — March 25, 2026 — [Esker](#), the leading AI Automation Suite for the Office of the CFO, today announced that McDonald's Force, the Economic Interest Group (EIG) responsible for advertising operations for McDonald's restaurants in France, has transformed its finance operations to manage 150 advertising campaigns per year with just an eight-person Finance team. Through a partnership spanning more than 10 years, McDonald's Force has leveraged Esker's automation technology to support growth, secure financial workflows and prepare for France's 2026 e-invoicing mandate.

A long-term partnership driving operational excellence and regulatory readiness

In 2014, a McDonald's global directive introduced strict traceability requirements for media purchases, the EIG's largest budget category. For McDonald's Force, the challenge was significant: Absorb a 50% increase in supplier invoice volume without increasing headcount. To meet these requirements, McDonald's Force selected [Esker Accounts Payable](#) to automate invoicing and establish a reliable audit trail.

What initially began as a response to constraints quickly evolved into a broader digital transformation strategy. Following AP automation, McDonald's Force expanded the partnership in 2015 by automating its purchasing cycle with [Esker Procurement](#). In 2022, the collaboration extended further with the implementation of [Esker Supplier Management](#), enabling the company to eliminate its remaining paper-based processes and further strengthen financial controls.

Since 2025, McDonald's Force has also been actively preparing for France's upcoming e-invoicing reform, relying on its long-standing partnership with Esker and the agility of its solutions.

AI and automation supporting performance and financial security

Seamlessly integrated with its Cegid ERP system, Esker's solutions have helped redefine operational efficiency across McDonald's Force's financial processes. Today, 80% of purchases are covered by purchase orders, helping to accelerate accounting processes while providing greater visibility into financial commitments.

Beyond efficiency gains, security has also dramatically improved. By automating supplier management, McDonald's Force has standardized the verification of bank details and legal information, significantly reducing exposure to fraud risks. This digital foundation allows



McDonald's Force to approach France's e-invoicing reform with confidence, as part of its ongoing optimization journey.

By leveraging Esker's technologies, McDonald's Force has achieved measurable improvements in financial performance, including:

- Faster invoice processing and payment cycles
- Improved internal collaboration with standardized purchasing and invoicing workflows
- Secure transactions through systematic bank account verification
- Greater visibility and control over financial commitments
- Improved readiness for regulatory requirements, including upcoming e-invoicing mandates

"Esker has been supporting us for more than 10 years with solutions that have evolved alongside our needs," said Cyrille Maton, Financial Control Manager at McDonald's Force. "Automation allows us to eliminate paper, secure our financial commitments and accelerate accounting processes. This partnership helps us anticipate market developments while continuing to create value for our restaurants."

"McDonald's Force's journey reflects exactly what we aim to accomplish at Esker: Help Finance teams become drivers of resilience and growth," said Thomas Honneger, Head of Sales France at Esker. "Over the past decade, we've helped them solve a traceability need to deliver intelligent, end-to-end automation. Supporting a company of this scale as it prepares for the 2026 e-invoicing reform shows how trust and innovation can drive real financial performance."

About McDonald's Force

McDonald's Force is an Economic Interest Group (EIG) established in 1979. It organizes advertising and promotional operations for McDonald's restaurants in France. Each year, the EIG manages more than 150 national campaigns with a Finance team of eight people.

9. Appendix

9.1 Glossary

Throughout this report, several critical concepts are consistently mentioned. To ensure clarity and avoid any confusion, the definitions provided herein apply to these concepts.

AR	Accounts Receivable are monies owed to a supplier by its customers arising in the normal course of business from the delivery of goods and services. They are usually represented by outstanding invoices.
AP	Accounts Payable are monies owed by a customer to its suppliers arising in the normal course of business from the delivery of goods and services. They are usually represented by outstanding invoices.
Artificial Intelligence, AI	Broader concept of machines being able to carry out tasks associated with humans around learning and problem solving. It has the cognitive ability to look for and learn on certain patterns and to take appropriate actions.
B2B Invoices	In this report includes all tax compliant invoices to corporate as well as to the public sector; B2B & B2G/G2B
Continuous Transaction Controls (CTC) models	Under this framework, organizations are mandated to report invoices to tax authorities or, at the least, furnish key invoice details electronically. The concept includes different models such as Real-time Reporting, Clearance, Centralised Exchange and Decentralised CTC and Exchange.
DPO	An efficiency ratio that measures the average number of days a company takes to pay its suppliers.
DSO	The days sales outstanding is a calculation used by a company to estimate their average collection period.
E-billing	E-billing covers in this report the electronic bills from Business-to-Consumers (B2C). Some market participants use this term alternatively for the process on issuer side in general, regardless if the customer is an enterprise or household.
E-invoicing	Electronic invoicing is the sending, receipt and storage of invoices in electronic format without the use of paper-based invoices as tax originals. Scanning incoming paper invoices or exchanging electronic invoice messages in parallel to paper-based originals is not electronic invoicing.
Integrated Digital Trade (IDT)	Integrated Digital Trade, transcending previous definitions such as Financial Supply Chain, EDI, Order-to-Cash, Procure-to-Pay, and Business Automation. This segment represents a holistic approach to digitally facilitated trade, including financial, procurement and e-reporting processes.
Invoice	Includes in this report all categories of invoices: B2B, B2C, B2G, G2B
Issuer	Invoice issuer, supplier, biller
Network operator	Service provider respectively operator with any-to-any model; an invoice issuer or recipient needs just one interface for achieving any other counterparty in the same network; In some countries, the terms 'operator', 'service provider', 'consolidator' or 'supplier network' are more common.
Order-to-Cash	Is the business process for receiving and processing customer sales. It follows the sales opportunity, order, delivery, invoice and payment, and covers both business-to-business (B2B) and business-to-consumer (B2C) transactions.
P2P	Is the process and supporting systems that automate the purchase-to-payment chain of activities, connecting procurement and invoicing operations through an intertwined business flow that automates the process

	from identification of a need, planning and budgeting, through to procurement and payment.
PO	Purchase Order
POS and mobile invoicing	Point of Sale invoicing; on a classical payment receipt, the included information is limited and the customer is normally not identified; if however, the customer is identified and considered in the content of the resulting confirmation document, the former payment receipt is upgraded to a classical invoice that can automatically be processed. The same is valid for purchases via mobile devices, e.g. train and flight tickets.
Procure-to-Pay	Buyer perspective for the processes of selecting vendors, establishing payment terms, strategic vetting, selection, the negotiation of contracts, actual purchasing of goods, order, delivery, invoicing and payment.
Purchase-to-Pay	Buyer perspective for the processes order, delivery, invoicing and payment. Purchasing is a subset of procurement.
SCF	Supply Chain Finance is defined as the use of financing and risk mitigation practices and techniques to optimize the management of the working capital and liquidity invested in supply chain processes and transactions. SCF is typically applied to open account trade and is triggered by supply chain events.
SME	Small and Medium sized Enterprise
Recipient	Buyer, Customer; The individual or organization that will receive the invoice

9.2 Sources

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