

Why Countries Should Build an Interoperable Electronic Invoicing System Into WTO E-Commerce Negotiations

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To support digital trade, countries must eliminate regulatory barriers—big and small, new and old, obvious and hidden—that prevent firms from using technology and the Internet to achieve critical economies of scale. Electronic invoices are a great example.

KEY TAKEAWAYS

- Electronic invoices (EIs) are machine-readable invoices issued, received, and processed electronically between buyers' and suppliers' finance and tax systems.
- They may not get much attention, and they may not yet be a key barrier to trade, but EIs are only growing in relevance to the global digital economy, especially for small- and medium-sized enterprises.
- Australia, Chile, New Zealand, and Singapore are showing how common principles and cooperation toward EI interoperability can prevent country-specific technical standards from becoming a trade barrier.
- WTO e-commerce negotiations need to include EI provisions as part of a holistic package of outcomes that together build an open, rules-based, and interoperable global digital economy.

OVERVIEW

More governments and firms around the world are embracing electronic invoicing (EI) to support traditional and digital trade, and to improve tax, business, and trade services. However, as more countries create their own EI frameworks, there's a potential they could enact country-specific technical standards that act as a barrier to digital trade. But Australia, Chile, New Zealand, and Singapore are showing how new rules, common principles, and cooperation can avoid this outcome by ensuring each country's system is interoperable with others'. World Trade Organization (WTO) e-commerce negotiations need to include these types of EI provisions as part of a holistic package of outcomes that together build an open, rules-based, and interoperable global digital economy.

WHAT IS ELECTRONIC INVOICING?

EIs are simply machine-readable invoices issued, received, and processed electronically between buyers' and suppliers' finance and tax systems. Billentis, a consultancy that specializes in the e-invoice market, estimates that the global economy produces some 550 billion invoices annually, growing around 10 to 20 percent per year.¹ There is still enormous room for growth, since more than 90 percent of all invoices worldwide are still processed manually.

The main advantages of EIs are that they:

- Shorten processing cycles, including payments of accounts receivable and tax recovery, in part, as they lessen the risk of human error;
- Cut transaction costs (such as printing and storage). EIs are 60 to 80 percent more efficient than traditional paper-based processing. For example, in Australia, research shows it costs \$20 USD to process a paper invoice as compared to \$6 USD per e-invoice;²
- Help governments fight tax fraud, as agencies can use software and artificial intelligence (AI) to quickly check vast numbers of transactions and to cross-check these with other records;³
- Make it easier for firms, especially small and medium-sized ones, to survive and engage in trade, including through improved trust, on-time payment, and “factoring” (see below); and
- Help modernize the economy and strengthen the technology sector through the large-scale use of communications technologies, digital signatures, and services development.

EIs are another great example of a digital technology, such as online platforms and payment services, that helps overcome costs, complexity, and other barriers to international trade, in that they help reduce uncertainty about local tax compliance requirements and a lack of trust in cross-border transactions.⁴ EIs can also help improve the real-time control and movement of goods. For example, Brazilian tax administrators rely on EIs as part of an innovative customs and tax management tool that makes customs operations more efficient. Authorities know what goods are coming, and where and who they're coming from, as their freight-vehicle tracking system

(which uses radio frequency stations and tracking) is integrated with their EI system so that details are registered as vehicles are on the move towards and through customs checkpoints.

EIs are particularly important to small- and medium-sized firms (SMEs). EIs facilitate the development of more transparent, efficient, and secure “factoring,” which allows suppliers to meet their working capital needs by selling their invoices, or accounts receivable, to lenders for cash (i.e., getting paid upon completion of work rather than waiting weeks or months for customers to pay their bills).⁵ EIs also help SMEs survive by helping to improve on-time payment.⁶ This is an issue that disproportionately affects SMEs, which are typically heavily dependent on cash flow, yet are often cash poor, as the result of extended payment times. In a similar way, governments can therefore support SME survival and participation in government procurement by using EIs and digital channels to pay invoices promptly, which Australia has done by mandating a maximum payment time of 20 calendar days for all contracts under AUD\$1 million (USD\$633,000).⁷

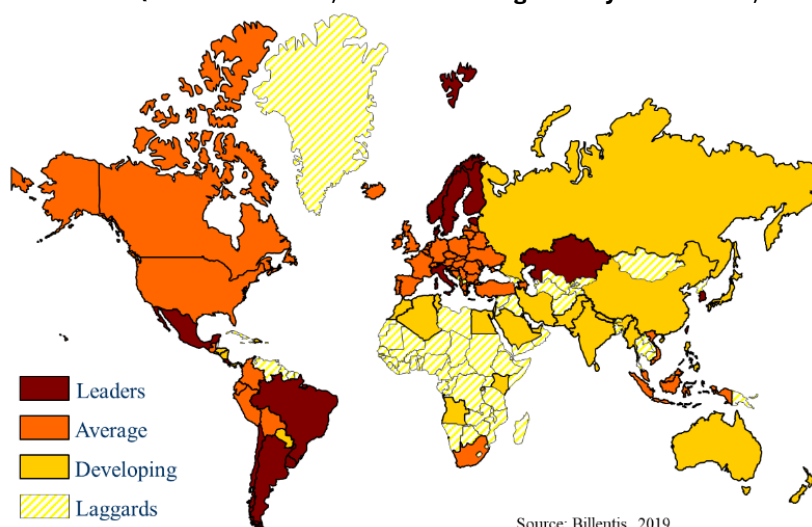
WHERE IS ELECTRONIC INVOICING IN USE?

EIs are a global phenomenon. A 2018 EY survey showed that of 82 countries, 57 had EI regulations. Nine countries in Latin America already use EI—Argentina, Brazil, Chile, Costa Rica, Ecuador, Guatemala, Mexico, Peru, and Uruguay—while projects are underway in several other economies, including Costa Rica, Colombia, Guatemala, Panama, and Paraguay.⁸ In Asia, Singapore has allowed EI since 2003. Chinese Taipei has made EI mandatory since 2011 for all companies that submit invoices to the finance ministry.⁹ EI is used in private-sector settings in several European Union economies, such as Austria, Germany, Sweden, and the United Kingdom. Denmark has made it obligatory since 2005 to use EI for all transactions with the public sector. Italy did the same in 2019. In Africa, Angola, Kenya, and South Africa all have or are considering EI systems.¹⁰

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In the United States, the private sector has largely driven the use of EI—there are over 200 EI network operators. While there’s no national EI system, the U.S. government has taken greater notice in recent years. For the public sector, the United States mandates that all government procurement contracts use EIs. In 2015, the White House Office of Management and Budget released a memorandum directing all federal agencies to transition to electronic invoices by the end of 2018, partly because only 40 percent of the federal government’s more than 19 million invoices were processed using electronic invoicing.¹¹ A 2017 U.S. Federal Reserve proposal for action on EI was taken up by the Business Payments Coalition, a voluntary group of government and private sector representatives, which is exploring the feasibility of developing and implementing a standard, ubiquitous business-to-business electronic invoice and processing platform (based on a review of international initiatives, mentioned below).¹²

Market Maturity for E-Invoices (Source: Billentis, “The E-Invoicing Journey 2019-2025,” 2019.¹³)



The term ‘Laggards’ in the chart above does not mean that there was no e-invoicing activity in these countries. It just expresses that they are typically in a very early stage. ‘Developing’ means that countries have already some e-invoicing activities, typically in the B2C segment and/or EDI between larger businesses.

EI systems can be either voluntary or compulsory for firms. Voluntary systems are typically used as a tool to improve business operations (such as in Australia and New Zealand), while mandatory systems are used as a part of a country’s tax-reporting system (such as in Chile and other countries in Latin America). This latter category of tax-focused countries see EI as a key tool to battle the “value-added tax gap,” where cash payments without receipts, fraudulent invoicing, and other activities lead to reduced tax collection.¹⁴ Therefore, EI offers tremendous potential benefits for tax control, as the accumulation of invoices of credits and debits for a taxpayer—contrasted with the periodic tax returns—creates an assessment and control capacity far beyond traditional tax practices.¹⁵ The traditional sampling of invoices as part of verification and scrutiny processes becomes obsolete when a country’s administration system has an electronic record of all the documents. Digitalization allows tax authorities and other firms to use data analytics to uncover complex business relationships that they can use to trigger audits if necessary.

E-INVOICES AND TRADE NEGOTIATIONS: WORKING TOWARD GLOBAL INTEROPERABILITY

While the private sector was the initial driver of e-invoices, governments are increasingly getting involved to ensure domestic regulations are interoperable so that firms can use common software and technology services to more easily engage in trade. Since EIs are digital, there are no differences between originals and copies of electronic invoices, but there need to be common rules and technical standards and processes to enable the interoperable interpretation of this digital documentation.

As the Information Technology and Innovation Foundation detailed in a report for the Asia Pacific Economic Cooperation (APEC), problems arise when countries enact country-specific technical requirements, such as for e-signatures and cryptographic processes.¹⁶ Such requirements act as

barriers to cross-border digital services and data flows, thus making it harder and more expensive, if not impossible, for firms to sell and support customers in multiple markets. For example, tax authorities in Brazil must certify third-party users of EIs, and in doing so, set certain technical standards. The problem is that Brazil requires EIs to use e-signatures that must use local Brazil-based IT infrastructure and services (in the form of a local government-authorized certification authority, called ICP Brazil). This acts as a localization requirement that prevents EI providers from using cloud storage to service multiple markets.

Until recently, Mexico had a policy in place that created local data storage, protection, and encryption issues for cross-border providers of EIs. As part of its certification for third-party EI providers, Mexico's tax administrators required providers to use a local hardware security module (HSM, which is specifically designed to protect and process the cryptographic keys involved in e-signatures and protected documentation).¹⁷ This requirement acted as a de facto data-localization requirement given that the crypto key, and associated EI data, needed to be stored in Mexico in case of an audit. Thankfully, after talking with relevant firms, Mexico's tax administrator decided to remove this local data-storage and protection requirement and allow third-party EI providers to use cloud-based HSMs.¹⁸

Australia and New Zealand's "Trans-Tasman e-Invoicing Interoperability Framework" provides a model approach to cooperation on e-invoices and closer digital economic integration.

Country-specific technical barriers arise, in part, as relevant United Nations Commission on International Trade Law (UNCITRAL) model laws on e-signatures are not prescriptive and legally binding, which means countries are able to enact laws that act as technical barriers to trade. E-signatures are another issue under negotiation at WTO talks, which is important given their role in EIs. They play an important role in building an open and interoperable global digital trading system. According to the OECD and WTO, e-signatures were ranked fourth among the top 10 challenges facing firms and consumers when accessing and using Internet services.¹⁹

EIs are an example of the type of digital rules that need alignment, as doing cross-border trade depends on the ability of firms to communicate with each other in a common (interoperable) manner (via joint standards). Countries should facilitate standards development where there needs to be an element of international regulatory collaboration to ensure economic opportunities are realized—such as via digital trade. Countries should use trade negotiations to achieve this. Thankfully, a small, but growing number of countries are doing this as part of bilateral and regional trade agreements, and potentially, under the auspices of the WTO.

Australia and New Zealand's "Trans-Tasman e-Invoicing Interoperability Framework" provides a model approach to cooperation on EIs and closer digital economic integration.²⁰ The Digital Business Council (a multi-stakeholder body) in conjunction with the Australian Taxation Office (ATO) and the New Zealand Government worked together to develop common standards so that firms from both countries can send and receive machine-readable invoices electronically—no matter which accounting software they use. To provide context, the respective New Zealand and Australian Productivity Commissions released a joint report—"Growing the Trans-Tasman digital economy and maximizing opportunities for SMEs"—which, among a range of issues, highlights the benefits of a joint approach to e-invoices.²¹ While the respective governments played a

central role in developing the joint standards, they handed over operational control of the system to an industry-led body, the newly established Australia New Zealand Electronic Invoicing Board.²²

Within trade agreements, Chile, New Zealand, and Singapore's recently concluded Digital Economy Partnership Agreement (DEPA) provides an example of best practices for how to build electronic invoice interoperability through trade agreements. DEPA (article 2.5) recognizes the importance of e-invoices and the need for parties to support their use at home and ensure their systems are interoperable, and to do the same globally.²³ Parties "shall base their measures related to e-invoicing on international standards, guidelines or recommendations, where they exist."

At the multilateral level, New Zealand and Singapore have started making the case for provisions on EIs. Each nation proposed (separately and then jointly) draft text on e-invoices as part of WTO e-commerce negotiations. The latest published draft (October 8, 2019) puts forward three fairly straightforward provisions:

1. That each member recognizes the important role e-invoices play in improving the efficiency, accuracy, and reliability of electronic commerce transactions;
2. That each member shall ensure that the implementation of measures related to e-invoicing in its jurisdiction is designed to support cross-border interoperability, in part, by being based on international systems, guidelines or recommendations; and
3. That each member shall share best practices on their e-invoicing systems.²⁴

While not enforceable, the second provision is the key one in that each member would make best efforts to enact a system that is interoperable. Interoperability is the key concept here as it recognizes that while each country enacts its own tax and accounting policies, working together does not depend upon each country harmonizing its domestic approach, but instead prioritizing that each system is based on commonly shared principles and processes.

Building on this, the final provision points members toward international systems and principles. In an earlier draft proposal, New Zealand explicitly mentioned Pan-European Public Procurement On-Line (PEPPOL), an interoperability framework for e-invoicing.²⁵ While procurement is in the name, PEPPOL is not an e-procurement platform. PEPPOL is an open standard that enables the exchange of standardized machine-readable documents over its network, regardless of whether organizations use different IT systems. This includes e-invoices, but also e-orders, e-advance shipping notes, and e-catalogues. It is based on three key pillars: the network (PEPPOL eDelivery network); the document specifications (PEPPOL business interoperability specifications); and the legal framework that defines the network governance (PEPPOL transport infrastructure agreements). PEPPOL is owned and maintained by the nonprofit organization OpenPEPPOL. PEPPOL was initially set up to give public sector organizations across Europe a standardized way to exchange electronic business documents, but it has since been adopted by around 300 organizations, which operate as "access points" to the network across 32 countries in Europe, Asia, and North America.

OpenPEPPOL appoints PEPPOL authorities in various countries to set national rules and country-specific rules, but countries without one can have entities in another country certified. In 2017, these access points were used by over 120,000 entities to exchange over 60 million e-invoices.²⁶ These entities are free to choose their preferred access point providers, which facilitate a “connect once, connect to all” concept of interoperability. As part of their bilateral initiative, both Australia and New Zealand adopted PEPPOL. New Zealand explicitly identifies PEPPOL in an earlier WTO proposal as an example of the type of international interoperable framework that members could use to show that their systems are interoperable.

However, New Zealand and Singapore removed the reference to PEPPOL in their latest WTO e-commerce proposal. This was likely done as they realized there’s no one system or framework for EI, so they wanted to encourage broader acceptance of the core goal—interoperability—without giving countries, especially those that do not currently have national EI systems, the impression that PEPPOL is a pre-requisite. There are other initiatives, associations, and standards that aim to improve interoperability at an international level, such as ConnectONCE, EESPA, and GS1.²⁷ It’s also a matter of how various regional organizations, such as the U.S. Business Payments Coalition and the A-NZ Digital Business Council, decide to align their models with the evolving international frameworks. Thankfully, at the heart of these initiatives is the shared goal of interoperability. This is what matters most and is what New Zealand and Singapore have ultimately focused on in their proposal.

Countries should support the use of EIs by ensuring their respective systems work together in a seamless manner. Otherwise, rules around EI will simply be added to the already long and growing list of technical barriers to digital trade.

This open, non-prescriptive approach to e-invoice provisions, and its central focus on interoperability, should make it much easier for countries involved in WTO negotiations that do not have a single national EI system to support the inclusion of these provisions. For example, the United States and Japan—both of whom are leading supporters of an ambitious outcome at the WTO, but neither of whom have a national system—should support the provisions given it aligns with their broader support for interoperability in digital trade talks. It’s hard to envisage either country enacting an EI system that is country-specific and incompatible given their other policy positions and the positions of their private-sector representatives.

CONCLUSION

Supporting digital trade will require countries to address barriers—big and small, new and old, obvious and hidden—that prevent firms from using technology and the Internet to achieve critical economies of scale through better market access and regulatory compatibility. Electronic invoices may not get much attention, and may not yet be a key barrier to trade, but their relevance to the global digital economy is only growing, especially for SMEs. Countries should support the use of EIs by ensuring their respective systems work together in a seamless manner. Otherwise, rules around EI will simply be added to the already long and growing list of technical barriers to digital trade.

Together, the efforts outlined in this issue briefing show how countries can work together to maximize the benefits of an incredibly useful digital technology that benefits both government and firms. It also represents a flexible approach to cooperation on digital policy as it depends on interoperability of common international principles and processes (rather than pushing for the strict harmonization of systems). Australia, Chile, New Zealand, and Singapore's efforts to add e-invoice provisions to the global digital trade and economy agenda deserve broader engagement and support from the United States, European Union, and others at WTO e-commerce talks.

About the Author

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ENDNOTES

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