

Policy Brief

Promoting E-Invoicing Interoperability in ASEAN: Overcoming Barriers to Trade Digitalisation

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Key Messages:

- **Regional Initiatives:** ASEAN has introduced several initiatives, such as the ASEAN Digital Trade Standards and Conformance Working Group, the Bandar Seri Begawan Roadmap, the ASEAN Digital Masterplan 2025, and the DEFA Framework. These aim to foster e-invoicing interoperability, establish common standards, and advance regional integration.
- **Adoption Challenges:** The adoption of e-invoicing in ASEAN is hindered by disparities in IT infrastructure, fragmented data policies, cybersecurity concerns, and limited private sector uptake. Overcoming these barriers is essential to building a secure and efficient e-invoicing ecosystem.
- **Strategic Actions Needed:** Key measures include promoting collaboration and harmonising standards, aligning regional initiatives with international frameworks, adopting flexible implementation models, developing a standardised e-invoicing format, implementing robust cybersecurity protocols, and supporting private sector adoption through financial incentives and capacity-building programmes.

Electronic invoicing (e-invoicing) is a vital component of paperless trading, delivering substantial cost savings and efficiency gains for businesses. The ASEAN e-invoicing market has experienced notable growth, spurred by initiatives from tax authorities, public procurement agencies, and business digitalisation programmes. However, adoption across the region still faces significant challenges.

To address these barriers, ASEAN has introduced initiatives to foster interoperability, develop common standards, and support regional integration. By prioritising standardisation, offering government support, and encouraging private sector adoption through financial incentives and capacity-building efforts, ASEAN can accelerate trade digitalisation and enhance economic integration across the region.

Electronic Invoicing¹: Enhancing Efficiency and Reducing Costs

Electronic invoicing (e-invoicing), a critical component of paperless trading, significantly accelerates payments to businesses, saving up to US\$6 per invoice in processing costs. It reduces invoice errors by 50%, minimises disputes, and decreases invoice rejections. Additionally, e-invoicing offers cost reductions ranging from US\$1 to US\$2.09 per invoice, with potential processing cost savings of up to 70% compared to manual or PDF-based invoice processing (IMDA, 2022a).

Interoperable e-invoicing also facilitates international trade by streamlining invoicing management for large firms operating across multiple markets and tax jurisdictions. It ensures compliance with diverse e-invoicing regulations, although cross-border use cases remain limited.

The ASEAN e-invoicing market has experienced significant growth, with a compound annual growth rate (CAGR) of 15% from 2021 to 2028 and projections of 17.4% by 2030 (VMR, 2024). The market value is expected to rise from US\$500 million in 2020 to US\$1.5 billion in 2028.

Public sector initiatives drive e-invoicing adoption in ASEAN:

- **Tax Authorities:** Utilise e-invoicing to enhance tax administration and reduce non-compliance.
- **Public Procurement Agencies:** Increase efficiency in Business-to-Government (B2G) transactions by minimising manual errors.
- **Business Digitalisation Agencies:** Promote digital transformation and paper reduction in business processes (IMDA, 2022a).

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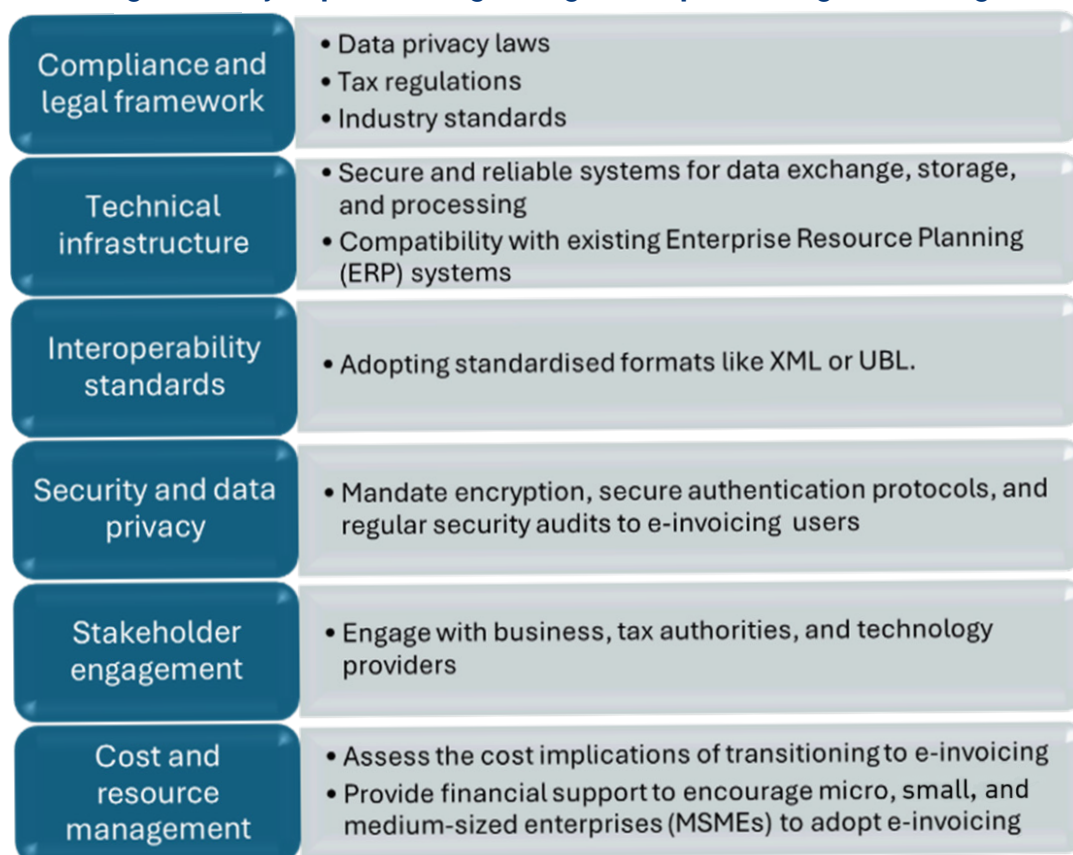
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¹ E-invoicing involves the electronic exchange of structured invoice data between a supplier and a buyer. Unlike paper-based or PDF invoices, e-invoices are transmitted in formats like XML, JSON, UBL, or PEPPOL, allowing for automatic processing with minimal human intervention. Unstructured formats such as PDF or scanned paper invoices are not true e-invoices, as they do not enable automated data exchange between accounting systems.

Figure 1 illustrates critical considerations for policymakers in regulating e-invoicing, including fostering interoperability, standardisation, and support for widespread adoption

Recognising the transformative potential of e-invoicing, ASEAN has initiated several measures to advance its adoption and regional integration. The ASEAN Digital Trade Standards and Conformance Working Group

Figure 1. Key Aspects of Regulating and Implementing E-invoicing



Source: Basware, 2023; Corcentric, 2024; Singh, 2024.

(DTSCWG) conducted a comprehensive study on the Electronic Invoicing Landscape in ASEAN Member States (AMS) to assess adoption levels and its impacts, with a particular focus on Business-to-Business (B2B) and Business-to-Government (B2G) transactions. As part of its Work Programme 2021–2025, e-invoicing has been included under the digital trade standards pillar to facilitate harmonisation and support the region's digital transformation efforts (IMDA, 2022b). The Bandar Seri Begawan Roadmap has further reinforced this initiative, proposing the development of common e-invoicing standards during the 2022–2024 acceleration phase to promote interoperability for cross-border business transactions (ASEAN, 2021b). Likewise, the ASEAN Digital Masterplan 2025 identifies e-invoicing as a critical trade document pivotal for achieving seamless trade digitalisation (ASEAN, 2021a).

Building on these initiatives, the Framework for Negotiating ASEAN Digital Economy Framework Agreement (DEFA) aims to encourage e-invoicing interoperability and the creation of regulatory frameworks tailored to member states' needs (ASEAN, 2023). In addition, the 4th ASEAN

Digital Ministers' Meeting endorsed the ASEAN–EU 2024 Digital Workplan, which focuses on enhancing inter-regional trade exchanges by promoting interoperable e-invoicing systems (ASEAN, 2024). Collectively, these actions underline ASEAN's commitment to leveraging e-invoicing as a tool for regional digital integration and economic growth.

Despite the considerable benefits of e-invoicing, its adoption in ASEAN is impeded by several challenges, including uneven IT infrastructure across AMS, fragmented policies on cross-border data flows, cybersecurity vulnerabilities, and limited uptake by the private sector. Countries like Indonesia, the Philippines, and Viet Nam have made significant progress by mandating e-invoicing to modernise tax systems and enhance compliance. Singapore and Thailand are also making strides through phased national roll-outs. In contrast, some AMS still lack national e-invoicing systems even for domestic transactions (IMDA, 2022a). Malaysia, for instance, plans to mandate e-invoicing based on annual turnover thresholds, starting in August 2024 for turnovers exceeding RM100 million, and

progressing to all taxpayers by July 2025 (PwC Malaysia, 2024). Singapore's InvoiceNow system will also become mandatory for GST-registered businesses in phases starting in May 2025, while Thailand aims to fully digitise its tax ecosystem by 2028, beginning with phased mandatory adoption from 2024. These developments highlight encouraging progress toward creating a unified framework for paperless trade across the region.

Cross-border data flow restrictions and cybersecurity concerns represent additional obstacles to e-invoicing adoption. Limitations on data collection, storage, and processing can impose compliance burdens on businesses, as they must navigate data sovereignty rules for individual assets. Inadequate protections for electronically exchanged data can further expose organisations to breaches, undermining trust and security. Overcoming these challenges is crucial to building a secure and efficient e-invoicing environment (UNDP, 2021).

The potential economic benefits of e-invoicing in ASEAN are substantial, with estimated savings of US\$94.55 billion for 70.6 million MSMEs. However, high implementation costs, information gaps, and limited technical capacity continue to impede widespread adoption. For instance, in Viet Nam, only 278 taxpayers registered for e-invoicing by February 2023, far below targeted numbers (Dharmaraj, 2023). Addressing these barriers through enhanced outreach, training programmes, and standardisation could improve private sector uptake. Government incentives such as early registration vouchers for MSMEs and financial grants for larger companies implementing IT systems, as seen in Singapore, have proven effective in driving adoption (Marcus, 2021).

Adopting international standards can align processes, reduce legal uncertainties, and improve interoperability. Directive 2014/55/EU, for example, mandates European Union (EU) public authorities to accept e-invoices that conform to standardised formats while allowing flexibility for national standards (EUR-Lex, 2014). Similarly, the Pan-European Public Procurement Online (PEPPOL) framework enables secure exchanges between public-sector buyers and suppliers by using EN16931-compliant formats (European Committee for Standardization, 2023). In the Trans-Tasman region, Australia and New Zealand have adopted a unified approach through the Trans-Tasman Electronic Invoicing Arrangement, aimed at creating a single digital economic market to enhance productivity and reduce costs (The Australian Government the Treasury, 2018). While ASEAN's Single Window (ASW) facilitates the electronic exchange of trade documents, it currently does not include e-invoicing (ASW, 2013). Expanding the ASW to incorporate e-invoicing could further improve interoperability within the region.

Two primary e-invoicing models have emerged based on international standards: the interoperability model and the clearance model. The interoperability model relies on private service networks and regulated formats for direct exchanges between businesses, with governments conducting post-audits. This model is exemplified by PEPPOL, used in Singapore, Australia, Japan, and New

Zealand, which supports cross-border trade by aligning local and international standards while reducing administrative tasks through standardised formats and automated validation (IMDA, 2024). Conversely, the clearance model, adopted by countries such as India, Indonesia, and the Philippines, requires government validation of e-invoices either before or after issuance (Deloitte, 2024). These models illustrate the diverse approaches ASEAN countries are adopting to advance e-invoicing.

Policy Recommendations

E-invoicing has significant potential to enhance trade within ASEAN, yet the region faces considerable challenges in achieving both cross-border usage and interoperable, region-wide implementation. To promote e-invoicing across ASEAN, the following policy recommendations are proposed:

1. **Tailored Commitments under DEFA:** Considering the varying e-invoicing capabilities of AMS, the obligations under the Digital Economy Framework Agreement (DEFA) should be framed as soft commitments. These commitments can encourage collaboration and promote the harmonisation of standards while accommodating the diverse capacities of AMS. Capacity-building support is crucial to expedite adoption and compliance with these obligations.
2. **Promoting Interoperability through International Standards:** To support cross-border frameworks, AMS should adopt international e-invoicing standards and share best practices. This approach would facilitate interoperability between national systems and enhance regional trade efficiency.
3. **Leveraging WTO JSI for Legal Recognition:** For commitments requiring stronger legal backing, AMS can look to the WTO Joint Statement Initiative (JSI) on e-commerce as a benchmark. This would ensure that the legal effect of e-invoices is not denied solely on the basis of their electronic form.
4. **Alignment with ASEAN Sectoral Bodies:** Regional initiatives under the DTSCWG should be coordinated with other ASEAN sectoral bodies such as the ASEAN Trade Facilitation Joint Consultative Committee, the ASEAN Coordinating Committee on the Implementation of the ATIGA, and the ASEAN Customs Procedures and Trade Facilitation Working Group. This alignment will ensure cohesive efforts toward paperless trading and seamless integration across the region.
5. **Flexibility in Model Adoption:** AMS should be allowed flexibility in adopting e-invoicing models that align with their local needs and regulatory environments. This flexibility is particularly important for AMS that have yet to implement national e-invoicing systems, ensuring the model accommodates their specific circumstances.
6. **Standardised Regional Format:** Once all AMS have established their e-invoicing frameworks, a standardised e-invoicing format should be developed to facilitate seamless integration and interoperability across the region.

7. Strengthening Cybersecurity and Data Sovereignty: Robust cybersecurity protocols and unified measures for data sovereignty should be established to protect electronic data and privacy. Streamlining cross-border data flows while ensuring compliance with local regulations will be essential for building trust in e-invoicing systems.
8. Encouraging Private Sector Adoption: To increase uptake in the private sector, efforts should focus on simplifying regulatory requirements through standardisation, providing technological and financial support (e.g. tax relief, subsidies, or reduced implementation costs), and offering capacity-building programmes to enhance employee proficiency in using new systems. Fostering industry networks for knowledge sharing and emphasising the benefits of e-invoicing will further encourage adoption.

By addressing these areas, ASEAN can accelerate e-invoicing adoption, foster regional integration, and support its transition toward a digitally integrated trade ecosystem.

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