TRADE POLICY HUB

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Rapid Evidence Review on the SME Capability and Digitalising Trade with ETDs for Department of Business and Trade

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Trade Policy Hub (TPH) | LSE Consulting

Department for Business and Trade

Department for
Business & Trade

The Department for Business and Trade is an economic growth department. We ensure fair, competitive markets at home, secure access to new markets abroad and support businesses to invest, export and grow. Our priorities are the Industrial Strategy, Make Work Pay, the Trade Strategy and the Plan for Small Business.

This is a report of research carried out by LSE Consulting, on behalf of the Department for Business and Trade.

Structure

- Executive summary
- Introduction and Methodology
- Findings
- Policy Implications
- Insights from Expert Interviews

Executive summary

Executive Summary: What the Evidence Shows

- **Big potential benefits:** Digital trade documents could unlock £25bn in UK SME trade growth, cut transaction costs by 80%, and reduce cross-border processing from 25 days to 1 day.
- **Very few companies are using ETDs yet:** Only 1–2% of trade documents are digital globally. Less than 4% of bills of lading are electronic, despite 40+ years of attempts.
- **Large players are moving; SMEs are not:** Adoption is accelerating among major commodity traders and carriers. SMEs remain largely untouched.
- **Benefits are projected, not yet proven at scale:** Measurable gains come only from pilots and case studies. No economy-wide results have been measured yet.

Executive Summary: Why Adoption Has Stalled

- **Fragmented systems, more than cost, are the binding problem:** SMEs face incompatible platforms, skills gaps, and heavy reliance on intermediaries, not just price barriers.
- **Past attempts have repeatedly failed:** SeaDocs, BOLERO, TradeLens, and we.trade all collapsed for similar reasons: closed systems, inability to trade with non-members, cost to scale, and difficulty onboarding entire supply chains.
- **Law alone doesn't trigger uptake:** Even where enabling legislation exists (UK, Singapore), adoption doesn't follow automatically as local electronic document laws differ (or don't exist) and must be considered. Governance, standards, and partner-country alignment are also needed.
- **Bottom line:** Voluntary, SME-led adoption will not scale. Progress depends on coordinated action by the government, large buyers, carriers, and customs authorities.

Executive Summary: Opportunities & Next Steps

Opportunities

- **UK legal leadership:** The ETDA is technology-neutral and internationally influential but needs governance and partner-country law alignment to deliver results.
- **International models exist:** Singapore's TradeTrust (open, free, interoperable) and SMEs Go Digital programme offer proven approaches to adapt.
- **Open standards are essential:** Common data standards and trusted accreditation are needed to prevent platform incompatibiity.

The SME survey must answer:

1. **Where exactly does adoption break down**: awareness, capability, coordination, or counterparties?
2. **Is training alone enough**, or are procurement/regulatory triggers needed?
3. **Which intermediaries help adoption** and which block it?
4. **What combination of incentives would make ETD use inevitable**, not optional?

Introduction and Methodology

Introduction

- This review brings together the available evidence on **electronic trade document (ETD) adoption**, with a focus on the UK and SME attitudes.
- **Key Themes:**
  - Barriers to adoption (potential and evidenced)
  - Sector differences
  - SME awareness
  - Business attitudes across supply chains (including freight forwarders)
  - International lessons from countries trying to adopt ETDs.
- **Scope:** UK-specific evidence where available, supplemented by international evidence. Literature from the last 10 years, with emphasis on the last 5. Both quantitative and qualitative sources.

Methodology

- **Identify sources:** Web scraping and snowball referencing to find relevant literature
- **Quality assurance:** Each source assessed for rigour and relevance.
- **Review and synthesise:** Sources analysed across six dimensions:
  - Existing evidence on ETD challenges;
  - SME awareness;
  - Perceived benefits;
  - Barriers to adoption;
  - Role of intermediaries;
  - International best practice.

Supplemented by **5 semi-structured expert interviews** (45–60 min), selected with DBT.

Evidence Snapshot

Sources: 17 documents (2017-2025)

Sources	Count
UK Government reports	6
International organisation, business association, and think tank reports	5
Peer-reviewed academic articles	6

Methods across evidence:

Method	Count
Mixed methods (survey + interviews)	4
Quantitative/Econometric	2
Qualitative (interviews)	1
Case studies	3
Legal analysis	6
Policy synthesis	1

Data reach:

- 5 surveys covering 2,900+ respondents (individuals, SMEs, intermediaries, industry)
- Geographic scope: 8 UK-focused, 6 comparative, 3 global (up to 243 jurisdictions)

Findings

Economic Benefits of Trade Digitalisation

Potential gains are significant

Trade Growth

UK-US digitalisation could **boost UK exports by ~2–7%** across sectors

10% improvement in trade facilitation linked to 18% increase in global goods exports

GDP Growth

Universal digitalisation could **increase UK GDP by up to 1.3%**
Consumer prices could fall 0.7–0.9% from lower import costs

SME Efficiency

£25bn potential UK SME trade growth - 35% potential increase in SME efficiency

Transaction costs cut by up to 80%

Cross-border processing reduced from 25 days to 1 day

Sources: Lee-Makiyama et al., 2023; OECD, 2025; ICC UK, 2024.

These are modelled projections. Economy-wide gains have not yet been measured.

ETDs Adoption Rates and Trajectory

Adoption is low, but momentum is building among large players

Legal progress

- UK's ETDA enables 80–90% of trade to go digital in the UK
- Governments covering 80% of world trade committed to removing legal barriers
- But UN model law on electronic records (MLETR) or similar laws have been adopted in only 13+ countries, few of which are key UK trading partners.

Where we are now?

- 1-2% of trade documents are digital globally
- Less than 4% of bills of lading are electronic, after 40+ years of effort

Momentum is building

- eBL use has doubled since 2023
- 60%+ adoption among the largest commodity traders
- 9 major carriers (75% of global capacity) committed to 50% digital by 2028, 100% by 2030

Sources: Ioannou, 2025; ICC UK, 2024; Finocchiaro & Castellani, 2023.

Adoption Barriers Overview

What is blocking ETD adoption?

Awareness & Skills

- 62% of SMEs can't name customs simplifications they could use.
- Most lack awareness of the benefits of ETD and have no guidance on implementation.
- 92% rely on third parties for customs compliance.

Legal & Governance

- The law enables digital documents in the UK but doesn’t provide certainty as to which platforms are trustworthy.
- No agreed standards for validating systems.
- Platforms not motivated to standardise and are not regulated.

Technical & Platforms

- Digital platforms don't talk to each other, creating "walled gardens."
- 73% of firms cite technology/interoperability as a concern.
- No common data standards exist across platforms or borders.

Cost & Culture

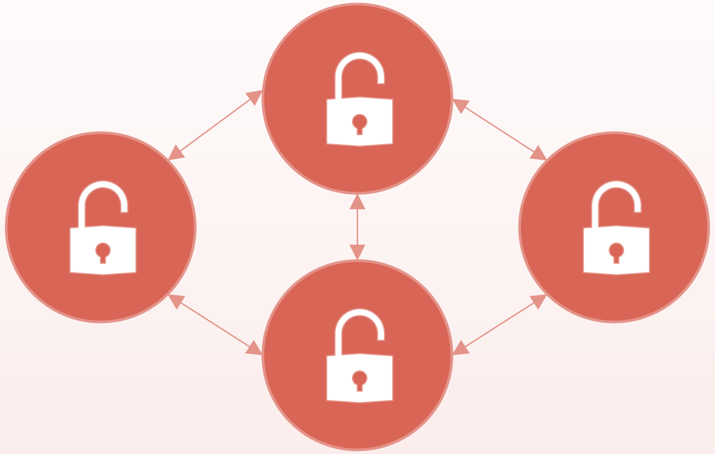
- Perceived high upfront costs (software, training) deter SMEs.
- The shipping industry has historically resisted change.
- Decision-makers are often not digital natives.

Sources: Warren & Cranney, 2018; Guo et al., 2025; Ioannou, 2023/2025; ICC UK, 2024; Krebs, 2023.

The Platform Problem

Competing platforms won't cooperate, thus presenting a core challenge.

Current state: Walled gardens



Ideal: Open, interoperable

The Problem

- Digital platforms are private businesses with competing interests
- They have no natural incentive to work together or adopt common standards

- Users who invest in one platform face high switching costs (IT, training, customer migration)
- The system only works when all parties in transaction use the same or compatible platforms and data standards (chicken-and-egg problem)

Sources: Ioannou, 2023/2025.

The Platform Problem

What has been tried before:

SeaDocs (1983)
High costs, low perceived benefit

→

BOLERO (1999-Present)
Closed membership, all parties must sign up and pay

→

TradeLens (2018-2022)
Could not onboard full supply chains

→

we.trade (2018-2022)
Blockchain consortium, went offline. Excessive costs to create any scale.

Lesson: Closed, membership-based systems have repeatedly failed. Open, interoperable, low-cost infrastructure is needed.

Sources: Ioannou, 2023/2025.

Sectoral Differences

Impact varies by sector and transport mode.

Higher immediate impact:

- **Time-sensitive commodities** (oil, gas, steel, agriculture): rely heavily on paper bills of lading and would benefit most from faster digital processing
- **Sea freight users:** paper bills of lading are central to maritime trade and taken as security by financing banks
- **Dry bulk commodities**: simpler supply chains make adoption easier

Lower immediate impact:

- **Road transport** (e.g., automotive): lower use of bills of lading and letters of credit
- **Containerised trade:** many actors in the chain create coordination challenges

NOTE: The evidence base for sectoral differences is thin; only one source provides sector-level detail. This is a gap the SME survey should address.

UK Legal Strengths

The UK has a strong legal foundation, but the law alone isn’t enough.

Simpler legal approach	The UK's ETDA gives digital documents the same legal status as paper in the UK without creating a complex parallel legal framework.
Technology-neutral	The law doesn't mandate a specific technology. It works with any platform: blockchain, registry-based, or otherwise (a “reliable system”).
Global influence	English law governs most sea carriage contracts worldwide, as between parties to the trade. Hence adoption of EDTA in contracts has more international impact than any other legal system.
Limitation	Legal frameworks alone won't solve the challenge of different laws across jurisdictions. The UK can't legislate for other countries and traders can’t fully avoid the impact of local law. Adoption depends on key counter-party trading nations also recognising digital documents.

Sources: Emeasoba, 2025; Krebs, 2023; Ioannou, 2025.

International Experiences: Singapore

TradeTrust

A government-backed, open-source system that lets businesses create, exchange, and verify electronic trade documents across platforms — with no centralised terms or fees. Accredited by Singapore's IMDA, audited by Ernst & Young, with 30+ successful trials.

SMEs Go Digital

Sector-specific digital plans with tailored guidance, financial support, pre-approved tools, and employee training — directly addressing SME capability and awareness gaps.

Aviation precedent

E-air waybills were normalised across the industry through a single industry resolution (IATA Resolution 672), demonstrating that a sector-wide digital transition is possible when coordinated.

Sources: Guo et al., 2025; Finocchiaro & Castellani, 2023; Alsheyab, 2025.

Policy Implications

Policy Actions: Three Tracks

Government

- Provide financial support and practical guidance for high-potential SME exporters
- Deliver awareness and training through intermediaries (FSB, ICC UK, LIBF)
- Create a live SME ETD Adoption Dashboard to track progress
- Use public procurement to normalise ETDs in government supply chains
- Consider developing platforms for customs bonds and other UK centric trade documents that are not affected by offshore requirements

Industry

- Large buyers should need digital documents from SME suppliers
- Create cross-sector taskforces (automotive, commodities, food & drink, pharma, retail)
- More support for short, outcome-based pilots. Firms that try ETDs usually do not go back to paper
- Support the adoption of common data standards internationally to reduce platform incompatibility

Joint Action

- Develop model platform data standards and intra-operability with prominent global platforms
- Invest in interoperable infrastructure (like Singapore's TradeTrust)
- Align on workforce training and digital skills development
- Support development of a coordinated, industry-led accreditation system

Sources: ICC UK, 2024; Guo et al., 2025; Ioannou, 2023/2025; Lee-Makiyama et al., 2023.

Insights from Expert Interviews

Interview Approach

- **Purpose:** Gather high-level insights on SME awareness, benefits, and barriers to adopting Electronic Trade Documents, plus international best practices and intermediary roles.
- **Participants:** 5 subject-matter experts with extensive experience in trade, trade finance, and ETDs across multiple regions, selected in cooperation with DBT
- **Semi-structured interviews** (45–60 min) covering SME awareness, barriers, intermediary roles, international adoption, and recommendations.

Transcripts analysed using AI tools (MS Teams, Otter.ai, Copilot) for transcription and synthesis, with human editorial review.

Expert View: SME Awareness & Adoption

What experts say about SMEs and ETDs

Habits are hard to break
SMEs and many corporate teams are attached to paper workflows. Decision-makers are often not digital natives.

But SMEs can move fast
Where the CEO/CFO owns the decision, SMEs actually adopt faster than large firms with complex internal approval chains.

What resonates with SMEs
Getting paid faster, reducing trapped cash, lower operational risk, easier compliance, agility and resilience & attracting younger staff.

Sector matters
Dry bulk and simple supply chains adopt more easily. Containerised trade with many actors faces chicken-and-egg dynamics.

Pilots change minds
Firms that try ETDs don't go back to paper. Time-boxed pilots are the most effective way to shift attitudes.

Expert View: Barriers, Costs and Mitigation

Barriers

- **It is complexity and cost.** SMEs would accept small transaction costs but can't absorb high onboarding, training, or integration effort.
- **The "overhaul IT" myth.** SMEs think they need to replace core systems. In practice, if trade-tech providers used standard data and systems, SMEs could immediately adopt ETD’s without changing existing IT.
- **Legal uncertainty.** Worry about enforceability across jurisdictions continues, as local laws vary and few digital solutions have been tested in court.
- **Banks aren't leading.** Only 10–15% of trade is bank-intermediated. Banks follow buyer-seller demand; they don't drive adoption.
- **Global headwinds.** Tariffs, sanctions, and rising costs have pushed many SMEs to deprioritise digital transformation.

Mitigation that works

- Short, outcome-based pilots with corporate executive support.
- Plain-English checklists for traders and intermediaries.
- Promotion of platform-neutral data standards.
- Public procurement and anchor programmes to seed ETD use in supply chains.

Expert View: International Lessons

What other countries are doing and what the UK can learn

- **Countries moving fast** (China, Singapore, India, UAE) use clear mandates and provide supportive programmes. Western economies need incentive frameworks rather than mandates.
- **The UK's ETDA** is widely seen as a game-changer, but progress also depends on harmonised data standards and practical SME outreach.
- **Customs authorities** are trending toward electronic checks, strengthening the case for digital trade documents.
- **What the UK can do next:**
  - Target buyer-seller pairs and supply chain clusters for coordinated adoption
  - Promote open, interoperable data standards to improve compatibility between electronic platforms, intermediaries, and traders
  - Provide practical guidance and anchor programmes to incentivise and accelerate adoption

Expert View: Trade Finance Perspective

- **Banks are not the main driver:** Only 10–15% of global trade involves bank-intermediated documents. For most SMEs, banks enter at the payment stage, not at the document-handling stage.
- **Ecosystem change matters more than SME incentives:** SMEs will adopt ETDs once customs authorities, carriers, and ports stop issuing paper documents. Voluntary adoption alone will not scale.
- **Don't overclaim ETDs as a fix for SME financing:** Digital documents don't automatically improve access to credit. Despite a practice of taking security over paper bills of lading, banks rely on financial statements and counter-party credit worthiness, not just trade documents, for lending decisions.

Note on the Use of AI

- Artificial Intelligence was used to transcribe and summarise expert interview content and to generate highly concise, synthetic text for placement in database to compile the evidence review.

- It was also used to support editorial and quality control to ensure clarity and consistency. All outputs were reviewed and verified by the research team.

Thank you!

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Annex: References

ALsheyab, M. S. A. (2025). Legal analysis of the merits of electronic transferable records: Toward cross-border trade digitalization. *International Journal of Law and Management*, *67*(1), 145–163. https://doi.org/10.1108/IJLMA-09-2023-0209

Barns-Graham, W. (2024). What is the Electronic Trade Documents Act and why does it matter. Chartered Institute of Export & International Trade. https://www.export.org.uk/insights/trade-news/what-is-the-electronic-trade-documents-act-and-why-does-it-matter/

Crossfield, J., & Finnerty, K. (2018). *Understanding of rules on bringing goods back from abroad (in person or via post) and future expectations*. HM Revenue & Customs.

Emeasoba, G. U. (2025). The law on electronic trade documents: Applying functional equivalence in the Model Law on Electronic Transferable Records and comparable common law jurisdictions. *Uniform Law Review*, *30*(3), 314–339. https://doi.org/10.1093/ulr/unaf037

Estimating the administrative burden of 2022 import and export customs declarations for trade between Great Britain and the European Union. (2025). HM Revenue & Customs.

Finocchiaro, G., & Castellani, L. (2023). The UNCITRAL Model Law on Electronic Transferable Records: Introduction and Overview. *European Review of Private Law*, *31*(Issue 5), 955–978. https://doi.org/10.54648/ERPL2023039

Guo, C., Hong, Z., Luo, X., Morandin, G., Sistino, E., & Vilela, D. (2025). *HOW CAN THE USE OF ELECTRONIC TRADE DOCUMENTS BENEFIT SMES EXPORTING INTERNATIONALLY?* Department of Business and Trade.

ICC UK. (2024a). *Seizing the moment: Unleashing the potential of trade digitalisation*.

ICC UK. (2024b). *The roadmap to digitalise UK trade*. International Chamber of Commerce UK.

Annex: References

Ioannou, I. (2023). RELATIONAL TRADE NETWORKS. *The Cambridge Law Journal*, *82*(3), 450–482. https://doi.org/10.1017/S0008197323000430

Ioannou, I. (2025). Is the Electronic Trade Documents Act 2023 Sufficient to Promote the Uptake of Paperless Trading Systems? *The Modern Law Review*, 1468-2230.70008. https://doi.org/10.1111/1468-2230.70008

Klahr, R., Maguire, K., & Hughes, K. (2022). *Research into the customs intermediaries sector*. HM Revenue & Customs.

Krebs, T. (2024). Electronic bills of lading, transnational and English law: Blocking the blockchain? *Uniform Law Review*, *28*(3–4), 323–338. https://doi.org/10.1093/ulr/unad022

Lee-Makiyama, H., Baker, R., Narayanan Gopalakrishnan, B., & Garnizova, E. (2023). *Benefits of the digitalisation of trade processes and cross border barriers to their adoption*. Department of Business and Trade.

OECD. (2025). *The digitalisation of trade documents and processes: Going paperless today, going paperless tomorrow* (297th edn, OECD Trade Policy Papers) [OECD Trade Policy Papers]. https://doi.org/10.1787/64872f25-en

Public Report The UK - SEA Trade Digitalisation Pilots 2024 DIGITAL. (n.d.). UK Government.

Warren, R., & Cranney, M. (2018). *Use and Understanding of Customs Simplifications, Customs Procedures, and Authorised Economic Operator (AEO) authorisations*.