POLICY SOLUTION

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FROM ADOPTION TO ADVANTAGE: LOCATING THE BARRIERS TO AI UPTAKE IN SMES AND MICRO-ENTERPRISES



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From Adoption to Advantage: Locating the Barriers to AI Uptake in SMEs and Micro-Enterprises

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Diagnosis

Artificial intelligence (AI) is increasingly regarded as a new general-purpose technology, with the potential to transform sectors and business functions. Its economic significance lies not simply in automating individual tasks, but in its capacity to improve prediction, optimization, decision-making, and content production, while enabling new products, services, and business models. In 2025, the OECD highlighted generative AI's potential to support long-term productivity growth through continuous improvement and innovation.[1] For smaller firms, digital technologies can reduce operating and transaction costs, improve access to information and markets, and facilitate product differentiation and automation.

Yet the firms that could benefit most from wider AI adoption are also those for which the evidence remains most incomplete. Across OECD countries, SMEs [2] account for around 99% of businesses, approximately two-thirds of employment, and 50–60% of value added.[3] However, micro-enterprises are frequently absent from comparable digitalization statistics: the OECD's ICT Access and Usage by Businesses dataset generally reports indicators for firms with 10 or more employees, effectively excluding the smallest firms from cross-country comparisons.[4] This is not a marginal statistical issue. In Italy, SMEs accounted for 99.9% of active firms in 2023 – and micro-enterprises around 94.8% –, representing roughly two-thirds of turnover and value added.[5] This makes the exclusion of firms with fewer than ten employees particularly consequential for understanding a country's digital transition.

The available evidence points to a substantial AI adoption gap worldwide.[6] Across the OECD, 40% of large firms use AI, compared with only 11.9% of small firms, a more than

[1] OECD, *AI Adoption by Small and Medium-Sized Enterprises: OECD Discussion Paper for the G7*, (OECD Publishing, December 9, 2025), https://www.oecd.org/en/publications/ai-adoption-by-small-and-medium-sized-enterprises_426399c1-en.html.
[2] SMEs are generally defined as businesses with fewer than 250 employees (OECD, 2026).
[3] "SMEs and Entrepreneurship," OECD, accessed October 8, 2026, https://www.oecd.org/en/topics/smes-and-entrepreneurship.html?.
[4] "ICT Access and Usage by Businesses," OECD Data Explorer, OECD, accessed October 8, 2026, https://data-explorer.oecd.org/vis?df[ds]=DisseminateFinalDMZ&df[id]=DSD_ICT_B%40DF_BUSINESSES&df[ag]=OECD.STI.DEP&dq=.A.B1_B..._T.S_GE10%2BS_GE100&pd=2012,&to[TIME_PERIOD]=false.
[5] OECD, "Italy," in *Financing SMEs and Entrepreneurs 2026,* (OECD Publishing, September 22, 2026), https://www.oecd.org/en/publications/financing-smes-and-entrepreneurs-2026_bb7fc5c4-en/italy_c6adf856-en.html?.
[6] OECD, *AI Adoption by SMEs*.

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threefold difference. Yet adoption should not be equated with transformation. The 2026 OECD D4SME Survey finds that SMEs increasingly rely on off-the-shelf AI tools, while a more strategic, targeted, and secure integration into business operations remains uneven.[7]

However, low AI adoption does not necessarily indicate a policy problem. Some firms face barriers related to skills, finance, data, infrastructure, or legacy systems. Others may see limited benefits relative to the costs or consider AI unsuitable for their activities. Indeed, according to OECD data, 57.3% of SMEs that do not adopt AI cite its unsuitability for their business activities as a reason.[8] The policy objective, therefore, should be to address barriers that prevent beneficial adoption and support the effective integration of AI into business processes, rather than to maximize adoption rates.[9]

Status Quo and Institutional Response

The clearest response to the AI adoption gap so far came during Canada's G7 Presidency with the **"SME AI Adoption Blueprint"**,[10] which provides public and private stakeholders with policy-oriented guidance, use cases and support measures, ranging in focus from AI literacy and talent exchanges to targeted financial mechanisms. The Blueprint draws on the **OECD "Taxonomy of AI Adopters"**,[11] which categorizes SMEs in four stages according to the complexity and purpose of their AI use:

- **AI Novices**: firms starting out, using AI for peripheral tasks through built-in and standard tools;
- **AI Optimisers**: firms integrating multiple AI tools to improve efficiency and productivity;
- **AI Explorers**: firms developing bespoke solutions, often in data-intensive contexts;
- **AI Transformers**: firms integrating AI across most operations and decision-making processes.

The underlying idea is that AI adoption in business is not a linear process, but an iterative one, as each enterprise has its own history and differs significantly in terms of digital maturity. The Blueprint uses these categories to identify policy drivers and tailor support to different stages of adoption. However, while it clearly identifies what governments should offer and to whom (based on the stage), it does **not identify where the barriers to adoption lie**. Firms at the same stage may face very different constraints. This creates a risk of directing skills, literacy and training measures towards firms that are "blocked" by other barriers, such as access to credit, procurement or supply-chain integration.

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[7] Marco Bianchini et al., *Empowering SMEs in the Age of AI: The 2026 OECD D4SME Survey*, OECD SME and Entrepreneurship Papers, (OECD Publishing, April 13, 2026), https://www.oecd.org/content/dam/oecd/en/publications/reports/2026/04/empowering-smes-in-the-age-of-ai_7f58652c/bf5a9816-en.pdf

[8] ECD, *Generative AI and the SME Workforce* (OECD Publishing, November 5, 2025), https://www.oecd.org/en/publications/generative-ai-and-the-sme-workforce_2d08b99d-en.html?.

[9] OECD et al., *The Adoption of Artificial Intelligence in Firms: New Evidence for Policymaking,* (OECD Publishing, May 2, 2025), https://www.oecd.org/en/publications/the-adoption-of-artificial-intelligence-in-firms_f9ef33c3-en.html?.

[10] "SME AI Adoption Blueprint," Innovation, Science and Economic Development Canada, accessed October 8, 2026, https://ised-isde.canada.ca/site/ised/en/sme-ai-adoption-blueprint.

[11] OECD, *AI Adoption by SMEs.*

The proposed measures largely focus on **internal barriers** (e.g. skills, literacy, training and access to tools) and the **broader enabling environment** (e.g. software and connectivity), while **external barriers** linked to firms' relationships with buyers, suppliers and lenders receive less attention. SME-specific measures are also limited: for example, procurement is addressed mainly through the pooling of AI-tool purchases. As already stressed, micro-enterprises are underrepresented in both data and program design, despite potentially being among the most affected by the adoption gap. Finally, the AI Blueprint does not establish a dedicated framework for monitoring, data collection and evaluation, limiting the ability to assess whether measures reach the firms most in need and effectively address their barriers.

Policy Recommendations

The gaps identified above require a coordinated response on two fronts: a shared way to identify where and why SMEs get stuck in their AI adoption (the matrix), and a commitment to act on the barriers that lie outside the control of the firm (common standards). Both build on commitments already endorsed at the G7 and G20 level.

1. AI Adoption Matrix

Existing instruments do not show clearly where each barrier to adoption sits. Because these barriers are grouped by type, the same label can cover very different problems at different AI adoption stages, leaving policymakers with an inventory of obstacles and little guidance on which actor should respond and how. To **move from description to prescription**, it is useful to view these barriers from the SME's perspective: they lie either within the firm – affecting operational efficiency –or outside it, in the relationships that shape its growth. They also vary across the stages of SME AI adoption and the OECD Taxonomy.

Internal barriers can be addressed through direct support to firms, including training, advisory services and AI integration assistance. External barriers, by contrast, are set by other actors, and cannot be removed by a single small firm. They can be addressed only by acting on the banks, large buyers, public procurers, software vendors and standard-setters that shape the firm's environment, or on the rules that govern them, mainly through financial regulation, common standards and procurement design. **The G20 should establish a common matrix linking each SME adoption stage to its main barriers along with the appropriate policy response**. Each cell would identify where intervention is needed and assign responsibility for delivering it. As existing surveys do not break barriers down by adoption stage, **Table 1** provides an initial hypothesis to be tested.

Implementation would take two steps. First, G20 members would populate it with evidence from their national business surveys, recording which barriers bind at each stage. Second, they would map existing support measures onto the same grid. Comparing the two would reveal where support is missing and where policies may not be addressing firms' actual needs. Participation by G20 members would be voluntary, encouraged and facilitated through technical support and a common methodology. The exercise would require no new

institutions, only a consensus at G20 level to apply a common analytical framework to existing data, with the technical support of the OECD.

2. Commitment to Common Standards

The external barriers identified through the matrix can be tackled through "external enablers": commitments that improve the environment in which SMEs operate. The most promising measures are those where G20 members already share common interests, making it easier to agree on action.

For example, SMEs often rely on different systems to manage invoices, stock, and payments. When these systems cannot easily exchange information, connecting them to AI tools can become more expensive, potentially acting as additional obstacles. **The G20 should promote open, common standards for exchanging business documents**, such as invoices, orders, and payment information. In practice, it means agreeing on common and easy-to-use ways to format and share such information. Such standards already exist: UBL and the Peppol network for invoices and orders, the EU's EN 16931 e-invoicing standard, UN/CEFACT standards for trade data and ISO 20022 for payments, which the G20's cross-border payments roadmap already endorses. However, national e-invoicing mandates each rest on their own format, so a small firm trading across borders must handle several. Promoting these standards therefore means aligning national mandates with the international formats.

This would put into practice Pillar 5 of the Chapel Hill statement, "AI for Standards and Standards for AI," which recognizes that standards "support technical interoperability and enhance economic growth."[12] Common standards would make it easier for SMEs to exchange information with larger buyers and so to join their supply chains (downstream). Banks and payment providers are well placed to promote adoption, since they already process the invoices and payments that pass between SMEs and those buyers.

Next Steps

The mandate should be assigned to the relevant Working Group, with OECD support, and implemented according to the following timeline:

- **First voluntary mapping (by 2027)**: to be prepared by the next Presidency (United Kingdom);
- **Pilot project (by 2030):** launch of a pilot involving 3-5 economies with different enterprise profiles, including at least one with a strong base of micro-enterprises;
- **Consolidation of the study (mid-2030):** finalize the results and feed them into the discussion on common standards, followed by the publication of a joint report with the OECD.

[12] "G20 Innovation Ministerial Statement: Pillars I–VI," U.S. Department of Commerce, September 2, 2026, https://www.commerce.gov/sites/default/files/2026-09/G20-INNOVATION-MINISTERIAL-STATEMENT-Pillars%20I-VI.pdf.

ANNEX

TABLE 1: THE "AI ADOPTION" MATRIX

	AI Novices	AI Optimisers	AI Explorers	AI Transformers
External barriers *(credit, procurement, supply chain)*	Affordable connectivity and cloud access (especially in rural areas) Little trusted guidance	Access to credit for AI investment High upfront cost of integration Incompatible data formats between suppliers and customers	Cross-border restrictions on data transfers Access to relevant datasets Ability to scale up capital	Fragmented AI governance across jurisdictions
Internal barriers *(skills, strategy, absorptive capacity, system compatibility)*	Switching costs General unfamiliarity with AI systems and opportunities for optimization Basic employee skill gaps Management reluctance	Weak coordination across workstream Tools incompatible with business operations Employee skill gap	Shortage of specialist talent within the firm Concentration of sector-specific data	Governance, cyber risk and organizational change at scale

Table 1: As a firm's use of AI broadens, more of its operations come to depend on external actors outside of its control: suppliers and customers whose data formats must match its own, lenders who must finance integration, and buyers whose requirements it must meet. Applying this logic further up the AI adoption stage would mean that the constraints on a Transformer are therefore likely to be set more by its environment than by its own capabilities, whereas the reverse holds for a Novice. The two types of barriers interact most directly in the advancement from Novice to Optimiser, where 76% of AI-using SMEs remain, because coordinated use of AI requires both internal capability and compatible connections with outside partners.