‘Unlocking AI: Practical Strategies for Business Productivity’

Background

On 29th October 2024, the Productivity Institute’s Scotland Forum hosted a focused roundtable exploring the role of Responsible Artificial Intelligence (AI) in shaping the future of Scotland’s economy. Chaired by Professor Bridgette Wessels, the session brought together leading voices from academia, industry, and public policy to examine how AI can be harnessed as a force for innovation while remaining aligned with societal values, ethical norms, and inclusive growth.

AI is widely regarded as a general-purpose technology—capable of transforming sectors, business models, and public services. However, its rapid development presents complex challenges for skills, regulation, trust, and equity. The discussion highlighted a growing tension between the pace of technological advancement and the readiness of policy, infrastructure, and public understanding to respond in kind.

Participants addressed the economic promise of AI, drawing on recent empirical studies and case examples from across Scotland, while also emphasising the risks of bias, displacement, and unintended harm. As businesses, governments, and communities confront these questions, the concept of “Responsible AI” has emerged as both a guiding principle and a practical framework for decision-making.

This briefing paper outlines key insights from the roundtable, including thematic findings, strategic reflections, and potential next steps for policy and practice. It positions Responsible AI not only as a technological issue but as a critical intersection of ethics, economics, and productivity.

Responsible AI

Aligning Innovation, Ethics, and Economic Growth in Scotland

Contextualising Responsible AI in Scotland’s Economy

Opening the session, Professor Des McNulty set the scene by emphasising the importance of understanding AI adoption in the broader economic and institutional context of Scotland—particularly within the Glasgow City Region. McNulty noted that discussions around productivity must be rooted in regional realities. While Scotland presents a diverse economic landscape, many areas remain held back by persistent inequalities, low proportions of tradable sectors, and fragile foundational economies.

He identified economic inactivity, lack of innovation diffusion, and underdeveloped skills ecosystems as core structural challenges. McNulty argued that without proactive investment in inclusive growth, training pathways, and collaborative leadership across Scotland's institutions, AI risks reinforcing existing inequalities. By contrast, if deployed strategically—anchored in strong education systems and coherent regional planning—AI could serve as a catalyst for sustainable economic renewal.

McNulty called for greater cooperation between Glasgow and Edinburgh, arguing that Scotland has the ingredients to become a dynamic digital hub, akin to international tech corridors, but lacks the joined-up political and institutional leadership needed to deliver it.

The Realities of AI in Business Practice

Professor Dominic Chalmers offered a sharp and empirical perspective on the realities behind the current AI hype. Drawing from recent research and startup case studies, Chalmers argued that while generative AI and automation tools are often overhyped, they are already creating significant productivity gains in specific contexts.

One example came from a Scottish edtech startup that had successfully used AI tools to automate every aspect of game development, legal contracting, and financial planning—allowing a two-person team to compete with firms thirty times their size. While not all outputs matched professional quality, they were "good enough" to bid for and win contracts, disrupting traditional supply chains and reshaping expectations of scale and cost.

Chalmers highlighted recent studies showing that generative AI tools can enhance white-collar productivity—particularly among lower-skilled workers—but can also slow down performance if misapplied. The technology's impact, he argued, depends on whether tasks fall within the current capabilities of AI models. He noted that AI appears increasingly capable of undertaking tasks involving judgment and decision-making, potentially disrupting knowledge-intensive professions such as law and consultancy.

Despite these advances, Chalmers warned of significant risks: economic displacement, the deskilling of creative industries, and the rise of "satisficing" over genuine quality. He concluded that while AI adoption is essential for competitiveness—particularly for Scottish SMEs—its impact on labour, quality, and economic fairness remains uncertain and must be carefully managed.

The Dual Nature of AI: Automation and Opportunity

Paul Winstanley, CEO of innovation centre CENSIS, offered practical insights from his work with Scottish businesses adopting AI tools. Winstanley made a clear distinction between generative AI—which includes language models and chatbots—and machine learning, which focuses on data-driven optimisation of business processes.

He shared case studies from Scottish firms experimenting with AI to enhance productivity in areas like tender generation, legal review, customer service, and manufacturing quality control. While these examples showed promise, Winstanley emphasised that many businesses are still in early stages—often running manual and AI-driven workflows in parallel to assess performance and risk. In heavily regulated industries, firms remain cautious, especially where errors carry legal or safety consequences.

Winstanley also raised challenges around siloed data, accreditation barriers, and the need for AI models that align with organisational tone, ethics, and brand identity. He argued that while large firms are beginning to see returns from AI, small and micro enterprises remain under-supported. Given that SMEs account for the majority of Scotland's business base, addressing this gap is critical. He advocated for tailored innovation models that provide accessible, credible AI pathways for SMEs, rather than relying solely on high-investment models that suit large enterprises.

Principles and Practice of Responsible AI

Professor Simone Stumpf brought a vital ethical and technical lens to the discussion, grounding the conversation in the emerging global consensus around Responsible AI. She defined Responsible AI as the development and deployment of AI systems that are safe, trustworthy, and aligned with social values such as fairness, transparency, accountability, and sustainability.

Stumpf underscored that AI is not neutral. Without deliberate design, systems risk amplifying existing biases and inequalities. She pointed to the example of Amazon's hiring AI, which was found to discriminate against women due to flawed historical data used in training. Other concerns included the carbon intensity of training large AI models, privacy risks, and the opacity of proprietary algorithms.

She argued that Responsible AI is not a barrier to innovation but a foundation for trustworthy deployment. Ethical safeguards, stakeholder engagement, and regulatory clarity are essential—not only for protecting rights but also for building public confidence in AI tools. Stumpf called for Scotland to position itself as a leader in AI ethics by embedding these principles across policy, business, and research frameworks.

Challenges, Gaps, and Opportunities

The roundtable identified several key cross-cutting challenges and opportunities in scaling Responsible AI adoption in Scotland.

First, the need for education and skills was seen as fundamental. Without AI literacy—from schools to boardrooms—the risk of technological exclusion and poor implementation increases. Participants proposed embedding AI awareness in

secondary education and developing new partnerships between industry and academia to ensure training aligns with real-world needs.

Second, SMEs face barriers around cost, capacity, and complexity. Many lack the time or technical expertise to assess AI tools or understand regulatory obligations. More targeted support, including funding mechanisms, AI sandboxes, and ethical implementation guides, was seen as essential.

Third, the issue of public trust loomed large. As AI becomes more embedded in services and employment models, questions of fairness, transparency, and accountability will shape its uptake. Businesses that fail to address these concerns risk reputational harm and diminished returns, regardless of technological capability.

Finally, Scotland was seen as having a unique opportunity to lead in AI ethics, thanks to its strengths in research, devolved policymaking, and civic engagement. However, this will require faster, more agile regulatory frameworks, better cross-sector collaboration, and greater clarity around governance structures.

Recommendations and Next Steps

To build a thriving Responsible AI ecosystem in Scotland, the roundtable recommended four priority actions.

1. There is a need to integrate AI literacy and ethics into education at all levels, from school curricula to executive training. This should be coupled with targeted skills development to support upskilling and reskilling, especially for those in sectors likely to be disrupted.
2. Incentivising the adoption of responsible AI in SMEs is critical. This may include grants, toolkits, or access to open-source AI solutions that are privacy-respecting and energy-efficient. Peer learning networks and local AI accelerators could further democratise access.
3. A working group should be established to advance a Scottish framework for AI ethics and sustainability. This group would bring together stakeholders from government, academia, and industry to co-develop guidance, share best practices, and ensure consistency with international standards.
4. Finally, there is a need for closer collaboration between universities, innovation centres, and policy bodies such as the Productivity Institute. Scotland's institutions must avoid fragmentation and instead build coherent, strategic partnerships that scale ideas and deliver impact.

Conclusion

The discussion on Responsible AI made clear that this is not simply a matter of managing emerging technologies. It is a question of how Scotland imagines its economic future, and what values will guide that transformation. With the right investment in skills, ethical design, SME support, and collaborative leadership, AI can become a cornerstone of inclusive productivity growth.

However, this opportunity will not realise itself. It requires deliberate choices—about education, innovation, regulation, and ethics—that must be made today to shape the economy of tomorrow. Responsible AI is not a constraint, but a direction: one that aligns technological progress with human dignity, community resilience, and long-term prosperity.

TL; DR

Scotland stands at a crossroads in the development and deployment of AI technologies. While AI presents opportunities to boost productivity and competitiveness, it also brings risks of inequality, exclusion, and organisational misalignment. The roundtable identified the need for a more coordinated and values-led approach to AI innovation. This includes embedding ethics and transparency into AI systems, upskilling the workforce, supporting SME adoption, and creating agile regulatory frameworks. With strategic action and collaborative leadership, Scotland can position itself as a leader in Responsible AI—one that supports economic renewal while protecting societal wellbeing.