



Policy recommendations for Romania

NATIONAL CONTEXT

Romania's AI ecosystem is developing from a relatively strong digital and software base, but its overall level of AI maturity remains below that of more advanced European economies. Although Romanian universities provide training in AI and related fields, **limited investment in research and development has constrained the scale and specialization of the talent pool**. At policy level, the adoption of the [National Strategy for Artificial Intelligence](#) in July 2024 marked **an important step toward a more structured national approach**, particularly regarding public services and societal adaptation to AI, but **implementation capacity remains uneven and is slowed** by broader administrative and digitalization gaps. At the same time, **Romania's innovation profile continues to be shaped by a business environment** in which outsourcing and IT services still weigh more heavily than the development of proprietary technologies and high-value R&D activities.

From an economic and business perspective, **AI uptake in Romania remains low**, but there are signs of potential acceleration. Eurostat data shows that only 3.1% of Romanian companies used AI technologies in 2024, increasing slightly to 5% in 2025, well below the EU average of about 20%. This gap reflects persistent barriers including **limited financial resources, shortages of experienced personnel, and a cautious approach to adoption**. Even so, **business expectations suggest latent demand**, with 40% of Romanian companies reportedly planning to implement AI within the next five years. Romanian startups are already contributing AI-based solutions in fields such as healthcare, finance, and e-commerce, but their growth is constrained by limited access to capital and the small size of the domestic market. Foreign investors also recognize Romania's skilled labour potential, yet this has not translated into a significant concentration of advanced AI research and development operations.

The economic case for faster and more coordinated AI adoption is significant. According to regional estimates, **widespread adoption of generative AI could increase Romania's GDP by around 5% over the next decade, with an even higher potential of 7%** if the country manages to accelerate adoption and use AI to improve productivity in sectors where it currently lags behind. **These gains would rely less on large-scale job replacement than on task transformation**.

Romania has several strategic assets that could support a stronger national AI trajectory if integrated into a coherent policy framework. The country hosts the European Cybersecurity Industrial, Technology and Research Competence Centre, which strengthens its relevance within the wider EU digital and technological ecosystem. In addition, the planned RO AI Factory, linked to the EuroHPC initiative, offers an important opportunity to expand national access to advanced AI infrastructure, computing capacity, and support services for research, business, and public administration.

In Romania, **the energy and retail sectors are already among the areas most exposed to AI-driven transformation**, although they start from different levels of technological maturity. According to the [Hope4AI Skillscape research](#), the energy sector is being reshaped by the pressure of grid modernisation, renewable integration and operational efficiency, with companies already using AI for demand forecasting,

real-time grid management, predictive maintenance, grid balancing and automated operational decisions; **the study estimates average process automation in the sector at over 60%. By contrast, retail shows a lower average automation level, around 30%**, but a rapid expansion of customer-facing and logistics applications, including AI-supported inventory management, demand forecasting, chatbots, self-service cashiers and even autonomous store formats. Across both sectors, **the likely impact of AI is not only cost reduction and productivity growth, but also significant job transformation** with repetitive and routine tasks being increasingly automatable, while demand rises for digital, analytical and socio-cognitive skills, making **reskilling and partial retraining a central policy requirement for responsible AI implementation in Romania.**

POLICY RECOMMENDATIONS

Romania should update its AI policy framework from a narrow focus on technology uptake toward a broader readiness-and-governance model, jointly shaped by employers' organisations and trade unions and negotiated with relevant public authorities. In line with the Framework Agreement on Digitalisation, **national measures should require early information, consultation and joint anticipation of change**, so that AI adoption is linked to organizational preparedness, documented processes, data audits, internal change-management capacity and risk-based safeguards, rather than being treated as an isolated technological purchase. This is particularly important because **the Hope4AI evidence shows that adoption remains fragmented, many firms underestimate the organizational transformation required, and weak institutional capacity, limited funding, poor data governance and insufficient monitoring continue to slow implementation.** A revised Romanian framework should therefore align the National AI Strategy, Digital Decade measures and labour-market instruments around common priorities, like readiness, trust, leadership capacity, and continuous evaluation of AI's effects on work and productivity.

A second priority should be a coordinated skills and transition agenda for both the general economy and the energy and retail sectors, where AI is already reshaping tasks, workflows and occupational profiles. **The Skillscape research shows that energy and retail are among the sectors most exposed to transformation**, with higher automation intensity in energy, rapid operational change in retail, and growing demand for digital, analytical and socio-cognitive skills. At the same time, most roles are expected to be transformed or complemented rather than simply eliminated. **Policy should therefore support sectoral reskilling pathways designed jointly by employers, unions, education providers and public employment institutions, with training embedded in working time, accessible to SMEs and frontline workers, and connected to real job transitions.** The Trends report further suggests that **Romania should prepare not only for human augmentation and algorithmic management, but also for the rise of green-collar work and skills, meaning that AI, digital literacy and climate literacy should increasingly be developed together**, especially in sectors linked to energy transition, circular logistics and operational efficiency.

A third recommendation is to place social dialogue at the centre of AI implementation, not as an accompanying measure, but as a core condition for legitimacy, trust and fair transition. Consistent with the Framework Agreement on Digitalisation, Romania **should encourage collective agreements, sectoral protocols or tripartite guidelines on issues such as transparency of AI use cases, worker information and**



consultation, access to retraining, human oversight in algorithmic decision-making, and the responsible use of worker data. This is also strongly supported by the technology providers' findings and the co-creation workshop, **which stress that transparent communication, employee involvement, practical AI familiarization, and structured cooperation between employers and workers are essential for reducing fear, preventing conflict, and turning AI from a source of anxiety into a tool that supports human work.**

The practical implementation of these principles requires **trade unions to be explicitly recognised as institutional partners** in AI adoption processes – not as passive beneficiaries of the consultation, but as actors with a real right of initiative. Collective agreements targeting the use of AI should necessarily include clauses regarding: prior notification of employee representatives before any implementation decision with a significant impact on jobs, trade union access to independent audits of algorithmic systems affecting staff management, and appeal mechanisms for automated decisions with disciplinary or performance evaluation effects.

Finally, **Romania should back these recommendations with targeted implementation instruments - bundled financial support for SMEs, stronger sectoral data infrastructure, public-private innovation partnerships, and a permanent monitoring mechanism for labour-market effects.** The evidence points to high implementation costs, limited access to capital, low interoperability, fragmented know-how and weak diffusion of practical training as major barriers, especially for smaller firms and routine-intensive roles. **Policy should therefore combine grants, vouchers and advisory support for technology, skills and organizational change in one package, while also building interoperable data environments and regulatory sandboxes or pilot ecosystems in sectors such as energy and retail, where AI applications already affect forecasting, maintenance, logistics, customer interaction and operational decisions.** Given the significant upside identified by the Skillscape research, including productivity and wage gains and a positive fiscal effect, **Romania should also create a joint employer-union-government observatory to monitor impacts on productivity, job quality, skills demand and budget revenues,** so that policy can be regularly adjusted on the basis of evidence and negotiated experience.

KEY MESSAGES RESULTED FROM THE CO-CREATION WORKSHOP

A key message emerging from the co-creation workshop was that **AI adoption in Romania is constrained less by the availability of technology itself than by a wider ecosystem of structural and organizational weaknesses.** Participants highlighted weak infrastructure, limited incentives and financing, low digitalisation of company processes, poor interoperability of data, and a systemic digital skills deficit, all of which **slow the scaling of AI across the economy.** The workshop clearly framed AI as a **labour-market and governance challenge,** not only a technological one, and stressed that competitiveness, adaptability and job security must be pursued together.

Another message was that **successful AI transition requires a human-centred, tripartite and long-term response built around skills, communication and shared governance.** The workshop repeatedly pointed to early digital and AI education, continuous professional training, counselling and transition-support platforms, and targeted awareness measures as essential foundations for a more resilient workforce. Equally important, **participants stressed that social dialogue must become more practical and**



operational, through stronger communication and partnership between employers and workers, wider dissemination of good practices, and the creation of tripartite or cross-sector structures able to identify needs, mobilise funding and increase acceptance of resulting policies. On the regulatory side, the discussions also signalled the need for a clearer and more participatory framework for AI management, including public debate on sustainable adoption, stronger involvement of academia and employers in shaping rules, and dedicated sectoral or specialised bodies that can support implementation, standard-setting and continuous learning.

A distinct message, insufficiently represented in current debates, is that **trade unions cannot play a real role in the AI transition without their own capacity for analysis and negotiation.** Workshop participants pointed out that the expertise gap between employers – who have specialised technical advice – and employee trade union representatives is one of the most concrete obstacles to a functioning social dialogue on AI. **A coherent national policy should include dedicated support for the training of trade union representatives in the field of the impact of AI on work,** including through programmes financed by European funds, so that collective bargaining takes place between informed partners and not between a technical part and one captive to its own ignorance.

CONCLUSIONS

Romania stands at an important turning point in its approach to artificial intelligence. Although the country benefits from a solid digital and software base, a growing policy architecture, and strategic assets such as the European Cybersecurity Competence Centre, its **level of AI maturity remains limited and uneven.** The evidence suggests that **the main challenge is no longer whether AI will reach the Romanian economy, but whether Romania can build the institutional, organizational and social conditions needed to adopt it in a coordinated, inclusive and productive way.** This is especially relevant in sectors such as energy and retail, where AI is already beginning to reshape processes, tasks and skill requirements. **Romania's success will depend less on isolated technology uptake and more on its capacity to connect AI investment with governance, workforce preparedness, social dialogue, and a realistic transition framework for companies and workers.**

The main policy implication is that AI implementation in Romania must be treated as a long-term labour-market and competitiveness project, not only as a digital modernization exercise. The recommendations point clearly toward a model based on readiness, trust and shared responsibility, including stronger coordination between government, employers and trade unions, sectoral reskilling and transition pathways, practical implementation support for firms, especially SMEs, and a clearer system for monitoring the effects of AI on productivity, job quality and workforce adaptation. **The co-creation workshop reinforces the conclusion that a human-centred and participatory approach is essential if Romania wants AI to strengthen, rather than weaken, economic resilience and social cohesion.** A more structured combination of investment, training, consultation and evidence-based regulation would allow Romania not only to narrow the gap with the European average, but also to shape a more balanced and sustainable model of AI adoption in the world of work.