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**PROMOTING  
EXCELLENCE IN  
THE FIELD OF AI  
WILL STRENGTHEN  
EUROPE'S POTENTIAL  
TO FACE GLOBAL  
COMPETITION**

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# EDITORIAL

## PROMOTING EXCELLENCE IN THE FIELD OF AI WILL STRENGTHEN EUROPE'S POTENTIAL TO FACE GLOBAL COMPETITION

**A**rtificial intelligence (AI) has emerged as one of the most transformative forces of the 21st century. Its applications span industries and sectors, from healthcare to agriculture, reshaping economies and societies. With predictions suggesting that AI could add up to \$15.7 trillion to the global economy by 2030, Europe finds itself at a crucial crossroads. The opportunity to lead the AI revolution is immense, but the risks of falling behind are equally real.

Europe has long been a leader in regulating technology through the introduction of the AI Act, the first comprehensive regulatory framework for AI. This ambitious legislation prioritizes the protection of fundamental rights, promoting the ethical use of AI while fostering innovation. It is designed to address AI's potential to impact our personal lives, ensuring that citizens' rights are respected while encouraging responsible technological advancement. The Act applies a risk-based approach, regulating high-risk AI systems more strictly while offering greater flexibility for low-risk applications. This regulatory leadership is vital to ensure that AI evolves in a way that aligns with European values of fairness, transparency, and respect for human rights.

However, the regulatory framework alone is not enough. For Europe to truly capitalize on AI's potential, the continent must invest boldly in research, innovation, and infrastructure. Europe has yet to foster an AI ecosystem that can compete with global giants like the United States and China. While the EU has taken commendable steps, such as initiatives like EuroHPC, which aims to provide SMEs and start-ups with access to powerful computing resources, AI adoption across European businesses remains low. Less than 10% of small and medium-sized enterprises (SMEs) in Europe currently use AI. This gap needs to be closed through substantial investments in digital infrastructure, skills development, and access to cutting-edge technologies. Without these investments, Europe risks becoming a consumer of AI technologies developed elsewhere rather than a leader in their creation.

One key area where Europe can and must take the lead is in the development of AI models that reflect European values. While the U.S. and China dominate the AI landscape, Europe has the opportunity to promote technologies that prioritize transparency, privacy, and the protection of citizens' rights. A key challenge will be ensuring that European AI development remains independent of non-European tech giants, reducing reliance on foreign technologies and promoting local solutions that are better suited to European needs.

Europe's AI future must also be inclusive. At the heart of this mission lies the ability to integrate AI into key sectors like healthcare, public services, and infrastructure. These sectors not only stand to benefit most from AI's

transformative power but also present opportunities to tackle societal challenges, such as an aging population, climate change, and public health crises. By harnessing AI in these areas, Europe can improve productivity, reduce inefficiencies, and better meet the demands of its citizens.

In parallel, Europe must overcome some significant obstacles that could hinder its AI ambitions. Access to capital is one such challenge. Start-ups and SMEs in Europe face funding gaps that could limit their ability to scale innovative AI solutions. A greater focus on venture capital, government funding, and international partnerships is required to support the development of world-class AI companies. Moreover, Europe must address the shortage of digital skills in its workforce. A coordinated effort to expand digital education at all levels, from primary schools to universities, is essential for equipping the next generation with the skills necessary to thrive in an AI-driven world.

Collaboration between governments, the private sector, and civil society will be essential for Europe's success in AI. Governments must not only regulate but also lead by example, adopting AI technologies in public services while adhering to strict ethical standards. Poland's initiative in creating an AI agency and its work on models like PLLuM is a prime example of how national governments can promote trust and innovation in AI. When citizens see governments adopting AI responsibly and effectively, their confidence in the technology grows, which in turn drives broader adoption across society.

Ethical questions surrounding AI, such as algorithmic biases, accountability, and transparency, must be at the forefront of Europe's AI strategy. AI systems should be developed with mechanisms in place to detect and address biases, ensuring fairness in their applications. Governments, businesses, and civil society must collaborate to establish strong governance frameworks that guarantee accountability and maintain public trust in AI technologies.

In conclusion, Europe stands at a defining moment. It has the potential to lead the world in AI, setting global standards for ethical, transparent, and inclusive technology. But this opportunity will not be realized unless Europe invests decisively in AI infrastructure, innovation, and skills development, while balancing regulation with flexibility to encourage growth. The stakes are high, as AI will shape the future of economies, societies, and individual rights. Europe's ambition must be matched by action, making AI a driver of collective progress and reinforcing Europe's digital sovereignty. The time for bold steps is now; Europe must act to seize its place as a global leader in the AI revolution.

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**VOLKER WISSING**

German Federal Minister for  
Digital and Transport

# AI is the Key to European Competitiveness

Without a doubt, artificial intelligence is one of the most transformative technologies of the 21st century. It has the potential to radically change our society and economy. According to a study by the German Economic Institute, AI could boost the German economy by €330 billion in ten years. Every third company in Germany is now investing in AI. Companies that miss this opportunity to profitably deploy AI applications will struggle to remain competitive in the future.

## Europe must retain its sovereignty

Since the establishment of the European Union, free rule-based trade has been one of its key features and contributed to its prosperity. Russia's war of aggression against Ukraine shows that autocracies cannot be reliable partners for liberal democracies. Using platforms and data-based AI applications from authoritarian states can have serious consequences for our security and economic competitiveness.

Mario Draghi's report on the future of EU competitiveness also highlights the fact that we need to take action. Appropriately, it focuses on innovation, placing a special emphasis on reducing Europe's dependence on other countries. The report is a vital wake-up call for Europe's competitiveness and could be a great opportunity if we take it seriously. Several of its recommendations overlap with the Federal Government's positions and ongoing activities.

My aim is to make Germany and Europe global pioneers in the digital transformation and, at the same time, strengthen the continent's technological autonomy and security.

## Thinking beyond Europe

AI applications in particular are based on collecting and analysing large volumes of data. This data may contain business secrets or sensitive personal characteristics. Using foreign AI systems or platforms may lead to data being transferred to other countries, where competing companies or governments could analyse it. We should

therefore limit ourselves to using AI systems from countries that share our values, such as the G7 or OECD countries, especially in critical sectors.

In 2023, we adopted common guardrails for advanced AI systems such as generative AI with the EU and our G7 partners – France, Great Britain, Italy, Japan, Canada and the United States – the first of their kind. In the *Hiroshima Code of Conduct for Organizations Developing Advanced AI Systems*, we agreed that AI should be developed in line with our values. AI must not be used to harm our democracies, manipulate people and support terrorism or other criminal activities. Over 50 states and regions, including all EU Member States, have already endorsed it. The aim is for AI developers to voluntarily commit to the standards set out in the *Code of Conduct*. In the G7, we are currently working closely with the OECD to promote the implementation of the standards.

At the same time, we must not become dependent on foreign big business, even from friendly states. Developing our own AI solutions is key to protecting our values and business secrets, as well as remaining globally competitive. This is not about protectionism; it is about the ability to take decisions and actions of our own choosing.

## Innovation-friendly regulation as a success factor

The EU AI Act is the world's first comprehensive regulatory framework for AI and shows that the European legislature is proactively shaping technological developments. However, when implementing the regulations, it is imperative that we ensure proportionality and consider the needs of the business community, so that we do not inhibit innovation. Overregulation places European companies at a disadvantage compared with global competition and drives innovation abroad. That is why I am in favour of maximizing freedom to innovate, for example in AI sandboxes.

## MISSION AI

We must focus on start-ups and medium-sized enterprises, the backbone of the European

economy. That is why my Ministry launched MISSION AI as part of the Federal Government's Digital Strategy. We are leveraging this initiative to promote the growth of trustworthy AI in Germany.

As a key project of the Digital Strategy, MISSION AI backs data spaces as a foundation for AI innovation. To this end, it is developing specific solutions, such as AI-based security and quality monitoring, to improve the quality and conformity of data in data spaces.

At the same time, we are organizing match-making formats to bring together microenterprises, small and medium-sized enterprises (SMEs) and start-ups and facilitate market access for AI applications in medium-sized enterprises. Several collaborative projects were already established at the first event, which was held in Heilbronn in July 2024.

We are also developing a voluntary minimum standard compatible with the EU AI Act for AI applications below the high risk threshold. On one hand, it aims to increase user trust in AI technologies, while on the other, it seeks to give AI providers applying the standard a competitive advantage, and offer AI operators that use the AI components a defined level of reliability. We debuted the minimum standard at the 2024 Digital Summit. The next step will be to trial it and the associated test criteria and procedures with AI applications already in use, to ensure that they are suitable for use in practice. In this way, we can guarantee quality and trustworthiness without inhibiting innovation.

The minimum standard is based on the 'Ethics Guidelines for Trustworthy AI' of the European Commission's high-level expert group on artificial intelligence, AI HLEG. As a result, it guarantees compliance with European AI regulations and standardization. With the minimum standard, we are promoting AI quality, trustworthiness and transparency, so that the 'AI made in Germany' or 'made in Europe' brands can succeed.



**DARA CALLEARY T.D.**

Minister of State for Trade Promotion, Digital and Company Regulation, IRELAND

# Enhance EU's competitiveness and economic growth through AI

The surge in AI deployment and continued unabated in 2024, driven by the successive releases of new systems from the leading providers, each claiming a step change in performance over their predecessors and competitors. While policy makers must be careful to discern marketing hype from reality, the indications are that rate of advance will not slacken in 2025.

2024 also saw the release of *The Future of European Competitiveness* report<sup>1</sup>, prepared by Mario Draghi, Special Advisor to the President of the European Commission and former President of the European Central Bank. The report sets out in stark terms the factors undermining EU competitiveness and puts forward proposals for remedying the situation. The report identifies three main areas for action, the first of which is closing the EU's innovation gap with the United States and China. A key component of this strategy is integrating new technologies like artificial intelligence into our industrial sector. Crucially, Draghi proposes that we need to shift our orientation from trying to restrain this technology to understanding how to benefit from it.

While AI is not a panacea for EU competitiveness, AI can have a transformative impact on competitiveness, if effectively harnessed. For example,

- AI is already being used to make advances in science and medicine e.g. in October 2024 the Nobel Prize for Chemistry was awarded to Demis Hassabis, a scientist at Google DeepMind for using AI to predict the structure of proteins.
- AI can analyse data in entirely new ways and reveal information and patterns previously hidden from us e.g. satellite imagery of agriculture land use, weather data, engineering data.

- AI can be harnessed by Government and public bodies to provide better, and more accessible, public services.
- AI will help companies to increase their productivity, to reduce their costs, to be more innovative and to provide better services to their customers.

The challenge for policy makers is to expedite the adoption of AI in the EU. This will not happen automatically; we must ensure that the necessary enablers are in place. Principal among those are AI skills, from simple skills to use AI as a productivity-boosting assistant, to the advanced technical skills needed to develop and train AI systems. We must provide appropriate education and training opportunities, tailored to the needs of distinct cohorts, from those in full-time education, to workers participating in life-long learning.

Another prerequisite for the widespread adoption of AI is public trust in AI systems and reassurance that they are being used ethically and responsibly. To this end, 2024 saw the entry into force of the pioneering EU AI Act. It is designed to protect people's health, safety and fundamental rights, in a risk-based manner so that its provisions are targeted and proportionate. This will ensure that the EU remains competitive for AI investment and innovation. I am confident that other jurisdictions will look to the EU's leadership in AI regulation, to enhance public confidence in AI. Such confidence can grow innovation.

To that end the AI Act contains specific measures to promote innovation, including the establishment of AI regulatory sandboxes which will provide businesses opportunities to develop, test and validate their AI systems under the guidance of regulators.

I had the honour of chairing the Ministerial Meeting of the D9+ Group of EU digital leaders in April 2024 where we adopted a declaration<sup>2</sup> highlighting the need for an effective balance between stimulating innovation and necessary regulation in the digital economy.

We advocated for particular consideration of the critical role of startups and scaleups in boosting the EU's competitiveness and innovation. Only 8% of SMEs currently use AI – this must change. It has never been more important that the EU abide by the principle of "think small first" in relation to regulatory requirements.

President von der Leyen has set the goal for the EU to become a global leader in AI innovation and key deliverables for the new European Commission include the AI Factories initiative to ensure access to tailored supercomputing capacity for AI start-ups and industry; the Apply AI Strategy to boost new industrial uses of AI and to improve the delivery of a variety of public services, such as healthcare; the EU Cloud and AI Development Act to increase computational capacity and create an EU-wide framework for providing 'computational capital' to innovative SMEs; and the European AI Research Council where the EU can pool all of our resources, similar to the approach taken with CERN.

Ireland's national approach is strongly aligned with this ambition and I was pleased to publish a refresh of our National AI Strategy in 2024<sup>3</sup>, which sets the vision that Ireland will be an international leader in using AI to the benefit of our population. The strategy contains a comprehensive suite of actions, spanning seven themes to make this vision a reality: governance; society; serving the public; enterprise; education; research; and infrastructure.

In 2024 I also appointed 15 AI Experts to act as Ireland's AI Advisory Council<sup>4</sup> to ensure that my Government has access to independent, expert advice on AI as it continues to evolve.

I am convinced that with a concerted effort involving all stakeholders in the EU, AI can play a pivotal role in re-invigorating EU competitiveness and propelling its economy on a sustainable growth trajectory for the benefits of all its citizens.

<sup>3</sup> [National AI Strategy Refresh 2024](#)

<sup>4</sup> [Membership of the AI Advisory Council](#)

<sup>2</sup> [D9+ Ministerial Meeting in Dublin, 19 April 2024: Ministerial Declaration](#)

<sup>1</sup> [The future of European competitiveness](#)



MÁRTON NAGY

Minister for Economy, Hungary

As the minister responsible for national economy I see artificial intelligence as a technological tool that can achieve unprecedented efficiency in almost any field in the economy and society.

I'm not alone with this insight.

Due to recent research findings the economic potential of AI is incredible, "conventional" and generative AI solutions could add the equivalent of 15.7 trillion USD to the global economy by the end of this decade.

AI in itself also generates a continuously growing market. Due to estimates<sup>1</sup> the total machine learning market was valued at \$19.45 billion in 2022 and will reach \$188.34 billion by 2030. The Natural language processing market will grow from \$18.9 billion in 2023 to \$68.1 billion in 2028. The global computer vision market was valued at \$10.6 billion in 2019 and will reach \$24.03 billion by 2027.

Generative AI has a decent and rapidly growing contribution to these numbers. In particular, Foundation Models, large-scale machine learning models trained on vast amounts of data, have become a cornerstone of modern AI development. These models underpin many of the generative AI systems that create content – text, images, code, and more – without direct human input. And while after Chat GPT was made available to the wide public there's a certain hype surrounding this topic, this transformative technology holds immense potential for literally all sectors of the economy, ranging from healthcare to manufacturing. It should also be mentioned that while one of the main concerns with regards to AI is that 'it will take our jobs' (which is – by the way – a rather false assumption since both surveys and experiences shows that AI also generates new workplaces with higher added

# Foundation models, generative AI and IP

value), a recent study<sup>2</sup> highlighted that close to 80% of the jobs in the U.S. economy could see at least 10% of their tasks done twice as quickly (with no loss in quality) via the use of generative AI. The survey also highlighted that these improvements were particularly noticeable among low-skilled/low-performer employees. This clearly shows the potential of this technology – the ability to improve existing workflows and the performance of the workforce is an important asset in productivity and competitiveness. Goldman Sachs estimates that over the next decade Generative AI in itself will be responsible for a 0.4 percentage point increase in GDP growth in the U.S., 0.3 points in other developed markets, and 0.2 points in emerging markets.

However, there's a special relation between Foundation models and Generative AI and the creative industry. While the industry itself also benefits from the use of this technology – it can undoubtedly help the work of writers, visual designers and even music composers – it also imposes its own challenges and raises questions to be answered. In the traditional understanding of IP law, creators and inventors are human. But with AI systems capable of generating original works, the lines between human and machine-generated content blur. Who owns the output of an AI system? Does the creator of the algorithm, the operator, or the AI itself hold the rights? And who is liable when traditional IP rights are violated by generated content?

As the Minister for National Economy, I believe the creative industry is as integral to the economy and competitiveness of a nation as any other sector. The gross value added of the Hungarian creative industry doubled between 2010 and 2022, accounting for approximately 2-3 % of the gross value added for the national economy. This growth rate of the creative industry is the second highest in the line

**2 Generative AI Impact – Survey by Google/ Andrew McAfee** (Andrew McAfee is Technology & Society's inaugural fellow, a Principal Research Scientist at the MIT Sloan School of Management, and the co-founder and co-director of MIT's Initiative on the Digital Economy.): [https://storage.googleapis.com/gweb-uniblog-publish-prod/documents/Generally\\_Faster\\_-\\_The\\_Economic\\_Impact\\_of\\_Generative\\_AI.pdf](https://storage.googleapis.com/gweb-uniblog-publish-prod/documents/Generally_Faster_-_The_Economic_Impact_of_Generative_AI.pdf)



<sup>1</sup> Századvég – Pre-research for the Hungarian AI Strategy



between sectors. The industry has the potential to drive overall economic growth as it develops products and services in conjunction with many other industries.

In addition, its cultural significance holds a special value that cannot be quantified in monetary terms or numbers and therefore requires special attention or protection.

My ministry has already consulted with industry stakeholders on this matter. They are not against the technology, quite the opposite; they are keen to adopt it. However, the rights of authors must be adequately safeguarded.

As the Minister for National Economy, it is not my job to resolve every legal aspect of this issue. However, I believe that through collective thinking and consultation with relevant parties,

we must strive to find a solution to these issues as soon as possible. This solution must ensure a peaceful coexistence with technology and allow for the reaping of its benefits for developers, innovators, and copyright holders alike.

Therefore, we have raised awareness on the importance of this topic both within the Hungarian government and at the relevant forums of the European Union (most notably at the newly formed AI Board responsible for the coordination of the implementation of the AI Act), and we encourage dialogue and joint thinking in this area.

**Conclusion**

Protecting European values and regaining European strategic sovereignty in the global

technology market dominated by the US and China is probably the most important European challenge of this decade. Hungary believes that adaptation and uptake has a key importance in European competitiveness. We believe that Europe has the potential to win this race, and the recent adoption of the AI Act with creating a level playing field for all actors of the market was an important step in this direction. We also believe that with further consultations and joint efforts we can achieve a unified approach to the recent issues of AI and intellectual property rights ensuring both innovation and the protection of the rightsholders and the European cultural heritage, while – as it was the case with GDPR – also setting up a global trend for this matter.





**PAMELA KRZYPKOWSKA**

*Director of Research and Innovation at  
Ministry of Digital Affairs, Poland*

# AI Implementation as a Pillar of Modern Governance: How Governments Can Lead by Example

**A**rtificial intelligence is transforming governance and public services worldwide, offering unprecedented opportunities to improve efficiency, decision-making, and service delivery. As AI becomes central to modern governance, governments face a pivotal moment in defining how this technology will shape the future. Poland's establishment of an AI Agency, tasked with overseeing the EU's AI Act while fostering innovation, marks a crucial step in setting regulatory foundations for responsible AI use.

However, policy and regulation alone are not enough. To fully realize AI's potential, governments must lead by example, demonstrating how AI can be implemented ethically, transparently, and in a way that garners public trust. Balancing innovation with ethical responsibilities is essential, and governments are uniquely positioned to set the standard for trustworthy AI adoption, both in their own operations and across society.

## **The Role of Policy and Regulation in AI**

Let us be very clear – AI Act is a pioneering EU regulation. It is not only smartly designed to ensure AI is developed and used safely, ethically, and transparently. It also critically tries to strike a balance between fostering innovation and protecting fundamental rights, making it a strong framework for responsible AI use in Europe. Its clear guidelines promote trust, accountability, and fairness in AI deployment, setting a global standard for ethical AI.

However, regulation alone has its limitations; it serves as a foundation but is insufficient to fully unlock AI's potential. The AI Act tells us what needs to be done, but we still need to make it happen. Therefore, action through implementation is critical.

An example of this approach in the digital sphere is Poland's digital wallet, mObywatel, which exemplifies how governments can embrace digital transformation and provide services that enhance citizen engagement.



The application is a one-stop-shop for digital administration, which soon will be powered by an AI chatbot, helping people to move through all available services. Moving forward in the AI driven world, can only be done by combining strong policies with tangible applications.

Governments can and must demonstrate the benefits of AI, ultimately leading to more efficient, responsive, and trustworthy public services.

## **Governments as Role Models in AI Implementation**

It needs to be said that governments have a unique responsibility to lead by example in

the ethical use of AI, as public institutions are entrusted with safeguarding citizens' rights and welfare. Public trust in government hinges on the responsible implementation of digital technologies, AI included. We know that trust is hard to build, but very easy to breach. Citizen always needs to be put first.

But here comes the solution for widespread AI implementation – by demonstrating ethical AI practices, governments not only reassure citizens but also set a standard for the private sector and the global community, showcasing how AI can be harnessed to benefit society while minimizing associated risks. If those solutions will be built on strong foundations,

accessible to the public, and more even – open source - This can provide guidance and legal certainty to private entities, still trying to figure out how AI Act should fit into their business applications. We have already started this journey to make AI Act understandable and accessible by starting a series of webinars on how AI Act can effect citizens and businesses.

We know that those changes don't happen overnight. For instance, Poland's initiative to develop its own large language model, PLLuM (Polish Large Language Model), has started in January, and we are committed to publish this model in the beginning of next year. This model - Built with ethically sourced data and designed to reflect local and cultural contexts - aims to ensure that AI applications serve the specific needs of Polish citizens. We are

sure that publishing this model and its data sources, will be a beginning of a new family of fine-tuned models, that can be built for specialized applications like finance or healthcare. Government provides strong foundation – business can do the rest.

This model will also be the basis for an AI assistant for government agencies and institutions. We believe that once built – this ethical technology will start the era of a new social servant. From now on powered with AI.

Additionally, preparing for this, Poland has already established recommendations for the use of generative AI in public administration, ensuring that its deployment aligns with ethical guidelines and public interest. Alongside these recommendations, training programs have been implemented to educate civil servants about AI technology, its capabilities, and ethical considerations. By connecting understanding with ethical use, governments can foster a culture of responsible AI adoption.

This holistic approach to AI implementation not only equips public servants with the tools and knowledge necessary to navigate this new landscape but also sets a precedent for ethical AI practices in the public sector. By leading the way, governments can demonstrate that AI can enhance governance and public services while maintaining accountability, transparency and compliance with existing regulations.

**The Path Forward: Building a Trustworthy AI Ecosystem**



But implementation and leading by example is only a good start. To build a trustworthy AI ecosystem, ongoing collaboration among government, academia, and the private sector is essential. Poland exemplifies this commitment through the establishment of a working group on AI adjacent to the Ministry of Digital Affairs, which includes experts from academia and business. This group focuses on blending best practices and creating a platform for knowledge exchange, ensuring that diverse perspectives inform AI development and implementation. And as I hope I've already shown – this collaboration makes us perfectly suited to create engagement and public trust with AI.

One thing is certain – AI is here to stay. As I said – governments have now an amazing opportunity of supporting artificial intelligence transformation, and showing how to make it ethically and upholding the highest standards. Now is the time to embrace innovation while upholding ethical standards and prioritizing citizen interests. Now, we – governments - can lead the way in creating a future where AI serves the public good.





BRANDO BENIFEI

MEP (S&amp;D Group – Italy)

# Supporting the development and use of trustworthy AI

“ The narrative that the AI Act is an obstacle to innovation is something we have heard for many years and continue to hear after its entry into force. The reason why it is still very successful today is simple: it is much easier. It is easier to achieve highly profitable results in an unregulated environment, because you only have to look at those two or three companies that have been very successful to think that unregulation is the way to go. What has less appeal is the account of accidents (fatal and non-fatal) and the violation of users' rights that that same context offers. We have been reading about this for months with the many lawsuits pending in the United States against companies offering generative AI, lawsuits that, if they had a certain result, would bring their business model to its knees. Just as we have also seen several cases in Europe in recent years, before the AI Act came into force, for the uncontrolled use of algorithms that had an impact on the lives of vulnerable individuals such as people who had applied for financial support from the state or students who had been misjudged because of a badly set-up algorithm with direct consequences on their academic future.

Then there is the European Union, which has come up with a text that, although not perfect, has the ambition to strike the right balance between innovation and respect for human rights, as we explicitly added, with the European Parliament's amendments for which I was co-rapporteur, in Article 1. There can be no widespread adoption of AI tools without the trust we place today in the fact that our appliances are safe because they have a CE mark. If we think, however, that AI is not a mere household appliance, and that it already helps us to make important decisions for our private lives and our work, perhaps it is good that upstream the choices made during its development are transparent and shrewd, far from approaches such as that of “move fast

and break things”, perhaps suitable for other contexts and times, but not for this one.

And we should be proud of this, as it already happens in other sectors such as food, where citizens of other countries discover that the same companies sell in Europe a healthier version of the same product, because it has fewer additives and colourings, than the one they find on their shelves. The same has happened with the GDPR, which certain commentators have tried to portray as the cookie law (which, incidentally, is a different

from the aggressiveness of certain companies on the use of our personal data, but also from the intrusiveness of governments, limiting the risks of a dictatorship of surveillance.

Getting there will require more effort, no doubt, but the result will be better because it will be guaranteed by an advanced system of controls. The possibility for users to be able to know the rationale behind the choice of a system using AI will help them to trust that system; knowing how AI has been trained will help to prevent forms of discrimination and to choose the AI best suited to the purpose



one) without remembering that many of the developments in favour of privacy for users outside the European Union have come about precisely because of work done on the basis of those norms that best protect the rights of the data subject. Norms that protect not only

we have in mind; the obligation in some cases to report high-risk AI systems in use and violations of the AI Act centrally will provide an up-to-date overview of the risks across the Union. The request for a Fundamental Rights Impact Assessment (FRISA), which we



obtained in negotiations for high-risk AI used in the public sector and in those sectors with a high social impact such as banking, goes in that direction. A public body, including law enforcement authorities, must act even more responsibly since, unlike the private sector, the

user cannot find a cheaper and more efficient alternative on the market. Furthermore, the state and the police exercise power, with legal effects, over people and their freedom. The FRIA therefore has the task of forcing the deployer to pause and reflect for further evaluation on the possible negative effects AI might have on people.

It would be a mistake, then, to think that these prescriptions can only be addressed by the big companies we know. In the AI act there are also many provisions for SMEs and start-ups, which enjoy preferential access to regulatory sandboxes to experiment with the uses of AI, under the guidance of the authorities, without the risk of sanctions.

The very fact that it is a EU regulation, and thus uniformly applicable throughout the EU, is an advantage not to be taken for granted when one considers that in the United States, as it is happening with privacy regulations, state initiatives are emerging to regulate AI that inevitably create a legislative puzzle that is difficult for a start-up to tackle.

While investments, support for compliance and public-private partnerships will undoubtedly be needed to finance the birth and growth of start-ups, we must be confident that designing AI systems in accordance with the requirements of the AI Act from the outset

will foster the spread of secure systems for the benefit of users and companies.”.



**BRUNO ZERBIB**

*Orange Executive Vice President in charge of Innovation Group*

# AI: A true game changer for connectivity networks

Over the last two years, we have seen the launch of a new industrial revolution with an ongoing exponential use of AI and Generative AI. AI has already started to spread across all the various sectors of activities and into our private lives. The AI revolution creates huge opportunities for the telecom sector to become more efficient, more competitive with smarter networks, and more innovative with customised offers combining AI and 5G slicing. This also creates huge responsibilities to ensure AI development and usage are responsible, inclusive, and compliant with our green commitments.

As far as connectivity networks are concerned, the AI effect is twofold: it will substantially transform the way we deploy and run our networks with greater efficiency and customer satisfaction, and at the same time it will require additional investments in innovation to ensure our networks are fit for the increased use of AI in our society.

## AI for networks: towards smarter networks for the benefit of all

AI is going to be a game changer for networks. They will become increasingly smarter and customised to various demands. Thanks to AI, they will run more efficiently, be more agile and flexible, with enhanced cost optimisation.

And this is not theory but already very concrete in practice! We have at Orange many use cases that are already deployed or under test in our networks. This includes for instance to use AI for

➤ Enhancing customer experience; AI can significantly improve customer experience by providing personalised services and instant support, thanks to AI-driven chatbots, enhancing user satisfaction and reducing response times, or thanks to personalised recommendations,

enabling tailored service offerings that meet individual needs.

➤ Optimising network investment choices, by designating the best network (antennas) location, and/or improved network capacity planning to optimise traffic flow.

➤ Network management, improving field operations, performing predictive maintenance, or summarising trouble tickets, helping technicians to fix issues.

➤ Fighting against cyber-attacks – which are themselves increased with AI. AI can be used to enhance cybersecurity protocols, enabling proactive threat detection and response, for instance with an AI tool in a anti DDoS system, or to protect submarine cables by monitoring with an AI sound tracker all types of activities ongoing around cables.

➤ Greener connectivity networks. While AI is raising huge challenges in terms of energy consumption (notably linked to data centres' energy and water consumption) that will have to be tackled, it can also enable the reduction in emissions. For instance, by using AI systems to monitor the energy consumption of our routers on international links, we have already managed to reduce this consumption by 12%.

To summarise, **using AI in our networks translates into a better customer experience, especially in terms of service reliability, reduced downtime, optimised performance, and more efficient customer support.** Our business customers also benefit from more robust and secure networks tailored to their specific needs, including their own AI tools.

To reap the most benefits of AI powered connectivity networks, and in addition to the cyber and green aforementioned challenges, we also need to address the following issues:

➤ Improve EU citizens and employees' skills on AI, which requires specific and adapted training. In Orange a wide range of trainings is available for our employees as well as a specific

service named Dinotoo<sup>1</sup>, which is a secure generative AI tool based on the most powerful LLMs with the utmost security and data protection available for all. Since its launch in January 2024, over 56,000 distinct employees used it. Based on its experience, Orange Business launched recently Live Intelligence: a range of plug-and-play GenAI solutions for businesses.

➤ Risk of hallucinations, which calls for testing AI systems robustly before any wide implementation.

➤ Data management and usage; entities need to adapt themselves to be able to manage and use the data at their disposal in the company in the most efficient way and to maintain high data quality. This is one of the most difficult tasks to achieve; "Data Democracy" is our dedicated multi-year programme in that domain.

On the other hand, the AI revolution cannot take place without connectivity and robust networks able to convey AI-driven traffic.

## Networks for AI: new challenges to cope with specific AI-driven traffic

AI will require more innovation in networks: we expect an increase in the volume and strong changes in the type of traffic we convey; according to OMDIA by 2030, two thirds of traffic will support AI based workloads. With AI running on diverse equipment, from devices to clouds, there will be more diverse traffic patterns and more upstream video traffic – supporting new video traffic in both directions is rather new for our networks, and more demanding requirements in terms of quality of service (including on demand), and in particular lower latency and/or high reliability.

<sup>1</sup> <https://hellofuture.orange.com/en/orange-is-developing-secure-and-streamlined-generative-ai-for-its-employees/>

If we look for instance at an AI powered virtual personal assistant, we don't speak only about conveying text but conveying multi modal interactions (text, images, videos) allowing immersive and interactive experiences thanks to low latency with real time processing and immediate responses. Specific quality (latency, real time, etc) requirements will also be required for instance in case of immersive interactive games, for AI powered smart cities, or AI-based visual quality inspection in a factory line. AI native applications will leverage a data-driven, knowledge-based ecosystem, where information is consumed instantly and dynamically generated to realise new AI-based functionalities or augment and replace static mechanisms.

Such types of usage strain networks requiring innovations in infrastructure, as well as traffic optimisation, and AI-driven resource management. With this evolution, edge computing may emerge as a potential solution to tackle some of the challenges: by processing data closer to the source, edge computing can indeed significantly reduce latency and bandwidth usage. Edge computing is also a way to strengthen security and data sovereignty, data being stored at local level. A combination of 5G network slicing and edge computing seems to be one of the possible solutions to support AI-driven innovative services.

This is why we call for a new IPCEI as a complement to the current CIS IPCEI to boost investment in edge computing solutions for AI use cases, with relevant budget for a pan-European sovereign coverage.

Finally, to facilitate global AI usage in a responsible way, which means addressing CO2 efficiency, data protection, AI safety all in a transparent and configurable way, specific AI routing mechanisms will need to be invented and deployed. Interoperability and routing among different AI systems and networks will be required at some point. Standardisation efforts will be needed gathering industry stakeholders as well as work on open common APIs to encourage innovation and collaboration among developers and businesses. On the latter, the sector has already started the journey thanks to the GSMA Open Gateway project, the CAMARA project<sup>2</sup> – an open source project within the Linux Foundation to define, develop and test the APIs, and ultimately the joint venture<sup>3</sup> that Orange together with some major telecom providers and vendor will launch to accelerate the adoption and innovation of network APIs.

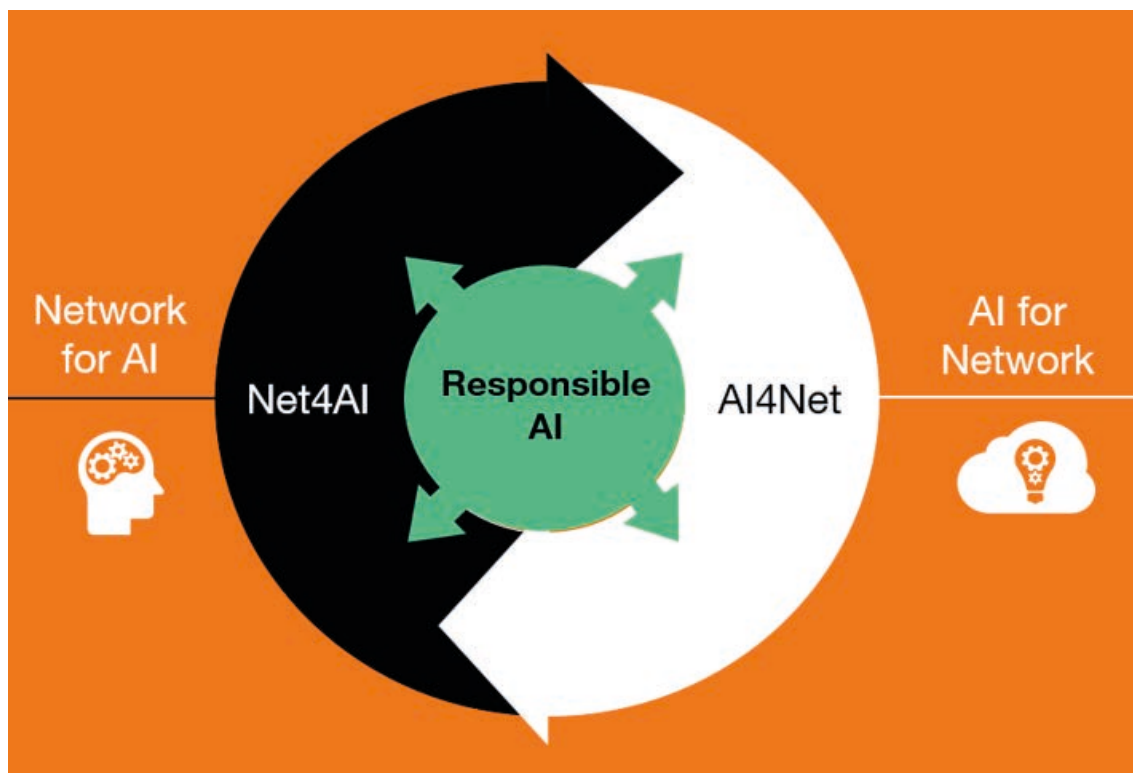
2 <https://camaraproject.org/>

3 <https://newsroom.orange.com/global-telecom-leaders-join-forces-to-redefine-the-industry-with-network-apis/>

**AI is there, let's ensure the EU collectively benefits from it in a responsible way**

AI will substantially transform our society. Orange is committed to playing a pivotal role in the responsible development and deployment of AI technologies, by transforming our networks to support this evolution. This requires an adequate European framework supporting private investment and allowing a fair return on investment. It also requires ensuring a harmonised implementation of rules impacting data and AI usage between Member States so that multi-national companies like Orange do not face further difficulty in making pan-European innovation in infrastructure and systems.

More globally the EU cannot afford to miss the AI revolution; it's the opportunity to strengthen European competitiveness, growth, and innovation. While the AI Act is now entering its implementation phase, it has become urgent to boost innovation in the EU and take-up in responsible AI. As mentioned by Mr Draghi in his report on the Future of European Competitiveness "The EU must have the ambition to be a leader in developing AI for its sectors of strength, regain and retain control over data and sensitive cloud services, and develop a robust financial and talent flywheel to support innovation in computing and AI." We strongly hope this new European mandate will allow such ambition to materialise.





**PILAR DEL CASTILLO**

MEP (EPP Group - Spain)

# Three Pillars for Europe's Tech Competitiveness

Following the publication of the Draghi Report, one message is loud and clear: **Europe must write 'competitiveness' in golden letters.** It is urgent to boost our ability to compete globally in the tech sector, building upon three decisive pillars: **repowering digital innovation, strengthening the digital infrastructure, and tackling the digital skills shortage.**

The competitiveness gap between the EU and other regions like the US is largely explained by the lack of innovation in the tech sector. As a consequence, it is vital to foster the development of cutting-edge technologies such as AI, Quantum, or IoT. These technologies hold a transformative potential for EU industries and will be catalysts for innovation.

On the other hand, digital technologies require massive volumes of data that need advanced infrastructures for super-fast transmission and processing, and the EU is lagging behind in their deployment. We all know from the European Commission that the EU faces a gap of at least 200 billion euros to deploy 5G and 6G coverage. In other words, **Europe, to be innovative, urgently needs robust, fast, low-latency, and secure networks.**

The coming **Digital Network Act (DNA)** will be the opportunity to tackle this challenge, but not only.

The DNA will have to address the **virtualization of the networks.** In this context, technologies such as **edge computing** are emerging as an alternative to relying just on the cloud. By processing data locally, edge computing reduces latency and minimizes the amount of data that needs to be sent to the cloud, which can lower costs associated with data transmission. Therefore, the EU should take policy action to enhance its capabilities

in edge computing and establish coordinated technical standards for its deployment.

In a data-driven economy, both edge computing and cloud computing are complementary. While edge computing offers reduced latency and transmission costs, cloud computing is key for more extensive and heavy data processing and storage. This combination can maximize the benefits of both systems. Following Mario Draghi, we should advance towards an EU-wide policy for public procurement of cloud.

Reinforcing our digital infrastructure is the second pillar, with a special emphasis on the need to upgrade **High-Performance Computing (HPC)** infrastructure and semiconductors. HPC is essential for developing and training advanced AI models, ensuring they can be deployed across all sectors and integrated into industry value chains.

The **Digital Europe Program**, with a budget of 7.5 billion euros dedicated to upgrading technological infrastructures such as super-computing, and the launch of the Euro-HPC Joint Undertaking in 2018 has made this progress possible. Thanks to these initiatives, the EU has several supercomputers: LUMI in Finland, Leonardo in Italy, and Mare Nostrum 5 in Spain. Furthermore, two exascale computers are planned to be launched in the near future.

Digital infrastructure is not sufficient. It is imperative to **open and facilitate access to HPC centers for SMEs, start-ups, and broader AI community.**

At the same time, **addressing Europe's dependency on semiconductors and chips is equally critical.** Looking at the bigger picture, semiconductors and chips are another of our weaknesses. The EU Chips Act was introduced

to address these challenges and to enhance Europe's position in the semiconductor value chain, attract significant investments, increase domestic production capacity, and implement mechanisms to monitor and respond to supply disruption.

The third pillar is about tackling the digital skills shortage. In my view, **digital education can be seen as a value chain per se with a horizontal impact on all economic sectors.**

**Digital training is critical at each educational stage**, from the basic to the highest levels. We must remember that the EU's competitiveness and success in the digital transition rely on having a society equipped with the necessary digital skills.

Let me finally underline that a **competitive and innovative Europe also depends on unlocking the full potential of Data.** Indeed, the development of digital technologies (AI, Quantum, IoT...) is inextricably linked to the availability of data, and in particular, industrial data. In that sense, the Data Act, becoming applicable in September 2025, will enable access to an almost infinite amount of industrial data, while respecting trade secrets and intellectual property rights. In short, the Data Act will be an opportunity for competitiveness and innovation, and in a very special way for SMEs and start-ups.

To conclude, a competitive Europe needs a **true Digital Single Market built upon reducing bureaucracy, cutting red tape, and fostering interoperability and standardization.**

**We have a long way to go, but also an opportunity we cannot miss. The time is now.**





### STÉPHANIE YON-COURTIN

*Member of the European Parliament, Renew Group. Renew coordinator of the Economic and Monetary Affairs committee (ECON) and Rapporteur on the Digital Markets Act (DMA)*

# EU's competitiveness and economic growth through AI

**A**rtificial intelligence, and more specifically generative AI, is set to revolutionize the global economy, reshaping industries, labour markets, and our societies. By embracing AI's potential, the EU can ensure its competitive edge, driving sustainable economic growth while reinforcing its role as a global technological leader. However, this future is not guaranteed. AI raises many questions - socially, ethically but especially economically. Whether Europe can fully leverage AI to boost its economy hinges on the access of this technology, which is currently concentrated in the hands of a few dominant players.

The EU has led the world in regulating AI, becoming the first continent to adopt a comprehensive framework. The AI Act represents a bold approach that seeks to encourage innovation while safeguarding fundamental rights, ensuring trust in AI systems. However, as we regulate, we must also recognize the deeper competitive challenges AI poses to Europe's digital future.

### A disruptive technology rooted in continuity

AI is the first technology to be dominated, from the outset, by a few major players. The vast amounts of personal and non-personal data controlled by Big Tech firms enable them to fine-tune their AI models, creating a feedback loop of data accumulation and technological superiority. These companies have built an insurmountable lead thanks to their control over critical assets like data and cloud infrastructure, which are essential for AI development. This dominance raises serious concerns about the fairness of competition, not only within the AI sector but across the entire economy. If left unchecked, AI risks exacerbating existing monopolistic tendencies, creating even greater barriers to entry for European start-ups and SMEs. Instead of fostering a vibrant ecosystem of innovation, AI

could end up deepening the structural power of a few global corporations.

In the recent conclusions of the G7 summit, world leaders highlighted that, while AI can drive growth, it must not exacerbate market concentration or create new digital monopolies. Instead, governments must globally work together to establish rules that promote innovation while safeguarding competitive markets. Europe, with its leadership in AI regulation, has the chance to set the global standard in this space.

### Regulation as the pathway to Europe AI's leadership

Europe could become a passive user of AI technologies, losing its agency over this critical technological shift and becoming dependent on foreign tech giants. To counter this, competition must be at the heart of Europe's AI strategy. A diversified and competitive AI ecosystem is essential. We need to democratize access to the tools necessary for innovation, enabling a broader range of developers and companies, especially in Europe, to participate in AI development. They need access

to flexible, modifiable AI models—resources that should not be locked behind the walls of proprietary software owned by tech giants.

Europe might have missed the wave of social networks, search engines but we must not miss the opportunity of having European champions in AI. Competition policy, through the Digital Markets Act and the work of the European Commission and National Competition Authorities, should address quickly the growing dominance of Big Tech, promoting a level playing field where all European innovators can thrive.





**PETER WECKESSER**

*Chief Digital Officer and member of Schneider Electric's executive committee*

# Transforming Energy Systems with Artificial Intelligence

## Perspectives from Schneider Electric

Artificial Intelligence (AI) is driving a new digital revolution and generating significant opportunities. It is revolutionizing energy systems by helping us improve consumption efficiency, reduce emissions, and facilitate the integration of renewable energy sources. Although AI is raising concerns as regards today's infrastructure and energy system or on its climate impact, we believe that they can be overcome because of the contributions AI is already making to our energy transition.

I believe that businesses and European decision makers can together ensure that AI does not become a barrier or stumbling block to the energy transition but a building block to enable new heights of green growth.

### How AI challenges today's energy systems

#### Meeting AI's electricity demand

Data centers today are a small fraction of our energy needs: only 20% of the world's energy consumption is electrified and data centers accounted for less than 2% of that electricity demand<sup>1</sup>. In turn, AI is only a fraction of data center demand. However, each of those is increasing considerably and AI faster than anything else.

In 2022, data centers used 460TWh of electricity; by 2026, they will need anywhere from 620TWh to nearly twice that much. In the words of the IEA, that's "roughly equivalent to adding at least one Sweden or at most one Germany". The IEA's estimate is among the

most conservative, with Barclays forecasting double the annual growth<sup>2</sup>.

Schneider Electric's Sustainability Research Institute has worked on different scenarios on AI's energy consumption. In a world of pure abundance without boundaries, we would expect AI energy consumption to increase thirteen-fold over a decade<sup>3</sup>, even accounting for data centers being abandoned as new and more efficient centers came online.

#### Keeping pace with infrastructural needs

After decades of stable electricity demand, grids are not sufficiently equipped to handle the structural increases needed for the transition. Data centers are straining against a pre-existing bottleneck and strengthening the case for urgent investment in expanded and smarter distribution grids.

Ireland is emblematic of this. Today it hosts over 80 data centers with over 50 more on the way. In 2022, they used 17% of Ireland's electricity (5.3TWh), more than every urban home in the country. At current pace of growth, they will need 32% of all of Ireland's electricity<sup>4</sup>, with all the corresponding challenges to the infrastructure.

#### Overcoming these challenges

There is a pressing need to ensure that AI technologies are provisioned sustainably.

<sup>2</sup> [https://www.ib.barclays/our-insights/ai-revolution-meeting-massive-infrastructure-demand.html?cid=pressrelease\\_site\\_PoweringAI2\\_](https://www.ib.barclays/our-insights/ai-revolution-meeting-massive-infrastructure-demand.html?cid=pressrelease_site_PoweringAI2_)

<sup>3</sup> <https://www.se.com/ww/en/insights/sustainability/sustainability-research-institute/artificial-intelligence-electricity-system-dynamics-approach/>

<sup>4</sup> <https://iea.blob.core.windows.net/assets/18f3ed24-4b26-4c83-a3d2-8a1be51c8cc8/Electricity2024-Analysisandforecastto2026.pdf>

Schneider Electric is committed to Responsible AI, emphasizing the importance of measuring AI's environmental footprint and collaborating with industry leaders to create energy-efficient data centers.

#### Data center efficiency

Data centers have made dramatic strides in their energy efficiency from everything to the algorithms to the chips to the cooling and are set to make many more. In a data center, 40% of energy is consumed by the computing itself, being converted into waste heat. The computer effectively becomes an electric boiler and so another 40% must be used in cooling. The remaining 20% is everything else, including surrounding IT<sup>5</sup>.

Early data center designs were inefficient and fan-cooled but as scale increased, so did density and efficiency. This gave way to the hyper-efficient systems of today, for which Schneider Electric provides end-to-end AI-ready electrification and cooling solutions that align the rise of AI with the energy efficiency needs for sustainability.

We're hopefully at the beginning of a new wave of efficiency gains. The European Union's Energy Efficiency Directive now requires data center operators to publish basic data and to share more detailed data to the European Commission so that it can aggregate a snapshot of energy consumption across Europe.

#### Frugal, flexible, responsible use

There are different AI tasks (training; inferring), different types of AI (generative; analytical), for different purposes (industrial; consumer), and on different timescales (immediate response; overnight processing). The greatest bottleneck will be on generative AI inferring. This points us to the highest gain solutions: algorithmic efficiency in

<sup>1</sup> <https://www.iea.org/reports/electricity-2024>

<sup>5</sup> Ibid.

generative AI is expected to improve 4 times per year and mixed precision techniques could even make its energy consumption plateau; prioritizing high impact use cases can drive consumption down further (from an overall data center consumption of 1370TWh to half as much, or 785TWh); flexible or staggered use can allow that consumption to flexibly match renewable production.

Additionally, to be taken up widely, AI needs to be trusted. This can be achieved through governmental incentives, such as the EU AI Act and the upcoming Apply AI Strategy, but also through the development of corporate Responsible AI strategies and processes.

### Cybersecurity best practice

Widespread adoption hinges on building trust in AI solutions. While AI introduces new cybersecurity challenges, it can also enhance defensive capabilities through advanced detection and protection tools. Ongoing conversations around acceptable risks and the establishment of a robust cybersecurity culture are crucial for responsibly integrating AI into energy systems.

### Transforming Energy Systems with AI

The reason that AI can be a net positive for our transition, is because of its incredible ability to handle massive volumes of data, simplify complexity, and act autonomously to optimize energy systems, especially digitalized and electrified ones.

### Optimizing for efficiency

AI has the capability to transform energy-intensive operations in factories, buildings, and district heating networks. District energy networks play a crucial role in achieving zero-carbon heating and cooling, with a goal of 350 million connections in urban areas worldwide by 2030, according to the IEA<sup>6</sup>. The growth of these systems is expected to meet approximately 20% of global space heating requirements.

What can AI do to help optimize this crucial energy system? For instance, a district heating utility Croatia, which serves over 8,000 residents, employs Schneider Electric's District Energy system with an AI Load Forecasting module. This technology, which complements our district energy software, predicts heating demands, optimizes energy consumption, reduces both operational and maintenance expenses, and lowers emissions. This AI advancement is helping our customer forecast the amount of energy needed to heat the

district, in turn allowing the district to optimize the operation of chillers, boilers, and energy storage systems.

### Optimizing for flexibility and prosumers

Schneider Electric also makes software designed to bring the power of AI to flexibility, enabling prosumers (consumers producing their own energy) and grid demand-response.

We combine our [EcoStruxure Building Operation](#) software with our [EcoStruxure Microgrid Advisor](#) so that energy is produced, consumed or stored exactly where it needs to be. Large buildings are even able to go beyond net-zero by distributing excess energy to hundreds of homes nearby.

This is not just theoretical; it's already happening. For instance, Schneider Electric partnered with Citycon on the Lippulaiva project in Finland, enhancing sustainability in the country's second-largest urban shopping center. Utilizing the AI-enabled systems mentioned above, Lippulaiva became an energy prosumer, reducing annual CO2 emissions by 335 tons and achieving a 3-year investment payback. Today, it stands as Europe's first energy-self-sufficient, sustainable, and carbon-neutral shopping center!

This will become more and more valuable as we integrate more variable renewables onto the grid, increasing the need for intelligent demand-response. In markets with high volatility or negative prices, we have already seen huge benefits in the application of solutions as EcoStruxure Microgrid Advisor.

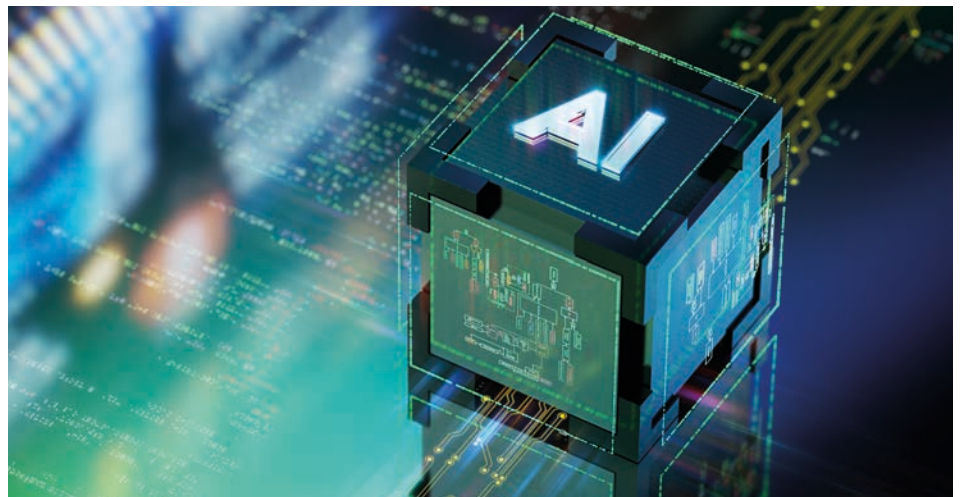
### Conclusion

By the end of the decade, we can expect AI to be integral to the energy sector, driving unprecedented efficiency and innovation.

This will be also about collaboration: no one can do it alone. At Schneider Electric, we partner with the world's leading chip manufacturers to design reference architectures that support high compute workloads with optimized uptime and efficient cooling.

New use cases will emerge, and AI will play a crucial role in achieving sustainability goals. The energy transition is not just possible; it's essential for a sustainable future.

While AI presents challenges, its transformative potential in the energy sector is immense – and the technology emerges as our best ally in the journey towards net zero. By developing and applying AI responsibly, we can revolutionize energy systems and create a more sustainable world.



6 <https://www.iea.org/reports/350-million-building-units-connected-to-district-energy-networks-by-2030-provide-about-20-of-space-heating-needs>



**ANDREAS SCHWAB**

MEP (EPP Group - Germany)

# To Support Start-Ups in the EU and Avoid AI Risks, We Must Regulate Big Tech

When it was released two years ago, ChatGPT surprised the world with skills that were thought to be decades away - text that would have taken us hours to write can now be generated in seconds. Artificial Intelligence (AI) holds enormous potential, but irresponsible development can pose significant risks. By shifting regulation away from small and medium-sized enterprises (SMEs) and towards Big Tech's foundation models with systemic risk, we can simultaneously enhance European competitiveness in AI and reduce the greatest risks arising from dangerous capabilities.

## AI's Potential and Risks

Properly implemented, AI can drive innovation, improve efficiency and create opportunities for businesses and individuals. For example, in healthcare, AI-powered tools can analyse medical images to detect diseases like cancer. In manufacturing, AI-driven predictive maintenance can foresee equipment failures, reducing downtime and improving operational efficiency. Lastly, in agriculture, AI-powered drones and sensors can monitor crop health and optimize irrigation, creating opportunities for precision farming.

To realise these benefits, it is crucial to avoid several risks - especially from large and rapidly evolving general-purpose AI models such as GPT. Industry experts such as Geoffrey Hinton, the "Godfather of AI" who recently won the Nobel price, have warned about the dangers of creating increasingly capable general-purpose AI systems<sup>1</sup>. Even their developers don't

understand their inner workings, so they can develop unforeseen dangerous capabilities and behaviours<sup>2</sup>. Issues range from facilitating access to biological weapons, over the transparency and interpretability of AI systems as black boxes to even their controllability.

## Combining Risk Reduction and European Competitiveness

Notably, these risks disproportionately stem from a few big tech companies—often based outside the EU—that hold a dominant position in the AI market. Therefore, we can mitigate these risks by imposing stricter controls on them while supporting smaller European AI companies that are developing specialized trustworthy AI tools. This can be achieved via a combination of the following three levers: applying advanced safety standards only to the largest, most expensive models with potentially dangerous capabilities, leveraging EU law to create a level playing field in AI, in Europe as well as abroad and providing strategic investments for responsible European AI development.

## Focusing Regulation on the Most Dangerous Models

In addition to its use-based regulations, the AI Act also includes provisions to apply safety requirements only to the biggest models with potentially dangerous capabilities without burdening smaller developers. Specifically, the AI Act mandates model evaluations, advanced cybersecurity measures, and serious incident reporting for providers of General Purpose AI Systems trained with more than  $10^{25}$  FLOPs<sup>3</sup>.

According to Epoch AI, these models are estimated to cost tens of millions of Euros, so this measure addresses the most severe risks without burdening SMEs through additional reporting requirements.<sup>4</sup>

## A Level Playing Field

Democratising the digital technology market and preventing a few unaccountable big tech companies from controlling the sector are challenges European policymakers are already familiar with. The Digital Markets Act (DMA) sets fair competition rules in tech. Although it doesn't explicitly mention AI, it overlaps with leading AI developers designated as gatekeepers who use AI tools in areas relevant to the DMA. Gatekeepers employ AI in ranking algorithms, data access, and advertising—all areas the DMA regulates. It mandates transparency, fairness, and non-discrimination in AI-driven content rankings, governs data access, and introduces transparency requirements for AI-based advertising, so it provides a robust groundwork for AI governance.<sup>5</sup>

To avoid disadvantaging European AI companies, the EU must enforce AI regulations internationally, leveraging mechanisms like the Brussels Effect or its position in the chip supply chain to ensure global compliance.

## Strategic Investment

According to the Draghi-Report, private investment in AI is 7 times higher in the US

1 Miles Kruppa, Deepa Seetharaman, 'A Godfather of AI Just Won a Nobel. He Has Been Warning the Machines Could Take Over the World.', in: *The Wall Street Journal*, 9 Oct. 2024, <https://www.wsj.com/tech/ai/a-godfather-of-ai-just-won-a-nobel-he-has-been-warning-the-machines-could-take-over-the-world-b127da71> (last accessed 27 Nov. 2024).

2 Noam Hassenfeld, 'Even the scientists who build AI can't tell you how it works', in: *Vox*, 15 Jul. 2023, <https://www.vox.com/unexplainable/2023/7/15/23793840/chat-gpt-ai-science-mystery-unexplainable-podcast> (last accessed 27 Nov. 2024).

3 Art. 51 (2); Art. 55 (2) Artificial Intelligence Act.

4 Ben Cottier, Robi Rahman, Loredana Fattorini, Nestor Maslej, David Owen, 'The rising costs of training frontier AI models', in: *ArXiv*, 03 Jun. 2024, <https://arxiv.org/abs/2405.21015> (last accessed 27 Nov. 2024).

5 Andreas Schwab, 'Digital Markets Act and artificial intelligence services', in: *Concurrences*, Sept 2024, <https://www.concurrences.com/en/review/issues/no-3-2024/libres-propos/digital-markets-act-and-artificial-intelligence-services> (last accessed 27 Nov. 2024).

than in Europe<sup>6</sup>. This highlights the need for investment in AI industry, international cooperation and nurturing AI talent.

Since many of the biggest AI risks stem from general-purpose AI models, we can reap many benefits of AI while avoiding the risks by supporting specialised narrow AI tools such as those to assist in early detection of diseases.

This innovation in trustworthy AI requires investment in European AI talent. Schools and universities must educate students about technical AI skills and working professionals need opportunities for upskilling in AI. Finally, AI talent must be incentivized to stay in Europe to provide the domestic industry with skilled workers.

This investment can be coordinated internationally with a CERN for AI, as advocated for in our EPP Manifesto<sup>7</sup>. It could help provide SMEs, academia and civil society access to the necessary resources and networks to help them secure Europe a seat at the AI table. Where strict compliance with EU regulations and a

focus on safety is given, research cooperation with other countries can enable European developers to learn from their expertise and ensure European safety standards are applied internationally.

### **Making Europe a Leader in Trustworthy AI**

AI presents unprecedented opportunities for innovation and growth within Europe. By investing strategically in a robust AI ecosystem centred around SMEs, specialized tools and interpretability research, and by enforcing international regulations like compute thresholds that promote a level playing field, Europe can lead the world in developing safe, transparent and trustworthy AI.

<sup>6</sup> European Commission, Draghi Report: The Future of European Competitiveness, Part B, p.79.

<sup>7</sup> EPP 2024 Manifesto, Section 2.6.





**HAHN THOMAS**

*Siemens Fellow at Siemens AG Germany*

# Create impact with Industrial AI!

Industrial use of AI is not an end unto itself. To be successful, AI applications must have far-reaching impacts on competitiveness and offer tangible added value - for society as a whole, and for all sectors of industry - in terms of productivity, innovation capacities and sustainability. To achieve this, the needs and expectations of European industry must be aligned from the beginning, across the entire supply chain (e.g. component suppliers, machinery manufacturers, IT companies, OEMs).

AI offers Europe a unique opportunity to achieve technological leadership. By rapidly integrating AI into their offerings, European industrial players can increase their competitiveness and profitability.

Four components drive AI innovation:

1. AI models
2. Access to data
3. Cloud capacity and high-performance computing infrastructure
4. Access to talent

Europe must become more agile and improve in all four areas!

Let's focus on the manufacturing industry and some examples like design and engineering - The same principles apply to other applications and sectors as well.

A major challenge in terms of ensuring the competitiveness of the manufacturing industry is optimization of products design and engineering and production systems.

Presently, design and engineering are characterized by significant specific effort with little reuse from previous projects. Consequently, design and engineering projects are often risky. Increasing time-to-market pressure requires reductions in processing time for design and engineering projects.

One approach to achieving higher quality engineering results in early project phases is clever reuse of available data from other, comparable projects, not only from projects within

one's own organization, but also across companies. Building on proven methods reduces risk, costs, and processing time simultaneously. AI offers such clever reuse.

Siemens, cooperating with industrial partners, has launched an Engineering Copilot. Embedded in its engineering tools, it is a Generative AI tool designed to assist engineers in generating automation code, creating visualizations, and performing natural language document searches. Engineering Copilot aims to reduce workload, increase productivity, and address labor shortages by augmenting engineering processes with AI. The Copilot, as part of Siemens Xcelerator, is available in the Xcelerator marketplace. Initial pilot tests indicate significant time savings and error reduction in industrial automation environments.

Building a cutting-edge industrial AI application, such as the Engineering Copilot and related solutions, requires a collaborative approach where data and knowledge can be shared in a secure and trusted environment. It requires data and knowledge, often across different industries and sectors, as well as talent, experience, powerful infrastructure, and lean efficient processes. In such an environment, interdisciplinary teams of experts collaborate, motivate and inspire one another. Additionally, shared infrastructure is readily available for development and maintenance of AI solutions.

Protecting competition-relevant knowledge and intellectual property rights - for example production design and automation code - is a key horizontal requirement.

One must credibly ensure that the parties involved agree to share data and cannot leak it. This must be reflected in cybersecurity and legal requirements (e.g. related to data protection, GDPR, ePrivacy), but also in contractual regulations.

Well-maintained data management, e.g. in and between companies that work together in data ecosystems, is another key prerequisite. Data must be accessible, structured, semantically described and embedded in a secure and privacy-preserving environment. As a result, in many areas today, AI applications require an upstream ETL process (Extract-Transform-Load) and technologies such as federated learning to meet these requirements.

On the shop floor, each machine generates its own data so that AI can be used profitably. This requires semantic and syntactic standardisation on all levels (from machine level up to the company level). International standards for interoperability are available on the market today, are being used, and will be further improved.

Finally, it is crucial that the barriers to enter are low for all contributors and all partners such as companies (including SMEs) have broad access and can easily and efficiently create effective business applications. To achieve this, industry associations such as VDMA (example from the manufacturing domain) must play an important role.

Europe and the European Member States have several relevant initiatives, if properly aligned, can become important building blocks for this European AI ecosystem.

With the "EuroHPC" Joint Undertaking, we have the elements for expansion and development of High-Performance Computing (HPC) in Europe relevant to have the necessary computing and storage capacities - a super compute infrastructure - to foster and support innovation in areas such as AI. This includes infrastructure, providing the necessary capacity and secure environment for the computation of complex applications (e.g. simulation, prediction and computation of AI models) and supporting usage of that infrastructure.

"AI Factories" create a dynamic ecosystem fostering innovation and development in the AI field and play a central role in strengthening Europe's leadership in trustworthy Industrial AI. AI Factories - the open AI development ecosystem formed around European public super-computers - have the potential to provide a collaborative environment by leveraging strong interdisciplinary AI ecosystems across Europe. These AI Factories integrate high-performance-computing, access to data and expertise to support SMEs, startups, research and innovation ecosystems, and other in the development and training of large AI models.

The "IPCEI CIS" (Important Projects of Common European Interest on next generation Cloud Infrastructure and Services) aims to develop an advanced cloud infrastructure, new edge capabilities, and cutting-edge cloud services in Europe. It promotes investment in innovative digital infrastructure for cloud-edge and connectivity technologies to drive the digital transformation of the economy. The cloud edge continuum supported by the IPCEI CIS describes the seamless connection of edge computing and cloud infrastructures. This makes it possible to process data closer to the source. While taking advantage of the cloud, to ensure efficient and scalable data processing, which is particularly important for IoT and real-time critical applications.

Europeans leading "Data Ecosystem initiatives" such as Manufacturing-X initiative, are driving key concepts for the

further development of data ecosystems. To accelerate the digital transformation, the industry seeks to increase efficiency and flexibility in production and improve sustainability, resilience and competitiveness with benefit from data ecosystems - the data ecosystem part.

Technologies such as artificial intelligence (e.g. AI Factories - AI development ecosystem) and cloud edge computing (e.g. IPCEI CIS - digital infrastructure), used in combination, processed in computer systems (e.g. EuroHPC - supercomputer infrastructure), create impact with Industrial AI while ensuring data sovereignty.

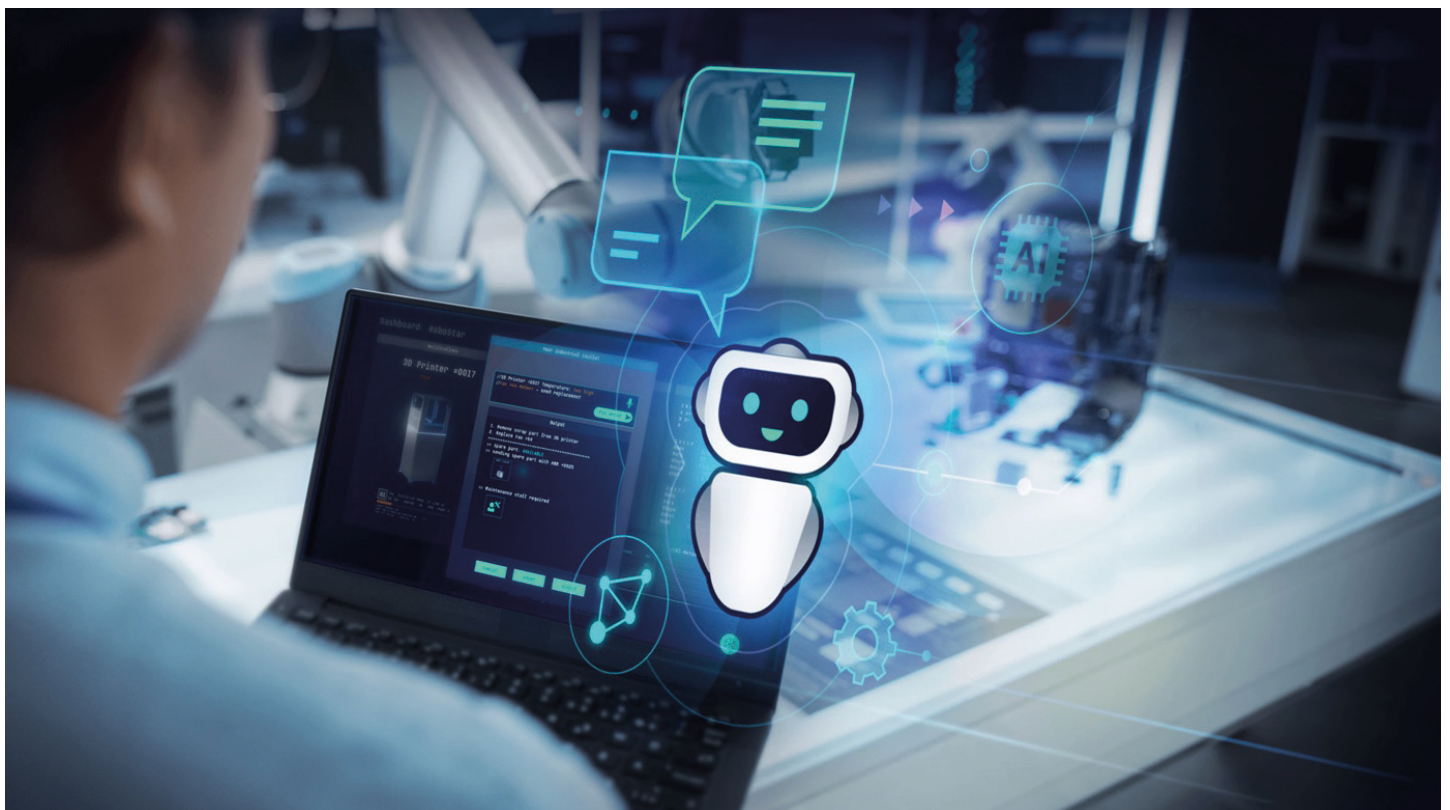
Combined with data ecosystems (such as Manufacturing-X), this enables closer collaboration between suppliers, manufacturers and customers. Ultimately, this increases innovation and competitiveness.

What should be done next?

Greater industry involvement in AI factories at all levels: from start-ups to SMEs and large companies, taking into account the entire value chain. Industry also requires simplicity, scalability, predictability, quality assurance, safety, and sustainability. It is crucial that all AI Factories partner closely to make offerings accessible across Europe for all sectors and partners. It is key to create a networking layer that homogenizes AI Factories at user level, with common governance rules that ensure fair and seamless access to services for industries required to fully achieve their objectives. Finally, as a pre-requisite, a strong supporting scheme between the European

Data Ecosystems, AI Factories, super-compute infrastructure, and other important projects (e.g. IPCEI CIS) should be established in close cooperation with Industry.

European Associations such as BDVA, a private member of the EuroHPC Joint Undertaking and focused on data, data value and industrial AI, are fundamental for effective engagement of Industrial AI, dialog with policy making, and among AI factories. This will foster collaboration between the Data ecosystems, other infrastructure projects, and involvement of Industry Associations.



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# Bridging legislation and innovation: how European harmonized standards help implement the AI Act

The advent of Artificial intelligence (AI) has ushered in transformative opportunities, along with challenges and risks. To address these, in 2024 the EU adopted the **AI Act (AIA)**. This groundbreaking piece of legislation establishes a uniform regulatory framework across the EU to address potential harmful risks caused by AI systems to the safety, health, and fundamental rights of individuals.

**European standards** are key to ensure the Act's implementation. In May 2023, the European Commission issued a Standardization Request to CEN and CENELEC (two of the official European Standardization organizations) to develop dedicated European Standards in advance of its adoption.

This article explores the role standards play for the EU's ambitions to regulate AI, and where they get their power from.

## The power of Harmonized Standards

At the heart of the system is the concept of **Harmonized Standards (hENs)**. hENs are a special type of European standards that ensure

that products, processes, and services comply with essential legal requirements. These standards provide technical benchmarks that help convert abstract legislation, such as the AI Act, into measurable criteria. The hENs - while remaining voluntary- are developed based on a so-called 'Standardization Request' from the European Commission.

Adherence to hENs grants a "**presumption of conformity**": once a suitable harmonized standards is published, its users (e.g. manufacturers) are automatically assumed to be compliant with the relevant requirements in legislation. This not only simplifies compliance, but also promotes legal certainty for businesses and institutions.

## Standardization, a collaborative endeavour

Our standards are developed through a **rigorous, consensus-based, and inclusive process** that ensures all stakeholders — academia, industry, societal representatives, and SMEs — have a voice. They provide an excellent venue to discuss technical

documents while ensuring that they are practical and balanced and support a level playing field for all players, including small and medium-sized enterprises.

This inclusive approach is at the very heart of the European Standardization System: by bringing all actors together, it ensures a unified interpretation of legal requirements. This collaborative process not only fosters clarity, but also establishes a robust foundation for building transparency and trust, both key to ensuring trustworthy AI.

Collaboration extends beyond European borders. CEN and CENELEC have long standing agreements with their international counterparts the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) to ensure global consistency and avoid the duplication of work. This international alignment is crucial for businesses operating globally, as it reduces barriers to trade and helps them maintain compliance across different regulatory frameworks.

## Standards are key to meet the AI Act's requirements

The strength of the process described above is evident in the AI Act. The Act adopts a risk-based approach, by categorizing AI systems into four risk levels: unacceptable, high, limited, and low. While unacceptable-risk AI is outright banned, **high-risk AI systems** face stringent requirements, including risk assessments, logging, and transparency measures.

However, the AIA's provisions often lack specificity. For instance, it mandates a risk management system, but does not define its scope or methodologies. This is where **hENs play a crucial role**: they fill these gaps, offering clear instructions for compliance.

There are other reasons standards are a strategic tool to support the EU's AI ambitions. They:







- **Promote Trust:** by ensuring that AI systems are safe and uphold fundamental rights, standards build consumer and societal trust in AI technologies;
- **Enhance Competitiveness:** standards reduce market fragmentation and create a level playing field, encouraging innovation and investment in AI;
- **Foster Interoperability:** they facilitate the seamless integration of AI systems across sectors, boosting the EU's position in global value chains.

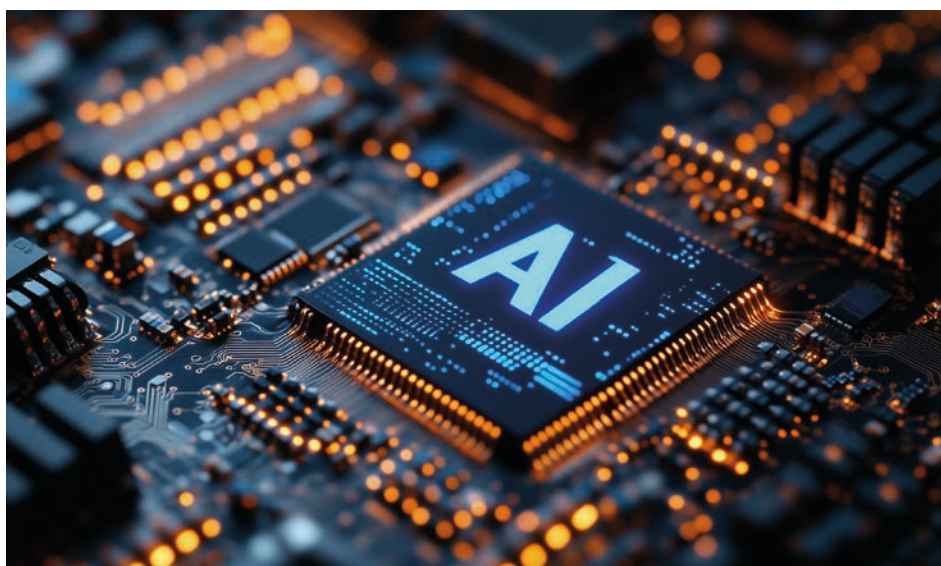
#### CEN and CENELEC's work on AI

In May 2023, the European Commission requested CEN and CENELEC to develop a series of standards to support the AIA. The request includes standards covering ten aspects of AI systems: Risk Management, Data Governance and Quality, Record Keeping, Transparency, Human Oversight, Accuracy, Robustness, Cybersecurity, Quality Management, and Conformity Assessment. A specific focus is also put on the risks that AI could pose to the health, safety, and fundamental rights of individuals.

Responsibility for developing these harmonized standards for Europe is with **CEN and CENELEC's Joint Technical Committee 21 'Artificial Intelligence'**. JTC 21 is developing a series of European homegrown standards. Whenever deemed relevant, it can adopt international standards (developed by ISO/IEC JTC 1/SC 42) to keep the divergence between the European and international level as small as possible.

Current work in JTC 21 primarily addresses requirements with regards to AI trustworthiness, Conformity Assessment, Risk Assessment and Quality management systems. They will be further complemented with a series of standards to cover all ten concrete aspects of AI systems mentioned above.

These hENs consider common (horizontal) requirements to address risks in AI systems. They will provide the necessary guidance to



manufacturers, enabling them to adapt these solutions to their specific systems.

The work, of course, comes with its own set of challenges, stemming from the inherent complexities of AI itself: an exceptionally broad spectrum of relevant stakeholders, bringing a variety of perspectives; the novelty of the topic; and its interplay with other fields, requiring strong coordination. In addition, defining requirements for some topics, such as trustworthiness, is challenging, as they still suffer from a lack of maturity or scientific consensus.

Despite the challenges, standardization work in JTC 21 has been happening in parallel to the political process, to ensure the availability of the hENs before August 2026, the deadline for high-risk AI systems to comply with AIA requirements.

To further raise awareness about its activities and attract new stakeholders, JTC 21 established a Task Group 'Inclusiveness'. The Group publishes a freely available dedicated [Newsletter](#), with the support of the European Trade Union Confederation (ETUC).

#### Conclusion

As the EU tries to become a world leader in AI regulation, Harmonized Standards can help bridge the gap between ambitions and reality. By translating legislative mandates into practical guidance, standards ensure that AI systems are safe, trustworthy, and compliant.

Moreover, the inclusive and collaborative nature of the European standardization process ensures that the resulting frameworks are balanced and reflective of diverse societal needs.

While challenges remain, the combined efforts of CEN and CENELEC, National Standardization Bodies, and all stakeholders underscore the EU's commitment to leading the world in ethical and innovative AI. For companies and organizations of all sizes, understanding and adopting these standards is not just a compliance exercise—it is a strategic move toward building a sustainable and competitive future in the AI-driven era.



Interview with

### EMMANUEL LEMPERT

VP, Head of Government Affairs for Middle East, Africa and France at SAP

#### Could you first explain what's happening with AI development in Africa?

Africa's engagement with AI presents a complex landscape of challenges and opportunities. According to MIT Tech Review, more than 90% of training data comes from North America and Europe, with less than 4% from Africa. This imbalance is not just a statistic - it fundamentally shapes AI development on the continent. The International Monetary Fund's (IMF) AI Preparedness Index and the Oxford Insights ranking show Africa consistently lagging behind other regions. For example, in the Oxford Insights ranking, we found that Mauritius, the most advanced sub-Saharan country in AI readiness, ranks only 57<sup>th</sup> globally (over 181 countries). This raises critical questions about data sovereignty and algorithmic bias that could reinforce existing inequalities.

#### These challenges contrast sharply with Africa's market potential. What makes this market so strategic?

The \$1.5 trillion market opportunity forecast by the United Nations' Economic Commission represents transformative potential across multiple sectors. This isn't just about consumer applications - it encompasses critical areas like healthcare delivery, agricultural optimization, and public service modernization. As the former Vice President of Ghana, M. Bawumia, noted: "Africans have a goldmine at their fingertips. A rapidly growing population of 1.4 billion people, 70% under the age of 30, combined with huge growth in AI investments."

This potential has sparked intense international competition. While US Big Tech companies are establishing research centers and Chinese firms like Huawei are deploying major cloud infrastructure, European influence is tangibly declining. Despite efforts from companies like Orange and SAP, Europe's digital

footprint in Africa is shrinking precisely when the market is poised for exponential growth.

#### How are African countries responding to these opportunities and challenges?

We're seeing three distinct strategic approaches, each reflecting different priorities and capabilities. First, countries like Mauritius, Egypt, and Nigeria are pursuing comprehensive AI strategies with strong public sector leadership. Mauritius's pioneering 2018 strategy treats AI as an integrated component of economic development, while Egypt is positioning itself as a regional AI powerhouse through systematic modernization of public services.

Second, countries like South Africa, Rwanda, and Tunisia are fostering multi-stakeholder ecosystems. South Africa's approach is particularly notable, combining market-driven innovation with strong academic partnerships through its AI Institute and university hubs.

Third, we have the innovation-first countries like Morocco and Kenya. Morocco's hosting of the Rabat Summit and Kenya's position among the fastest-growing digital economies show how countries can lead regionally without comprehensive national strategies.

#### Infrastructure seems crucial here. What are the specific challenges?

The infrastructure challenge is fundamentally about computing power and data processing capacity. Cloud computing adoption in Africa is just 15%, compared to Europe's 71%. This gap is critical because cloud capabilities directly determine AI development potential - from model training to deployment and business use cases. The continent's limited network of about 100 data centers, concentrated in a few countries, creates a significant barrier to AI innovation.

However, we're seeing encouraging developments in research and training capabilities. The Mohammed VI Polytechnic University

(UM6P) in Morocco has established itself as an international AI research hub, attracting global partnerships and talent. Similar centers of excellence are emerging, though the overall capacity remains concentrated in North Africa.

#### How is this shaping international competition in Africa?

The competition is creating a clear divide between "sovereignist" countries (Egypt, Ethiopia, Kenya, Morocco) prioritizing national control, and "regionalist" countries (South Africa, Ghana, Senegal) embracing multilateral frameworks. This split has significant implications for international partnerships.

Chinese companies are making decisive moves through major cloud region investments, particularly in Nigeria and Egypt. These aren't just infrastructure projects - they're comprehensive digital transformation initiatives including AI-augmented public services. US Big Tech companies are following suit with their own strategic investments. Meanwhile, European involvement, despite multiple initiatives, is losing ground in terms of both market presence and strategic influence.

#### What specific advantages do European companies have in this context?

European technology companies bring unique strengths in delivering focused, interoperable solutions through initiatives like Global Gateway. Their expertise in areas like data governance, e-health, and regulatory frameworks aligns well with African development priorities. European solutions, particularly those with natively embedded AI, can generate significant productivity and competitiveness gains for African enterprises.

German and French development cooperation exemplify effective European engagement. Through GIZ and GovStack, an open-source community, Germany maintains both bilateral partnerships and multilateral engagement. The Agence Française de

Développement (AFD) and KfW Development Bank provide valuable technical assistance and program design. However, without greater support, coordination and resources, these strengths risk being overshadowed by competitors' massive infrastructure investments.

### What concrete steps should Europe take to strengthen its position?

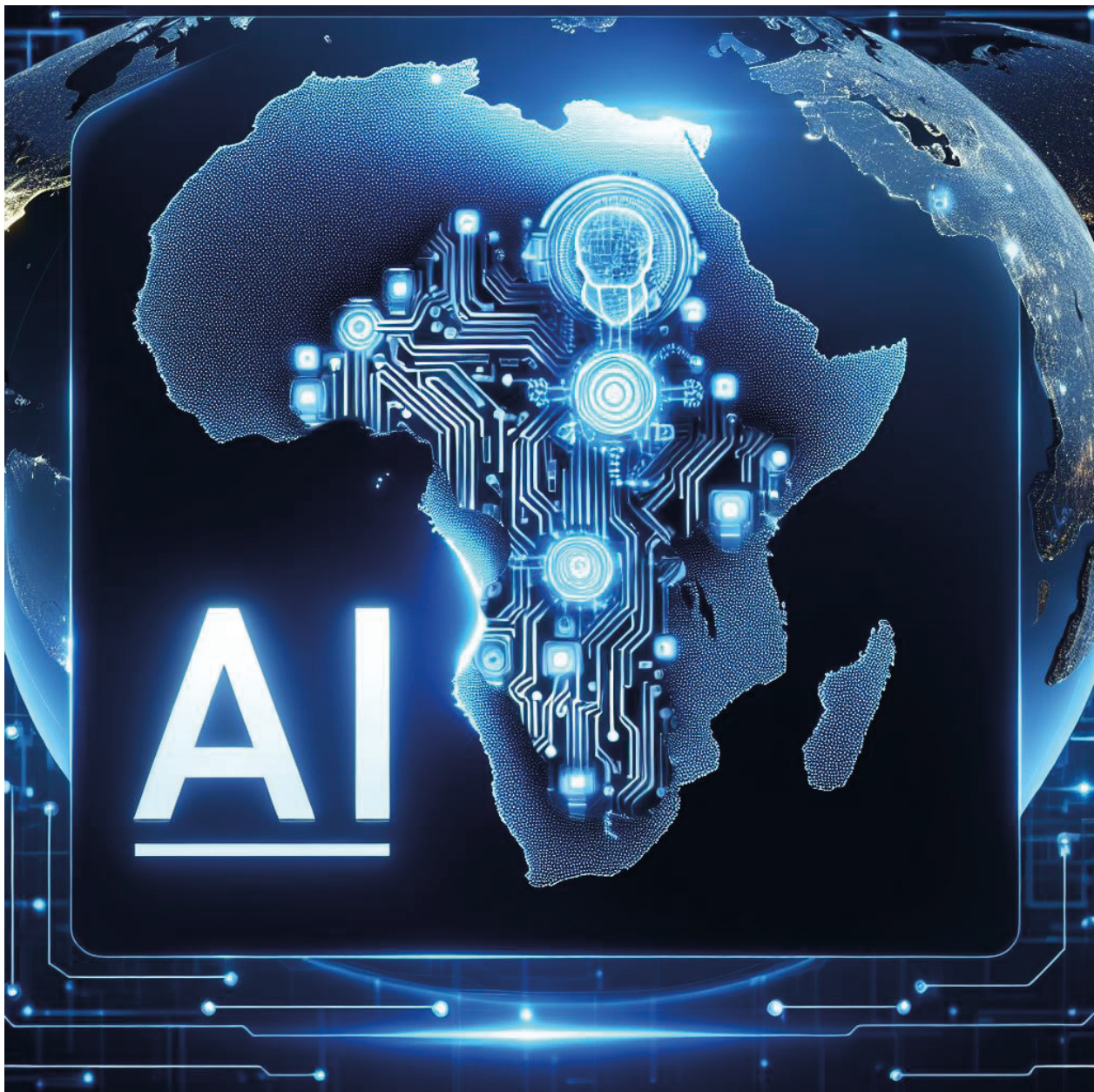
European action needs to be immediate and substantial. First, EU institutions must provide targeted support to European technology companies operating in African markets, particularly in harmonizing their approaches with development goals. This includes leveraging existing platforms more effectively - the AI Action Summit, Rwanda AI Summit, Mediterranean AI Forum, and African Union forums offer immediate opportunities for strengthening cooperation.

Second, Europe should focus on its comparative advantages in professional solutions and regulatory frameworks. By combining technical expertise with strong governance principles, European companies can offer distinctive value in Africa's digital transformation. This approach should emphasize solutions that embed AI capabilities while respecting data sovereignty and promoting sustainable development.

### Looking ahead to 2030, what's at stake for Europe?

The stakes are both economic and strategic. Without immediate action, Europe risks permanent marginalization in Africa's digital transformation. This would mean losing access to a \$1.5 trillion market opportunity and, more critically, diminishing Europe's global technological position.

The African Union's vision of a Digital Single Market by 2030 presents a crucial opportunity. However, realizing this potential requires Europe to move beyond traditional technical assistance toward more substantial market engagement. The continent will likely see increasing fragmentation between national champions and regional cooperators, making it essential for Europe to develop differentiated engagement strategies while supporting overall African digital integration.





**PHILIPPE LATOMBE**

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# AI and Robotics: Europe's Survival Hinges on Rapid Advancement!

The first humanoid robot, named Talos, emerges from a myth more than twenty-eight centuries old. Crafted by Hephaestus, the god of fire, forging, and metals, and a master artisan, this bronze giant was created to guard Crete for King Minos. Thrice daily, Talos would patrol the island, pelting foreign ships with rocks to prevent their landing. Should any sailors manage to reach shore, Talos would burn them by embracing them against his fire-heated chest. Yet, Talos was more than a mere murderous automaton; he also served as a mobile arbiter of justice in the countryside, carrying bronze tablets of law. Thus, he possessed intelligence.

Long deemed a minor myth within Greek theogony, today it assumes new significance. Although lacking substantial scientific credibility, the tale of Talos extends far back into the annals of time, to the notion of beings made in man's likeness—servile, indefatigable, tasked with menial labors humans prefer to avoid. The term "robot" itself, stemming from the Czech word "robota" meaning "chore," and "slave" in ancient Slavic, leaves no room for ambiguity.

Yet, aided by artificial intelligence and machine learning, robotics now opens thrilling yet daunting new horizons for humanity. AI-enabled robots can execute tasks with enhanced efficiency, learn from experiences, and interact more intuitively with the real world, promising significant benefits across healthcare, manufacturing, and logistics. This envisioned progress is collaborative and inclusive, an ideal synergy between humans and machines.

However, a more ominous perspective looms over the future dominated by robotics and artificial intelligence. Isaac Asimov, a visionary both in science fiction and science, anticipated the perils of robotics, proposing three laws to

ensure this technological advance does not ultimately threaten humanity.

While the human brain's development is constrained by the skull, artificial intelligence knows no such bounds. Everything hinges on the builders' intentions, the powers at their disposal, and their ultimate goals. These prospects unsettle all those pondering their fate in a world where humans might lose control over their destinies.

These exhilarating prospects and legitimate anxieties reassert the importance of political involvement, tasked with the hefty duty of forecasting and mitigating the risks these technologies might pose—in essence, regulation. Civilizational considerations must eclipse mere economic interests, which should depend on them. Now more than ever, we require strategists capable of planning in the short, medium, and long term.

Admittedly, France must make significant strides in foresight. Our lack of control during the internet saga is a clear indicator that we

must advance. An upcoming summit on artificial intelligence in Paris next February is promising, but insufficient on its own.

We cannot merely discuss, analyze, and theorize. It is crucial that we proactively anticipate and assess impending developments to ascertain their benefits and risks. We must explicitly define our desires and rejections. Then, we must act—swiftly.

A surge in investment toward innovation, particularly in robotics and AI, is imperative to avoid falling irretrievably behind leading nations. Such ambition necessitates a substantial stimulus plan.

In an era of profound public debt, the term "stimulus" might seem controversial. Yet, it is not so in other countries. China injected \$150 billion to rejuvenate its economy, especially in innovation. During the American electoral debates, concerns over debt and deficits were sidelined, overshadowed by the technological challenges.



In Japan, an impending debt exceeding 260% of GDP barely alarms observers, as it is largely held by the Bank of Japan and domestic investors, primarily funneling into innovation. In contrast, our nation's debt, predominantly owned by foreign investors, eludes our full control. Thus, it is the nature of the debt and how we utilize it that are problematic.

For a stimulus plan to succeed, a return to genuine forward-thinking and strategic planning, as seen in bygone days, is essential, along with restoring the prominence of the Planning Commission. "Countries contemplating their future are ahead of others," François Mitterrand aptly stated.

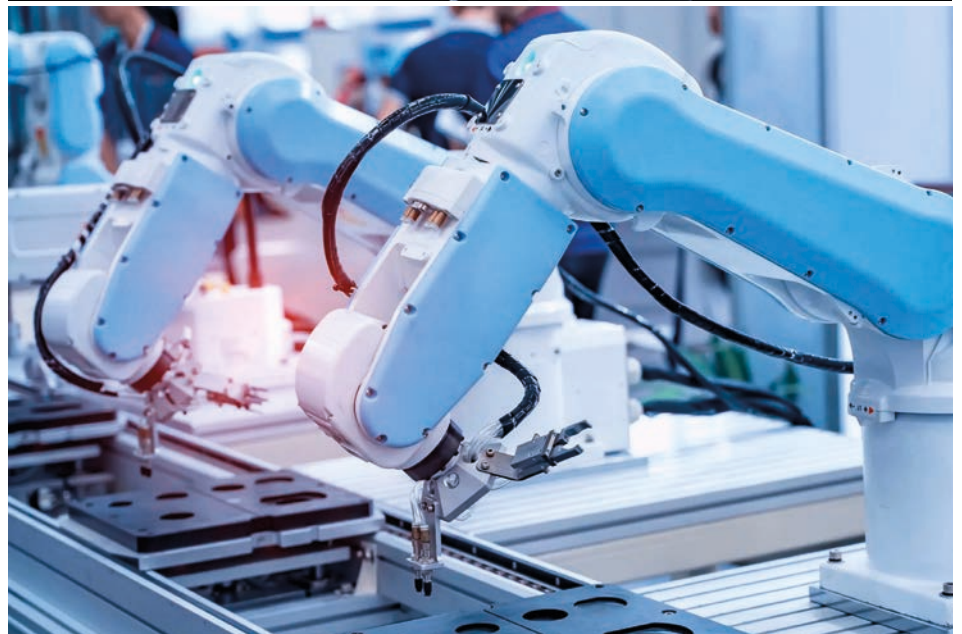
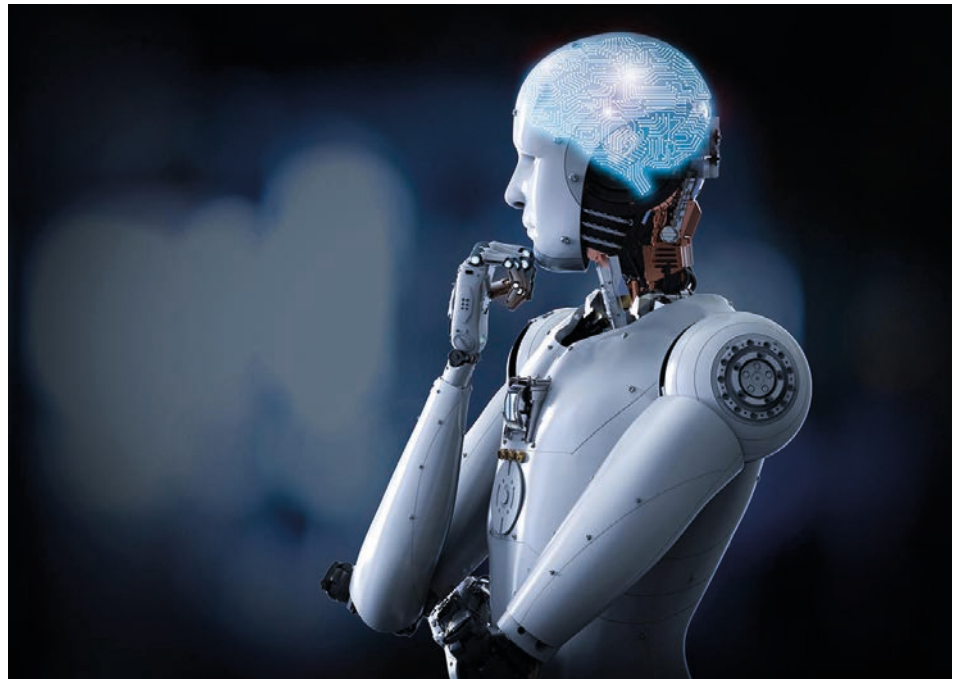
We must then pinpoint sectors for focused recovery, avoiding funding companies prone to relocation and tax avoidance, as evidenced by the tax credit for competitiveness and employment (CICE), where a substantial share benefited shareholders, or the reduction in the solidarity wealth tax (ISF).

Furthermore, we must harness the appropriate human skills, considering a study by Dell and the Institute for the Future suggests 85% of jobs by 2030 don't yet exist. Both public and private entities must swiftly map their immediate and medium-term needs and secure essential talents. This necessitates the prompt recruitment of AI engineers, AI UX designers, and ethical AI officers—roles nonexistent just a few years ago. There's also an urgent need given the disinterest among French youth in scientific fields.

All these endeavors and the promotion of excellence could be futile without vigilance over AI cybersecurity. By highlighting that AI tools are integral to the information system, Thalès CEO Philippe Caine rightly alerts us to the risks of confidential data extraction or model manipulation. Here, too, we cannot afford mistakes.

Can France, alone, traverse this path to excellence, having already lagged significantly? It's questionable. European businesses and governments must collaboratively amass substantial computational resources to train and deploy large-scale AI models. Currently, Europe's most powerful supercomputer, Jupiter, struggles to keep pace with rivals like xIA.

Only through promoting excellence in AI can Europe and its members enhance their potential and withstand global competition. Because AI is a significant revolution in human history, mastering it is crucial in the geopolitical arena.



In the Minoan myth, like Achilles in the Iliad, Talos falls due to a simple heel weakness overlooked by his creator. It would be regrettable for the Old Continent to suffer a similar fate, having underestimated the stakes of AI.

European Union, 2024 – Source: EP

**BIRGIT SIPPEL**

MEP (S&amp;D Group – Germany)

# Towards Ethical and Transparent Artificial Intelligence: The Role of the European Parliament in Protecting Fundamental Rights

Artificial intelligence is no longer a futuristic concept; it is a transformative force shaping societies, education, industries and governance. Yet, its power raises challenges concerning fundamental rights, transparency, and accountability. As the European Union strives to lead in creating rights-based AI frameworks, the European Parliament has assumed a crucial role in shaping legislation to protect Europeans while enabling innovation. The Artificial Intelligence Act is central to this effort, addressing judicial safeguards, human oversight, and scrutiny of Member States' implementation.

Effective implementation of the AI Act requires more than initial legislative success – it demands ongoing scrutiny and adaptability. As a Member of the AI Implementation Working Group, I will work to ensure that Member States' implementation of AI regulations complies with EU law.

## The Role of the European Parliament in AI Governance

The European Parliament has emerged as a proactive actor in shaping AI governance, focusing on upholding fundamental rights, democratic principles, and establishing societal trust in new technologies. Through tough negotiations with the Council, the Parliament has worked hard to balance safeguards and innovation, protecting individuals from risks of bias, discrimination, and overreach, while at the same time fostering innovation and allowing for AI systems to be developed and tested by SMEs in sandboxes.

These sandboxes offer (prospective) providers a controlled environment to develop, train, test, and validate innovative AI systems for a limited period before market entry. The AI Act recognises the significant role SMEs and start-ups play in AI innovation and

includes specific provisions to support their participation.

While the AI Act encourages innovation, it also emphasises the importance of responsible AI development and deployment. The framework includes judicial review and human oversight over AI systems, particularly in sensitive areas like law enforcement, healthcare, and public administration. Moreover, the Parliament emphasises the importance of ongoing scrutiny by the European Commission and a robust review mechanism for Member States to ensure that national implementations align with EU standards.

## Human oversight: A cornerstone of trustworthy AI

The AI Act implements various safeguards to keep AI systems under human control and subject to judicial oversight. These safeguards feature throughout the lifecycle of an AI system, from design and development to deployment and post-market monitoring. They are essential to addressing the risks posed by algorithmic biases and errors which can perpetuate discrimination or exacerbate existing inequalities. High-risk AI systems in particular must not operate as unaccountable "black boxes": human oversight ensures that AI tools complement, rather than replace, human judgment, aligning technological capabilities with ethical standards and democratic values.

## Fundamental Rights Impact Assessment: anticipating and mitigating risks

To address potential harms to fundamental rights, the AI Act requires certain deployers of high-risk AI systems to conduct fundamental rights impact assessments. This involves identifying risks to fundamental rights that the use of a high-risk AI system may pose to individuals or groups, particularly vulnerable groups.

## Biometric identification and national security

The use of AI for biometric identification, especially in post and real-time contexts, is particularly contentious. Biometric technologies, such as facial recognition, significantly affect privacy, freedom of assembly, and non-discrimination. Deployed without adequate safeguards, these systems risk turning public spaces into surveillance zones. The chilling effect for the freedom of expression also has significant impact on our society and risks undermining democratic participation.

The Parliament has recognised these risks, pushing for strict limitations on the use of remote biometric identification, especially in public spaces. However, the potential to introduce post-remote biometric identification, such as retrospective analysis of video footage, raises complex ethical and legal questions. While such tools could enhance security and aid in criminal investigations, they must be carefully regulated to prevent abuses and ensure fundamental rights compliance. We will carefully scrutinise Member States' implementation of provisions that introduce such law enforcement tools.

National security presents another challenge. Member States often claim exemptions for AI systems in areas deemed essential for public safety and security. These exemptions can create loopholes from the AI Act's safeguards, leading to disparities in the protection of rights across the EU. The Parliament has highlighted the need for vigilance in monitoring how Member States invoke national security exceptions, urging the Commission to publish a legislative proposal to scrutinise such claims rigorously.

## Conclusion

Europeans must feel confident that AI technologies serve their interests without compromising their rights. This requires robust legal frameworks, public engagement, and education to foster understanding of AI's benefits and risks.

Transparency is key. Europeans must have access to clear information about how AI systems operate and how their data is used. This empowers individuals to make informed choices and hold entities accountable for misuse.

The European Parliament's role in advancing rights-based, transparent AI governance reflects the commitment to protecting fundamental rights. The AI Act contributes toward balancing innovation with accountability, emphasising safeguards such as human oversight, judicial review, and rigorous monitoring of Member States.

Through its ongoing efforts, the Parliament reaffirms that technology must serve humanity, not the other way around. By prioritising transparency, public engagement, and continuous scrutiny of AI systems, the EU sets a global standard for responsible AI that upholds the dignity, freedoms, and trust of all Europeans.





**LAURENT DAUDET**

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# Generative AI and Innovation: From Large Language Models to Enterprise-Ready Platforms

**L**arge Language Models (LLMs) are advanced generative AI systems capable of understanding, generating, and analyzing text with remarkable precision. Due to their unmatched power and versatility, LLMs are poised to revolutionize businesses and administrations in their daily operations. Still, to harness this promising technology in a secure and ROI-oriented manner, it is essential to implement a suite of functionalities that extend beyond the LLM itself. Understanding these steps can enlighten organizations in the "build or buy" dilemma.

## The Mirage of Simplicity: An Underestimated Challenge

In the ever-evolving landscape of AI technologies, generative AI based on LLMs offers immense transformative potential for businesses and administrations. Essentially, this technology leverages all the unstructured information continuously produced: text documents or forms, graphs, tables, and more generally, any document representing the majority of information exchanged internally or with customers/users. Workflows involving such documents can be partially or totally automated thanks to GenAI, offering major productivity gains at every level of the organization.

The primary strength of generative AI tools, like ChatGPT, lies in their ability to conceal extreme technological sophistication behind a user-friendly chat interface. The availability of powerful open-source LLMs (such as Llama, Mistral, Qwen, Falcon) might suggest that building a complete internal GenAI solution is feasible. However, transforming a raw LLM into an operational business application is a monumental challenge that should not be underestimated. A generic pre-trained model is merely a raw engine that requires a suite of technologies to address high-value business use cases in production.

Here, we will review four feature items that have to be built on top of LLMs in order to qualify as an enterprise-ready GenAI platform.

### 1/ Infrastructure: Critical Choices for Confidentiality and Scalability

While there is extensive literature on the initial training costs of LLMs that involve the continuous use of supercomputers equipped with GPU processors for several weeks, the infrastructure requirements for deploying LLMs in production are often overlooked despite being potentially significant. Indeed, once training is complete, using LLMs in production requires an appropriate GPU-based infrastructure that may become large when handling a large number of simultaneous queries. Commercial LLMs accessed through a pure Software-as-a-Service (SaaS) model eliminate direct infrastructure costs for the user but require data to be sent to the provider's servers. For sensitive data, this approach may violate organizational data governance procedures, particularly in regulated sectors such as banking, insurance, healthcare, and public administration. As an alternative, some GenAI providers offer their technology either on private cloud/single tenants or directly on-premise - within the client's physical infrastructure - requiring an investment in servers equipped with GPUs. Properly choosing a future-proof infrastructure is crucial, as poor sizing can lead to either unacceptable latency or significant overcosts.

### 2/ Personalization : RAG Pipeline and Document Ingestion

Once installed, LLMs must be personalized with the company's documentation. One of the most common applications of LLMs in businesses is the enhancement of document repositories through RAG (Retrieval Augmented Generation) systems. RAG combines generative AI with internal search engines, in order to create an intelligent dialogue

system. Such modules enable users to simply ask questions related to the content of the documents, such as data extraction, summarization, document comparison, etc. While the basic principle of RAG systems is relatively simple, setting up an effective and scalable system for various document types (including those with specific layouts, tables, or graphs) is notoriously complex, involving multimedia document parsing and multiple calls to the LLM. It should be noted that using an LLM in RAG mode helps minimize the risk of "hallucinations" by displaying the sources employed to substantiate the answer.

More complex tasks, such as the automation of workflows, require the development of so-called "agents", that involves the orchestration of various complementary tools, such as internet information search or the generation of self-correcting computer code. AI agents are currently an active field of research and are likely to become predominant in the future.

### 3/ Compliance : User Management, Data Access, and Regulatory aspects

Regulatory compliance is another fundamental aspect, particularly as AI regulations are being strengthened (GDPR, EU AI Act, etc.). Such regulations impose corporate liability and can result in extremely high fines for non-compliance. In order to comply, tracing the origin of data at every stage, and understanding AI decisions are key requirements. Therefore, the auditability of systems has to be built-in. However, such transparency does not mean that all users have access to all data : Role-Based Access Control (RBAC) mechanisms must ensure that each user accesses only data that is relevant to the user's organizational role.

### 4/ Maintenance and safety : How systems are monitored and maintained

Systems deployed in production must have advanced monitoring mechanisms that display



usage by user category and diagnose component failures. Furthermore, built-in safety features must ensure that decisions based on AI are eventually reviewed and assessed by humans. Finally, given the extremely fast progress of generative AI technologies, AI platforms cannot be static. Maintaining and regularly updating systems without disrupting services and with appropriate documentation is essential.

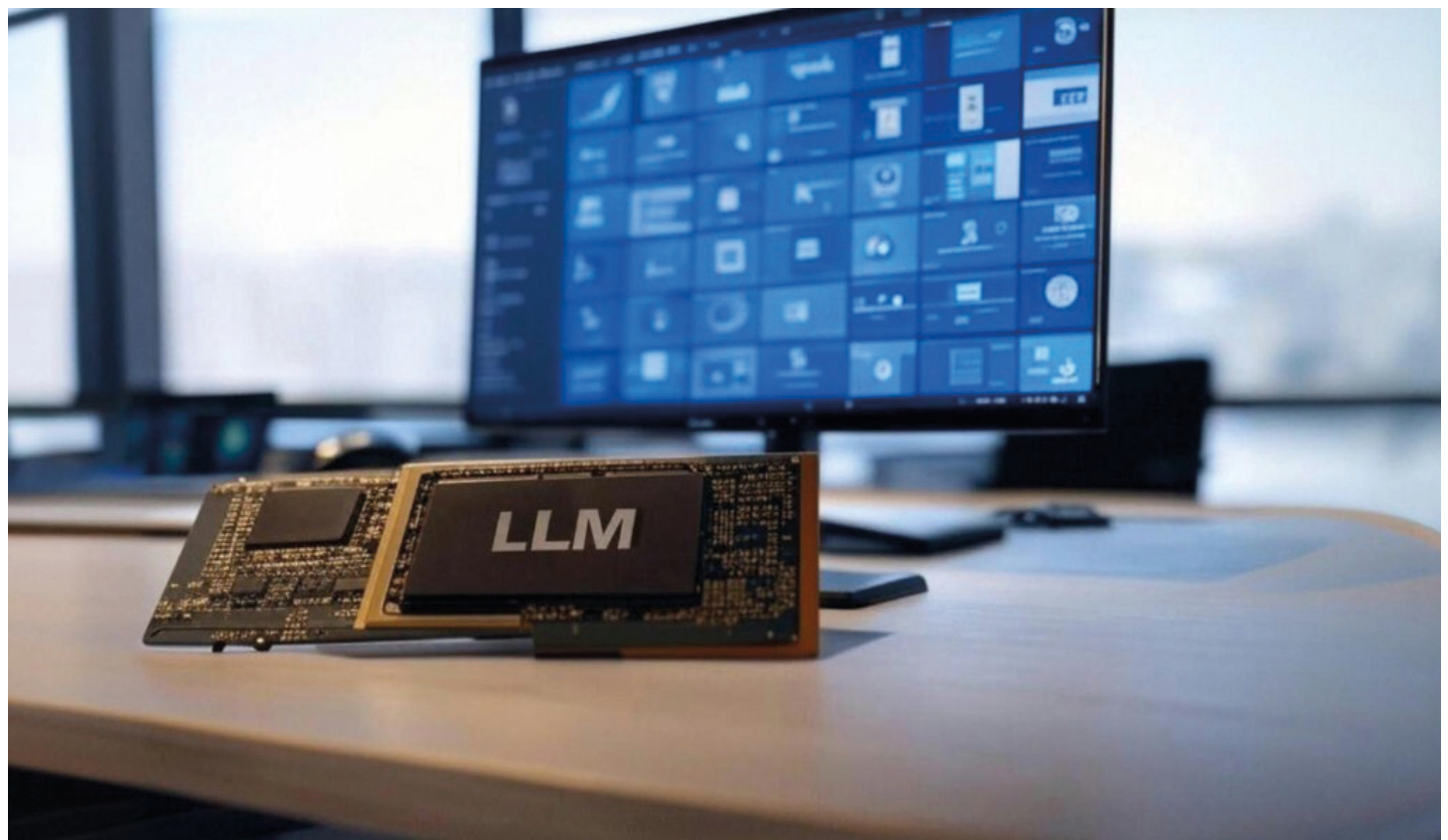
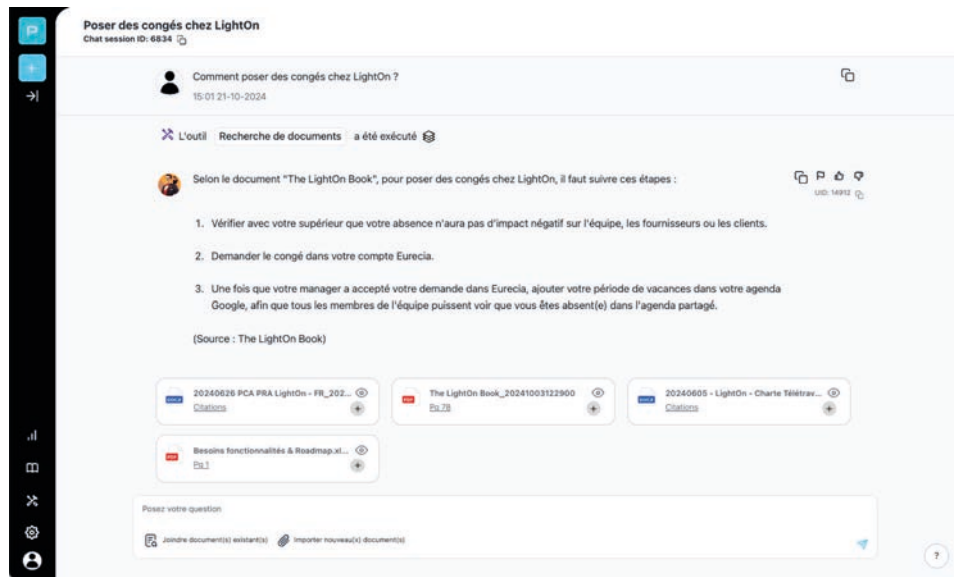
**Build or Buy: The Risks of an Internal Development Approach**

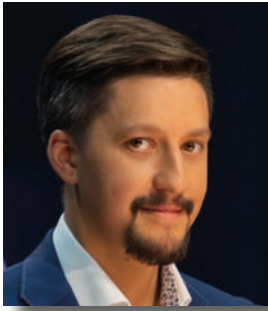
Internally developing an AI platform may seem appealing for organizations seeking full

control over their tools and budget, leveraging open-source LLMs and tools. This approach might be adequate when a large pool of highly technical engineers is available in-house, with skills ranging from GenAI, to software development and deployment (DevOps). However, while prototypes can be developed relatively easily, building a whole production-grade AI platform extends far beyond the core LLM, with large time scales and significant hurdles in the medium-to-long term.

*As an alternative, working with external GenAI providers reduces operational risk and time-to-production. In a world where*

*the adoption of generative AI has become a necessity, working with experts is not just a practical solution—it is an accelerator of digital transformation. Those who integrate this approach today will be the leaders of tomorrow.*





**LUUKAS ILVES**

*Former Undersecretary for Digital Transformation in Estonia. He is a non-resident fellow at the International Center for Defence Studies and an advisor to the deputy Prime Minister of Ukraine in questions of AI and digital transformation.*

# AI and (digital) resilience

**A**rtificial intelligence is reshaping the boundaries of what is possible — not only for innovators and the public good, but also for the bad guys.

## The Challenge: A Rapidly Evolving Threat Landscape

Until recently, criminals could send as many phishing emails, develop as much malware, or pull off as many social engineering schemes as they could build teams of technically or socially skilled people. Not anymore: they are using AI to automate and accelerate these tasks at an unprecedented scale.

Made easier and cheaper at every step by AI, the number of brute force denial-of-service cyber attacks has [increased 106%](#) in the last year. And AI is doing sophisticated work - Google [recently announced](#) its "Big Sleep" AI discovered a previously unreported zero-day vulnerability (until October, a feat of code analysis and insight requiring unusual human talent). It is only a small leap (for AI) to code an attack exploiting this vulnerability.

AI-generated phishing emails and social engineering tactics are now more targeted and widespread, with AI models producing

convincing, personalized scams for individuals based on publicly available data. Audio deepfakes are now used in [CEO fraud schemes](#) that empty companies' bank accounts. A marketplace of malicious service providers has emerged to "democratize" these tools; "deepfake-as-a-service", for instance, is now available for as little as €145 per video.

The impact is clear. Today, an estimated 56% of cyber-attacks use AI during the access and penetration phases, driving up the average cost of data breaches to over €4 million. And it takes only a quick peek at current developments in generative AI - [perfect video](#), agents that can autonomously [control computers](#) and [do tasks](#) on the internet, exponentially dropping token prices - to realize things will get much worse, and soon. Imagine these capabilities deployed at European scale (analogously to the use of TikTok for microtargeting in Romanian elections).

And get ready for cyber-physical fusion. In its war against Ukraine, Russian cyber attacks have preceded missile strikes, with the intent of making sewing panic and slowing down first responders. In the aftermath of Hurricanes Helene and Milton in the US (this year),

targeted misinformation (linked to Russia, China, and Cuba) was used to undermine and misdirect first responders' efforts. Again, lowering cost means that organized crime and even simple criminals will be using these tools soon.

## What can we do about it?

The best response to a bad guy with an AI is a good guy with an AI. Only organizations (and societies) that embed AI into every element of their crisis response cycle (prevention, preparedness, response, recovery) stand a chance.

**Preparation and prevention.** We must attack ourselves with AI before the bad guys do. AI tools to scan our code and constantly test our systems for vulnerabilities. Frequent simulations and exercises (made cheaper with AI) to test our teams and systems against complex attacks. Bots probing our own employees with social engineering attacks to help them raise their psychological defenses.

**Situational awareness and response.** Algorithmic tools, with access to vast pools of



data and the ability to detect small patterns and anomalies, can identify dangers earlier and also take action. Automated systems can reroute network traffic, deploy backup resources, and restore functionalities with minimal human intervention. (This is already how anti-DDoS tools work). Quaint notions of keeping a human-in-the-loop fail against attacks moving faster than human (or organizational) speed.

**Recovery and resilience.** Once attacks are contained, AI-assisted systems can help rapidly restore data and infrastructure, limit the spread of disinformation, and identify lessons for strengthening our defenses. Intelligent forensics tools, operating at machine speed, can spot how attackers gained entry and recommend structural changes to stop them next time.

**Continuous improvement and reinvention.** Adapting to an AI-driven threat environment demands more than new tools; it will require continuous learning and adaptation at individual and group level. Beyond the need for more data and cyber specialists, the largest challenge hardest is organizational: new teams, new budgets, new reporting lines, new organizational habits. That is complex and

uncomfortable change management - with resilience and security ideally part of a broader set of changes to improve AI-readiness.

### So is Europe ready?

We certainly have a legal framework in place:

- New cyber regulation (NIS2, the Cyber Resilience and Cyber Solidarity Acts) create a legal framework for product standards and certification, regulation of essential services and cross border collaboration on large-scale cyber incidents;
- The Digital Services Act obligates action on misinformation;
- eIDAS 2 creates a pan-European digital identity infrastructure, essential for distinguishing between bots and real humans.

If Europe fails, it will not be for lack of regulation. But we face a significant execution gap:

The adoption of AI (and also of the cloud services underlying most AI) is modest among both governments and enterprises. Adoption of secure eID is in the single digits in many large countries (a German is three times as likely to fall prey to identify theft and fraud as an Estonian, where more than 90% use secure eID).

Our collaboration moves at human speed, with many countries contributing almost nothing to cross-border sharing of threat information. And most European firms lack the data and AI skills and literacy to be resistant to

So what can the next commission do? Some ideas:

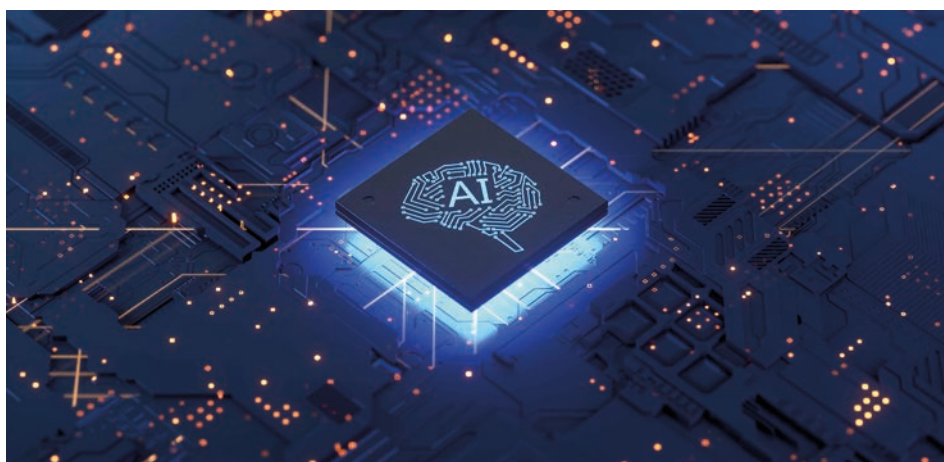
With a legal framework in place, the Commission and ENISA should propose an action plan on digital resilience, with plans to measure and improve on quantitative indicators (updated from the current Digital Decade targets), including the following (I offer target values for 2030)

- Percentage of Europeans regularly using secure eID (>80%)
- Percentage of government and enterprise technology expenditure going to security (>10%)
- Proportion of vulnerabilities and incidents reported on threat and information sharing platforms (>95%)
- Average speed of initial automated response to common incidents (<5 minutes)
- Damage from disruptive and destructive cyber attacks (reduce by 30%)
- Percentage of citizens, employees passing cyber and disinformation training (>75%)
- Volume and intensity of exercises and penetration testing

While Europe builds a single market with many multinational companies, governmental cyber capacities remain national. The Commission and ENISA should grow their direct collaboration and communication with industry, especially with essential service providers in inherently cross-border sectors (e.g. energy, transport, digital infrastructure), as is already the case for financial services. Member States and industry should set ambitious capability targets, including 1000 new "Red Teams" across Europe using AI tools to probe systems and find vulnerabilities before the bad guys do.

To preempt concerns about data protection and AI governance, ENISA, the European Data Protection Board (EDPB) and EU AI Office should issue clear and specific guidance on permissible use of data and AI for cyber security.

Finally, Europe should become an active student of Ukraine's experience. Since 2014, the country has been under constant Russian cyber attack and has developed significant public and private capabilities and a security mindset absent in most of Europe. And the best way to learn is through active collaboration and working side-by-side, best achieved by bringing Ukrainian teams and companies into every element of operational and technical cooperation as soon as possible, without waiting for full Ukrainian EU membership.





**PROFESSOR ALESSANDRO SACCOIA**

*Co-Founder, Veridien.ai*

# Horizon Scanning and Strategic Intelligence: AI in Modern Decision Making

In an era of rapid change and ongoing unpredictability it becomes more important than ever for us humans to procure solid information from reliable sources, and to turn it into actionable strategic insights. Recent days and weeks on the international scene have epitomized how established international structures and seemingly predictable policies can be overturned all of a sudden, sending ripples and waves through all sectors in all countries.

For any strategic decision, a tremendous amount of relevant information can be found distributed across disparate sources, **far exceeding what human attention can track**. While the rise of Generative AI has put much focus on generative text, the latest improvements in Natural Language Understanding (NLU) have opened the possibility to

continuously monitor this vast sea of information, surfacing **critical insights for human decision makers**. This has the potential to transform both policy making and strategic planning through making available more and better quality information at higher speed and lesser effort than ever before, while keeping human judgment where it belongs - at the center of decision making.

The foundation of informed decision making lies in understanding both established knowledge and emerging developments. By building on comprehensive knowledge graphs, modern AI systems can perform continuous horizon scanning across multiple sources and domains. Experience with our [Topic Feeds](#) demonstrates how this systematic monitoring can help decision makers to identify patterns, relationships and trends that might otherwise go unnoticed.

When monitoring strategic developments, a well designed AI system should consistently track:

- Evolving discussions and interaction across different institutions and forums, as in our [Institutional Monitors](#)
- Connections between new information and established knowledge
- Emerging trends and shifting priorities
- Historical context and precedents for current developments

In this way, **business leaders** can better anticipate regulatory impacts on their industry; **public sector officials** can understand the broader implications of their decisions; **NGOs** can track developments across multiple jurisdictions more effectively.

While systematic monitoring excels at connecting information and tracking developments over time, many decisions



require immediate awareness of ongoing discussions. Real-time processing systems like [StreamScope](#) complement our horizon scanning solutions by analyzing **live broadcasts** and discussions as they happen, automatically identifying speakers, speech patterns, key topics, and alerting stakeholders when their areas of interest are being discussed. This immediate access to processed information brings many advantages. For example, stakeholders no longer need to wait for filtered summaries or rely on incomplete analysis, while for the public, it enables a new form of **democratic access** to complex and hard-to-track procedures of modern policy-making and government.

The key to effective decision making isn't just having information—it's transforming that information into strategic insight. This requires understanding of historical context, identification of patterns and hidden correlations across different domains, recognition of emerging trends early, and evaluation of potential future developments through diverse analytical perspectives.

One of the most challenging aspects of strategic decision making is **anticipating how different stakeholders will respond to new initiatives or changes**. The approach we are currently developing and preparing for the market combines knowledge graphs with synthetic panel assessments and quantitative analysis techniques to evaluate developments through multiple analytical lenses.

This multi-perspective analysis helps to **identify weak signals** and **emerging trends** while providing nuanced, data-driven assessments of potential impacts and reactions. By measuring the future impact

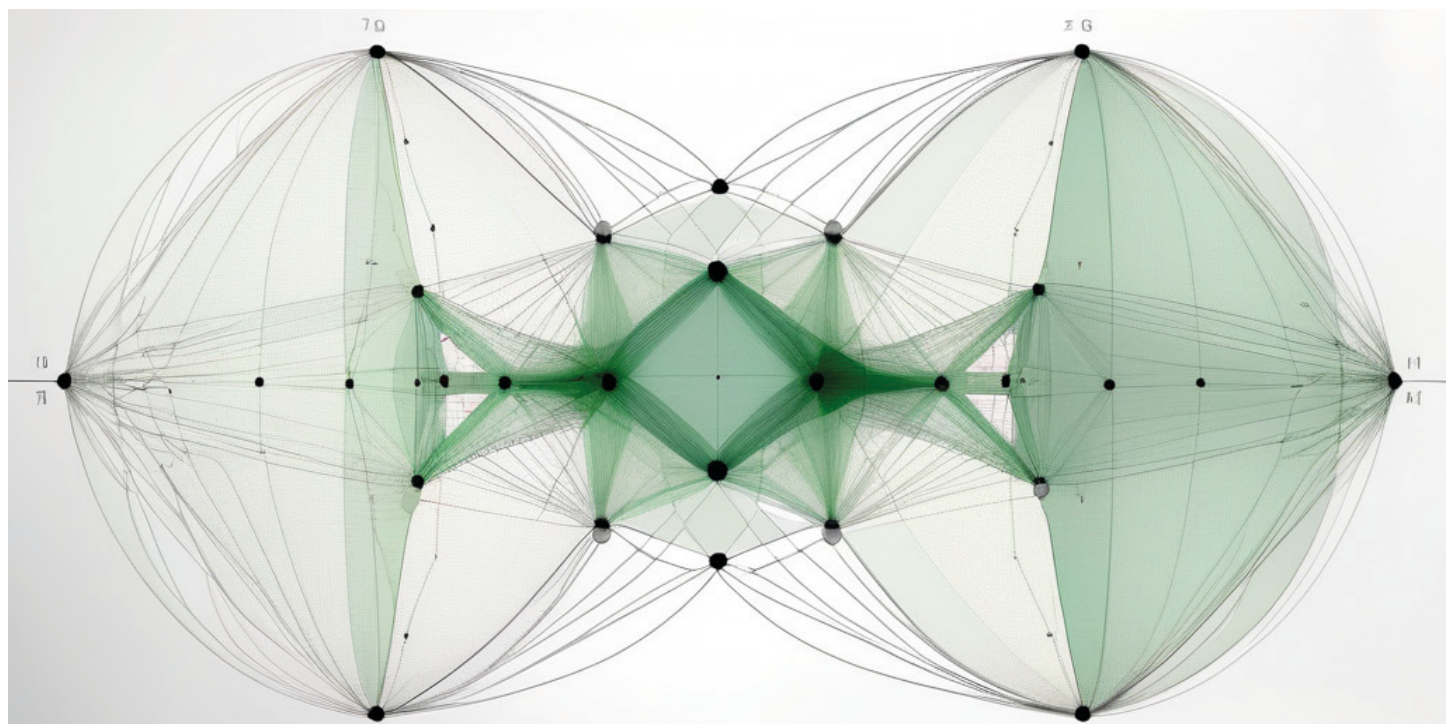
of current developments from multiple angles—economic, social, environmental, and technical—we can already provide valuable insights about the **relative magnitude and direction of potential outcomes**.

Looking ahead, we are building towards a future where we help decision makers evaluate policy choices with unprecedented clarity. Our development roadmap focuses on systems that will provide quantifiable confidence levels for different outcomes, **allowing leaders to move from intuition-based to evidence-based strategic planning**. This represents not just an evolution in decision support technology, but a fundamental transformation in how organizations can approach strategic choices.

We are already making this vision accessible through **intuitive chat interfaces** that allow users to query complex information at different levels of understanding in order to reach forward-looking conclusions. Whether accessing proprietary databases, real-time feeds, or specific historical data, users can engage in natural conversations to explore and understand the implications of various developments. Combined with our automated reporting capabilities, this creates a comprehensive system where strategic insights can be both generated systematically and explored interactively.

In conclusion, **strategic decision making today requires combining human expertise with intelligent information processing**. By making vast amounts of information more accessible and actionable, we can support better decisions while maintaining

transparency and accountability - importantly, in line with European ethical and legal standards, such as the AI Act. Veridien's technology aims at transforming how organizations approach both policy making and strategic planning—not by replacing human judgment, but making it more powerful by equipping decision makers with better tools than ever. Therein lies arguably one of the greatest opportunities of our times for understanding ever more complex situations, developing effective strategies, and crafting equitable solutions in the interest of us all.





**BART GROOTHUIS**

*MEP (Renew Europe - Netherlands)*

## Doctor Draghi

With a podcast on the latest tech developments, Lex Fridman reaches an audience of millions. CEOs from Silicon Valley queue up to be interviewed.

To my surprise, a recent guest was a Dutchman unknown to me: Pieter Levels. Just after Elon Musk and just before Donald Trump, he was allowed to tell his story for three hours.

As a 'digital nomad', the freshly graduated Amsterdam programmer roamed Asia and Latin America until a depression took hold of him. His father advised him: 'Talking about it can help, but picking up a rake to work in the garden is better.' So get to work. And set yourself new goals'.

That fatherly instruction translated Levels into a challenge to start 12 tech start-ups in 12 months. He succeeded miraculously, and his success reckoned with his depression. He is currently a celebrated programmer and entrepreneur in the US, with an income of about 200k a month. Levels does not like cumbersome technology companies that operate slowly and inefficiently.

The European tech sector is also struggling with depression. A doctor, Mario Draghi, was hired to diagnose it. In the European Parliament, he pointed out that 1 in 3 unicorns leave Europe for the US. Of the 50 biggest tech companies, only four are European. EU labour productivity and profitability are sharply lower and the Americans are better positioned technologically to compete globally.

He correctly diagnosed the problem: insufficient venture capital and too much regulation. The cure: deregulation and heavy investment. 'Get to work and set yourself new goals,' I heard Levels' father say. Europe must now deal with its tech depression by taking up

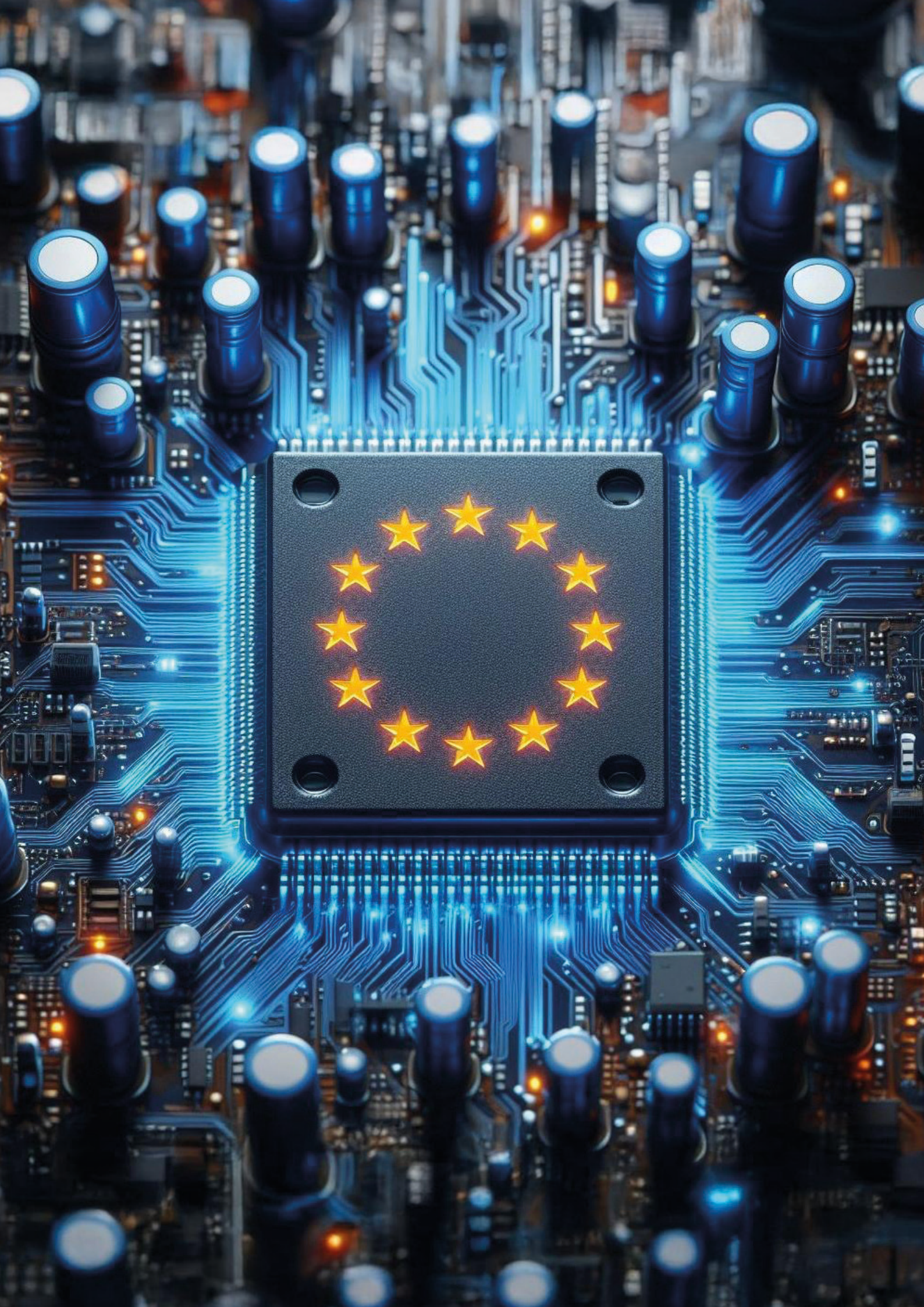
the rake. And there is potential. Excluding the big-tech sector in the US, European labour productivity growth is higher. Knowledge at universities is developed better and faster here, there are more tech startups in Europe and the potential is huge with a market of 450 million wealthy consumers.

However, initial reactions in Strasbourg were meagre. 'Too expensive,' said Germany. But with our shrinking workforce, the EU has no choice but to offset the loss of labour productivity with the creation of winning

European tech companies. This will also benefit our privacy and long-term prosperity. A new European data strategy and proposals that let companies breathe again are in the works. The stakes are high in the coming years and I look forward to contributing to this with the right ideas.

The goal should be: more Europeans on Fridman's podcast to explain the miraculous resurgence of European tech. Preferably: even more Dutch guests on his podcast!







# Learn. Connect. Engage.

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The Brussels Sustainability Club is a unique network gathering over 150 public affairs professionals representing leading organisations including multinational companies and trade associations from across sectors as well as environmental NGOs who share a common interest in sustainability policies.

Our platform aims to foster networking, sharing of information, and a constructive dialogue with policymakers and business leaders on sustainability issues. Our club brings together a diverse group of professionals from all seniority levels working in Brussels.

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