

2 HOT TOPIC: The story behind Europe's AI ambitions

The European Commission's proposed new regulations for artificial intelligence (AI) include a clear ambition and plans to make Europe a "global hub for trustworthy AI". EURAXESS Worldwide Newsletter explores what this means and how it fits into wider digital ambitions and research policy directions.

Barely a day goes by without a news headline heralding developments in artificial intelligence. Tantalising as each story may sound, the scientific community is likely to be more drawn to the backstory. The countless hours of hard work behind the scenes and, behind that, the strong belief – backed by political will and investment – that AI can transform science and society.

In its proposed regulation, [announced on 21 April](#), the Commission spells out that 'trustworthy AI' means safeguarding freedoms and safety while encouraging innovation, investment and commercial uptake. Ethical concerns are also raised about the way AI is developed, how data is obtained and 'trained' during machine-learning processes to avoid bias, and how the information is used.

As the Commission's proposal is debated in the EU's law-making chambers, questions about AI compliance and strategies for enforcing it are also being explored. Issues about its use in law-enforcement (e.g. facial recognition systems), credit scoring and insurance risk, as well as its potential abuses (e.g. deep fakes, scams, subverting justice and democracy) are also high on the agenda.

The EU naturally wants to capitalise on the benefits while ensuring that suitable checks and balances (standards and agreements) are in place to guide developments. Many of these challenges and opportunities are presented in a 2020 [White Paper](#), 'Artificial intelligence – A European approach to excellence and trust'.

World-class AI research (and funding)

Europe is betting big on artificial intelligence. There are good grounds for such optimism. The global market for AI, which includes software, hardware and services, is forecast to grow by 16.4% to \$327.5 billion in 2021 and push through the \$500 billion mark by 2024 thanks to a five-year compound annual growth rate (CAGR) of 17.5%, according to [IDC data](#).

Reaching this potential is going to take a lot of strategic planning and hard work. According to the Commission, Europe needs to increase and better coordinate public and private investment to "reap the full benefits of AI" and strengthen its position in this key enabling technology. It is why digital technology and AI feature prominently in EU research programmes and initiatives. These include [Horizon Europe](#), the main R&I funding programme supporting technological and societal aspects of AI development and deployment, and [European Research Council](#) grants to simulate AI-focused research centres and leadership across the EU, and beyond.

Other AI initiatives include [European Innovation Council](#) funding to help promising innovators and SMEs turn research into breakthrough innovations, and [European Partnerships](#) bringing private and public R&I partners together to tackle pressing societal challenges. For example, the [AI, Data and Robotics Partnership](#) is looking for cross-fertilisation between partners from the digital and space sectors/industries, thus driving development and uptake of new technologies.

Public-private partnerships (PPP) are another avenue to advance AI in and with Europe. One [AI-PPP](#) is being set up to boost “value-driven trustworthy AI, data and robotics based on European fundamental rights, principles and values”. It brings together a range of initiatives ([EurAI](#), [CLAIRE](#), [ELLIS](#), [BVDV](#) and [euRobotics](#)) covering different aspects of big data, intelligent systems, machine-learning, etc.

More details about EU projects, results and publications, including a handy [CORDIS Results Pack](#) on how AI is “turbocharging European industry”, can be found on the Commission’s dedicated [AI research web-page](#).

Better understanding of ‘trust’

“With all of the attention on machine learning, many are seeking a better understanding of this hot topic and the benefits that it could provide to their organisations,” notes SAS, a software and analytics business, in a helpful [primer/briefing](#) on ethics and AI. This is also true of the international research community, which is both heavily invested in the science behind AI but also in what it can do for their field.

Artificial intelligence and related fields are driving innovation in countless areas, from language processing and security applications to image analysis, medicine, self-driving vehicles, personalised marketing, e-commerce, and much more.

According to a [2020 report on AI research and innovation](#), ‘Europe paving its own way’, the EU ranks among global leaders in AI science and it has actively supported ethical and human-centric progress, but its innovation performance in the field needs a boost.

Effort in the coming years is thus focused on developing and deploying [AI solutions](#) with positive impacts on society and the economy, while prioritising public and private investment including [better access to and use of scientific data](#).

Focus is also needed on extending [trustworthy AI](#) and “ethics by design” in Horizon Europe R&I projects. The impact of such determination could “bring about significant improvements to society”, the Commission notes, delivering high-impact innovations in healthcare, education, transport, industry, climate action, and many other sectors.

On the flipside, as AI becomes more pervasive, it will bring about considerable socio-economic changes which need discussing, according to the Commission. This is why it has launched a consultation ([Europe’s Digital Decade](#)) to explore these implications as it forges new laws governing AI developments: “The EU must act as one, based on European values, to promote the development and deployment of AI.”



A post-pandemic digital compass

To help translate the EU's digital ambitions into concrete goals with built-in monitoring and reporting milestones to reach by 2030, the Commission came up with a so-called [Digital Compass](#) revolving around four "cardinal points" outlined briefly here:

- Digital skills (at least 80% of adults and a much higher proportion of women should have digital skills to reach a target of 20 million ICT specialists employed in the EU)
- Well-functioning, secure and sustainable digital infrastructures (all EU households should have gigabit connectivity and all populated areas should be covered by 5G)
- Digital transformation of businesses (75% of companies should use cloud computing services, big data and AI)
- Digitalisation of public services (all key public services should be available online including secured access to e-medical records and eID solutions)

The pandemic has shown the importance of digital technologies and skills, and highlighted where improvements are still needed. In a [prepared statement](#) about Europe's post-Covid digital ambitions, Commission President Ursula von der Leyen said, "We must now make this Europe's Digital Decade so that all citizens and businesses can access the very best the digital world can offer," and concluded that the new Digital Compass "gives us a clear view of how to get there."

More info

[Read the Commission proposal](#) laying down harmonised rules on AI to the European Parliament and Council.