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AI in science: Europe seeks to balance sovereignty with progress

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US companies who want a piece of Europe's AI market are starting to make concessions to concerns over technological and data sovereignty. But these moves do not go far enough for some lawmakers, who see a risk of "sovereign washing" that leaves Europe exposed.

One company hoping to sooth European worries in the niche market of AI for science is Sapio Sciences, which is marketing an AI-based electronic lab notebook called Elain. The tools included mean that the system doesn't just record results, but acts as a "co-scientist" that can help analyse data and design and run experiments.

At the beginning of 2025 Sapio announced it would open up to third-party scientific applications, platforms and models from companies such as Nvidia, Elsevier and Schrödinger.

"We have fully embraced the fact that pretty much every life sciences business out there has already chosen their favourite retrosynthesis tool, their favourite docking tool, their favourite whatever it may be," Andrew Wyatt, chief growth officer at Sapio Sciences, told Science|Business.

While pitched as a convenience to users, so that they don't have to switch between different systems or rely on their bioinformatics or cheminformatics department to run tools, it also allows those with sovereignty concerns to choose applications made in Europe.

Even if the tools are developed in Europe, however, the cloud services needed to run them are dominated by a small number of US companies. This means that the data is moved out of the EU and is no longer covered by its protections.

According to Wyatt, this data sovereignty hasn't been an issue for Sapio's European clients, which include AstraZeneca, Johnson & Johnson and the UK-based Wellcome Sanger Institute.

If need be, Sapio's software can be deployed on local servers in sectors such as public healthcare, where data sovereignty is crucial. Otherwise, it uses cloud infrastructure from AWS, which earlier this year launched a cloud service located entirely in Europe in a bid to respond to sovereignty concerns.

Other big tech companies including Microsoft boast similar sovereign cloud solutions, where data stays in Europe.

"Sovereign washing"

This is not enough for Aura Salla, a Finnish MEP from the European People's Party and a key figure in digital regulation, who says there is a risk of "sovereign washing" in these concessions.

According to a study compiled for the European Parliament's industry committee, on which Salla sits, there are clear limits to claims that sovereignty can be protected. "Under US law, American companies must comply with US legal mandates regardless of where their operations or data are located," the study notes. "True sovereign cloud implies that both the provider and infrastructure are based in Europe and fully under European jurisdiction."

"I would definitely not upload any of my personal data or scientific data that I think is sensitive to a US cloud," she said, although she acknowledged that researchers face a difficult choice. "Of course, you want to use the best possible tools, but you also need to understand the security aspect," she said.

Salla believes it is "absolutely not" possible to maintain global collaboration on AI in science given the current geopolitical situation. "China is helping Putin in Ukraine [...] The US is threatening a sovereign country in Europe, meaning Greenland," she said.

Negotiations with the US over data privacy were already difficult during the Biden administration, and will be even more complicated now, "because there is no trust," she added.

Even if sensitive data is not transferred outside of Europe, US-based companies could still use customers' data to strengthen their innovation lead. "You are feeding their development work when you're using their tools," said Salla, herself a former director of EU public policy at Meta.

Salla is currently the research committee's rapporteur for the Digital Omnibus, a Commission proposal to simplify the EU's digital rules. This includes changes to the definition of personal data in the General Data Protection Regulation, which Salla hopes will both enable Europe to use more data to train AI models, and restrict foreign actors.

"We need to somehow, at the same time, put barriers towards third country participants in the EU market," Salla said. For example, she is looking into the feasibility of introducing a digital tax or putting a price on data.

Competitiveness means collaborating

While Salla is hard-line about the dangers, others feel that compromise is inevitable if Europe is to benefit from AI.

"Sovereignty needs to be conceived not just as using European tools. It's about having a competitive innovation ecosystem in Europe, and you don't build a competitive ecosystem if you renounce what is available," said David Osimo, executive director and director of research at the Lisbon Council, a Brussels-based think tank working on AI in science with companies such as NVIDIA and Google DeepMind.

At the same time, he believes it's easier to find common ground with international partners when it comes to scientific progress. "The reality of science is that it has always been a global collaboration, far more than any other field," he told Science|Business. "Luckily, when it's about curing cancer, sovereignty is secondary."

AI for science also involves a level of co-building, rather than using off-the-shelf instruments, he added. "It's not just about having European models or computing power to run them," he said. "The focus should really be on applying AI to scientific problems. This is where the real competitive advantage is."

Find a balance

The research community, meanwhile, is looking for a balance. “Technological sovereignty and international collaboration should not be seen as mutually exclusive,” said Mikey Creane, chair of the International Consortium of Research Staff Associations. “Such collaboration must be grounded in strong ethical standards, research integrity and responsible data use.”

Researchers are adopting a cautious approach to using AI tools developed in the US and China, “particularly due to concerns related to data protection, regulatory differences and commercial influence,” Creane said, passing on responses from consortium member organisations to queries from Science|Business.

“European researchers are especially cautious about tools whose training data and compliance mechanisms lack transparency,” he went on. In some cases, paid licences can offer stronger data privacy guarantees and prevent sensitive information from being used to train models.

“It is clear to the research community in Europe that alternative AI models, cloud infrastructures and a stronger European technological ecosystem, independent from the US and China, are needed,” Creane said.

This is the line in the EU’s AI in science strategy, which includes creating a Resource for AI Science in Europe, a virtual institute that promises to pool AI resources including computation, data and research funding.