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European Central Bank

ECB: Artificial Intelligence and Supervision – Innovation with Caution

- In his address marking the 10th anniversary of Banco de Portugal's ethics and conduct framework, Pedro Machado of the ECB outlined **the institution's evolving approach to artificial intelligence (AI) within European banking supervision**. While recognising AI's transformative potential, the ECB adopts a **measured, ethics-driven strategy**, ensuring that innovation does not compromise integrity or oversight quality.
- The ECB's **AI integration rests on two key milestones**: the 2020 establishment of a dedicated technology and innovation division, and the 2024 rollout of supervised experimentation by Joint Supervisory Teams. These laid the groundwork for the Single Supervisory Mechanism's (SSM) digital infrastructure, enabling AI tools to support - rather than replace - human judgement.
- **Five foundational systems** underpin this effort: (1) Agora, a prudential "data lake" centralising supervisory data with natural language access; (2) Athena, an intelligent document search and summarisation tool; (3) the Virtual Lab, a collaborative cloud space for AI prototyping; (4) a unified supervisory cockpit integrating data and AI insights; (5) scaled deployment across the SSM to ensure consistency and shared benefits.
- Notable **AI tools** include Delphi for early risk detection using market and social media data; Medusa for managing supervisory findings; Heimdall for supporting fit and proper assessments; Navi, which visualises complex ownership structures. These tools enhance supervisory depth, consistency and efficiency while enabling more robust risk analysis.
- The E AI adoption is **driven by supervisory quality rather than efficiency alone**. AI enables supervisors to focus on analysis and judgement by reducing routine burdens. However, Machado also highlighted **five core risks**: (1) inaccuracy and hallucinations in AI outputs, (2) potential deskilling of staff, (3) lack of explainability, (4) increased cyber threats, (5) AI-generated content risks in regulatory interactions.
- The ECB aligns its practices with the EU's forthcoming **AI Act**, requiring internal operational risk assessments and robust governance for all AI applications.

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