SSM digitalisation – from exploration to full-scale adoption

Central Banking’s Summer Meetings

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Elizabeth McCaul
ECB Representative to the Supervisory Board
Supervision and technology
Technological innovation triggers structural changes in all areas of the global economy, and banking is no exception

- The banking sector is undergoing a rapid transformation, with **new players** entering the market and therefore the financial value chain.

- Traditional banks are adopting **new business models** incorporating **fintech intermediaries** in key business processes.

- **Banks are using AI to revolutionise** customer interfaces and data management, and to improve credit assessment, customer support and fraud detection.

- The **volume of data** used in banking worldwide is **growing at an unprecedented pace** and is expected to grow from tens to hundreds of zettabytes within a few years.
Banking supervisors must therefore adapt through innovation to align with these changes and the new environment

- **Digital innovation** and fostering an **innovation supervisory culture** is **not a choice** for supervisors but **a necessity** to meet new challenges.

- **Supervisors** must leverage technology to effectively **manage** growing **data volumes** and new risks stemming from banks’ use of AI or new business models.

- **Harnessing the power of technology** allows supervisors to remain **efficient** and **effective** in fulfilling their mandate to keep the **European banking system safe and sound**.

- At the same time, the ECB is **mindful of the risks** around digitalisation and takes into account the **legal framework** including the upcoming **AI Act**.

“We only have two demands! Why don't people just give us what we want?”
Our achievements
Since 2020 we have driven digital innovation forwards by connecting people, ideas and projects across European banking supervision.

**BEFORE**

Full innovation potential not used

Multiple projects did not maximise the full capacity of technology

Limited approach to innovation, few projects on key technologies such as AI, RPA or NLP¹

**TODAY**

Connected people, ideas and projects across the ECB and the national competent authorities (NCAs)

Innovation is fostered and benefits and knowledge are shared

The SSM Digitalisation Blueprint, the first action plan to deliver digital innovation across European banking supervision, has been implemented.

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1. AI: Artificial intelligence
   RPA: Robotic process automation
   NLP: Natural language processing
The digital transformation has resulted in significant achievements within a short time frame.

14 Suptech tools implemented from a starting point of more than 100 ideas prioritised using a structured innovation management framework.

15+ Agile, multidisciplinary innovation teams formed comprising IT and supervision experts from the ECB and NCAs working together.

2,600 Experts trained in innovation and digitalisation through comprehensive training programmes.
The main result was the rollout of cutting-edge suptech tools to all European banking supervisors.

- Virtual Lab: Platform for **SSM-wide digital collaboration** as well as code sharing, cloud computing and the development of generative AI capabilities.
- Athena: **AI-supported textual analysis platform** offering **natural language processing** capabilities to all supervisory areas.
- Agora: **Single data lake bringing together** all prudential data in one location, with access for all SSM users.
- Navi: **Graph and network analytics platform** with advanced **visualisation** capabilities for data analysis.
- Heimdal: Tool for **machine reading and analysis** of thousands of fit and proper applications.
- Gabi: Specialised model development platform for **big data analytics**.
Suptech tools are in high demand and becoming increasingly popular among European banking supervisors...

**VIRTUAL LAB**

Users and projects

**AGORA**

Users and queries

Registered NCA users

Projects

Users (lhs)

Queries (rhs)
...and are having a tangible impact on their daily work

**VIRTUAL LAB**

- **Head of Division**
  Improves collaboration and coordination of the Supervisory Review and Evaluation Process (SREP)

- **Central bank digital currency expert**
  Supports a joint research project to estimate the potential take-up of a digital euro

- **Principal Banknote R&D expert**
  Uses the platform to explore cutting-edge computer vision technologies to identify banknotes from pictures

- **Data scientist**
  Speeds up model training for natural language processing using high-performance cloud computing

**AGORA**

- **Horizontal supervisors**
  Benchmark the capital requirements set for banks in SREP

- **Supervisor at Deutsche Bundesbank**
  Accesses data for 45,000+ banks worldwide to quickly draw lessons in times of financial turmoil

- **Joint supervisory team (JST) member at De Nederlandsche Bank**
  Retrieves IMAS, Anacredit, master and ad hoc data from one system in a consistent manner for benchmarking bank developments

- **Economist in Financial Stability**
  Uses the master data to build datasets and ensures analytics are consistent with those of SSM colleagues
The new SSM tech strategy
Several pressing business needs require further innovation and digitalisation efforts

Need to keep up with the **challenges of the ever-changing banking sector** (AI, new business models, fintechs) and emerging risks (e.g. IT risks)

Make sure that **supervisors can fully use the applications and data** available to them and that technology is seamlessly integrated into their day-to-day work

**Consolidate** IT to further strengthen the **SSM** to work as **ONE team** with **ONE technology** across the ECB and NCAs
The new SSM tech strategy connects people and technology to deliver “supervision at your fingertips”
The strategy outlines a comprehensive action plan in line with SSM priorities and objectives.

### Core systems and data infrastructure

- **Adapt IT tools to evolving processes & methodologies** *(e.g. update of SREP methodology in core IT systems)*
- **Upgrade data infrastructure and consolidate information exchange** *(with significant institutions e.g. Agora upscaling, SSM portal)*
- **Simplify** SSM IT landscape and address barriers for joint work *(e.g. enhanced SSM data governance, Olympus project)*

### Supervisory analytics

- **Address emerging risks** *(e.g. IT and cyber risk supervision and climate and environmental risk monitoring)*
- **Explore new datasets** and sources of information *(e.g. social media monitoring and non-bank financial institution data analytics)*
- **Holistically assess, consolidate and upscale SSM data analytics** *(e.g. streamlined dashboards and repositories, SSM cockpit)*

### Process automation and collaboration

- **Strengthen SSM integration and collaboration** *(e.g. ECB-NCAs’ shared calendar and mailboxes)*
- **Automate workflows** and support information searches *(e.g. robotic process automation applications)*
- **Monitor and adopt pioneering technologies** *(e.g. generative AI support for supervision)*

**Optimise the SSM IT landscape to maximise the impact and use of existing applications**

**BY 2028**

- Enhance supervisory risk assessment by augmenting analytical capabilities
- Deliver breakthrough solutions to automate workflows and improve SSM collaboration
The action plan will increase the effectiveness and efficiency of supervisors using technology accessible with only a few clicks.

- **JST members**
  - Will connect to a single and integrated SSM cockpit for everyday tasks, bundling 80% of the most highly demanded supervisory data and IT services for addressing supervisory priorities.

- **Horizontal supervisors**
  - Will be prompted with new insights powered by generative AI and new SSM data analytics capabilities following expert group recommendations.

- **On-site inspectors**
  - Will work on an AI-assisted findings and measures tool to improve remediation effectiveness across all types of supervisory findings.

- **Regulatory experts at supervised banks**
  - Will exchange all information about their bank through a single channel, significantly reducing compliance efforts for their institution.
The strategy also follows a clear, people-oriented approach.

**Impact measurement**
Use of key performance indicators for each tool to pinpoint bottlenecks and identify areas for improvement.

**One-click initiative**
Provide intuitive and consistent experience across all IT systems and tools, focusing on ease of use for supervisors.

**People-focused approach**

**Suptech champions**
Ambassadors in all areas to foster awareness and support the use and development of suptech.

**Engagement strategy**
Raise awareness and increase user base of tools through targeted initiatives, such as roadshows and people-oriented training.
High-quality training and digital culture initiatives are equally important and provided for all staff levels.
Partnerships with peer authorities, industry, academia and startups allow supervisors to leverage the most recent trends and knowledge.
Conclusion
Our digital transformation efforts will pave the way for the banking supervisors of the future

**Augmented data expert**
combines prudential data with other sources using AI to derive new insights

**Agile supervisor**
collaborates in virtual teams and works on fully integrated and AI-empowered systems

**Citizen technologist**
uses latest technologies, leveraging self-built apps to resolve pain points

**European banking supervisor**
works together with all European banking supervisors based on a common set of tools

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**Banking supervisor of the future**
- Advanced analytics
- Low-code systems
- Cloud-native systems
- Modular IT services
- Integrated systems
- Single sign-on
- Business orientation
- Suptech
- Integrated data
- AI powered analytics

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