AI in Banking: Real Use Cases and Update on the AI Act

ABI 2025

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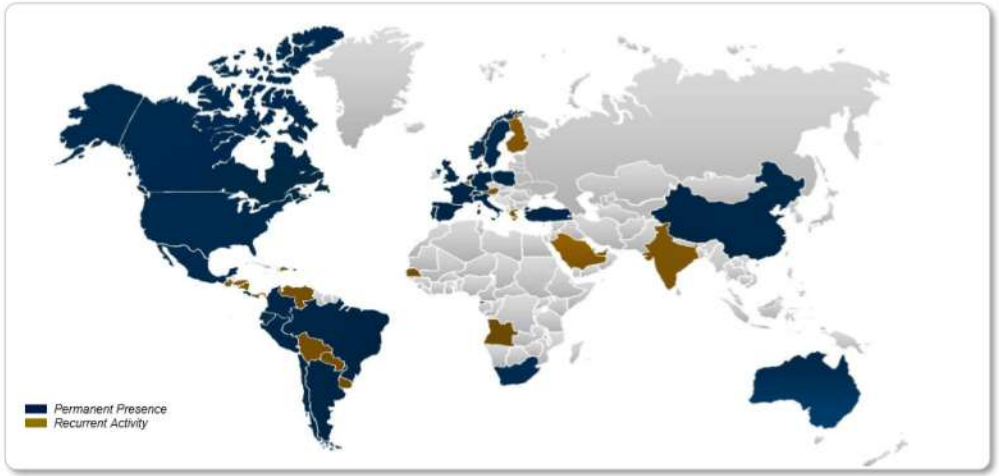
Who is Management Solutions?

Management Solutions **is an international business consulting firm with operations in 50+ countries (50 offices), and a team of 4,000+ professionals working for 2,000+ clients around the world (600 FIs)**

We are an international firm…



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Europe
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Oceania
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with a team of talented and multidisciplinary professionals…

- International consulting firm specialized in **regulated industries**.
- Globally managed multidisciplinary teams
- **Analytical team: business, quant and technical**
- **Strong relationship with regulators and supervisors**

…and extensive experience in regulated industries

- **Collaborating with:**
  - **9 financial supervisors**: ECB, DNB, PRA, Bank of Spain…
  - **20 out the of the 30 G-SIBs** (Europe and America)
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  - **600+ financial institutions** in 50+ countries.
  - **500+ major corporates** in Insurance, Energy, Telco and other

MS´Activity in Artificial Intelligence

Management Solutions combines deep AI regulatory knowledge with advanced tech and quant skills, offering proprietary AI tools and expertise in model governance, recognized by top financial regulators

Management Solutions' services in AI

Management Solutions
Making things happen

Compliance with AI regulation
- AI Act, NIST 600-1, ISO 42001, AIDA…
- AI audits
- Compliance plan

AI risk analysis
- Explainability (XAI) dashboard
- Fairness analysis
- AI/GenAI validation and audit
- AI/GenAI monitoring dashboard

AI strategy and framework
- AI strategy and adoption roadmap
- Adjustment of risk appetite to AI
- AI governance and organization
- AI policies and procedures
- AI IT and data stack

AI use cases
- Selection of AI/GenAI use cases
- Piloting
- Cost-benefit-risk analysis
- GenAI deployment in production

How are banks and supervisors really using GenAI?

Brief update on the AI Act

Industry response and AI adoption plan

Key takeaways

Annex

1 How are banks and supervisors really using GenAI?

In banks, GenAI is already being used (or piloted) for productivity, efficiency and quality

Business and customer relations

1. **Chatbots:** interface for queries and incidents, with transaction analysis.
2. **Customer center assistant:** transcribes calls, generates summaries and provides information to the agent to answer.
3. **Dynamic personalized marketing:** content for campaigns and newsletters.
4. **Voice of the Customer:** massive analysis of feedback and social networks.
5. **Instant proposals and contracts:** real-time drafting with customer data.
6. **Predictive cross-sell and up-sell:** segmentation and prediction of purchase/usage behavior.
7. **Financial product recommendations:** personalization according to history and preferences.
8. **Multilingual product sheets and catalogs:** automated and channel-adapted generation.
9. **Market and competition reports:** consolidating internal and external data.

Technology, operations and processes

1. **Chat with DB:** data queries in natural language.
2. **Data quality control:** detection of duplicates and inconsistencies; obtaining validation rules.
3. **Real-time input control:** instantaneous detection of unusual values in the input.
4. **Multi-agent search engine in databases and data dictionaries:** agents that locate variables, tables, definitions and metadata.
5. **Data anonymizer:** transformation of personal data, complying with GDPR.
6. **Synthetic data generator:** creation of artificial data while maintaining statistical properties.
7. **Technical documentation:** generation and updating of user and support manuals.
8. **Code translation and optimization:** migration and refactoring of programming languages.
9. **Log monitoring:** early detection of anomalies in critical systems and proactive alerts.
10. **Automation of repetitive processes:** combining RPA with GenAI to reduce time.
11. **Automated test design:** test generation for software testing.
12. **Process reengineering:** redesign processes and reduce bottlenecks.

Support areas

1. **Credit rating with social media:** controversy detection and impact on corporate ratings.
2. **Model validation:** automated verification and explanation of results and assumptions.
3. **Audit Analyst:** generation of findings from massive documentation.
4. **Evaluation of CVs:** matching of profiles with positions and compensation recommendations.
5. **Accessibility:** simplification of texts to B2 level to comply with EAA (Accessibility Directive)
6. **Regulatory chatbot:** virtual assistant with knowledge of internal policies and/or regulation.
7. **Legal and regulatory review:** verification of contracts and applicable regulations.
8. **ESG and CSR reporting:** periodic drafting of reports and briefings.
9. **Extraction of data from financial statements:** accounting support and reporting.
10. **Helpdesk with GenAI:** real-time support ticket resolution.

1 How are banks and supervisors really using GenAI?

Central banks are developing AI use cases in a number of fields

1 Support for corporate functions

- Chatbots for citizen and internal support
- Wizards for report writing, presentations and code generation
- Machine translation, proofreading and transcription of documents
- Sentiment analysis to ensure institutional tone of communications
- **Automatic evaluation of CVs with LLMs for selection processes**

2 Payment systems

- Detection of anomalous transactions and laundering networks with ML (e.g., Project Aurora).
- Identifying unusual patterns in payment systems with neural networks
- Standards research and innovation to improve resilience and robustness

3 Regulation

- **Early warnings on regulatory developments**
- Normative complexity calculation using NLP techniques
- **Regulatory impact analysis with scraping, classification and semantic matching**

4 Supervision and surveillance

- **Extracting insights from supervisory documents with ML, NLP and GenAI**
- **Support to supervisors in risk and compliance analysis**
- **Credit risk assessment, exposure and portfolio risk assessment with IA**

5 Cash

- Optimization of the banknote printing process with deep learning techniques.
- Automated quality control in cash production
- Predictive models for the demand for banknotes and coins and their distribution

6 Anomaly detection

- **Identification of errors and outliers in pricing, balance sheets and reports**
- **Improving data quality through anomaly detection algorithms**
- Financial system cyber resilience assessment with AI (e.g., Project Raven)

7 Risk assessment

- Early warning systems for financial crises through multi-source analysis
- **Risk event classification and pattern detection with NLP**
- Synthetic data generation for advanced simulations and stress testing

8 Economic and policy analysis

- GDP nowcasting with ML models
- Integrated inflation forecast in projection
- **Textual analysis of news, surveys and official publications using NLP and LLMs**
- Sentiment analysis applied to economic indicators
- Models to support the design and implementation of public policies

Note: use cases partially sourced from BIS (2025): Governance of AI adoption in central banks - BIS Representative Office for the Americas

2 Brief update on the AI Act

Key updates on the AI Act: strict compliance deadlines, stringent requirements for high-risk AI systems, but lack of clarity regarding supervision and reporting

Update on the AI Act

- **Legislative process**
  - AI Act approved, entered into force on 01/08/2024
  - Prohibited practices decommissioned in February 2025
  - AI definition and prohibited AI clarification guidelines issued in February 2025
  - High-risk AI systems to be compliant by August 2026
  - European Commission to issue Delegated Acts clarifying the definition of AI and high-risk?
  - AI Code of Practice (within 9 months) to guide compliance, serving as an interim standard?
- **Supervision**
  - National Competent Authorities (NCAs) coordinating and issuing local guidelines?
  - ECB to issue Supervisory Expectations on AI, in principle not related to the AI Act?
- **Hot topics**
  - Sanctions for non-compliance: Up to €35 million or 7% of global turnover
  - **High-risk AI systems have numerous and very strict requirements**
  - **It seems that logistic regressions will NOT be considered AI, but the question is still open**
  - **Inventories need to incorporate <u>all AI systems</u> – supervisors expect them**
  - Beware of "blind spots", hidden pockets of unnoticed high-risk AI systems

AI Act requirements for high-risk AI systems

- Accountability and governance
- Transparency and explainability
- Human rights and ethical considerations
- Fairness and bias mitigation
- Human oversight
- Robustness, reliability, and accuracy
- Data quality and data protection
- Cybersecurity
- Comprehensive risk assessment and management
- Documentation (technical doc, logs, incident reporting)
- Continuous monitoring and updating

2 Brief update on the AI Act

AI Act audits reveal significant gaps in banks, with most critical findings around inadequate risk frameworks

Real anonymized findings from an AI Act audit

Finding	Description	Severity	AI Act reference
Incomplete AI governance	• AI Office not yet constituted; resources not integrated across areas • Governance not extended to Group subsidiaries	● High	Art. 17, Art. 29
Missing AI strategy	• No centralized AI strategy • Missing unified AI policy and guidelines, lack of standardized framework	● High	Art. 17
Inadequate AI system registration	• Internal inventory of AI systems incomplete • AI systems not ready to be registered in EU database	● Medium	Art. 49, 71, Annex VIII
Poor client transparency	• Clients not systematically notified when interacting with AI systems	● Medium	Art. 50
Insufficient bias controls	• No comprehensive bias analysis framework for high-risk AI systems • Missing procedures for detecting and preventing discrimination	● High	Art. 10.2(f)
Deficient quality management	• Missing regulatory compliance procedures, no accountability framework • Incomplete post-marketing surveillance system	● High	Art. 17
Incomplete documentation	• High-risk AI systems documentation incomplete • Missing required elements from Annex IV	● Medium	Art. 11.1, 11.2, Annex IV
Gaps in risk management	• Current framework doesn't address fundamental rights impacts • Missing systematic risk assessment procedures	● High	Art. 9.1, 9.2, 9.6
Missing conformity checks	• No conformity assessments performed for high-risk systems • Missing evaluation procedures	● High	Art. 43, Annex VI, VII
Poor post-market monitoring	• Incomplete monitoring framework for high-risk systems • Missing systematic follow-up procedures	● Medium	Art. 72
Inadequate incident reporting	• AI-specific incident reporting to authorities not implemented • Missing incident classification framework	● Medium	Art. 73
Lacking impact assessments	• No fundamental rights impact assessments conducted • Missing assessment methodology and procedures	● High	Art. 27

3 Industry response and AI adoption plan

In practice, companies are launching AI Governance programs – and complying with the AI Act is a consequence

AI adoption program

01. Regulatory compliance

- Monitor AI regulations (EU AI Act, GDPR, etc.)
- Conduct gap analysis against AI regulation
- Coordinate with supervisors
- Prepare reporting on AI systems

02. AI Governance

- Develop an AI strategy
- Establish an AI adoption plan
- Create AI oversight committees and AI task forces
- Define AI roles (e.g., Chief AI Officer, Head of AI Risk)
- Create AI policies and procedures

03. AI Risk Management

- Inventory all AI systems and classify their AI Act risk level
- Integrate AI Risk in the Risk Taxonomy
- Develop an AI Risk Appetite
- Uplift risk frameworks (Model, IT, Data, etc.)
- Implement AI risk control and mitigation measures
- Validate and audit AI

06. AI Literacy

- Raise awareness among developers and users
- Train in AI skills, including AI Ethics
- Develop AI4All programs
- Train Board and ExCo

05. IT and Data Stack

- Develop AI technology roadmap
- Deploy cloud infrastructure for AI scalability
- Design efficient AI architectures
- Revise data and IT security frameworks
- Adopt MLOps and open-source tools

04. AI Use Cases

- Select and prioritize AI use cases
- Ensure AI models are compliant-by-design
- Implement monitoring and human oversight
- Address explainability and fairness in AI systems
- Establish sandboxes for AI prototyping

4 Key takeaways

AI in banking has moved beyond hype to real production use cases, but success requires a delicate balance between innovation and regulatory compliance

01. AI is no longer just hype in banking

- Numerous AI systems already in production across all bank areas, real benefits being captured
- Many banks moving from pilots to large-scale deployment

02. The regulatory landscape is becoming clearer, but not there yet

- AI Act sets concrete deadlines and requirements – but supervision is unclear
- High-risk AI systems (especially credit scoring) need immediate attention
- Banks are preparing for stringent supervision – they just don't know by whom

03. Banks face significant compliance gaps

- Most institutions lack (are developing) comprehensive AI governance
- Current frameworks are insufficient for AI Act requirements
- Critical gaps in inventory, risk management, bias control, and documentation

04. A structured approach is essential

- Enterprise-wide AI strategy and robust governance needed
- Comprehensive AI validation covering technical and ethical aspects
- Strong focus on human oversight

05. Success requires balancing innovation and control

- Adopt AI use cases that deliver clear business value
- Build controls and oversight from the ground up
- Invest in AI infrastructure and capabilities
- Foster a culture of responsible AI innovation

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Making things happen

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Multiscope Team

Best practice *know-how*

Proven Experience

Maximum Commitment

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www.managementsolutions.com

Or at our social network channels

What is GenMS™?

Management Solutions leverages its expertise in generative AI to create customized tools, automating processes using our GenMS™ framework

What is GenMS™?

GenMS™ is Management Solutions' framework to create and deploy generative AI tools in record time.

Front-end components

Pre-compiled, customizable and reusable user interface elements that ensure a consistent look and feel across all tools and fast time-to-market.

Code libraries

Optimized, robust, and reusable back-end components developed in-house and combined with open-source code.

Knowledge repository

Collection of best practices and most commonly used techniques:

- Prompting engineering
- Retrieval augmented generation (RAG)
- Knowledge graphs…

GENMS ManagementSolutions

Secured multi-cloud

Highly secured development and deployment options in AWS, GCP, Azure, protecting sensitive data.

Flexible deployment (SaaS, on-prem)

Large Language Models (LLMs)

- Proprietary: Gemini, GPT-4o, Claude
- Open-source: Mistral, Llama, Gemma, Vicuna, Phi, SeamlessM4T…

Compliance-by-design

Solutions are developed to be compliant with AI regulation (e.g., AI Act) since their inception

Why GenMS™?

- **Customization:** enables rapid customization of generative AI tools
- **Expertise**: leverages MS's extensive AI expertise
- **Efficiency**: reduce costs by automating processes
- **Accuracy**: minimizes manual tasks and human mistakes
- **Scalability**: enhances capabilities without los of quality
- **Compliance**: facilitates rapid adaptation to AI regulations
- **Consistency**: improves uniformity across models and equipment
- **Flexibility**: supports both cloud and on-premise implementation

GenMS™: Building blocks

MS is focusing on assembling the building blocks for robust and customizable LLM applications within the main cloud service providers to standardize its practice and enforce lessons learnt in all projects

GenMS building blocks

Low complexity → **High complexity**

LLMs & embeddings
- Open-source such as Llama, Phy
- Vendor such as Gemini, GPT gamily, Claude
- Embeddings models such as OpenAI Ada

LLM Validator
- Frameworks for model evaluation (Phoenix, LLM Checkup)
- Metrics for LLM evaluation and human evaluation
- Interpretability & fairness module

Advanced use cases (accelerators)
- Classic: Chatbot
- Scarlet: Gap assessment module
- Crystal: CV analyzer
- PDF data extraction
- Auditor
- …

D. Fine-tuning
- (Exploratory) Lightweight fine-tuning for domain-specific use cases

Prompt engineering
- Prompt engineering templates for specific domains or tasks
- Frameworks for best practices

RAG & databases
- Simple RAG.
- Graph RAG (under construction)
- Connection to structured databases (SQL)
- Connection to Python engine

Agentification
- Module to implement agents following a predefined hierarchy and structure.

H. Advanced functionalities
- Multi-modal use cases and RAG
- Dynamic knowledge updating
- Machine unlearning
- …

Compliance by design: LLMOps framework to design GPAI systems following the AI Act requirements in terms of development, testing, documentation, and implementation.