

(Gen)AI adoption framework

Selection and implementation of use cases



← NEWS

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Who is Management Solutions

Introduction

AI strategy and adoption plan

A use case approach

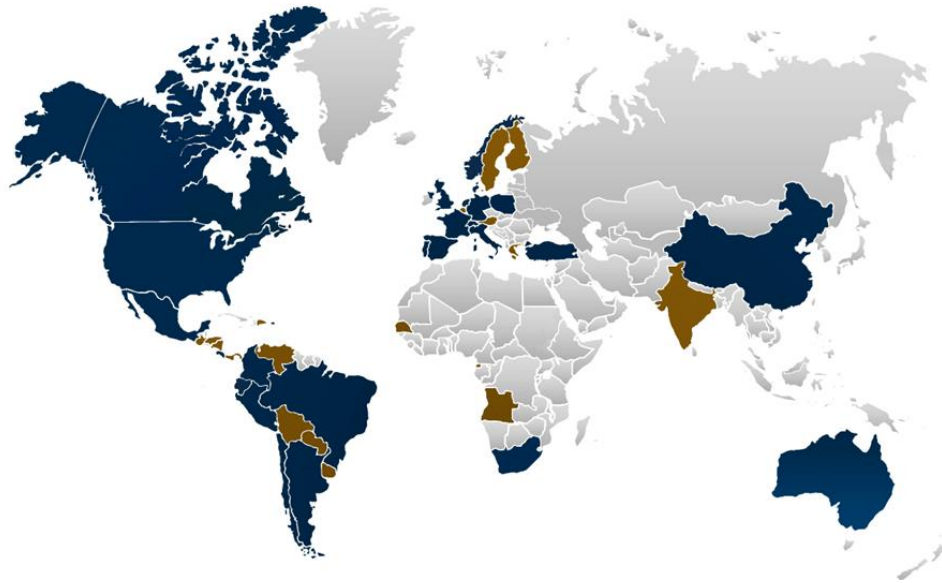
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Who is Management Solutions?

Overview

Management Solutions is an international business consulting firm with operations in 50+ countries (46 offices), and a team of 4,000+ professionals working for 1,500+ clients around the world (600+ financial institutions)

We are an international firm...



America: Toronto, New York, Boston, Birmingham, Houston, Pittsburgh, San Juan de Puerto Rico, Mexico City, Monterrey, Querétaro, San José, Medellín, Bogotá, Quito, Sao Paulo, Río, Lima, Buenos Aires, Santiago de Chile, Panama, Uruguay, Paraguay, Venezuela, Nicaragua, Honduras, Bolivia, El Salvador, Dominican Republic, Guatemala

Europe: Madrid, Barcelona, Bilbao, A Coruña, Málaga, London, Frankfurt, Dusseldorf, Paris, Amsterdam, Copenhagen, Oslo, Warsaw, Wrocław, Zurich, Milan, Rome, Bologna, Lisbon, Belgium, Austria, Luxembourg, Sweden, Finland, Greece, Andorra

Asia: Beijing, Istanbul, Singapore, India

Africa: Johannesburg, Senegal, Equatorial Guinea, Angola

Oceania: Sydney

■ Permanent Presence ■ Recurrent Activity

...with a team of talented and multidisciplinary professionals...

- International consulting firm specialized in delivering business and transformation programs across **regulated industries** (e.g., Financial, Energy and Telecom sectors).
- Globally managed multidisciplinary teams, which objective is to foster an **organic growth and a strong corporate culture to ultimately offer high quality advisory services**.
- **Balanced pyramid with strong functional, mathematical and technical capabilities**, with in depth expertise on delivery of complex regulatory programs.
- **Strong relationship model with regulators and supervisors** in Europe, the UK and the Americas.

...and extensive experience in regulated industries

- **Collaborating with:**
 - **9 financial supervisors** worldwide: ECB, DNB, Bank of England, Bank of Spain...
 - **20 out of the 30 G-SIBs** (Europe and America)
 - **300+ D-SIBs** (Europe, America, Asia, Africa and Oceania)
 - **600+ financial institutions** in 50+ countries.
 - **500+ major corporates** in Insurance, Energy, Telecom and other industries

1

Who is Management Solutions?

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' differential capabilities in AI

1. **Specialized team.** MS has **+1,000 data scientists** who combine **tech and quant skills with solid regulatory knowledge**, certified in AWS, Azure and Google.
2. **Frameworks.** MS supports major companies and FIs in the **adaption of their frameworks to AI** and has wide experience in MRM, BCBS 239, GDPR, DORA, etc.
3. **Experience with regulators and supervisors.** MS is a "**highly qualified external service provider**" of the **ECB, DNB** and other authorities.
4. **AI models under regulation.** MS has **developed and validated numerous AI/GenAI models** for multiple uses: FinCrime, Credit Risk, Energy, RepRisk, etc.
5. **Interpretability (XAI) and fairness.** MS has **extensive experience in the development of interpretable and fair models** in the industries where it operates.
6. **R&D area.** MS allocates **10% of its capacity to R&D**, co-founded the iDanae chair, researches on sustainability and efficiency in neural networks, among others.
7. **Proprietary tools.** MS has a suite of AI-powered tools, including **ModelCraft™** (AutoML and XAI); **Gamma™** (model governance, MRM); **Hatari™** (NLP and LLM).

Management Solutions' services in AI

Compliance with AI regulation

- AI Act, AI BoR, NIST gap analysis
- Compliance plan



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 risk analysis

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



AI use cases

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





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AI strategy and adoption plan

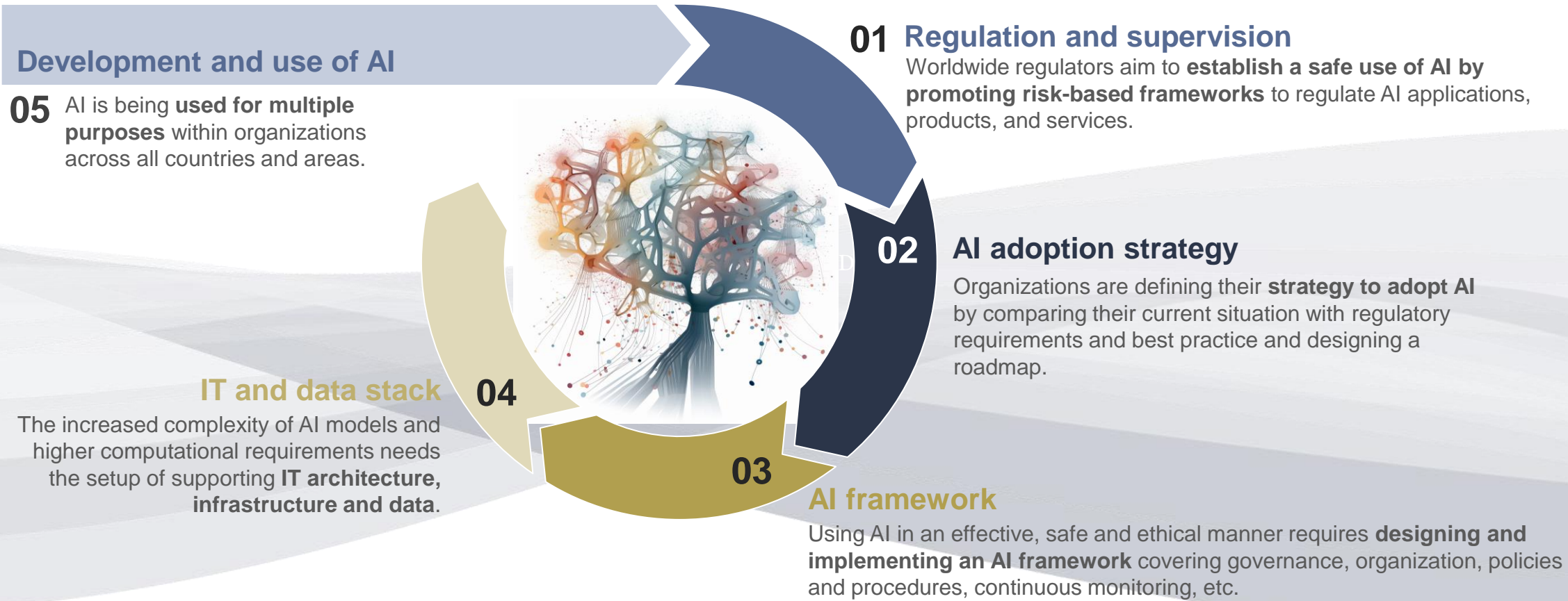
A use case approach

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Introduction

A path for the IA integration

Organizations are exploiting massive amounts of data and developing (Gen)AI systems across industries and domains, which has to be aligned to the new regulation



2 Introduction

Regulatory landscape: Main requirements in the AI Act

The AI regulation aims to address the potential risks, limitations, and ethical concerns associated with AI models, while promoting their **responsible development, implementation and use**

Overview of AI regulatory requirements

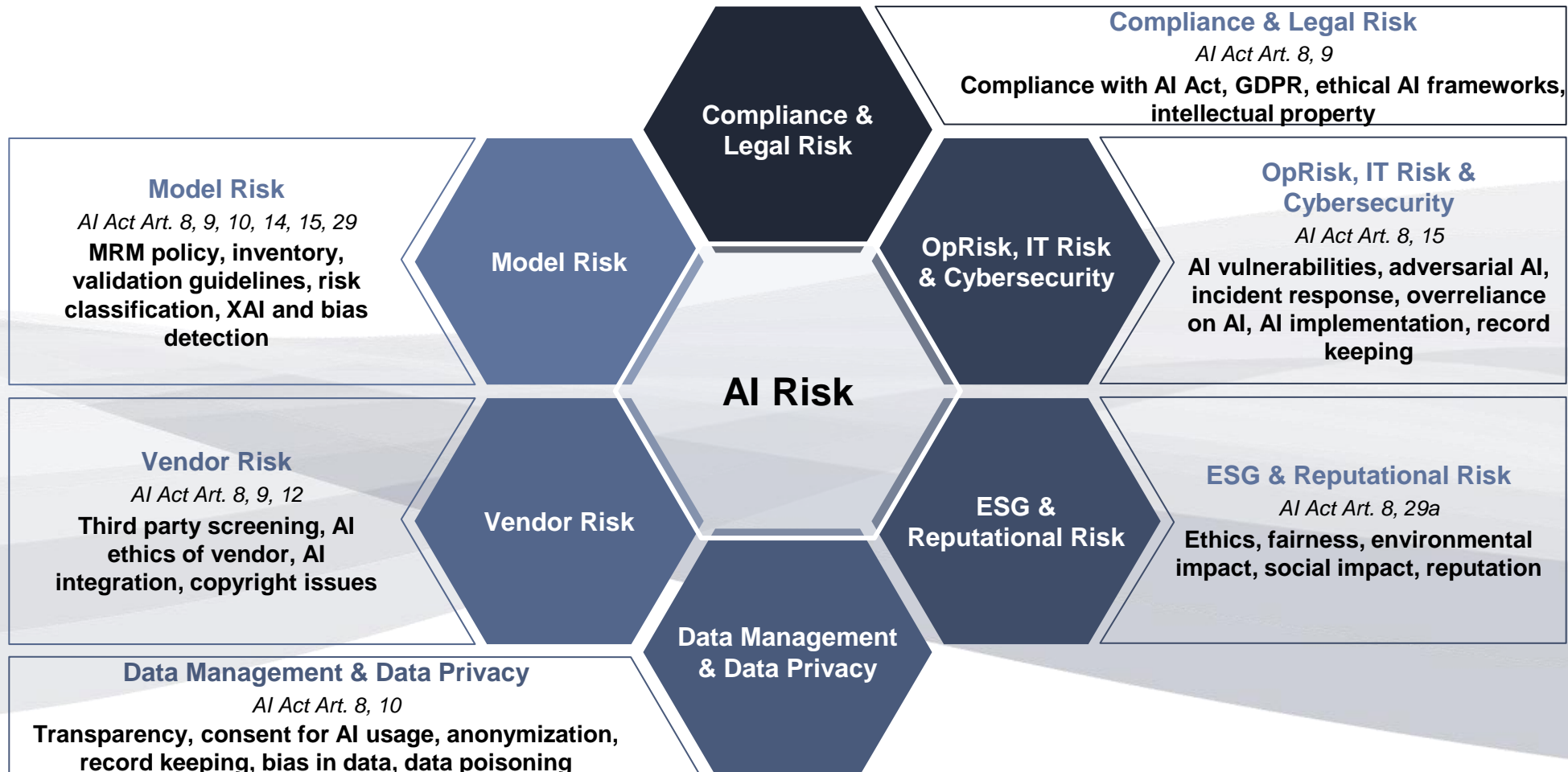


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Introduction

Regulatory landscape: A 360 degrees risk assessment

Controlling AI risks involves identifying and assessing how AI amplifies current risks, and leveraging existing controls or defining new ones to minimize inherent risks





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A use case approach

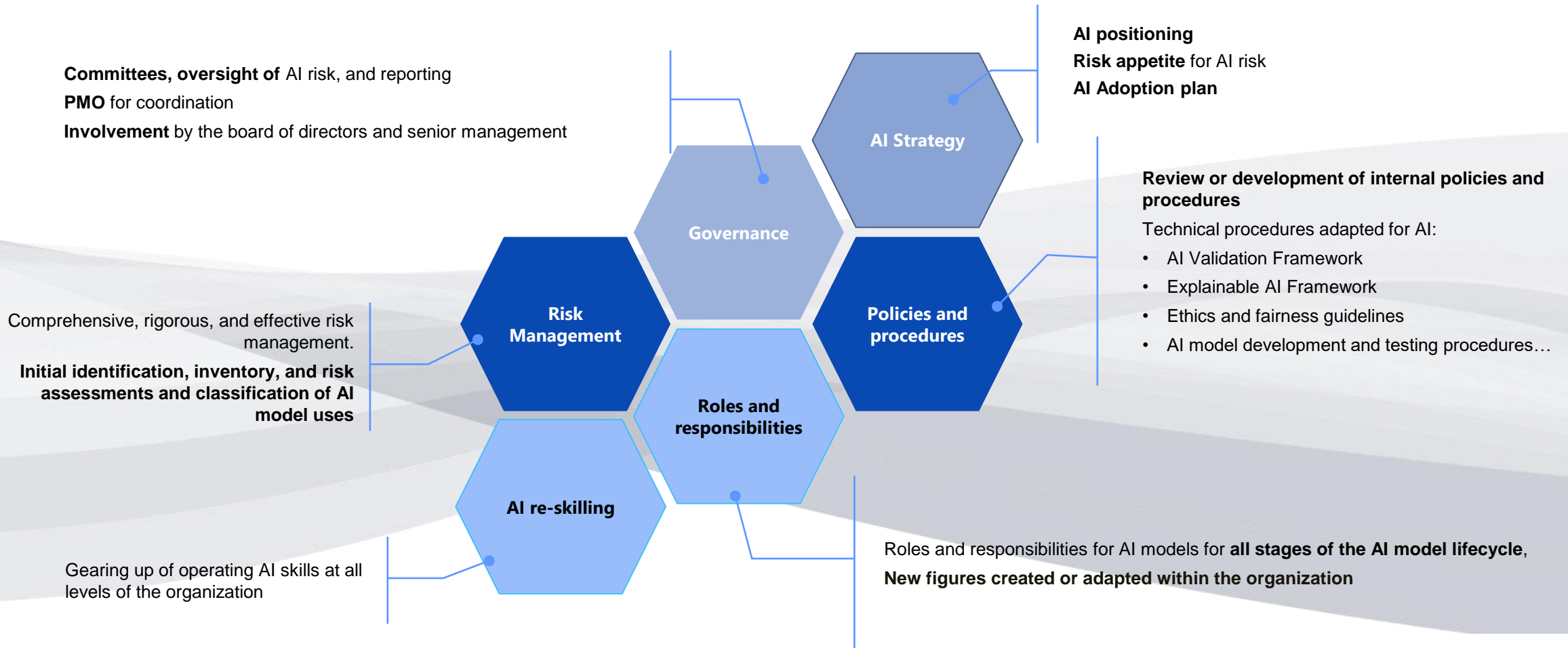
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AI strategy and adoption plan

AI Framework

Based on these regulatory requirements, the process for embedding AI within an organization starts with the development of an AI framework, and defining the necessary organizational, governance and procedural changes

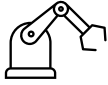
Governance, policies and procedures, organization and regulatory changes



3 AI strategy and adoption plan

Infrastructure, architecture and data

The AI technology framework should anticipate the key IT points for AI, in terms of **infrastructure, architecture and data**



Infrastructure

- **Selecting an efficient cloud infrastructure**
- **Scalability, computational capacity, storage needs.**
- **Specialized hardware, use of distributed computing and/or federated learning.**
- **Big Data infrastructures, and efficiently managing the use of the technological resources.**
- **Flexibility and speed in terms of maintenance and update.**
- **Monitoring consumption and costs; and controlling vendor risks.**



Architecture

- **Transforming and evolving the architecture from legacy systems.**
- Design of an architecture that allows the **efficient use of the infrastructure.**
- Availability, maintenance and update of the **different environments** (development, test, production).
- **Efficient processes for development, production and update** of the AI systems.
- **Ensuring the capabilities** according to the needs of the AI Solutions.
- **Security layers** (codes and data access, managing authorisations and permissions, cyber-attacks).



Data

- Processes for **capturing, acquiring, storing and updating multiple types of data**
- **Sources of information of different nature.**
- Ensuring the **high-quality of data, reliability, traceability, the avoidance of biases, data ethics, compliance to the regulatory requirements.**

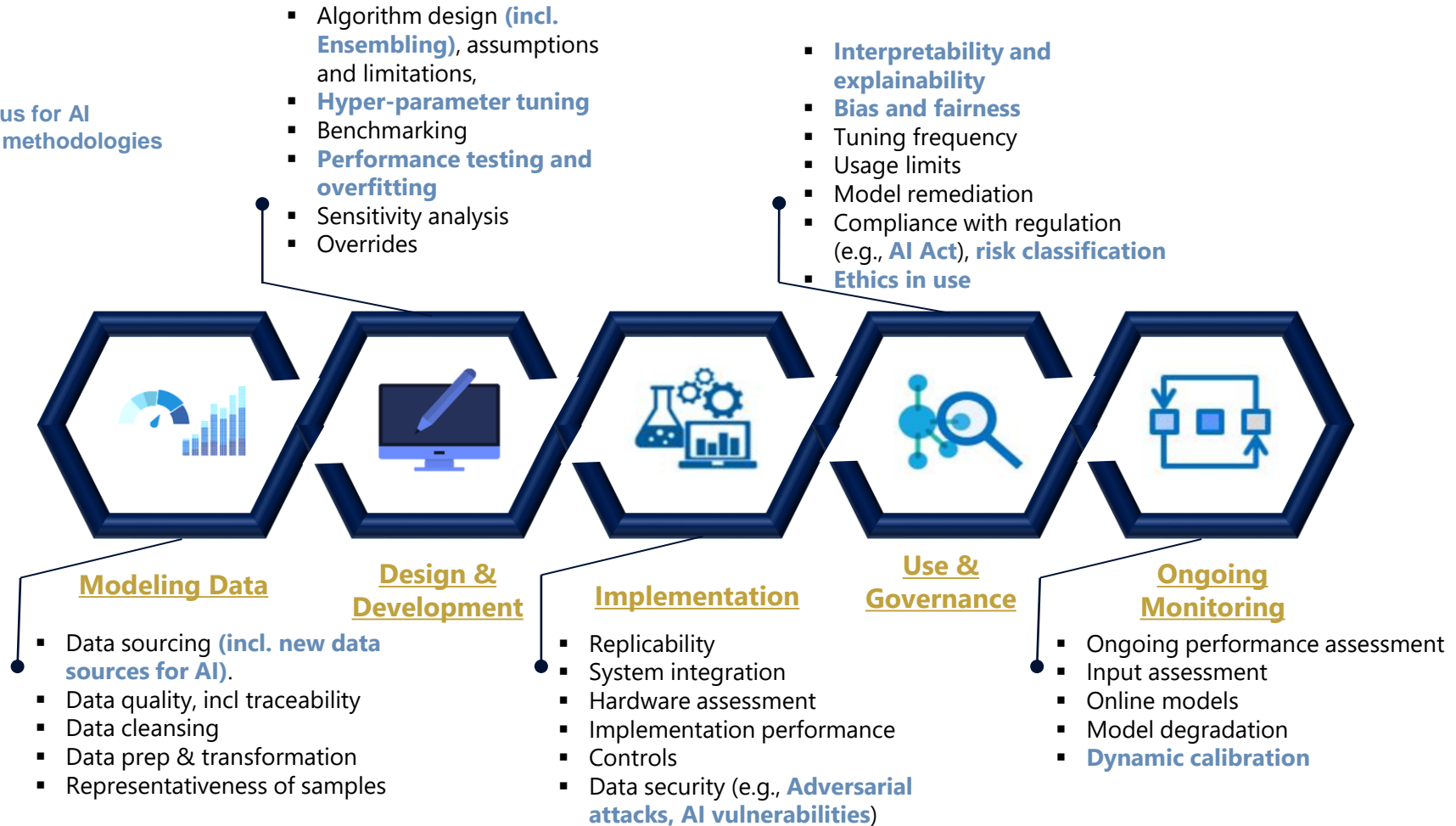
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AI strategy and adoption plan

The lifecycle of model development and validation

The framework for AI model development and validation should cover, at a minimum, the modeling data, the design and development of the model, its implementation, use and governance, and the ongoing monitoring of the model

NEW Areas of increased focus for AI models or new testing methodologies





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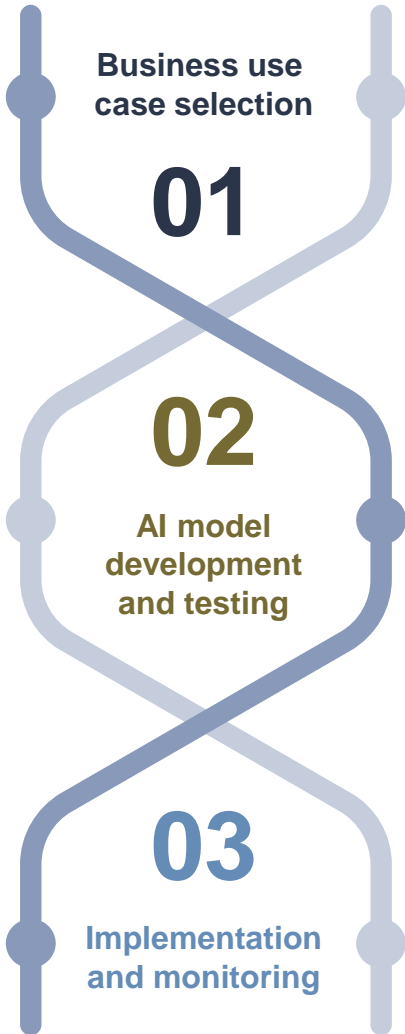
A use case approach

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A use case approach

Development and use of AI

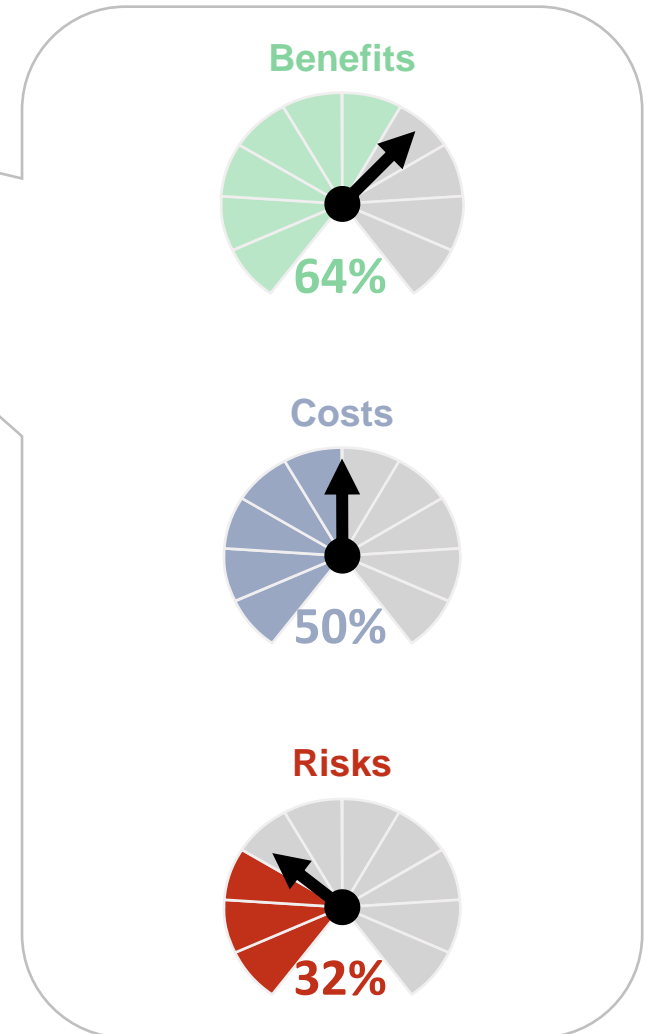
Management Solutions offers a comprehensive approach for AI adoption and a diverse array of AI use cases on efficiency, control, business, risk, finance, technology, operations, HR and ESG



- **Discovery and inventory** of business use cases
- AI use case **selection and investment procedure in pilots (MVPs)**.
- Definition of **pipelines for implementation**.

- **Development and validation of AI models**
- **Automation** of AI model reports and tools
- **Definition of working methodologies and profiles**

- **Technical implementation in production of AI systems**
- **Definition and implementation of monitoring** measures
- Implementation and review of the correct use of deployed AI systems.



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A use case approach

Selection of AI use cases

The use cases of artificial intelligence span **all areas of an organization**, from business to audit, risk, finance or compliance

Customer and workforce intelligence

Customer experience

1. Customer-tailored marketing campaigns
2. Personalized financial advisor
3. Chatbot in customer service (client-facing / agent-facing)
4. Client sentiment analysis through verbal/written feedback
5. Generator of trade sales pitch ideas via market analysis

Process industrialization

6. AI-based BI models (churn, cross-selling, propensity...)
7. AI-based customer behavior model
8. Audit of in/outbound calls via speech-to-text + LLM
9. Claims process enhancement via automated analysis

Human Resources

10. CVs screening and ranking
11. AI-based people analytics (e.g., attrition, talent map)

Efficiency and operational enhancement

Process industrialization

1. 'Own GPT' (summarization, translation, doc chatbot...)
2. Data extraction from large documents (e.g., funds, ESG)
3. Digitalization of highly unstructured docs (OCR+LLM)
4. Automated report generation from transactional data
5. Automated form filler (e.g., cybersec, VRM)
6. Mail and documents classification
7. AI-based data quality (e.g., anomaly detection in reports)

Tech innovation and solutions

8. Translator of code (SAS-SQL-Python-R) & data models
9. Biometric authentication
10. Predictive maintenance (e.g., ATMs) based on data
11. Optimization of deep neural network training

Risk and compliance

Financial risks

1. AI-based credit granting, IRB and IFRS 9/16 models
2. AI-based collections model
3. Automated credit risk analysis generation
4. AI-based portfolio optimization

Non-financial risks

5. AI-based model validation
6. Fraud detection in transactions (credit cards, payments...)
7. AML alerts scoring (reducing false positives)
8. Cybersec threat intelligence (e.g., phishing detection)
9. ESG&VRM rating based on AI-extracted controversies
10. Reputational risk measurement via NLP
11. Market abuse monitoring in trading data

Process industrialization and AI risk assessment

12. Automation of Internal Audit processes
13. Validation of LLMs
14. XAI and fairness in AI systems
15. Vendor risk and op risk in AI systems

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A use case approach

Use Case: application of GenAI in Model Validation with GenMS™ Scarlet

Management Solutions can create GenAI MVPs for Internal Validation, relying on GenMS™ **Scarlet** as an accelerator (MS proprietary tool)

Objectives




- **Generation of draft model validation reports** based on the results of the validation tests and historical model validation reports
- **Suggestion of draft findings** based on input regulatory requirements and model development documentation.
- **Suggestion of draft findings** based on the quantitative results of the validation tests and suggestion of the **severity of findings**, based on previous historical findings
- **Other functionalities:**
 - **Suggestion of regulatory requirements** to support findings.
 - **Chatbot** to interact with the model validation reports
 - **Explainability of the tool.**

Benefits



- **Reducing time and costs** in the production of the model validation reports, allowing model validators to focus on multiple models on a shorter time period
- **Reducing the number of manual tasks** during the model validation through **automated reporting and documentation** with flexibility
- **Providing an exploitable database of previous model validations reports and findings**, which can be easily consulted
- **Improving the consistency in the assignment of the severity of the findings**, and traceability of severities of similar findings historically
- Providing a **preliminary list of regulatory findings** to reduce time spent in model validation.



Streamline Your Model Validation Process

Scarlet is an AI-powered tool designed to assist model validators in conducting comprehensive and efficient validations. Upload your model documentation, validation templates, guidelines, historical reports, and applicable regulations to generate detailed validation findings and reports.

Note: Not all files are required. Scarlet will work with the files you provide.

Upload Files

Model Documentation: Ninguno archivo selec.

Validation Template: Ninguno archivo selec.

Validation Guidelines: Ninguno archivo selec.

Historical Reports: Ninguno archivo selec.

Applicable Regulations: Ninguno archivo selec.

Validation Results

Here is a comprehensive list of validation findings for the IB Fees model based on the provided documentation:

Lack of Comprehensive Model Documentation

The model documentation does not fully meet the expectations outlined in SR 11-7 and SR 15-18. Key gaps include insufficient detail on model limitations, assumptions, and theoretical justification for chosen methodologies. More comprehensive documentation is needed to ensure the model can be understood and replicated by an independent party.

Severity: Medium

Applicable Regulations: SR 11-7 and SR 15-18

Comments: Thorough model documentation is critical to ensure models are sound, transparent, and can be validated. The documentation should be enhanced to fully align with regulatory expectations and leading practices.

Insufficient Validation of Key Assumptions

The model relies on several key assumptions, such as the stability of business mix and



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