AI GOVERNANCE

AI Strategy, Organization and Operational Lifecycle for Business Value Generation

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What's AI Governance?

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Fostering AI Governance to generate Continuous Business Value

At a time when digital experiences are surpassing our physical interactions, and with this being amplified by 2020 events, the adoption of artificial intelligence continues to rapidly gain ground across industries.

Market disruptors and tech giants, with a data-driven DNA, have led the way on how to leverage Artificial Intelligence to build new business models, creating persona-centric experiences and translating operational competitiveness.

As new AI-driven startups hit the market with innovative products and services, a new context emerges for organizations that now need to leverage AI, not just for differentiation, but

for market survival. Not that long ago, the critical challenge was to design a data strategy, define a data governance framework, and integrate Big Data capabilities across the organization.

However, the time to talk about AI governance has come, pushed forward by the use of data at scale in combination with the rise of data science. Organizations are intensively looking to extract new insights from data in order to uncover new trends, augment decision-making and ultimately generate business value. Yet, the proliferation of analytical applications demands a sound orchestration across areas to reap the benefits of potential synergies and mitigate risks.

Setting AI-Driven Organization Foundations with AI Governance

Within AI governance, we identify the following three key domains to support the definition of solid AI-Driven Organization foundations

These levers should help organizations continuously innovate by enabling fast experimentation, and foster AI-driven initiatives with differential value.

AI STRATEGY: every organization aiming to lead the competitive AI race should design and rely on a sound business and technology strategic alignment, identifying the viability of business opportunities and assessing potential risks.
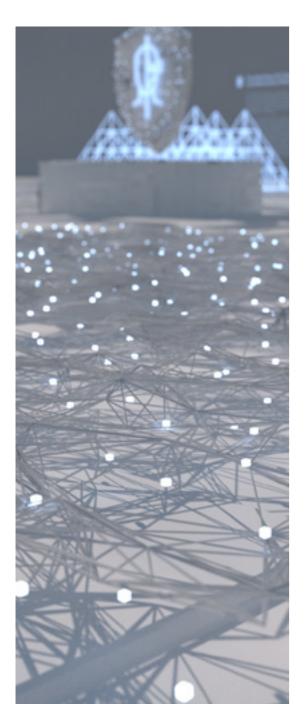
AI ORGANIZATION: the AI-driven organization requires fostering continuous experimentation through hybrid capabilities, expanding an AI innovation culture through AI literacy, as well as defining all roles that collaborate within the AI lifecycle and their responsibilities.

AI OPERATIONAL LIFECYCLE: transparency, reproducibility, and robustness of the processes are essential to properly manage AI at scale, being paramount to identify all requirements across the AI stages: from business opportunity to development, deployment and monitoring.

Operationalizing Responsible AI through AI Governance

The implementation of AI governance should seek to translate AI-driven initiatives into business value through trustworthy systems. AI leaders need to ensure the development AI initiatives is aligned with ethical principles such as Human Oversight, Transparency, Fairness, Diversity and Non-discrimination, Systems Robustness, and Privacy.

In addition to proactive alignment with responsible AI principles, the upcoming European AI regulation, proposed in April 2021 by the European Commission, sets a critical task for AI Governance to lead compliance efforts with both technical requirements and establishing processes that translate the regulatory framework.

Overall, organizations have a critical role in addressing the increasing demands, by communities and governments, to generate a positive impact through the responsible use of AI.

Which Ethics principles are embedded in Responsible AI Governance?

Organizations can leverage AI Governance to set AI ethics principles into practice by transforming the way AI is developed and implemented. Consistent, end-to-end AI Governance should enhance internal capabilities through methodologies and tools that address key ethical requirements such as:

Accountability
Defining roles and responsibilities as well as human supervision mechanisms to hold people accountable for AI outcomes.

Fairness
Ensuring from design to deployment, that AI supports general well-being and inclusion by mitigating potential harmful bias.

Privacy
Reinforcing data governance with tools and processes that prevent potential breach of privacy and data integrity when gathering, exploiting and sharing data through the AI lifecycle.

Transparency
Promoting AI stakeholders communication, interpretable AI outcomes and complete traceability of AI systems by enabling audit processes.

Robustness
Building reliable and secure AI by preventing potential misuses and enhancing validation practices that guarantee accurate outcomes through continuous evaluation.

Key Levers for AI Governance

As organizations evolve through their digital transformation path, they become increasingly aware of the need for translating the value of data into actionable and timely insights for decision-making.

Yet, many organizations that have been actively building up their data science capabilities are finding themselves in analytical silos where scalability remains the main challenge.

AI Governance aims at unlocking the value of data insights by tackling siloed AI and fostering synergies across AI efforts.
It focuses on centralizing current AI capabilities which tend to rely on operating models where experimentation is either isolated in labs or scattered across business areas.

Through our AI governance framework we define three key levers for organizations to implement an operating model that oversees the complete algorithm lifecycle, embedding responsible AI guidelines and best practices across each domain's objectives.

AI STRATEGY

Outline Standards
- Align the strategic business needs with AI, defining a clear roadmap focused on delivering value and trust.

- Consider risks and hurdles that may arise from AI initiatives implementation.

Achieving successful AI impact by generating business value implies aligning the AI strategic roadmap with the corporate strategy, seeking to fulfill business objectives and rapidly respond to market demands while minimizing risks.

It is paramount for organizations to enable synergies between business and technical departments through the discovery and planning of AI opportunities.

Once and AI roadmap has been established, measuring the Return on Artificial Intelligence (ROAI) allows tracking the real impact of AI-driven initiatives, enabling a value-driven portfolio management.

AI ORGANIZATION

Orchestrate Teams
- Define AI teams structure, setting an end-to-end accountability framework to standardize AI development.

- Foster AI experimentation culture through continuous upskilling with AI Literacy plans.

The AI organizational model orchestrates the structure that connects all stakeholders involved in the definition, development and implementation of AI applications, leading to the definition of the AI Hub.

It is key to correctly identify tasks and responsibilities for each of the roles involved, and to define a common working methodology for agile collaboration on the development of projects.

As organizations ramp up in AI resources, the AI Hub should become a catalyst for AI experimentation by promoting continuous innovation culture and upskilling of AI talent.
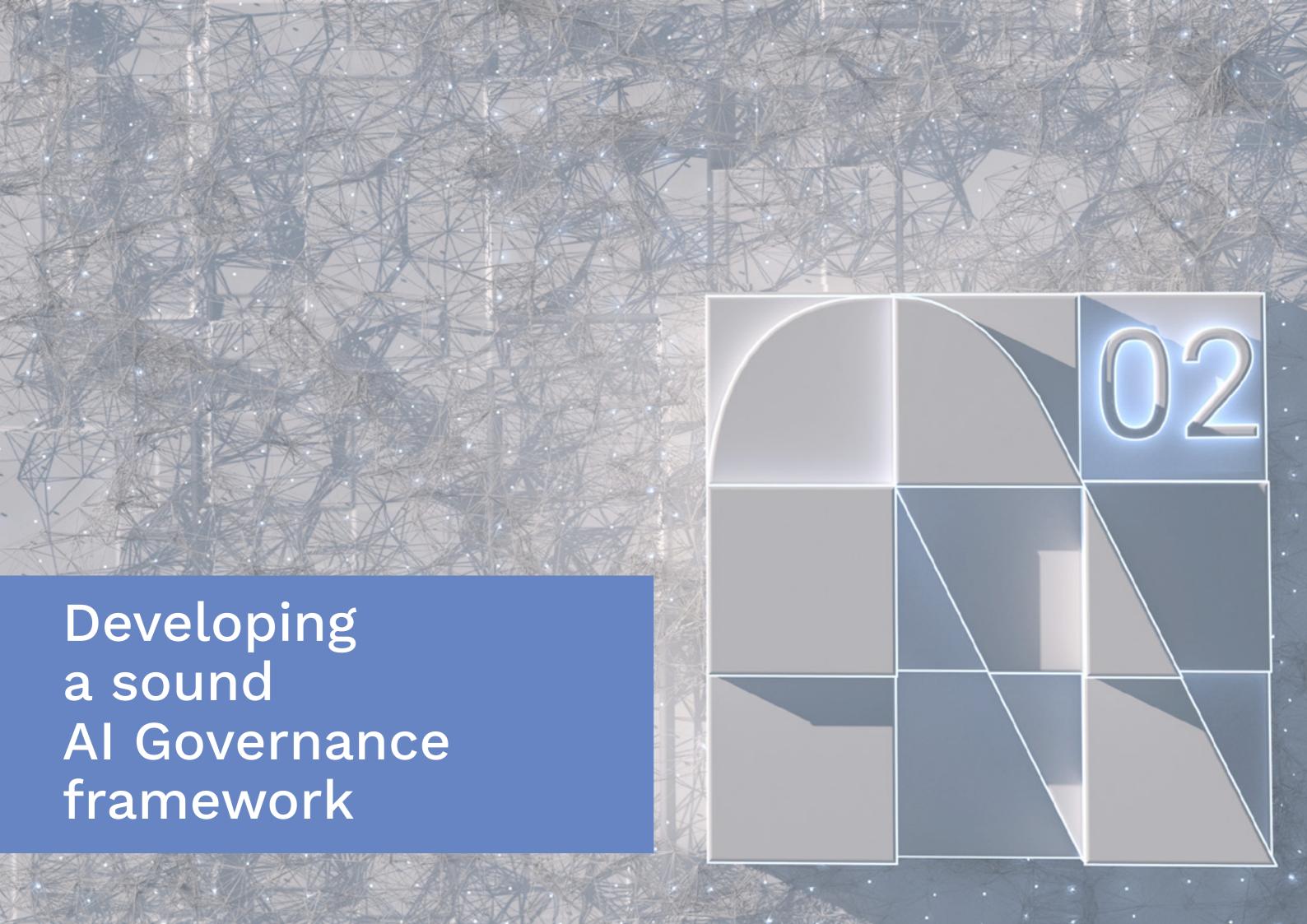
AI OPERATIONAL LIFECYCLE

Oversee Performance
- Implement tools and develop procedures that serve as a lever for AI scalability.

- Translate AI Governance principles into MLOps solutions to achieve full control of the algorithm's lifecycle.

Transforming market opportunities into new AI-driven initiatives must rely on fast development, testing, and industrialization.

To enable an agile, efficient and reliable response to business opportunities, AI Governance defines processes with enterprise-wide protocols and standards that are translated into the AI operational lifecycle by leveraging tools integrated within an AI platform.

As organizations gain higher AI maturity, they need to increasingly drive efforts towards leveraging the cloud ecosystem to provide the infrastructure needed to automatically scale AI applications and reinforce systems' resiliency

Developing
a sound
AI Governance
framework

Developing a sound AI Governance framework: Action Lines

In order to guide organizations into building the capabilities for deploying AI Governance, we've identified five lines of action to address needs across three domains: Strategy, Organization and Operations. Building up an AI strategy requires ongoing alignment between the long-term strategic goals and also with day-to-day business needs. Furthermore, each decision should be assessed through the lens of potential AI risks and address the implications related to AI ethics across every development and implementation.

Organizations should pursue a model of human-centered and human-driven AI, relying on an accountability framework that guides teams and structures the relationship model across AI stakeholders. It is critical for organizations to build an AI culture

that fosters transparency of the AI activity, caring on critical aspects such as AI Explainability, and being prepared to communicate what's behind automated decision making to diverse stakeholders.

Culture transformation is also impacted as AI Governance engages the organization in an experimentation culture that seeks to continuously innovate and elevate analytical capabilities.

Finally, in achieving the goal of scaling AI with agility and robustness, AI Governance needs to define and embed the processes and infrastructure needed through the AI lifecycle operations. This translates into MLOps practices and tools that reinforce capabilities in systems transparency, traceability, monitoring and auditability.

AI STRATEGY

AI Strategic Alignment
- AI Strategic Alignment
- AI & Business Alignment
- AI Portfolio Management

Risk Management
- Risk Classification
- Risk Control Management

AI ORGANIZATION

Accountability Framework
- AI Stakeholders Identification
- Roles & Responsibilities
- AI Reporting Model

AI Culture & Literacy
- AI Skills & Literacy
- Talent Management
- Experimentation Culture

AI OPERATIONAL LIFECYCLE

AI Lifecycle
- Data Discovery
- Training & Deployment
- Maintenance Decomissioning
- Model Monitoring & Auditability
- Model Documentation & Traceability

RESPONSIBLE AI

Strategic Objectives

- Align AI initiatives with Business Value
- Define Standards & Processes to Scale AI
- Identify & Manage AI Risks
- Foster Responsible AI

"Focus on addressing key business opportunities and mitigate potential risks to scale AI initiatives across the organization"

DEVELOPING A SOUND
AI GOVERNANCE FRAMEWORK: AI STRATEGY

Orchestrating Value & Managing Risk

AI Strategy is a cornerstone across AI Governance, as it serves organizations align the business value of AI with the corporate strategy, focusing on those initiatives with the greatest impact on the company's agenda and defining a clear AI roadmap.

In addition, this is complemented with a supervision role, as AI governance needs to considers risks and hurdles that may arise from AI initiatives

implementation. Successful AI-driven organizations rely on a strong governance body to scale AI initiatives value, mitigate the risks, and foster responsible use of AI. This requires establishing an AI Governance centralization role considering the orchestration with business stakeholders and technical teams into developing a common vision towards an AI strategy.

Action Plan

- Align AI & Business teams to collaborate and promote synergies
- Identify AI Risks
- Envision Responsible AI implications

- Plan & Coordinate AI roadmap
- Define AI Risk Mgmt. Framework
- Adopt Responsible AI principles

01 • **02** • **03** • **04**

Prioritize AI initiatives based on strategic Objectives
Create an AI Risk classification
Create Responsible AI awareness

- Measure return on AI initiatives
- Automate Risks management
- Translate Responsible AI into processes

Strategic Objectives

- Build an AI Accountability Framework
- Democratize AI capabilities
- Define Roles & Responsibilities across the AI lifecycle
- Elevate the Organization through AI Literacy

"Foster AI Literacy and Culture across the organization, and strengthen market competitiveness by engaging best AI professionals."

DEVELOPING A SOUND
AI GOVERNANCE FRAMEWORK: AI ORGANIZATION

Defining the Accountability Framework, AI Literacy & Culture

The AI organizational model orchestrates the structure that connects a variety of profiles that interact across AI lifecycle, enabling AI governance and fostering greater accountability on AI systems outcomes.

Team building practices are encouraged across the organization in order to foster multidisciplinary teams and create innovative ways to grow internal talent.

A common working methodology for the development of the AI projects enables experimentation agility as it centralizes best practices and accelerate AI application.

Finally, organizations that pursue an Hub & Spoke model should support its centralization role with strong C-level sponsorship to ensure a successful transformation process towards the AI–driven organization.

Action Plan

- Engage top & middle management into AI Governance
- Map out current AI lifecycle & stakeholders
- Document in-house AI capabilities

- Ensure best practices are transversally applied to all AI use cases.
- Centralize best practices through the AI Hub
Generate AI learning paths for non-AI teams

01 • 02 • 03 • 04

- Define Structure & responsibilities to manage AI risk
- Foster multidisciplinary teams to build AI
- Build learning paths to grow talent

- Streamline governance. processes with automation
- Dedicate AI experts to an AI Innovation Hub
- Generate area-specific AI literacy plans

Strategic Objectives

- Ensure Performance & AI Reliability
- Deploy Control Mechanisms
- Foster Trust through Transparency
- Elevate AI Infrastructure for agile innovation

"Guarantee the quality, homogeneity and consistency of AI initiatives across the MLOps lifecycle."

DEVELOPING A SOUND
AI GOVERNANCE FRAMEWORK: AI OPERATIONAL

Overseeing the AI Lifecycle for Operational Agility

Organizations require an action plan that enables operational agility and embeds standardized methods, reducing time to market of AI applications.

When defining an action plan, it is important to tackle the reporting requirement of evolving governance needs, moving from siloed AI developments to a more documented and controlled environment. Being able to audit models, automate them and cen-

tralize AI monitoring becomes key to ensure the quality, homogeneity and consistency of AI initiatives that move into production.

Focusing on explainability and reproducibility techniques along AI operations is the starting point to successfully embed responsible AI across operations the AI lifecycle, guaranteeing higher systems quality.

Action Plan

01
- Define Model documentation needs
- Define reporting requirements for governance
- Map infrastructure weaknesses

02
- Move from siloed AI developments to documented models
- Develop best practices through AI standard methodologies
- Explore Responsible AI tools through PoCs

03
- Audit Models through documentation
- Automate model validation controls
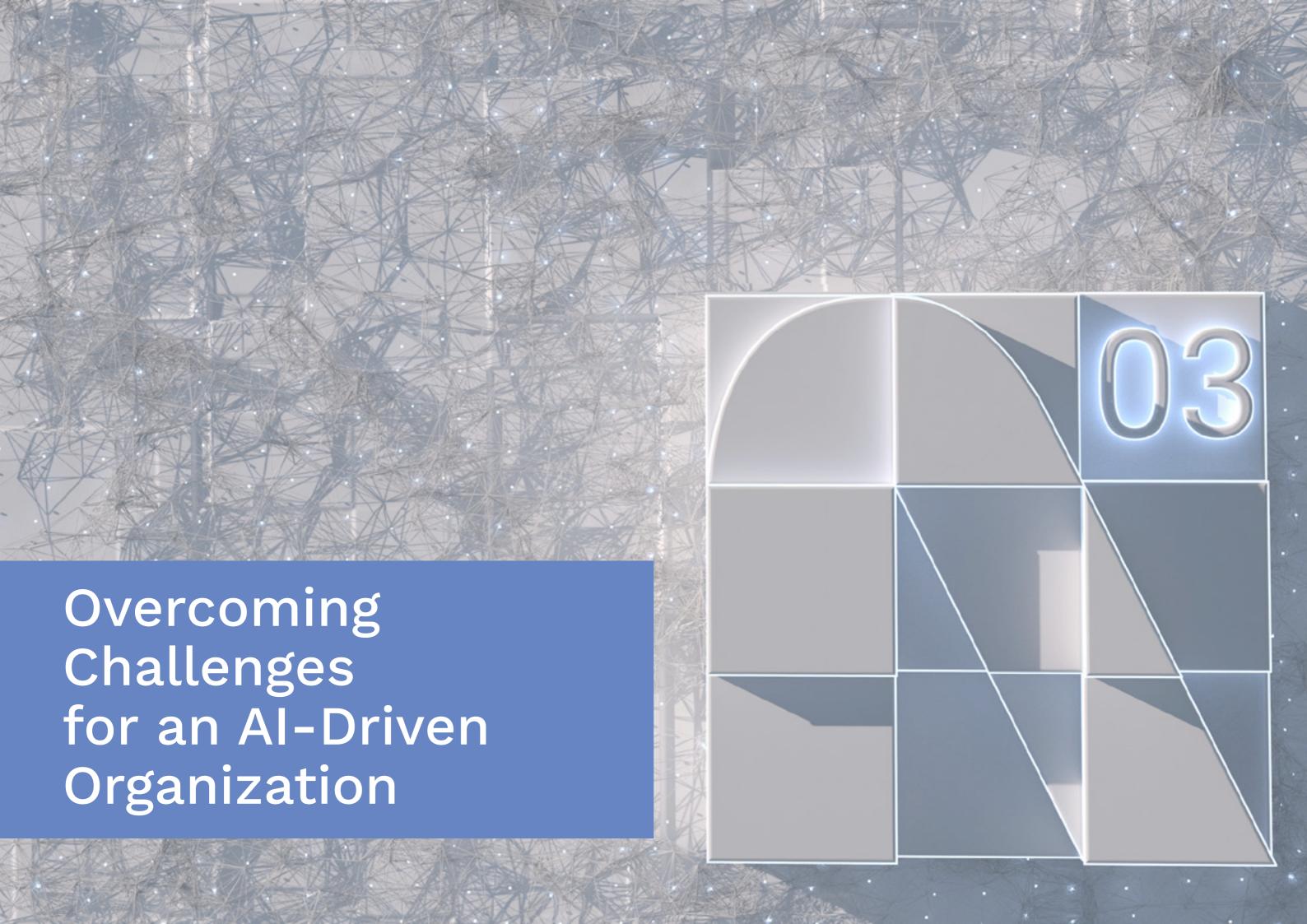- Implement tools for enabling the reutilization of artifacts

04
- Centralize AI monitoring & automate alerts
- Develop an Agile Experimentation platform
- Embed Responsible AI tools across operations

Overcoming Challenges for an AI-Driven Organization

SILOED DEVELOPMENTS

Business departments across the organization define analytical strategies separated and isolated one to another, duplicating efforts and lowering visibility on AI's Return on Investment.

ETHICAL CONCERNS

As consumers' increasingly demand AI responsible use, organizations need to generate trust in AI systems, aligning AI activities with ethical principles.

TALENT SCARCITY

Understanding how prolific AI technologies are becoming, the number of AI experts in the world is small, and competition to attract the best talent high.

ANTICIPATING REGULATION

Goverments are developing guides, policies and directives to regulate the use, development and deployment of AI initiatives.

INNOVATION: WINNER TAKES ALL

AI offers a limitless range of opportunities to thrive, allowing the best performers to rise to the top at the expense of the losers.

TRANSLATE AI-DRIVEN INITIATIVES INTO BUSINESS VALUE ELIMINATING SHORTFALLS

Overcoming Challenges for an AI-Driven Organization

In order to translate AI-driven initiatives into sustained business value, organizations need to tackle some key challenges in their path towards greater AI maturity.

SILOED DEVELOPMENTS

It is not uncommon for some business areas to have taken the lead in developing their own AI applications. This results in a lack of visibility across the organization affecting potential efficiency gains from AI. If not controlled, an increasing number of ungoverned AI systems can generate security concerns and systems duplicities.

ETHICAL CONCERNS

AI decision-making systems may raise ethical challenges along the AI lifecycle, having a direct impact on the business reputation and potential economic impact. Unaccounted vulnerabilities on AI systems could lead to data privacy breaches, unfair outcomes or untrusted decisions.
In this sense, AI governance seeks to deal with ethical concerns as, or before, they appear through a principled approach, rather than reactive ad hoc handling.

TALENT SCARCITY

Organizations are facing scarcity of AI experts, slowing down their path towards greater AI maturity. Deploying AI Governance across the organization can help to overcome AI talent and skills scarcity by fostering an AI Democratization Culture. Elevating internal AI capabilities requires the continuous upskilling of employees through AI literacy, as well as attracting top external talent through purposefully defined programs.

ANTICIPATING REGULATION

Governments are moving rapidly into establishing a regulatory framework that translates into companies assuming greater responsibility and accountability over the outcomes of their AI systems. In this sense, governments and the private sector will need to coordinate in order to produce solid frameworks that regulate AI initiatives and establish AI accountability. In light of the upcoming potential regulations, organizations have the opportunity to anticipate and establish compliance structures, methodologies, tools to facilitate a responsible AI implementation.

INNOVATION: WINNER TAKES ALL

In recent years, tech companies and industries "newcomers" have grasped the full benefits of AI as a driver for exponential growth, resulting into the "winner-takes-all" market. Therefore, incumbent institutions must carefully establish innovation strategies articulated through agile and flexible experimentation methodologies to face challengers' rapid pace and take advantage of the AI opportunities.

In other words, it is essential that when an organization identifies market opportunities, it cannot only foresee profits, but design a coherent and solid strategy, using efficiently its internal resources to make the most of AI benefits.

A Guide to start

From NTT DATA AI Center of Excellence, we have developed our proprietary **AI Governance assessment** to enable AI leaders from diverse industries, supporting the definition of their roadmap towards deploying AI Governance.

As an outcome, the assessment translates the company's diagnosis on their **AI maturity level** and serves as a guide to build **the action plan for becoming an AI-driven organization.**

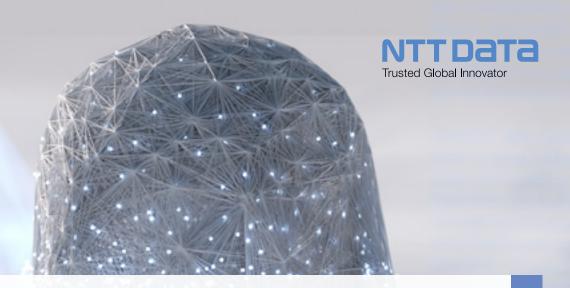◎ **Diagnose the AI maturity of your organization.**

As a first step, identifying current needs and gaps within the AI lifecycle is a valuable exercise to translate visibility on the end-to-end and building a unified AI vision.

◎ **Orchestrate AI & Business teams.**

Deploying AI as a strategic lever requires cross-hierarchy and cross-functional collaboration. Particularly, AI and Business teams need to work closely at defining AI opportunities in alignment with organizations' objectives.

◎ **Plan for long-term, act for short-term.**

The journey towards greater AI maturity should be shaped around a common path in which, capabilities-wise, every AI initiative builds upon the next. By supporting the AI transformation, the action should become the backbone of the AI stratategy.

About NTT DATA

NTT Data, was recently named a Challenger by Gartner in its 2020 Magic Quadrant for Data and Analytics Service Providers Worldwide.

The company shares the Innovation DNA as part of NTT Group, accelerates open ecosystems and contributes to fostering Responsible AI across its operations.

As a trusted global innovator, our values comes from "consistent belief" to shape the future society with clients and "courage to change" the world with innovative digital technologies.

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